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*Technical Specification*

**Services and Protocols for Advance Network (SPAN);  
Network Integration Testing between  
General Packet Radio Service (GPRS)  
and Internet Protocol (IP) Networks  
Part 1: Test Suite Structure and Test purposes (TSS&TP)**

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Reference

DTS/SPAN-130306-1

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Keywords

IP, GPRS, 3GPP, NIT, TSS&TP, testing

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## Foreword

This Technical Specification (TS) has been produced by ETSI Technical Committee Services and Protocols for Advanced Networks (SPAN).

The present document was developed by EURESCOM P1106 as Deliverable 2 Volume 4 and made freely and publicly available to ETSI TC SPAN for publication.

The present document is part 1 of a multi-part deliverable covering the Network Integration Testing between GPRS and IP Networks, as identified below:

**Part 1: "Test Suite Structure and Test Purposes (TSS&TP)";**

Part 2: "Abstract Test Suite (ATS), Implementation Conformance Statement (ICS) and partial Implementation eXtra Information for Testing (PIXIT) proformas";

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## Introduction

The present document contains the Test Suite Structure and Test Purposes (TSS&TP) for Network Integration Testing for the European PLMN, covering Network Integration Testing (NIT) between GPRS and non managed IP Networks.

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# 1 Scope

The present document specifies the Test Suite Structure and Test Purposes for Network Integration Testing to verify the overall compatibility between GPRS (UMTS, GSM Phase 2+) and IP Networks. The objective is to verify the level of international or national end-to-end support of GPRS services.

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# 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 and/or edition number or version number) or non-specific.
  - For a specific reference, subsequent revisions do not apply.
  - For a non-specific reference, the latest version applies.
- [1] ETSI TS 124 008: Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); Mobile radio interface layer 3 specification, Core Network protocols - Stage 3 (3G TS 24.008)".
  - [2] ETSI TS 100 940: Digital cellular telecommunications system (Phase 2+); Mobile radio interface layer 3 specification (GSM 04.08)".
  - [3] ISO/IEC 9646-1: "Information Technology-OSI Conformance Testing Methodology and Framework, Part 1: General Concepts".
  - [4] ETSI TS 125 323: "Universal Mobile Telecommunications System (UMTS); Packet Data Convergence Protocol (PDCP) specification (3GPP TS 25.323)".
  - [5] ETSI TS 129 060: "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); General Packet Radio Service (GPRS); GPRS Tunnelling Protocol (GTP) across the Gn and Gp interface (3GPP TS 29.060)".
  - [6] ETSI TS 125 322: "Universal Mobile Telecommunications System (UMTS); Radio Link Control (RLC) protocol specification (3GPP TS 25.322)".
  - [7] ITU-T Recommendation I.361: "B-ISDN ATM layer specification".
  - [8] ETSI TS 125 321: "Universal Mobile Telecommunications System (UMTS); Medium Access Control (MAC) protocol specification (3GPP TS 25.321)".
  - [9] ETSI TS 123 040: "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); Technical realization of Short Message Service (SMS) (3GPP TS 23.040)".
  - [10] ETSI TS 125 413: "Universal Mobile Telecommunications System (UMTS); UTRAN Iu interface RANAP signalling (3GPP TS 25.413)".
  - [11] ETSI TS 123 121: "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); Architecture Requirements for release 99 (3GPP TS 23.121)".
  - [12] ETSI TS 123 107: "Universal Mobile Telecommunications System (UMTS); Quality of Service (QoS) concept and architecture (3GPP TS 23.107)".
  - [13] ITU-T Recommendation H.323: "Packet-based multimedia communications systems".

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## 3 Definitions and abbreviations

### 3.1 Definitions related to conformance testing

**Abstract Test Case (ATC):** Refer to ISO/IEC 9646-1 [3].

**Abstract Test Suite (ATS):** Refer to ISO/IEC 9646-1 [3].

**Implementation Under Test(IUP):** Refer to ISO/IEC 9646-1 [3].

**lower tester:** Refer to ISO/IEC 9646-1 [3].

**Implementation Conformance Statement (ICS) proforma:** Refer to ISO/IEC 9646-1 [3].

**Implementation eXtra Information for Testing (IXIT) proforma:** Refer to ISO/IEC 9646-1 [3].

**Point of Control and Observation (PCO):** Refer to ISO/IEC 9646-1 [3].

**Protocol Implementation Conformance Statement (PICS):** Refer to ISO/IEC 9646-1 [3].

**Protocol Implementation eXtra Information for Testing (PIXIT):** Refer to ISO/IEC 9646-1 [3].

**System Under Test (SUT):** Refer to ISO/IEC 9646-1 [3].

**Test Purpose (TP):** Refer to ISO/IEC 9646-1 [3].

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## 4 Abbreviations

For the purpose of the present document the following abbreviations apply:

ATS	Abstract Test Suite
BS	Base Station
BSC	Base Station Controller
BSC	Base Station Controller
BSS	Base Station Sub-system
BSS	Base Station System
GSM	Global System for Mobile Communication
GW	Gateway
HLR	Home Location Register
IMSI	International Mobile Subscriber Identity
IP	Internet Protocol
MS	Mobile Station
MS	Mobile Subscriber
MSC	Mobile Switching Center
MT	Mobile Terminal
MT	Mobile Terminated
NIT	Network Integration Testing
PDP	Packet Data Protocol
PIXIT	Protocol Implementation eXtra Information for Testing
PLMN	Public Land Mobile Network
PPP	Point to Point Protocol
QoS	Quality of Service
RADIUS	Remote Authentication Dial In User Service
SCCP	Signaling Connection and Control Part
SGSN	Serving GPRS Support Node
SMS	Short Message Service
SS	Supplementary Service
TC	Test Case
TCP/IP	Transmission Control Protocol/Internet Protocol
TP	Test Plant

TSS	Test Suite Structure
TSS&TP	Test Suite Structure and Test Purposes
UDP	User Datagram Protocol
UMTS	Universal Mobile Telecommunications System
UTRAN	UMTS Terrestrial Radio Access Network

## 5 Numbering Scheme

- Pos. 1: Network of the A-Subscriber.
- Pos. 2: Network of the B-Subscriber.
- Pos. 3: Network of the C-Subscriber.
- Pos. 4: Network of the D-Subscriber.
- Pos. 5: Network of the E-Subscriber.

The following Network Codes apply:

\_: No such network used (used e.g. for C-Subscriber in successful A to B Calls)

(underscore makes it easier to read the name)

G: GSM (w/HCSCD & GPRS)

U: UTRAN (UMTS)

N: IP Network

(Extensions will be added when needed)

- Pos. 6 and 7: Bearer- or Teleservice involved.

xx: defined per PIXIT value

Packet Services

GI: GPRS (IP)

NT: IP Network TCP

NU: IP Network UDP

- Pos. 8 and 9:

\_\_: No Supplementary Services Involved/Successful

\_U: No Supplementary Services Involved/Unsuccessful

- Pos. 10 to 25: YYYY Name of individual Test Group (if needed).
- Pos. Last two positions XX Number of individual Test Purpose.

Short description	Name of individual Test Group
A_PDP_CR_GEN	ACTIVATE PDP CONTEXT REQUEST General
A_PDP_CR_INTE	ACTIVATE PDP CONTEXT REQUEST Interactive class
A_PDP_CR_BC_C	ACTIVATE PDP CONTEXT REQUEST Background class
A_PDP_STR_C	ACTIVATE PDP CONTEXT REQUEST Streaming class
A_PDP_CON_C	ACTIVATE PDP CONTEXT REQUEST Conversational class
A_PDP_CR_GENxx_R98	ACTIVATE PDP CONTEXT REQUEST General for Rel.98
A_SPDP_CR	Activate Secondary PDP context Request
M_PDP_CR	Modify PDP Context Request
D_PDP_CR	Deactivate PDP Context Request

## 5.1 Examples

1	2	3	4	5	6	7	8	9	10	11	12	13	14	14	15	17	18	19	20	21	19	20
G	N	-	-	-	G	I	-	-	A	-	P	D	P	-	C	R	-	G	E	N	X	X

## 6 Test Suite Structure (TSS)

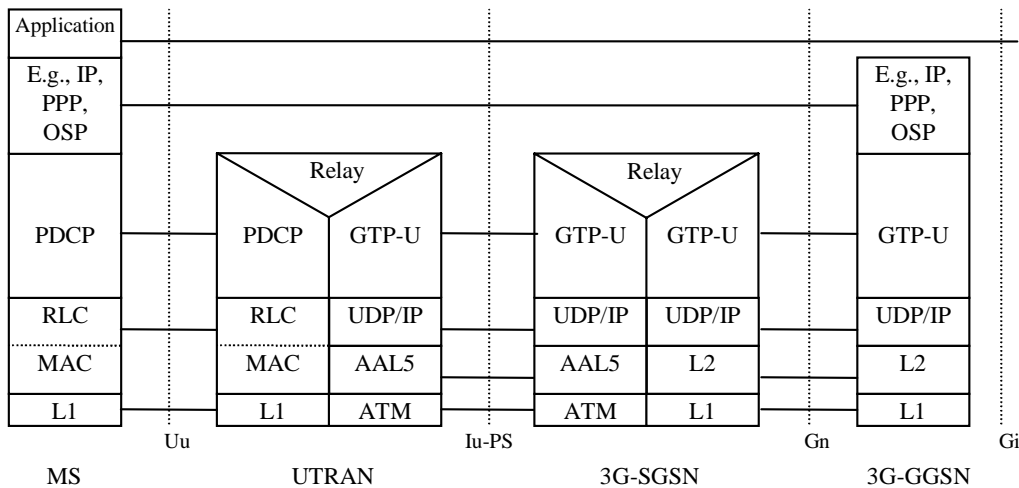
Packet Services GPRS 99 to ext. Network	Control Plane	PDP context activation	Successful GPRS General	GN_GI_A_PDP_C R_GENxx
	Control Plane + Application		Successful GPRS Interactive class	GN_GI_A_PDP_C R_INTExx
			Successful GPRS Background class	GN_GI_A_PDP_C R_BC_Cxx
			Successful GPRS Streaming class	GN_GI_A_PDP_S TR_Cxx
			Successful GPRS Conversational class	GN_GI_A_PDP_C ON_Cxx
GPRS 98 to external PDP network	Control Plane	PDP context activation	Successful GPRS General	GN_GI_A_PDP_C R_GENxx_R98xx
GPRS 99	General	Basic GPRS scenario – Successful	GPRS Activate PDP context Accept	GN_GI_A_PDP_Ax x
			Activate Secondary PDP context Request	GN_GI_A_SPDP_ CRxx
			Modify PDP Context Request	GN_GI M_PDP_CR xx
			Deactivate PDP Context Request	GN_GI_D_PDP_ CRxx
		Basic GPRS scenario - Unsuccessful	GPRS Activate PDP context Accept	GN_GI_U_A_PDP_ Axx
			Activate Secondary PDP context Request	GN_GI_U_A_SPDP_ _CRxx
			PDP Context modification	GN_GI_UM_PD_PD P Xx
ANNEX A GPRS 99 – Session Management, Interface Interoperability, Performance			Session Management Tests	GN_GI_SM_xx
			Interface Interoperability	GN_GI_II_xx
			Performance Tests	GN_GI_PM_xx



## 7 Test configurations and test procedures

### 7.1 User Plane for UMTS

MS-GGSN



Legend:

**Packet Data Convergence Protocol (PDCP):** This transmission functionality maps higher-level characteristics onto the characteristics of the underlying radio-interface protocols. PDCP provides protocol transparency for higher-layer protocols. PDCP supports e.g., IPv4, PPP, OSP, and IPv6. Introduction of new higher-layer protocols shall be possible without any changes to the radio-interface protocols. PDCP provides protocol control information compression. PDCP is specified in TS 125 323 [4].

**NOTE:** Unlike in GPRS, user data compression is not supported in UMTS, because the data compression efficiency depends on the type of user data, and because many applications compress data before transmission. It is difficult to check the type of data in the PDCP layer, and compressing all user data requires too much processing.

**GPRS Tunnelling Protocol for the user plane (GTP-U):** This protocol tunnels user data between UTRAN and the 3G-SGSN, and between the GSNs in the backbone network. All PDP PDUs shall be encapsulated by GTP. GTP is specified in TS 129 060 [5].

**UDP/IP:** These are the backbone network protocols used for routing user data and control signalling.

**Asynchronous Transfer Mode (ATM):** The information to be transmitted is divided into fixed-size cells (53 octets), multiplexed, and transmitted. ATM is specified in ITU-T Recommendation I.361 [7]. [FFS: add AAL5 description.]

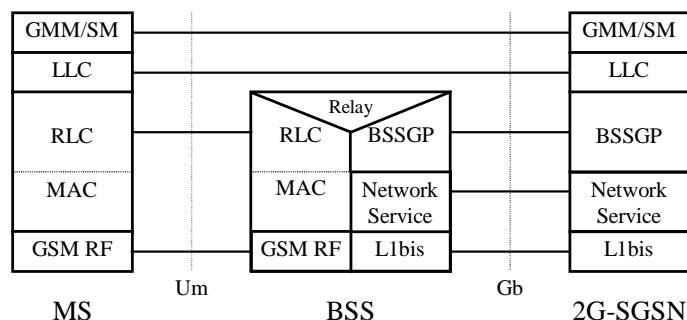
**Radio Link Control (RLC):** The RLC protocol provides logical link control over the radio interface. There may be several simultaneous RLC links per MS. Each link is identified by a Bearer Id. RLC is defined in TS 125 322 [6].

**Medium Access Control (MAC):** The MAC protocol controls the access signalling (request and grant) procedures for the radio channel. MAC is specified in TS 125 321 [8].

Figure 1: User Plane for UMTS

## 7.2 Control Plane

MS-SGSN for GPRS

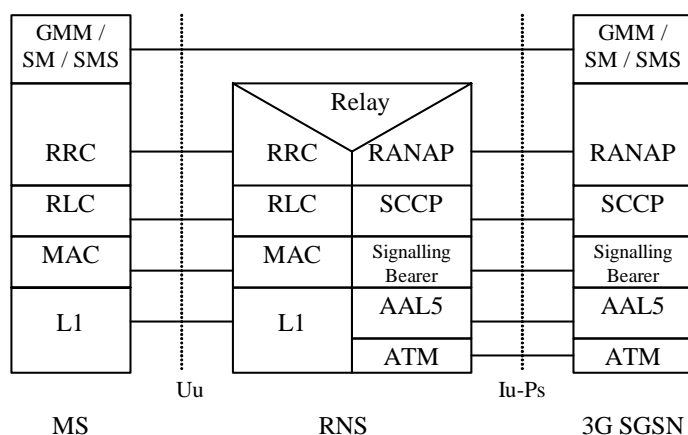


Legend:

**GPRS Mobility Management and Session Management (GMM/SM):** This protocol supports mobility management functionality such as GPRS attach, GPRS detach, security, routing area update, location update, PDP context activation, and PDP context deactivation, as described in clauses "Mobility Management Functionality" and "PDP Context Activation, Modification, and Deactivation Functions".

**Figure 2: Control Plane MS-2G-SGSN**

MS-SGSN for UMTS



Legend:

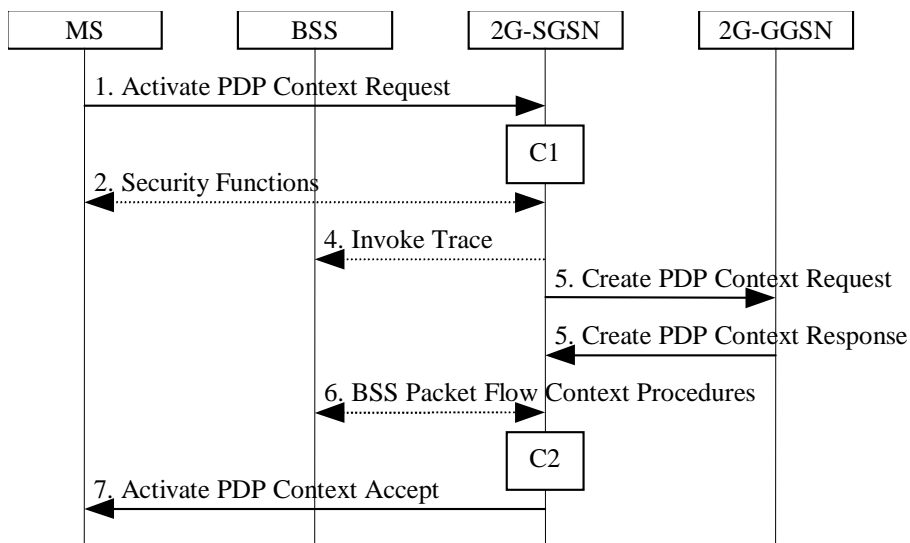
**UMTS Mobility Management and Session Management (GMM/SM):** GMM supports mobility management functionality such as attach, detach, security, and routing area update, as described in clause "Mobility Management Functionality". SM supports PDP context activation and PDP context deactivation, as described in clause "PDP Context Activation, Modification, and Deactivation Functions". SMS supports the mobile-originated and mobile-terminated short message service described in TS 123 040 [9].

**Radio Access Network Application Protocol (RANAP):** This protocol encapsulates and carries higher-layer signalling, handles signalling between the 3G-SGSN and UTRAN, and manages the GTP connections on the Iu interface. RANAP is specified in TS 125 413[10]. The layers below RANAP are defined in TS 123 121 [11].

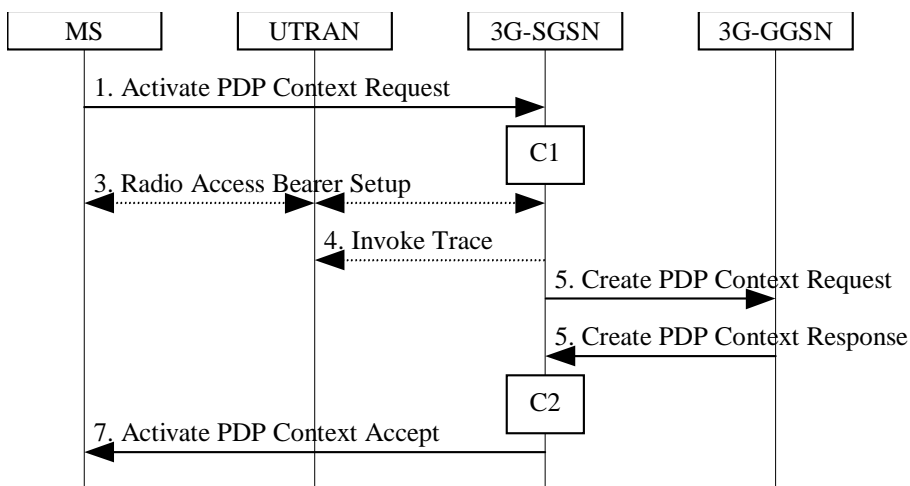
**Radio Link Control (RLC):** The RLC protocol offers logical link control over the radio interface for the transmission of higher layer-signalling messages and SMS. RLC is defined in 3G TS 25.322.

**Figure 2a: Control Plane MS-3G-SGSN**

## 7.3 PDP Context Activation Procedure



**Figure 3: PDP Context Activation Procedure for GPRS**



**Figure 4: PDP Context Activation Procedure for UMTS**

### 7.3.1 Successful Network-Requested PDP Context Activation Procedure

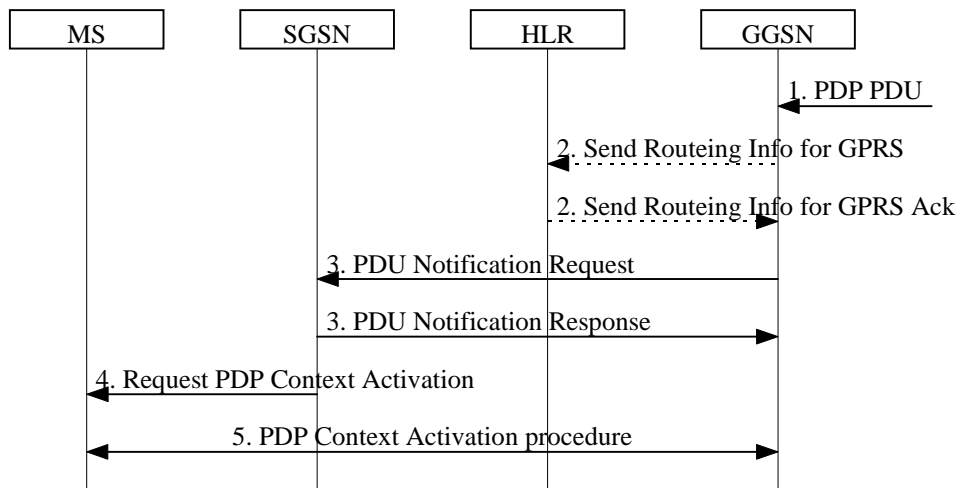


Figure 5: Successful Network-Requested PDP Context Activation Procedure

## 8.1 PDP context activation

### 8.1.1 GPRS R99 to external PDP network

#### 8.1.1.1 Successful

GN__GI A_PDP_CR_GEN 01	<b>GSM ref. to:</b> TS 124 008 [1] clauses 6.1.1 and 6.1.3.1.1	
<b>TSS reference:</b>	<b>GPRS R99 to external PDP network/PDP context activation/successful/ACTIVATE PDP CONTEXT REQUEST</b>	
<b>GSM selection criteria:</b>	BS 70	
<b>IP selection criteria:</b>	None	
<b>Test purpose:</b>	<p>If the UE is attached, then the Detach Request is originated from the UE indicating "GPRS detach without switching off". The network responds with a Detach Accept after completing the security mode procedures. A PDP context activation is then requested by the user. The PS attach (ATTACH REQUEST) is then indirectly caused by a requested PDP context activation. The SS returns the ATTACH ACCEPT message to the UE. Now session management can proceed with PDP context activation.</p> <p>On receipt of the ACTIVATE PDP CONTEXT REQUEST message an ACTIVATE PDP CONTEXT ACCEPT is returned by the SS with the same requested QoS.</p> <p>The GGSN may further restrict QoS Negotiated given its capabilities and the current load. If the QoS offered by the network is acceptable to the mobile, then upon receipt of the ACTIVATE PDP CONTEXT ACCEPT message the MS shall initiate establishment of the logical link with the offered QoS.</p> <p>An external IP application is started defined with PIXIT values.</p> <p>Ensure that the PDP PDU transfer with the offered parameters is performed correctly. Verify if the requested QoS parameters in the ACTIVATE PDP CONTEXT ACCEPT message are kept on the routed PDP PDUs.</p>	
<b>GSM parameter values:</b>	<p>QoS Requested:  PDP type organization: PCO_ID  PDP type number value: PDP_TNV_ID (PIXIT)  Reliability class: RC_IDreq (PIXIT)  Delay class: DC_IDreq (PIXIT)  Precedence class: PC_IDreq (PIXIT)  Peak throughput: PT_IDreq (PIXIT)  Mean throughput: MT_IDreq (PIXIT)  Delivery of erroneous SDU: DoeSDU_IDreq (PIXIT)  Delivery order: DO_IDreq (PIXIT)  Traffic class: TC_IDreq (PIXIT)  Maximum SDU size: M_SDU_S_IDreq(PIXIT)  Maximum bit rate for uplink: MBRFU_IDreq (PIXIT)  Maximum bit rate for downlink: MBRFD_IDreq (PIXIT)  Residual Bit Error Rate: RBER_IDreq (PIXIT)  SDU error ratio: SDU_ER_IDreq (PIXIT)  Traffic handling priority: THP_IDreq (PIXIT)  Transfer delay: TD_IDreq (PIXIT)  Guaranteed bit rate for uplink: GBRU_IDreq (PIXIT)  Guaranteed bit rate for downlink: BRD_IDreq (PIXIT)</p>	
<b>IP application parameter values:</b>	<p>Application name: IP_APLIC (PIXIT)  Application parameters values : IP_PAR 1 to ...IP_PAR 3 (PIXIT)</p>	

<b>Comments:</b>	<p>PDP context activation shall initiate PS Attach by the UE to establish a GMM context, when the UE is PS Detached.</p> <p>In order to request a PDP context activation, the UE sends an ACTIVATE PDP CONTEXT REQUEST message to the network, enters the state PDP-ACTIVE-PENDING and starts timer T3380. The message contains the selected NSAPI, PDP type, requested QoS and, if the UE requests a static address, the PDP address.</p> <p>If the QoS offered by the network is the same as the QoS requested by the UE, then upon receipt of the message ACTIVATE PDP CONTEXT ACCEPT the UE shall stop timer T3380.</p> <p>In GSM, the MS shall initiate establishment of the logical link for the LLC SAPI indicated by the network with the offered QoS and selected radio priority level if no logical link has been already established for that SAPI.</p> <p>In UMTS, both the network and the MS shall store the LLC SAPI and the radio priority in the PDP context.</p> <p>A UE, which is capable of operating in both GSM and UMTS, shall use a valid LLC SAPI, while a UE which is capable of operating only in UMTS shall indicate the LLC SAPI value as "LLC SAPI not assigned" in order to avoid unnecessary value range checking and any other possible confusion in the network.</p>
------------------	--

Expected sequence				
Step	Direction		Message	Comments
	UE	SS		
1		→	DETACH REQUEST	Only sent if the UE attaches at power-up, if not go to step 3. Detach is performed by the UE using MMI or AT Commands
2		←	DETACH ACCEPT	SS sends Detach Accept message.
3		UE		Initiate a context activation
4		→	ATTACH REQUEST	Request attach
5		←	ATTACH ACCEPT	Accept attach
6		→	ACTIVATE PDP CONTEXT REQUEST	Request a PDP context activation
7		←	ACTIVATE PDP CONTEXT ACCEPT	Accept the PDP context activation

Values for PDP type organization:	
VA_01	PCO_ID: PPP for use with IP PDP type
VA_02	PCO_ID: OSP:IHOSS PDP type
Values for PDP type number value:	
VA_01	PDP_TO_ID: IETF allocated address PDP_TNV_ID : IPv4 address
VA_02	PDP_TO_ID: IETF allocated address PDP_TNV_ID: IPv6 address
Values for Reliability class	
VA_01	RC_IDreq: Acknowledged GTP, LLC, and RLC; Protected data
VA_02	RC_IDreq: Unacknowledged GTP; Acknowledged LLC and RLC, Protected data
VA_03	RC_IDreq: Unacknowledged GTP and LLC; Acknowledged RLC, Protected data
VA_04	RC_IDreq: Unacknowledged GTP, LLC, and RLC, Protected data
VA_05	RC_IDreq: Unacknowledged GTP, LLC, and RLC, Unprotected data
Values for QoS – Delay class	
VA_01	DC_IDreq: Delay class 1
VA_02	DC_IDreq: Delay class 2
VA_03	DC_IDreq: Delay class 3
VA_04	DC_IDreq: Delay class 4
Values for QoS – Precedence class	
VA_01	PC_IDreq: High priority
VA_02	PC_IDreq: Normal priority
VA_03	PC_IDreq: Low priority

<b>Values for QoS – Peak Throughput</b>	
VA_01	PT_IDreq: Up to 1 000 octet/s
VA_02	PT_IDreq: Up to 2 000 octet/s
VA_03	PT_IDreq: Up to 4 000 octet/s
VA_04	PT_IDreq: Up to 8 000 octet/s
VA_05	PT_IDreq: Up to 16 000 octet/s
VA_06	PT_IDreq: Up to 32 000 octet/s
VA_07	PT_IDreq: Up to 64 000 octet/s
VA_08	PT_IDreq: Up to 128 000 octet/s
VA_09	PT_IDreq: Up to 256 000 octet/s
<b>Values for QoS – Mean throughput</b>	
VA_01	MT_IDreq: 100 octet/h
VA_02	MT_IDreq: 200 octet/h
VA_03	MT_IDreq: 500 octet/h
VA_04	MT_IDreq: 1000 octet/h
VA_05	MT_IDreq: 2000 octet/h
VA_06	MT_IDreq: 5000 octet/h
VA_07	MT_IDreq: 10 000 octet/h
VA_08	MT_IDreq: 20 000 octet/h
VA_09	MT_IDreq: 50 000 octet/h
VA_10	MT_IDreq: 100 000 octet/h
VA_11	MT_IDreq: 200 000 octet/h
VA_12	MT_IDreq: 500 000 octet/h
VA_13	MT_IDreq: 1 000 000 octet/h
VA_14	MT_IDreq: 2 000 000 octet/h
VA_15	MT_IDreq: 5 000 000 octet/h
VA_16	MT_IDreq: 10 000 000 octet/h
VA_17	MT_IDreq: 20 000 000 octet/h
VA_18	MT_IDreq: 50 000 000 octet/h
<b>Values for QoS – Delivery of erroneous SDU</b>	
VA_01	DoeSDU_IDreq: Erroneous SDU are delivered ("yes")
VA_02	DoeSDU_IDreq: Erroneous SDU are not delivered ("no")
<b>Values for QoS – Delivery order</b>	
VA_01	DO_IDreq: With delivery order ("yes")
VA_02	DO_IDreq: Without SDU are not delivered ("no")
<b>Values for QoS – Traffic class</b>	
VA_01	TC_IDreq: Streaming class
VA_02	TC_IDreq: Interactive class
VA_03	TC_IDreq: Background class
<b>Values for QoS – Maximum SDU size</b>	
VA_01	M_SDU_S_IDreq:10 octets
VA_02	M_SDU_S_IDreq:20 octets
VA_03	M_SDU_S_IDreq:40 octets
VA_04	M_SDU_S_IDreq:80 octets
VA_05	M_SDU_S_IDreq:160 octets
VA_06	M_SDU_S_IDreq:320 octets
VA_07	M_SDU_S_IDreq:640 octets
VA_08	M_SDU_S_IDreq:1280 octets
VA_09	M_SDU_S_IDreq:1 500 octets
VA_10	M_SDU_S_IDreq:1502 octets
VA_11	M_SDU_S_IDreq:1510 octets
VA_12	M_SDU_S_IDreq:1520 octets
<b>Values for QoS – Maximum bit rate for uplink</b>	
VA_01	MBRFU_IDreq: Subscribed the maximum bit rate for uplink
VA_02	MBRFU_IDreq: 1 kbps
VA_03	MBRFU_IDreq: 2 kbps
VA_04	MBRFU_IDreq: 8 kbps
VA_05	MBRFU_IDreq: 16 kbps
VA_06	MBRFU_IDreq: 32 kbps
VA_07	MBRFU_IDreq: 63 kbps
VA_08	MBRFU_IDreq: 64kbps
VA_09	MBRFU_IDreq: 564 kbps
VA_10	MBRFU_IDreq: 576 kbps
VA_11	MBRFU_IDreq: 8640kbps

<b>Values for Maximum bit rate for downlink</b>	
VA_01	MBRFD_IDreq: Subscribed the maximum bit rate for downlink
VA_02	MBRFD_IDreq: 1 kbps
VA_03	MBRFD_IDreq: 2 kbps
VA_04	MBRFD_IDreq: 8 kbps
VA_05	MBRFD_IDreq: 16 kbps
VA_06	MBRFD_IDreq: 32 kbps
VA_07	MBRFD_IDreq: 63 kbps
VA_08	MBRFD_IDreq: 64kbps
VA_09	MBRFD_IDreq: 564 kbps
VA_10	MBRFD_IDreq: 576 kbps
VA_11	MBRFD_IDreq: 8640kbps
<b>Values for Residual Bit Error Rate</b>	
VA_01	RBER_IDreq: $5 * 10^{-2}$
VA_02	RBER_IDreq: $1 * 10^{-2}$
VA_03	RBER_IDreq: $5 * 10^{-3}$
VA_04	RBER_IDreq: $4 * 10^{-3}$
VA_05	RBER_IDreq: $1 * 10^{-3}$
VA_06	RBER_IDreq: $1 * 10^{-4}$
VA_07	RBER_IDreq: $1 * 10^{-5}$
VA_08	RBER_IDreq: $1 * 10^{-6}$
VA_09	RBER_IDreq: $6 * 10^{-8}$
<b>Values for QoS – SDU error ratio</b>	
VA_01	SDU_ER_IDreq: $1 * 10^{-2}$
VA_02	SDU_ER_IDreq: $7 * 10^{-3}$
VA_03	SDU_ER_IDreq: $1 * 10^{-3}$
VA_04	SDU_ER_IDreq: $1 * 10^{-4}$
VA_05	SDU_ER_IDreq: $1 * 10^{-5}$
VA_06	SDU_ER_IDreq: $1 * 10^{-6}$
<b>Values for QoS – Traffic handling priority</b>	
VA_01	THP_IDreq: Priority level 1
VA_02	THP_IDreq: Priority level 2
VA_03	THP_IDreq: Priority level 3
<b>Values for Transfer delay</b>	
VA_01	TD_IDreq: 10 ms
VA_02	TD_IDreq: 20 ms
VA_03	TD_IDreq: 30 ms
VA_04	TD_IDreq: 40 ms
VA_05	TD_IDreq: 50 ms
VA_06	TD_IDreq: 60 ms
VA_07	TD_IDreq: 70 ms
VA_08	TD_IDreq: 80 ms
VA_09	TD_IDreq: 90 ms
VA_10	TD_IDreq: 100 ms
VA_11	TD_IDreq: 120 ms
VA_12	TD_IDreq: 150 ms
VA_13	TD_IDreq: 200 ms
VA_14	TD_IDreq: 300 ms
VA_15	TD_IDreq: 400 ms
VA_16	TD_IDreq: 500 ms
VA_17	TD_IDreq: 600 ms
VA_18	TD_IDreq: 700 ms
VA_19	TD_IDreq: 800 ms
VA_20	TD_IDreq: 900 ms
VA_21	TD_IDreq: 950 ms
VA_22	TD_IDreq: 1000 ms
VA_23	TD_IDreq: 2000 ms
VA_24	TD_IDreq: 3000 ms
VA_25	TD_IDreq: 4100 ms



<b>Guaranteed bit rate for uplink</b>	
VA_02	GBRU_IDreq: 1 kbps
VA_03	GBRU_IDreq: 2 kbps
VA_04	GBRU_IDreq: 8 kbps
VA_05	GBRU_IDreq: 16 kbps
VA_06	GBRU_IDreq: 32 kbps
VA_07	GBRU_IDreq: 63 kbps
VA_08	GBRU_IDreq: 64kbps
VA_09	GBRU_IDreq: 564 kbps
VA_10	GBRU_IDreq: 576 kbps
VA_11	GBRU_IDreq: 8 640kbps
<b>Guaranteed bit rate for downlink</b>	
VA_02	GBRD_IDreq: 1 kbps
VA_03	GBRD_IDreq: 2 kbps
VA_04	GBRD_IDreq: 8 kbps
VA_05	GBRD_IDreq: 16 kbps
VA_06	GBRD_IDreq: 32 kbps
VA_07	GBRD_IDreq: 63 kbps
VA_08	GBRD_IDreq: 64kbps
VA_09	GBRD_IDreq: 564 kbps
VA_10	GBRD_IDreq: 576 kbps
VA_11	GBRD_IDreq: 8 640kbps

## 8.1.1.1.1 Application models

<b>Interactive class; Applications: HTTP, FTP</b>	
GN__GI A_PDP_CR_ INTE_01	<b>GSM ref. to:</b> TS 124 008 [1] clauses 6.1.1 and 6.1.3.1.1
<b>TSS reference:</b>	<b>GPRS R99 to external PDP network/PDP context activation/successful/ACTIVATE PDP CONTEXT REQUEST</b>
<b>GSM selection criteria:</b>	BS 70
<b>IP selection criteria:</b>	None
<b>Test purpose:</b>	<p>Ensure that the Requested PDP Context Activation procedure allows the GGSN to route PDP PDUs between the SGSN and the external PDP network, and to start charging. The GGSN may further restrict QoS Negotiated given its capabilities and the current load. If the QoS offered by the network is acceptable to the mobile, then upon receipt of the ACTIVATE PDP CONTEXT ACCEPT message the MS shall initiate establishment of the logical link with the offered QoS</p> <p>Ensure that the network can support the "Packet data protocol address" parameters requested by the MS with the ACTIVATE PDP CONTEXT REQUEST message.</p> <p>Ensure that the PDP PDU transfer with the offered parameters is performed correctly. Verify if the requested QoS parameters in the ACTIVATE PDP CONTEXT ACCEPT message are kept on the routed PDP PDUs.</p>
<b>GSM parameter values:</b>	<p>QoS Requested:</p> <p>PDP type organization: IETF allocated address</p> <p>PDP type number value: PDP_TNV_ID</p> <p>Reliability class: 5 (Unacknowledged GTP, LLC, and RLC, Unprotected data)</p> <p>Delay class: <b>Delay class 2</b></p> <p>Precedence class: Low priority</p> <p>Peak throughput: Up to 16 000 octet/s (128 kbit/s)</p> <p>Mean throughput: 50 000 000 octet/h (111,1 kbit/s)</p> <p>Delivery of erroneous SDU: Erroneous SDU are not delivered ("no")</p> <p>Delivery order: With delivery order ("yes")</p> <p>Traffic class: Interactive class</p> <p>Maximum SDU size: 1 500 octets</p> <p>Maximum bit rate for uplink: 64 kbps</p> <p>Maximum bit rate for downlink: 64 kbps</p> <p>Residual Bit Error Rate: <math>4 * 10^{-3}</math></p> <p>SDU error ratio: <math>10^{-3}</math></p> <p>Traffic handling priority: <b>Priority level 2</b></p> <p>Transfer delay: *</p> <p>Guaranteed bit rate for uplink: *</p> <p>Guaranteed bit rate for downlink: *</p>
<b>IP parameter values:</b>	IP Address: GPRS_A_IP_ADD (PIXIT); GPRS_B_IP_ADD (PIXIT)
<b>Comments:</b>	<p>If the UE is attached, then the Detach Request is originated from the UE indicating "GPRS detach without switching off". The network responds with a Detach Accept after completing the security mode procedures. A PDP context activation is then requested by the user. The PS attach (ATTACH REQUEST) is then indirectly caused by a requested PDP context activation. The SS returns the ATTACH ACCEPT message to the UE. Now session management can proceed with PDP context activation.</p> <p>On receipt of the ACTIVATE PDP CONTEXT REQUEST message an ACTIVATE PDP CONTEXT ACCEPT is returned by the SS with the same requested QoS.</p>

<b>Values for test purpose GN__GI 01</b>	
VA_01	PDP_TO_ID: IETF allocated address PDP_TNV_ID: IPv4 address
VA_02	PDP_TO_ID: IETF allocated address PDP_TNV_ID: IPv6 address

GN__GI A_PDP_CR_INTE 02	<b>GSM ref. to:</b> TS 124 008 [1] clauses 6.1.1 and 6.1.3.1.1 TS 123 107 [12], clause 9.1.2.2	
<b>TSS reference:</b>	<b>GPRS R99 to external PDP network/PDP context activation/successful/ACTIVATE PDP CONTEXT REQUEST</b>	
<b>GSM selection criteria:</b>	BS 70	
<b>IP selection criteria:</b>		
<b>Test purpose:</b>	<p>Ensure that the Requested PDP Context Activation procedure allows the GGSN to route PDP PDUs between the SGSN and the external PDP network, and to start charging. The GGSN may further restrict QoS Negotiated given its capabilities and the current load. If the QoS offered by the network is acceptable to the mobile, then upon receipt of the ACTIVATE PDP CONTEXT ACCEPT message the MS shall initiate establishment of the logical link with the offered QoS.</p> <p>Ensure that the network can support the "QoS – "Maximum SDU size" parameter coded as M_SDU_S_IDreq. The bit rate for uplink and downlink and Peak Throughput are defined with the parameters MBRFU_IDreq, MBRFD_IDreq and PT_IDreq. The user data rate on the bearer is equal with the Maximum bit rate for uplink and Maximum Bit Rate for downlink. The user data SDU size on the bearer is defined as M_SDU_S_P. Ensure that the PDP PDU transfer with the offered parameters is performed correctly. Verify if the requested QoS parameters in the ACTIVATE PDP CONTEXT ACCEPT message are kept on the routed PDP PDUs.</p>	
<b>GSM parameter values:</b>	<p>OoS Requested: PDP type organization: IETF allocated address PDP type number value: PIXIT Reliability class: 5 (Unacknowledged GTP, LLC, and RLC, Unprotected data) Delay class: <b>Delay class 2</b> Precedence class: Low priority Peak throughput: PT_IDreq Mean throughput: 50 000 000 octet/h (111,1 kbit/s) Delivery of erroneous SDU: Erroneous SDU are not delivered ("no") Delivery order: With delivery order ("yes") Traffic class: <b>Interactive class</b> Maximum SDU size: M_SDU_S_IDreq Maximum bit rate for uplink: MBRFU_IDreq Maximum bit rate for downlink: MBRFD_IDreq Residual Bit Error Rate: <math>4 * 10^{-3}</math> SDU error ratio: <math>10^{-3}</math> Traffic handling priority: Priority level 2 Transfer delay: * (value is ignored) Guaranteed bit rate for uplink: * (value is ignored) Guaranteed bit rate for downlink: * (value is ignored)</p>	
<b>IP parameter values:</b>	IP Address: GPRS_A_IP_ADD (PIXIT); GPRS_B_IP_ADD (PIXIT)	
<b>Comments:</b>	<p>If the UE is attached, then the Detach Request is originated from the UE indicating "GPRS detach without switching off". The network responds with a Detach Accept after completing the security mode procedures. A PDP context activation is then requested by the user. The PS attach (ATTACH REQUEST) is then indirectly caused by a requested PDP context activation. The SS returns the ATTACH ACCEPT message to the UE. Now session management can proceed with PDP context activation.</p> <p>On receipt of the ACTIVATE PDP CONTEXT REQUEST message an ACTIVATE PDP CONTEXT ACCEPT is returned by the SS with the same requested QoS.</p>	

Values for QoS – maximum SDU size	
VA_01	PT_IDreq: 8 000 octets (64 kbps) MBRFU_IDreq: 32 kbps MBRFD_IDreq: 32 kbps M_SDU_S_IDreq: 1 500 octets M_SDU_S_P: 1 500 octets
VA_02	PT_IDreq: 8 000 octet/s (64 kbps) MBRFU_IDreq: 32 kbps MBRFD_IDreq: 32 kbps M_SDU_S_IDreq: 1 502 octets M_SDU_S_P: 1 502 octets

Values for QoS – maximum SDU size	
VA_03	PT_IDreq: 8 000 octet/s (64 kbps) MBRFU_IDreq: 32 kbps MBRFD_IDreq: 32 kbps M_SDU_S_IDreq: 1 520 octets M_SDU_S_P: 1 520 octets

GN_GI A_PDP_CR_INTE 03	<b>GSM ref. to:</b> TS 124 008 [1] clauses 6.1.1 and 6.1.3.1.1 TS 123 107 [12], clause 9.1.2.2	
<b>TSS reference:</b>	<b>GPRS R99 to external PDP network/PDP context activation/successful/ACTIVATE PDP CONTEXT REQUEST</b>	
<b>GSM selection criteria:</b>	BS 70	
<b>IP selection criteria:</b>		
<b>Test purpose:</b>	<p>Ensure that the Requested PDP Context Activation procedure allows the GGSN to route PDP PDUs between the SGSN and the external PDP network, and to start charging. The GGSN may further restrict QoS Negotiated given its capabilities and the current load. If the QoS offered by the network is acceptable to the mobile, then upon receipt of the ACTIVATE PDP CONTEXT ACCEPT message the MS shall initiate establishment of the logical link with the offered QoS</p> <p>Ensure that the network can support the "<b>Maximum Bit Rate for uplink and Maximum Bit Rate for downlink</b>" parameter coded as MBRFU_IDreq and MBRFD_IDreq. The user data rate on the bearer is equal with the Maximum Bit Rate for uplink and Maximum Bit Rate for downlink. The user data SDU size on the bearer is defined as M_SDU_S_P. Ensure that the PDP PDU transfer with the offered parameters is performed correctly. Verify if the requested QoS parameters in the ACTIVATE PDP CONTEXT ACCEPT message are kept on the routed PDP PDUs.</p>	
<b>GSM parameter values:</b>	<p>QoS Requested: PDP type organization: IETF allocated address PDP type number value: IPv4 address Reliability class: 5 (Unacknowledged GTP, LLC, and RLC, Unprotected data) Delay class: <b>Delay class 2</b> Precedence class: Low priority Peak throughput: PT_IDreq Mean throughput: 50 000 000 octet/h (111,1 kbit/s) Delivery of erroneous SDU: Erroneous SDU are not delivered ("no") Delivery order: With delivery order ("yes") Traffic class: Interactive class Maximum SDU size: 1 500 octets Maximum bit rate for uplink: MBRFU_IDreq Maximum bit rate for downlink: MBRFD_IDreq Residual Bit Error Rate: <math>4 * 10^{-3}</math> SDU error ratio: <math>10^{-3}</math> Traffic handling priority: <b>Priority level 2</b> Transfer delay: * (value is ignored) Guaranteed bit rate for uplink: * (value is ignored) Guaranteed bit rate for downlink: * (value is ignored)</p>	
<b>IP parameter values:</b>	IP Address: GPRS_A_IP_ADD (PIXIT); GPRS_B_IP_ADD (PIXIT)	
<b>Comments:</b>	<p>If the UE is attached, then the Detach Request is originated from the UE indicating "GPRS detach without switching off". The network responds with a Detach Accept after completing the security mode procedures. A PDP context activation is then requested by the user. The PS attach (ATTACH REQUEST) is then indirectly caused by a requested PDP context activation. The SS returns the ATTACH ACCEPT message to the UE. Now session management can proceed with PDP context activation.</p> <p>On receipt of the ACTIVATE PDP CONTEXT REQUEST message an ACTIVATE PDP CONTEXT ACCEPT is returned by the SS with the same requested QoS.</p>	

Values for test purpose GN_GI A_PDP_CR_INTE 03	
VA_01	PT_IDreq: 1 000 octet/s (8 kbps) MBRFU_IDreq: 4 kbps MBRFD_IDreq: 4 kbps M_SDU_S_P: APL
VA_02	PT_IDreq: 8 000 octet/s (18 kbps) MBRFU_IDreq: 9 kbps MBRFD_IDreq: 9 kbps M_SDU_S_P: APL
VA_03	PT_IDreq: 8 000 octet/s (64 kbps) MBRFU_IDreq: 32 kbps MBRFD_IDreq: 32 kbps M_SDU_S_P: APL
VA_04	PT_IDreq: 16 000 octet/s (128 kbps) MBRFU_IDreq: 64 kbps MBRFD_IDreq: 64 kbps M_SDU_S_P: APL
VA_05	PT_IDreq: 64 000 octet/s (512 kbps) MBRFU_IDreq: 256 kbps MBRFD_IDreq: 256 kbps M_SDU_S_P: APL
VA_06	PT_IDreq: 128 000 octet/s (1 024 kbps) MBRFU_IDreq: 512 kbps MBRFD_IDreq: 512 kbps M_SDU_S_P: APL
VA_07	PT_IDreq: 256 000 octet/s (2 048 kbps) MBRFU_IDreq: 1 024 kbps MBRFD_IDreq: 1 024 kbps M_SDU_S_P: APL
VA_08	PT_IDreq: 256 000 octet/s (2 048 kbps) MBRFU_IDreq: 1 984 kbps MBRFD_IDreq: 64 kbps M_SDU_S_P: APL
VA_09	PT_IDreq: 256 000 octet/s (2 048 kbps) MBRFU_IDreq: 64 kbps MBRFD_IDreq: 1 984 kbps M_SDU_S_P: APL

GN__GI A_PDP_CR_INTE 04	<b>GSM ref. to:</b> TS 124 008 [1] clauses 6.1.1 and 6.1.3.1.1 TS 123 107 [12], clause 9.1.2.2	
<b>TSS reference:</b>	<b>GPRS R99 to external PDP network</b> /PDP context activation/successful/ACTIVATE PDP CONTEXT REQUEST	
<b>GSM selection criteria:</b>	BS 70	
<b>IP selection criteria:</b>		
<b>Test purpose:</b>	<p>Ensure that the Requested PDP Context Activation procedure allows the GGSN to route PDP PDUs between the SGSN and the external PDP network, and to start charging. The GGSN may further restrict QoS Negotiated given its capabilities and the current load. If the QoS offered by the network is acceptable to the mobile, then upon receipt of the ACTIVATE PDP CONTEXT ACCEPT message the MS shall initiate establishment of the logical link with the offered QoS</p> <p>Ensure that the network can support the "Residual Bit Error Rate" and "SDU error ratio" coded as RBER_IDreq and SDU_ER_IDreq. The <b>Reliability class</b> is defined as RC_IDreq.</p> <p>The user data rate on the bearer is equal with the Maximum Bit Rate for uplink and Maximum Bit Rate for downlink. The user data SDU size on the bearer is defined as M_SDU_S_P.</p> <p>Ensure that the PDP PDU transfer with the offered parameters is performed correctly. Verify if the requested QoS parameters in the ACTIVATE PDP CONTEXT ACCEPT message are kept on the routed PDP PDUs.</p>	
<b>GSM parameter values:</b>	<p>QoS Requested: PDP type organization: IETF allocated address PDP type number value: PIXIT Reliability class: RC_IDreq Delay class: <b>Delay class 2</b> Precedence class: Low priority Peak throughput: 16 000 octet/s Mean throughput: 50 000 000 octet/h (111,1 kbit/s) Delivery of erroneous SDU: Erroneous SDU are not delivered ("no") Delivery order: With delivery order ("yes") Traffic class: Interactive class Maximum SDU size: 1 500 octets Maximum bit rate for uplink: 64 kbit/s Maximum bit rate for downlink: 64 kbit/s Residual Bit Error Rate: RBER_IDreq SDU error ratio: SDU_ER_IDreq Traffic handling priority: <b>Priority level 2</b> Transfer delay: * (value is ignored) Guaranteed bit rate for uplink: * (value is ignored) Guaranteed bit rate for downlink: * (value is ignored)</p>	
<b>IP parameter values:</b>	IP Address: GPRS_A_IP_ADD (PIXIT); GPRS_B_IP_ADD (PIXIT)	
<b>Comments:</b>	<p>If the UE is attached, then the Detach Request is originated from the UE indicating "GPRS detach without switching off". The network responds with a Detach Accept after completing the security mode procedures. A PDP context activation is then requested by the user. The PS attach (ATTACH REQUEST) is then indirectly caused by a requested PDP context activation. The SS returns the ATTACH ACCEPT message to the UE. Now session management can proceed with PDP context activation.</p> <p>On receipt of the ACTIVATE PDP CONTEXT REQUEST message an ACTIVATE PDP CONTEXT ACCEPT is returned by the SS with the same requested QoS.</p>	

Values for test purpose GN__GI A_PDP_CR_INTE 04	
VA_01	RC_IDreq: 4 RBER_IDreq: $4 \cdot 10^{-3}$ SDU_ER_IDreq: $10^{-4}$ M_SDU_S_P: APL
VA_02	RC_IDreq: 3 RBER_IDreq: $10^{-5}$ SDU_ER_IDreq: $10^{-5}$ M_SDU_S_P: APL

Values for test purpose GN_GI A_PDP_CR_INTE 04	
VA_03	RC_IDreq: 2 RBER_IDreq: $6 \times 10^{-8}$ SDU_ER_IDreq: $10^{-6}$ M_SDU_S_P: APL
GN_GI A_PDP_CR_INTE 05	<b>GSM ref. to:</b> TS 124 008 [1] clauses 6.1.1 and 6.1.3.1.1 TS 123 107 [12], clause 9.1.2.2
<b>TSS reference:</b>	<b>GPRS R99 to external PDP network</b> /PDP context activation/successful/ACTIVATE PDP CONTEXT REQUEST
<b>GSM selection criteria:</b>	BS 70
<b>IP selection criteria:</b>	
<b>Test purpose:</b>	Ensure that the Requested PDP Context Activation procedure allows the GGSN to route PDP PDUs between the SGSN and the external PDP network, and to start charging. The GGSN may further restrict QoS Negotiated given its capabilities and the current load. If the QoS offered by the network is acceptable to the mobile, then upon receipt of the ACTIVATE PDP CONTEXT ACCEPT message the MS shall initiate establishment of the logical link with the offered QoS Ensure that the network can transport user data rate defined with parameter MBRFU_P. The bit rate for uplink and downlink and Peak Throughput are defined with the parameters MBRFU_IDreq MBRFD_IDreq and PT_IDreq. All packets which are sent over the Peak Throughput should be discarded. Ensure that the PDP PDU transfer with the offered parameters is performed correctly. Verify if the requested QoS parameters in the ACTIVATE PDP CONTEXT ACCEPT message are kept on the routed PDP PDUs.
<b>GSM parameter values:</b>	PDP type organization: IETF allocated address PDP type number value: PIXIT Reliability class: 5 Delay class: <b>Delay class 2</b> Precedence class: Low priority Peak throughput: PT_IDreq Mean throughput: 50 000 000 octet/h (111,1 kbit/s) Delivery of erroneous SDU: Erroneous SDU are not delivered ("no") Delivery order: With delivery order ("yes") Traffic class: Interactive class Maximum SDU size: 1 500 octets Maximum bit rate for uplink: MBRFU_IDreq Maximum bit rate for downlink: MBRFD_IDreq Residual Bit Error Rate: $4 \times 10^{-3}$ SDU error ratio: $10^{-3}$ Traffic handling priority: <b>Priority level 2</b> Transfer delay: * (value is ignored) Guaranteed bit rate for uplink: * (value is ignored) Guaranteed bit rate for downlink: * (value is ignored)
<b>IP parameter values:</b>	IP Address: GPRS_A_IP_ADD (PIXIT); GPRS_B_IP_ADD (PIXIT)
<b>Comments:</b>	If the UE is attached, then the Detach Request is originated from the UE indicating "GPRS detach without switching off". The network responds with a Detach Accept after completing the security mode procedures. A PDP context activation is then requested by the user. The PS attach (ATTACH REQUEST) is then indirectly caused by a requested PDP context activation. The SS returns the ATTACH ACCEPT message to the UE. Now session management can proceed with PDP context activation. On receipt of the ACTIVATE PDP CONTEXT REQUEST message an ACTIVATE PDP CONTEXT ACCEPT is returned by the SS with the same requested QoS.

Values for test purpose GN__GI A_PDP_CR_INTE 05	
VA_01	PT_IDreq: 64 kbps MBRFU_IDreq: 32 kbps MBRFD_IDreq: 32 kbps MBR_P: 100 kbps
VA_02	PT_IDreq: 128 kbps MBRFU_IDreq: 64kbps MBRFD_IDreq: 64 kbps MBR_P: 150 kbps
VA_03	PT_IDreq: 256 kbps MBRFU_IDreq: 128 kbps MBRFD_IDreq: 128 kbps MBR_P: 300 kbps

GN__GI A_PDP_CR_INTE 06	<b>GSM ref. to:</b> TS 124 008 [1] clauses 6.1.1 and 6.1.3.1.1	
<b>TSS reference:</b>	<b>GPRS R99 to external PDP network/PDP context activation/successful/ACTIVATE PDP CONTEXT REQUEST</b>	
<b>GSM selection criteria:</b>	BS 70	
<b>IP selection criteria:</b>		
<b>Test purpose:</b>	<p>Ensure that the Requested PDP Context Activation procedure allows the GGSN to route PDP PDUs between the SGSN and the external PDP network, and to start charging. The GGSN may further restrict QoS Negotiated given its capabilities and the current load. If the QoS offered by the network is acceptable to the mobile, then upon receipt of the ACTIVATE PDP CONTEXT ACCEPT message the MS shall initiate establishment of the logical link with the offered QoS</p> <p>Ensure that the network can support the "QoS - " Traffic handling priority and the delay class " parameters defined as THP_IDreq and DC_IDreq requested by the MS with the ACTIVATE PDP CONTEXT REQUEST message. The bit rate for uplink and downlink and Peak Throughput are defined with the parameters MBRFU_IDreq, MBRFD_IDreq and PT_IDreq. The user data SDU size on the bearer is defined as M_SDU_S_P.</p> <p>Ensure that the PDP PDU transfer with the offered parameters is performed correctly. Verify if the requested QoS parameters in the ACTIVATE PDP CONTEXT ACCEPT message are kept on the routed PDP PDUs.</p>	
<b>GSM parameter values:</b>	PDP type organization: IETF allocated address PDP type number value: PIXIT Reliability class: 5 (Unacknowledged GTP, LLC, and RLC, Unprotected data) Delay class: <b>DC_IDreq</b> Precedence class: Low priority Peak throughput: PT_IDreq Mean throughput: 50 000 000 octet/h (111,1 kbit/s) Delivery of erroneous SDU: Erroneous SDU are not delivered ("no") Delivery order: With delivery order ("yes") Traffic class: <b>Interactive class</b> Maximum SDU size: 1 500 octets Maximum bit rate for uplink: MBRFU_IDreq Maximum bit rate for downlink: MBRFD_IDreq Residual Bit Error Rate: $4 * 10^{-3}$ SDU error ratio: $10^{-3}$ Traffic handling priority: THP_IDreq Transfer delay: * (value is ignored) Guaranteed bit rate for uplink: * (value is ignored) Guaranteed bit rate for downlink: * (value is ignored)	
<b>IP parameter values:</b>	IP Address: GPRS_A_IP_ADD (PIXIT); GPRS_B_IP_ADD (PIXIT)	
<b>Comments:</b>	<p>If the UE is attached, then the Detach Request is originated from the UE indicating "GPRS detach without switching off". The network responds with a Detach Accept after completing the security mode procedures. A PDP context activation is then requested by the user. The PS attach (ATTACH REQUEST) is then indirectly caused by a requested PDP context activation. The SS returns the ATTACH ACCEPT message to the UE. Now session management can proceed with PDP context activation.</p> <p>On receipt of the ACTIVATE PDP CONTEXT REQUEST message an ACTIVATE PDP CONTEXT ACCEPT is returned by the SS with the same requested QoS.</p>	



Values for test purpose GN_GI A_PDP_CR_INTE 06	
VA_01	TC_IDreq: Delay class 1 PT_IDreq: 8 000 octet/s (64 kbps) MBRFU_IDreq: 32 kbps MBRFD_IDreq: 32 kbps M_SDU_S_P: APL THP_IDreq: Priority level 1
VA_02	TC_IDreq: Delay class 1 PT_IDreq: 16 000 octet/s (128 kbps) MBRFU_IDreq: 64 kbps MBRFD_IDreq: 64 kbps M_SDU_S_P: APL THP_IDreq: Priority level 1
VA_03	TC_IDreq: Delay class 1 PT_IDreq: 32 000 octet/s (256 kbps) MBRFU_IDreq: 128 kbps MBRFD_IDreq: 128 kbps M_SDU_S_P: APL THP_IDreq: Priority level 1
VA_04	PT_IDreq: 64 000 octet/s (512 kbps) MBRFU_IDreq: 256 kbps MBRFD_IDreq: 256 kbps M_SDU_S_P: APL THP_IDreq: Priority level 1
VA_05	PT_IDreq: 256 000 octet/s (2 048 kbps) MBRFU_IDreq: 1 024 kbps MBRFD_IDreq: 1 024 kbps M_SDU_S_P: APL THP_IDreq: Priority level 1
VA_06	TC_IDreq: Delay class 1 PT_IDreq: 256 000 octet/s (2 048 kbps) MBRFU_IDreq: 1 984 kbps MBRFD_IDreq: 64 kbps M_SDU_S_P: APL THP_IDreq: Priority level 1
VA_06	TC_IDreq: Delay class 1 PT_IDreq: 256 000 octet/s (2 048 kbps) MBRFU_IDreq: 64 kbps MBRFD_IDreq: 1 984 kbps M_SDU_S_P: APL THP_IDreq: Priority level 1
VA_07	TC_IDreq: Delay class 2 PT_IDreq: 8 000 octet/s (64 kbps) MBRFU_IDreq: 32 kbps MBRFD_IDreq: 32 kbps M_SDU_S_P: APL THP_IDreq: Priority level 2
VA_08	TC_IDreq: Delay class 2 PT_IDreq: 16 000 octet/s (128 kbps) MBRFU_IDreq: 64 kbps MBRFD_IDreq: 64 kbps M_SDU_S_P: APL THP_IDreq: Priority level 2
VA_09	TC_IDreq: Delay class 2 PT_IDreq: 32 000 octet/s (256 kbps) MBRFU_IDreq: 128 kbps MBRFD_IDreq: 128 kbps M_SDU_S_P: APL THP_IDreq: Priority level 2
VA_10	TC_IDreq: Delay class 2 PT_IDreq: 64 000 octet/s (512 kbps) MBRFU_IDreq: 256 kbps MBRFD_IDreq: 256 kbps M_SDU_S_P: APL THP_IDreq: Priority level 2

Values for test purpose GN_GI A_PDP_CR_INTE 06	
VA_11	TC_IDreq: Delay class 2 PT_IDreq: 256 000 octet/s (2 048 kbps) MBRFU_IDreq: 1 024 kbps MBRFD_IDreq: 1 024 kbps M_SDU_S_P: APL THP_IDreq: Priority level 2
VA_12	TC_IDreq: Delay class 2 PT_IDreq: 256 000 octet/s (2 048 kbps) MBRFU_IDreq: 1 984 kbps MBRFD_IDreq: 64 kbps M_SDU_S_P: APL THP_IDreq: Priority level 2
VA_13	TC_IDreq: Delay class 2 PT_IDreq: 256 000 octet/s (2 048 kbps) MBRFU_IDreq: 64 kbps MBRFD_IDreq: 1 984 kbps M_SDU_S_P: APL THP_IDreq: Priority level 2
VA_14	TC_IDreq: Delay class 3 PT_IDreq: 8 000 octet/s (64 kbps) MBRFU_IDreq: 32 kbps MBRFD_IDreq: 32 kbps M_SDU_S_P: APL THP_IDreq: Priority level 3
VA_15	TC_IDreq: Delay class 3 PT_IDreq: 16 000 octet/s (128 kbps) MBRFU_IDreq: 64 kbps MBRFD_IDreq: 64 kbps M_SDU_S_P: APL THP_IDreq: Priority level 3
VA_16	TC_IDreq: Delay class 3 PT_IDreq: 32 000 octet/s (256 kbps) MBRFU_IDreq: 128 kbps MBRFD_IDreq: 128 kbps M_SDU_S_P: APL THP_IDreq: Priority level 3
VA_17	TC_IDreq: Delay class 3 PT_IDreq: 64 000 octet/s (512 kbps) MBRFU_IDreq: 256 kbps MBRFD_IDreq: 256 kbps M_SDU_S_P: APL THP_IDreq: Priority level 3
VA_18	TC_IDreq: Delay class 3 PT_IDreq: 256 000 octet/s (2 048 kbps) MBRFU_IDreq: 1 024 kbps MBRFD_IDreq: 1 024 kbps M_SDU_S_P: APL THP_IDreq: Priority level 3
VA_19	TC_IDreq: Delay class 3 PT_IDreq: 256 000 octet/s (2 048 kbps) MBRFU_IDreq: 1 984 kbps MBRFD_IDreq: 64 kbps M_SDU_S_P: APL THP_IDreq: Priority level 3
VA_20	TC_IDreq: Delay class 3 PT_IDreq: 256 000 octet/s (2 048 kbps) MBRFU_IDreq: 64 kbps MBRFD_IDreq: 1 984 kbps M_SDU_S_P: APL THP_IDreq: Priority level 3

Values APL for test purpose: GN___GI A_PDP_CR_INTE 03, GN___GI A_PDP_CR_INTE 04, GN___GI A_PDP_CR_INTE 06	
APL = FTP	M_SDU_S_P: for downlink 7 % 100 octets 16 % 90 octets 77 % 1 500 octets Uplink: 100 % 40 octets
APL = HTTP	M_SDU_S_P: for downlink: 24 % 100 octets 13 % 300 octets 15 % 500 octets 4 % 700 octets 3 % 900 octets 2 % 1 100 octets 2 % 1 300 octets 37 % 1 500 octets for uplink: 70 % < 100 octets 24 % 300 octets 6 % 500 octets

<b>Background class; Application: E-mail</b>	
GN__GI A_PDP_CR_ BACK_C 01	<b>GSM ref. to:</b> TS 124 008 [1] (2000-04) clauses 6.1.1 and 6.1.3.1.1
TSS reference:	<b>GPRS R99 to external PDP network/PDP context activation/successful/ACTIVATE PDP CONTEXT REQUEST</b>
GSM selection criteria:	BS 70
IP selection criteria:	None
Test purpose:	<p>Ensure that the Requested PDP Context Activation procedure allows the GGSN to route PDP PDUs between the SGSN and the external PDP network, and to start charging. The GGSN may further restrict QoS Negotiated given its capabilities and the current load. If the QoS offered by the network is acceptable to the mobile, then upon receipt of the ACTIVATE PDP CONTEXT ACCEPT message the MS shall initiate establishment of the logical link with the offered QoS.</p> <p>Ensure that the network can support the "Packet data protocol address" parameters requested by the MS with the ACTIVATE PDP CONTEXT REQUEST message.</p> <p>Ensure that the PDP PDU transfer with the offered parameters is performed correctly. Verify if the requested QoS parameters in the ACTIVATE PDP CONTEXT ACCEPT message are kept on the routed PDP PDUs.</p>
GSM parameter values:	<p>PDP type organization: IETF allocated address PDP type number value: PDP_TNV_ID Reliability class: 5 (Unacknowledged GTP, LLC, and RLC, Unprotected data) Delay class: <b>Delay class 4</b> Precedence class: Low priority Peak throughput: Up to 16 000 octet/s (128 kbit/s) Mean throughput: 50 000 000 octet/h (111,1 kbit/s) Delivery of erroneous SDU: Erroneous SDU are not delivered ("no") Delivery order: With delivery order ("yes") Traffic class: <b>Background class</b> Maximum SDU size: 1 500 octets Maximum bit rate for uplink: 64 kbps Maximum bit rate for downlink: 64 kbps Residual Bit Error Rate: <math>4 * 10^{-3}</math> SDU error ratio: <math>10^{-3}</math> Traffic handling priority: Priority level 3 (value is ignored) Transfer delay: * (value is ignored) Guaranteed bit rate for uplink: 64 kbps Guaranteed bit rate for downlink: 64 kbps</p>
IP parameter values:	IP Address: GPRS_A_IP_ADD (PIXIT); GPRS_B_IP_ADD (PIXIT)
Comments:	<p>If the UE is attached, then the Detach Request is originated from the UE indicating "GPRS detach without switching off". The network responds with a Detach Accept after completing the security mode procedures. A PDP context activation is then requested by the user. The PS attach (ATTACH REQUEST) is then indirectly caused by a requested PDP context activation. The SS returns the ATTACH ACCEPT message to the UE. Now session management can proceed with PDP context activation.</p> <p>On receipt of the ACTIVATE PDP CONTEXT REQUEST message an ACTIVATE PDP CONTEXT ACCEPT is returned by the SS with the same requested QoS.</p>

<b>Values for test purpose GN__GI A_PDP_CR_BACK_C 01</b>	
VA_01	PDP_TO_ID: IETF allocated address PDP_TNV_ID : IPv4 address
VA_02	PDP_TO_ID: IETF allocated address PDP_TNV_ID: IPv6 address

GN_GI A_PDP_CR_BACK_C 02	<b>GSM ref. to:</b> TS 124 008 [1] clauses 6.1.1 and 6.1.3.1.1	
<b>TSS reference:</b>	<b>GPRS R99 to external PDP network/PDP context activation/successful/ACTIVATE PDP CONTEXT REQUEST</b>	
<b>GSM selection criteria:</b>	BS 70	
<b>IP selection criteria:</b>		
<b>Test purpose:</b>	<p>Ensure that the Requested PDP Context Activation procedure allows the GGSN to route PDP PDUs between the SGSN and the external PDP network, and to start charging. The GGSN may further restrict QoS Negotiated given its capabilities and the current load. If the QoS offered by the network is acceptable to the mobile, then upon receipt of the ACTIVATE PDP CONTEXT ACCEPT message the MS shall initiate establishment of the logical link with the offered QoS.</p> <p>Ensure that the network can support the "QoS – "Maximum SDU size" parameter coded as M_SDU_S_IDreq. The bit rate for uplink and downlink and Peak Throughput are defined with the parameters MBRFU_IDreq MBRFD_IDreq and PT_IDreq. The user data rate on the bearer is equal with the Maximum Bit Rate for uplink and Maximum Bit Rate for downlink. The user data SDU size on the bearer is defined as M_SDU_S_P.</p> <p>Ensure that the PDP PDU transfer with the offered parameters is performed correctly. Verify if the requested QoS parameters in the ACTIVATE PDP CONTEXT ACCEPT message are kept on the routed PDP PDUs.</p>	
<b>GSM parameter values:</b>	<p>PDP type organization: IETF allocated address  PDP type number value: PIXIT  Reliability class: 5 (Unacknowledged GTP, LLC, and RLC, Unprotected data)  Delay class: <b>Delay class 4</b>  Precedence class: Low priority  Peak throughput: PT_IDreq  Mean throughput: 50 000 000 octet/h (111,1 kbit/s)  Delivery of erroneous SDU: Erroneous SDU are not delivered ("no")  Delivery order: With delivery order ("yes")  Traffic class: <b>Background class</b>  Maximum SDU size: M_SDU_S_IDreq  Maximum bit rate for uplink: MBRFU_IDreq  Maximum bit rate for downlink: MBRFD_IDreq  Residual Bit Error Rate: <math>4 * 10^{-3}</math>  SDU error ratio: <math>10^{-3}</math>  Traffic handling priority: Priority level 3 (value is ignored)  Transfer delay: 1000 ms  Guaranteed bit rate for uplink: MBRFU_IDreq  Guaranteed bit rate for downlink: MBRFU_IDreq</p>	
<b>IP parameter values:</b>	IP Address: GPRS_A_IP_ADD (PIXIT); GPRS_B_IP_ADD (PIXIT)	
<b>Comments:</b>	<p>If the UE is attached, then the Detach Request is originated from the UE indicating "GPRS detach without switching off". The network responds with a Detach Accept after completing the security mode procedures. A PDP context activation is then requested by the user. The PS attach (ATTACH REQUEST) is then indirectly caused by a requested PDP context activation. The SS returns the ATTACH ACCEPT message to the UE. Now session management can proceed with PDP context activation.</p> <p>On receipt of the ACTIVATE PDP CONTEXT REQUEST message an ACTIVATE PDP CONTEXT ACCEPT is returned by the SS with the same requested QoS.</p>	

Values for QoS – Maximum SDU size	
VA_01	PT_IDreq: 8 000 octet/s (64 kbps) MBRFU_IDreq: 32 kbps MBRFD_IDreq: 32 kbps M_SDU_S_IDreq: 1 500 octets M_SDU_S_P: 1 500 octets
VA_02	PT_IDreq: 16 000 octet/s (128 kbps) MBRFU_IDreq: 64 kbps MBRFD_IDreq: 64 kbps M_SDU_S_IDreq: 1 502 octets M_SDU_S_P: 1 502 octets

Values for QoS – Maximum SDU size	
VA_03	PT_IDreq: 16 000 octet/s (128 kbps) MBRFU_IDreq: 64 kbps MBRFD_IDreq: 64 kbps M_SDU_S_IDreq: 1 520 octets M_SDU_S_P: 1 520 octets

GN_GI A_PDP_CR_ BACK_C 03	<b>GSM ref. to:</b> TS 124 008 [1] clauses 6.1.1 and 6.1.3.1.1	
<b>TSS reference:</b>	<b>GPRS R99 to external PDP network/PDP context activation/successful/ACTIVATE PDP CONTEXT REQUEST</b>	
<b>GSM selection criteria:</b>	BS 70	
<b>IP selection criteria:</b>		
<b>Test purpose:</b>	<p>Ensure that the Requested PDP Context Activation procedure allows the GGSN to route PDP PDUs between the SGSN and the external PDP network, and to start charging. The GGSN may further restrict QoS Negotiated given its capabilities and the current load. If the QoS offered by the network is acceptable to the mobile, then upon receipt of the ACTIVATE PDP CONTEXT ACCEPT message the MS shall initiate establishment of the logical link with the offered QoS.</p> <p>Ensure that the network can support the "Maximum Bit Rate for uplink and Maximum Bit Rate for downlink" parameter coded as MBRFU_IDreq and MBRFD_IDreq. The user data rate on the bearer is equal with the Maximum Bit Rate for uplink and Maximum Bit Rate for downlink. The user data SDU size on the bearer is defined as M_SDU_S_P. Ensure that the PDP PDU transfer with the offered parameters is performed correctly. Verify if the requested QoS parameters in the ACTIVATE PDP CONTEXT ACCEPT message are kept on the routed PDP PDUs.</p>	
<b>GSM parameter values:</b>	<p>QoS Requested: PDP type organization: IETF allocated address PDP type number value: PIXIT Reliability class: 5 (Unacknowledged GTP, LLC, and RLC, Unprotected data) Delay class: <b>Delay class 4</b> Precedence class: Low priority Peak throughput: PT_IDreq Mean throughput: 50 000 000 octet/h (111,1 kbit/s) Delivery of erroneous SDU: Erroneous SDU are not delivered ("no") Delivery order: With delivery order ("yes") Traffic class: <b>Background class</b> Maximum SDU size: 1 500 octets Maximum bit rate for uplink: MBRFU_IDreq Maximum bit rate for downlink: MBRFD_IDreq Residual Bit Error Rate: <math>4 * 10^{-3}</math> SDU error ratio: <math>10^{-3}</math> Traffic handling priority: * (value is ignored) Transfer delay: (value is ignored) Guaranteed bit rate for uplink: MBRFU_IDreq Guaranteed bit rate for downlink: MBRFU_IDreq</p>	
<b>IP parameter values:</b>	IP Address: GPRS_A_IP_ADD (PIXIT); GPRS_B_IP_ADD (PIXIT).	
<b>Comments:</b>	<p>If the UE is attached, then the Detach Request is originated from the UE indicating "GPRS detach without switching off". The network responds with a Detach Accept after completing the security mode procedures. A PDP context activation is then requested by the user. The PS attach (ATTACH REQUEST) is then indirectly caused by a requested PDP context activation. The SS returns the ATTACH ACCEPT message to the UE. Now session management can proceed with PDP context activation.</p> <p>On receipt of the ACTIVATE PDP CONTEXT REQUEST message an ACTIVATE PDP CONTEXT ACCEPT is returned by the SS with the same requested QoS.</p>	

Values for test purpose GN_GI A_PDP_CR_BACK_C 03	
VA_01	PT_IDreq: 1 000 octet/s (8 kbps) MBRFU_IDreq: 4 kbps MBRFD_IDreq: 4 kbps M_SDU_S_P: APL
VA_02	PT_IDreq: 8 000 octet/s (18 kbps) MBRFU_IDreq: 9 kbps MBRFD_IDreq: 9 kbps M_SDU_S_P: APL
VA_03	PT_IDreq: 8 000 octet/s (64 kbps) MBRFU_IDreq: 32 kbps MBRFD_IDreq: 32 kbps M_SDU_S_P: APL
VA_03	PT_IDreq: 16 000 octet/s (128 kbps) MBRFU_IDreq: 64 kbps MBRFD_IDreq: 64 kbps M_SDU_S_P: APL
VA_04	PT_IDreq: 64 000 octet/s (512 kbps) MBRFU_IDreq: 256 kbps MBRFD_IDreq: 256 kbps M_SDU_S_P: APL
VA_05	PT_IDreq: 128 000 octet/s (1 024 kbps) MBRFU_IDreq: 512 kbps MBRFD_IDreq: 512 kbps M_SDU_S_P: APL
VA_06	PT_IDreq: 256 000 octet/s (2 048 kbps) MBRFU_IDreq: 1 024 kbps MBRFD_IDreq: 1 024 kbps M_SDU_S_P: APL
VA_07	PT_IDreq: 256 000 octet/s (2 048 kbps) MBRFU_IDreq: 1 984 kbps MBRFD_IDreq: 64 kbps M_SDU_S_P: APL
VA_08	PT_IDreq: 256 000 octet/s (2 048 kbps) MBRFU_IDreq: 64 kbps MBRFD_IDreq: 1 984 kbps M_SDU_S_P: APL

GN__GI A_PDP_CR_BACK_C 04	<b>GSM ref. to:</b> TS 124 008 [1] clauses 6.1.1 and 6.1.3.1.1	
<b>TSS reference:</b>	<b>GPRS R99 to external PDP network/PDP context activation/successful/ACTIVATE PDP CONTEXT REQUEST</b>	
<b>GSM selection criteria:</b>	BS 70	
<b>IP selection criteria:</b>		
<b>Test purpose:</b>	<p>Ensure that the Requested PDP Context Activation procedure allows the GGSN to route PDP PDUs between the SGSN and the external PDP network, and to start charging. The GGSN may further restrict QoS Negotiated given its capabilities and the current load. If the QoS offered by the network is acceptable to the mobile, then upon receipt of the ACTIVATE PDP CONTEXT ACCEPT message the MS shall initiate establishment of the logical link with the offered QoS.</p> <p>Ensure that the network can support the "Residual Bit Error Rate" and "SDU error ratio coded" as RBER_IDreq and SDU_ER_IDreq.</p> <p>The <b>Reliability class</b> is defined as RC_IDreq.</p> <p>The user data rate on the bearer is equal with the Maximum Bit Rate for uplink and Maximum Bit Rate for downlink. The user data SDU size on the bearer is defined as M_SDU_S_P.</p> <p>Ensure that the PDP PDU transfer with the offered parameters is performed correctly. Verify if the requested QoS parameters in the ACTIVATE PDP CONTEXT ACCEPT message are kept on the routed PDP PDUs.</p>	
<b>GSM parameter values:</b>	<p>QoS Requested: PDP type organization: IETF allocated address PDP type number value: PIXIT Reliability class: 5 (Unacknowledged GTP, LLC, and RLC, Unprotected data) Delay class: <b>Delay class 4</b> Precedence class: Low priority Peak throughput: 16 000 octet/s Mean throughput: 50 000 000 octet/h (111,1 kbit/s) Delivery of erroneous SDU: Erroneous SDU are not delivered ("no") Delivery order: With delivery order ("yes") Traffic class: <b>Background class</b> Maximum SDU size: 1 500 octets Maximum bit rate for uplink: 64 kbit/s Maximum bit rate for downlink: 64 kbit/s Residual Bit Error Rate: RBER_IDreq SDU error ratio: SDU_ER_IDreq Traffic handling priority: Priority level 2 Transfer delay: * (value is ignored) Guaranteed bit rate for uplink: * (value is ignored) Guaranteed bit rate for downlink: * (value is ignored)</p>	
<b>IP parameter values:</b>	IP Address: GPRS_A_IP_ADD (PIXIT); GPRS_B_IP_ADD (PIXIT)	
<b>Comments:</b>	<p>If the UE is attached, then the Detach Request is originated from the UE indicating "GPRS detach without switching off". The network responds with a Detach Accept after completing the security mode procedures. A PDP context activation is then requested by the user. The PS attach (ATTACH REQUEST) is then indirectly caused by a requested PDP context activation. The SS returns the ATTACH ACCEPT message to the UE. Now session management can proceed with PDP context activation.</p> <p>On receipt of the ACTIVATE PDP CONTEXT REQUEST message an ACTIVATE PDP CONTEXT ACCEPT is returned by the SS with the same requested QoS.</p>	

<b>Values for test purpose GN__GI A_PDP_CR_BACK_C 04</b>	
VA_01	RC_IDreq: 4 RBER_IDreq: $4 * 10^{-3}$ SDU_ER_IDreq: $10^{-4}$ M_SDU_S_P: APL
VA_02	RC_IDreq: 3 RBER_IDreq: $10^{-5}$ SDU_ER_IDreq: $10^{-5}$ M_SDU_S_P: APL
VA_03	RC_IDreq: 2 RBER_IDreq: $6 * 10^{-8}$ SDU_ER_IDreq: $10^{-6}$ M_SDU_S_P: APL



GN__GI A_PDP_CR_ BACK_C 05	<b>GSM ref. to:</b> TS 124 008 [1] clauses 6.1.1 and 6.1.3.1.1	
<b>TSS reference:</b>	<b>GPRS R99 to external PDP network/PDP context activation/successful/ACTIVATE PDP CONTEXT REQUEST</b>	
<b>GSM selection criteria:</b>	BS 70	
<b>IP selection criteria:</b>		
<b>Test purpose:</b>	<p>Ensure that the Requested PDP Context Activation procedure allows the GGSN to route PDP PDUs between the SGSN and the external PDP network, and to start charging. The GGSN may further restrict QoS Negotiated given its capabilities and the current load. If the QoS offered by the network is acceptable to the mobile, then upon receipt of the ACTIVATE PDP CONTEXT ACCEPT message the MS shall initiate establishment of the logical link with the offered QoS.</p> <p>Ensure that the network can transport user data rate defined with parameter MBRFU_P. The bit rate for uplink and downlink and Peak Throughput are defined with the parameters MBRFU_IDreq MBRFD_IDreq and PT_IDreq.</p> <p>All packets which are sent over the Peak Throughput should be discarded.</p> <p>Ensure that the PDP PDU transfer with the offered parameters is performed correctly. Verify if the requested QoS parameters in the ACTIVATE PDP CONTEXT ACCEPT message are kept on the routed PDP PDUs.</p>	
<b>GSM parameter values:</b>	<p>QoS Requested: PDP type organization: IETF allocated address PDP type number value: PIXIT Reliability class: Unacknowledged GTP, LLC, and RLC, Unprotected data Delay class: <b>Delay class 4</b> Precedence class: Low priority Peak throughput: PT_IDreq Mean throughput: 50 000 000 octet/h (111,1 kbit/s) Delivery of erroneous SDU: Erroneous SDU are not delivered ("no") Delivery order: With delivery order ("yes") Traffic class: <b>Background class</b> Maximum SDU size: 1 500 octets Maximum bit rate for uplink: MBRFU_IDreq Maximum bit rate for downlink: MBRFD_IDreq Residual Bit Error Rate: <math>1 * 10^{-5}</math> SDU error ratio: SDU_ER_IDreq: <math>1 * 10^{-4}</math> Traffic handling priority: * (value is ignored) Transfer delay: * (value is ignored) Guaranteed bit rate for uplink: MBRFU_IDreq Guaranteed bit rate for downlink: MBRFU_IDreq</p>	
<b>IP parameter values:</b>	IP Address: GPRS_A_IP_ADD (PIXIT); GPRS_B_IP_ADD (PIXIT)	
<b>Comments:</b>	<p>If the UE is attached, then the Detach Request is originated from the UE indicating "GPRS detach without switching off". The network responds with a Detach Accept after completing the security mode procedures. A PDP context activation is then requested by the user. The PS attach (ATTACH REQUEST) is then indirectly caused by a requested PDP context activation. The SS returns the ATTACH ACCEPT message to the UE. Now session management can proceed with PDP context activation.</p> <p>On receipt of the ACTIVATE PDP CONTEXT REQUEST message an ACTIVATE PDP CONTEXT ACCEPT is returned by the SS with the same requested QoS.</p>	

<b>Values for test purpose GN__GI A_PDP_CR_BACK_C 05</b>	
VA_01	PT_IDreq: 64 kbps MBRFU_IDreq: 32 kbps MBRFD_IDreq: 32 kbps MBR_P: 100 kbps
VA_02	PT_IDreq: 128 kbps MBRFU_IDreq: 64kbps MBRFD_IDreq: 64 kbps MBR_P: 150 kbps
VA_03	PT_IDreq: 256 kbps MBRFU_IDreq: 128 kbps MBRFD_IDreq: 128 kbps MBR_P: 300 kbps

<b>Values APL for test for test purpose:</b> GN___GI A_PDP_CR_BACK_C 03, GN___GI A_PDP_CR_BACK_C 04	
APL: E-mail	M_SDU_S_P: for downlink: 100 % 1 500 octets Uplink: 100 % 40 octets

<b>Streaming class; Application: Video on demand</b>	
GN___GI A_PDP_CR_ STR_C 01	<b>GSM ref. to:</b> TS 124 008 [1] clauses 6.1.1 and 6.1.3.1.1
TSS reference:	<b>GPRS R99 to external PDP network/PDP context activation/successful/ACTIVATE</b> PDP CONTEXT REQUEST
GSM selection criteria:	BS 70
IP selection criteria:	None
Test purpose:	Ensure that the Requested PDP Context Activation procedure allows the GGSN to route PDP PDUs between the SGSN and the external PDP network, and to start charging. The GGSN may further restrict QoS Negotiated given its capabilities and the current load. If the QoS offered by the network is acceptable to the mobile, then upon receipt of the ACTIVATE PDP CONTEXT ACCEPT message the MS shall initiate establishment of the logical link with the offered QoS. Ensure that the network can support the "Packet data protocol address" parameters requested by the MS with the ACTIVATE PDP CONTEXT REQUEST message. Ensure that the PDP PDU transfer with the offered parameters is performed correctly. Verify if the requested QoS parameters in the ACTIVATE PDP CONTEXT ACCEPT message are kept on the routed PDP PDUs.
GSM parameter values:	PDP type organization: IETF allocated address PDP type number value: PDP_TNV_ID Reliability class: 2 Delay class: <b>Delay class 1</b> Precedence class: Low priority Peak throughput: Up to 16 000 octet/s (128 kbit/s) Mean throughput: 50 000 000 octet/h (111,1 kbit/s) Delivery of erroneous SDU: Erroneous SDU are not delivered ("no") Delivery order: With delivery order ("yes") Traffic class: <b>Streaming class</b> Maximum SDU size: 1 500 octets Maximum bit rate for uplink: 64 kbps Maximum bit rate for downlink: 64 kbps Residual Bit Error Rate: $1 * 10^{-6}$ SDU error ratio: $1 * 10^{-5}$ Traffic handling priority: * (value is ignored) Transfer delay: 50 ms Guaranteed bit rate for uplink: 64 kbps Guaranteed bit rate for downlink: 64 kbps
IP parameter values:	IP Address: GPRS_A_IP_ADD (PIXIT); GPRS_B_IP_ADD (PIXIT)
Comments:	If the UE is attached, then the Detach Request is originated from the UE indicating "GPRS detach without switching off". The network responds with a Detach Accept after completing the security mode procedures. A PDP context activation is then requested by the user. The PS attach (ATTACH REQUEST) is then indirectly caused by a requested PDP context activation. The SS returns the ATTACH ACCEPT message to the UE. Now session management can proceed with PDP context activation. On receipt of the ACTIVATE PDP CONTEXT REQUEST message an ACTIVATE PDP CONTEXT ACCEPT is returned by the SS with the same requested QoS.

<b>Values for test purpose GN___GI A_PDP_CR_STR_C 01</b>	
VA_01	PDP_TO_ID: IETF allocated address PDP_TNV_ID: IPv4 address
VA_02	PDP_TO_ID: IETF allocated address PDP_TNV_ID: IPv6 address

GN__GI A_PDP_CR_ STR_C 02	<b>GSM ref. to:</b> TS 124 008 [1] clauses 6.1.1 and 6.1.3.1.1	
<b>TSS reference:</b>	<b>GPRS R99 to external PDP network/PDP context activation/successful/ACTIVATE PDP CONTEXT REQUEST</b>	
<b>GSM selection criteria:</b>	BS 70	
<b>IP selection criteria:</b>		
<b>Test purpose:</b>	<p>Ensure that the Requested PDP Context Activation procedure allows the GGSN to route PDP PDUs between the SGSN and the external PDP network, and to start charging. The GGSN may further restrict QoS Negotiated given its capabilities and the current load. If the QoS offered by the network is acceptable to the mobile, then upon receipt of the ACTIVATE PDP CONTEXT ACCEPT message the MS shall initiate establishment of the logical link with the offered QoS.</p> <p>Ensure that the network can support the "QoS – " Transfer delay" parameters requested by the MS with the ACTIVATE PDP CONTEXT REQUEST message. The bit rate for uplink and downlink and Peak Throughput are defined with the parameters MBRFU_IDreq, MBRFD_IDreq and PT_IDreq.</p> <p>The user data SDU size on the bearer is defined as M_SDU_S_P.</p> <p>Ensure that the PDP PDU transfer with the offered parameters is performed correctly. Verify if the requested QoS parameters in the ACTIVATE PDP CONTEXT ACCEPT message are kept on the routed PDP PDUs.</p>	
<b>GSM parameter values:</b>	<p>QoS Requested: PDP type organization: IETF allocated address PDP type number value: PIXIT Reliability class: 2 Delay class: <b>Delay class 1</b> Precedence class: Low priority Peak throughput: PT_IDreq Mean throughput: 50 000 000 octet/h (111,1 kbit/s) Delivery of erroneous SDU: Erroneous SDU are not delivered ("no") Delivery order: With delivery order ("yes") Traffic class: <b>Streaming class</b> Maximum SDU size: 1 500 octets Maximum bit rate for uplink: MBRFU_IDreq Maximum bit rate for downlink: MBRFD_IDreq Residual Bit Error Rate: <math>1 * 10^{-6}</math> SDU error ratio: <math>1 * 10^{-5}</math> Traffic handling priority: * (value is ignored) Transfer delay: TD_IDreq Guaranteed bit rate for uplink: MBRFU_IDreq Guaranteed bit rate for downlink: MBRFU_IDreq</p>	
<b>IP parameter values:</b>	IP Address: GPRS_A_IP_ADD (PIXIT); GPRS_B_IP_ADD (PIXIT)	
<b>Comments:</b>	<p>If the UE is attached, then the Detach Request is originated from the UE indicating "GPRS detach without switching off". The network responds with a Detach Accept after completing the security mode procedures. A PDP context activation is then requested by the user. The PS attach (ATTACH REQUEST) is then indirectly caused by a requested PDP context activation. The SS returns the ATTACH ACCEPT message to the UE. Now session management can proceed with PDP context activation.</p> <p>On receipt of the ACTIVATE PDP CONTEXT REQUEST message an ACTIVATE PDP CONTEXT ACCEPT is returned by the SS with the same requested QoS.</p>	

Values for test purpose GN GI A_PDP_CR_STR_C 02	
VA_01	PT_IDreq: 16 000 octet/s (128 kbps) MBRFU_IDreq: 64 kbps MBRFD_IDreq: 64 kbps M_SDU_S_P: APL TD_IDreq: 50 ms
VA_02	PT_IDreq: 32 000 octet/s (256 kbps) MBRFU_IDreq: 128 kbps MBRFD_IDreq: 128 kbps M_SDU_S_P: APL TD_IDreq: 50 ms
VA_03	PT_IDreq: 64 000 octet/s (512 kbps) MBRFU_IDreq: 256 kbps MBRFD_IDreq: 256 kbps M_SDU_S_P: APL TD_IDreq: 50 ms
VA_04	PT_IDreq: 256 000 octet/s (2 048 kbps) MBRFU_IDreq: 1 024 kbps MBRFD_IDreq: 1 024 kbps M_SDU_S_P: APL octets TD_IDreq: 50 ms
VA_05	PT_IDreq: 256 000 octet/s (2 048 kbps) MBRFU_IDreq: 1 984 kbps MBRFD_IDreq: 64 kbps M_SDU_S_P: APL TD_IDreq: 50 ms
VA_06	PT_IDreq: 256 000 octet/s (2 048 kbps) MBRFU_IDreq: 64 kbps MBRFD_IDreq: 1 984 kbps M_SDU_S_P: APL TD_IDreq: 50 ms
VA_08	PT_IDreq: 16 000 octet/s (128 kbps) MBRFU_IDreq: 64 kbps MBRFD_IDreq: 64 kbps M_SDU_S_P: APL TD_IDreq: 100 ms
VA_09	PT_IDreq: 32 000 octet/s (256 kbps) MBRFU_IDreq: 128 kbps MBRFD_IDreq: 128 kbps M_SDU_S_P: APL TD_IDreq: 100 ms
VA_10	PT_IDreq: 64 000 octet/s (512 kbps) MBRFU_IDreq: 256 kbps MBRFD_IDreq: 256 kbps M_SDU_S_P: APL TD_IDreq: 100 ms
VA_11	PT_IDreq: 256 000 octet/s (2 048 kbps) MBRFU_IDreq: 1 024 kbps MBRFD_IDreq: 1 024 kbps M_SDU_S_P: APL octets TD_IDreq: 100 ms
VA_12	PT_IDreq: 256 000 octet/s (2 048 kbps) MBRFU_IDreq: 1 984 kbps MBRFD_IDreq: 64 kbps M_SDU_S_P: APL TD_IDreq: 100 ms
VA_13	PT_IDreq: 256 000 octet/s (2 048 kbps) MBRFU_IDreq: 64 kbps MBRFD_IDreq: 1 984 kbps M_SDU_S_P: APL TD_IDreq: 100 ms
VA_14	PT_IDreq: 16 000 octet/s (128 kbps) MBRFU_IDreq: 64 kbps MBRFD_IDreq: 64 kbps M_SDU_S_P: APL TD_IDreq: 150 ms

Values for test purpose GN GI A_PDP_CR_STR_C 02	
VA_15	PT_IDreq: 32 000 octet/s (256 kbps) MBRFU_IDreq: 128 kbps MBRFD_IDreq: 128 kbps M_SDU_S_P: APL TD_IDreq: 150 ms
VA_16	PT_IDreq: 64 000 octet/s (512 kbps) MBRFU_IDreq: 256 kbps MBRFD_IDreq: 256 kbps M_SDU_S_P: APL TD_IDreq: 150 ms
VA_17	PT_IDreq: 256 000 octet/s (2 048 kbps) MBRFU_IDreq: 1 024 kbps MBRFD_IDreq: 1 024 kbps M_SDU_S_P: APL octets TD_IDreq: 150 ms
VA_18	PT_IDreq: 256 000 octet/s (2 048 kbps) MBRFU_IDreq: 1 984 kbps MBRFD_IDreq: 64 kbps M_SDU_S_P: APL TD_IDreq: 150 ms
VA_19	PT_IDreq: 256 000 octet/s (2 048 kbps) MBRFU_IDreq: 64 kbps MBRFD_IDreq: 1 984 kbps M_SDU_S_P: APL TD_IDreq: 150 ms
VA_20	PT_IDreq: 16 000 octet/s (128 kbps) MBRFU_IDreq: 64 kbps MBRFD_IDreq: 64 kbps M_SDU_S_P: APL TD_IDreq: 200 ms
VA_21	PT_IDreq: 32 000 octet/s (256 kbps) MBRFU_IDreq: 128 kbps MBRFD_IDreq: 128 kbps M_SDU_S_P: APL TD_IDreq: 200 ms
VA_22	PT_IDreq: 64 000 octet/s (512 kbps) MBRFU_IDreq: 256 kbps MBRFD_IDreq: 256 kbps M_SDU_S_P: APL TD_IDreq: 200 ms
VA_22	PT_IDreq: 256 000 octet/s (2 048 kbps) MBRFU_IDreq: 1 024 kbps MBRFD_IDreq: 1 024 kbps M_SDU_S_P: APL octets TD_IDreq: 200 ms
VA_23	PT_IDreq: 256 000 octet/s (2 048 kbps) MBRFU_IDreq: 1 984 kbps MBRFD_IDreq: 64 kbps M_SDU_S_P: APL TD_IDreq: 200 ms
VA_24	PT_IDreq: 256 000 octet/s (2 048 kbps) MBRFU_IDreq: 64 kbps MBRFD_IDreq: 1 984 kbps M_SDU_S_P: APL TD_IDreq: 200 ms
VA_25	PT_IDreq: 16 000 octet/s (128 kbps) MBRFU_IDreq: 64 kbps MBRFD_IDreq: 64 kbps M_SDU_S_P: APL TD_IDreq: 500 ms
VA_26	PT_IDreq: 32 000 octet/s (256 kbps) MBRFU_IDreq: 128 kbps MBRFD_IDreq: 128 kbps M_SDU_S_P: APL TD_IDreq: 500 ms

Values for test purpose GN <u>GI A_PDP_CR_STR_C 02</u>	
VA_27	PT_IDreq: 64 000 octet/s (512 kbps) MBRFU_IDreq: 256 kbps MBRFD_IDreq: 256 kbps M_SDU_S_P: APL TD_IDreq: 500 ms
VA_28	PT_IDreq: 256 000 octet/s (2 048 kbps) MBRFU_IDreq: 1 024 kbps MBRFD_IDreq: 1 024 kbps M_SDU_S_P: APL octets TD_IDreq: 500 ms
VA_29	PT_IDreq: 256 000 octet/s (2 048 kbps) MBRFU_IDreq: 1 984 kbps MBRFD_IDreq: 64 kbps M_SDU_S_P: APL TD_IDreq: 500 ms
VA_30	PT_IDreq: 256 000 octet/s (2 048 kbps) MBRFU_IDreq: 64 kbps MBRFD_IDreq: 1 984 kbps M_SDU_S_P: APL TD_IDreq: 500 ms

GN_GI A_PDP_CR_ STR_C 03	<b>GSM ref. to:</b> TS 124 008 [1] clauses 6.1.1 and 6.1.3.1.1	
<b>TSS reference:</b>	<b>GPRS R99 to external PDP network/PDP context activation/successful/ACTIVATE PDP CONTEXT REQUEST</b>	
<b>GSM selection criteria:</b>	BS 70	
<b>IP selection criteria:</b>		
<b>Test purpose:</b>	<p>Ensure that the Requested PDP Context Activation procedure allows the GGSN to route PDP PDUs between the SGSN and the external PDP network, and to start charging. The GGSN may further restrict QoS Negotiated given its capabilities and the current load. If the QoS offered by the network is acceptable to the mobile, then upon receipt of the ACTIVATE PDP CONTEXT ACCEPT message the MS shall initiate establishment of the logical link with the offered QoS.</p> <p>Ensure that the network can support the "QoS-Maximum SDU size" parameter coded as M_SDU_S_IDreq. The bit rate for uplink and downlink and Peak Throughput are defined with the parameters MBRFU_IDreq MBRFD_IDreq and PT_IDreq. The user data rate on the bearer is equal with the Maximum Bit Rate for uplink and Maximum Bit Rate for downlink. The user data SDU size on the bearer is defined as M_SDU_S_P.</p> <p>Ensure that the PDP PDU transfer with the offered parameters is performed correctly. Verify if the requested QoS parameters in the ACTIVATE PDP CONTEXT ACCEPT message are kept on the routed PDP PDUs.</p>	
<b>GSM parameter values:</b>	<p>QoS Requested: PDP type organization: IETF allocated address PDP type number value: PIXIT Reliability class: 2 Delay class: <b>Delay class 1</b> Precedence class: Low priority Peak throughput: PT_IDreq Mean throughput: 50 000 000 octet/h (111,1 kbit/s) Delivery of erroneous SDU: Erroneous SDU are not delivered ("no") Delivery order: With delivery order ("yes") Traffic class: <b>Streaming class</b> Maximum SDU size: M_SDU_S_IDreq Maximum bit rate for uplink: MBRFU_IDreq Maximum bit rate for downlink: MBRFD_IDreq Residual Bit Error Rate: <math>1 * 10^{-6}</math> SDU error ratio: <math>1 * 10^{-5}</math> Traffic handling priority: Priority level 3 (value is ignored) Transfer delay: 50 ms Guaranteed bit rate for uplink: MBRFU_IDreq Guaranteed bit rate for downlink: MBRFU_IDreq</p>	
<b>IP parameter values:</b>	IP Address: GPRS_A_IP_ADD (PIXIT); GPRS_B_IP_ADD (PIXIT)	
<b>Comments:</b>	<p>If the UE is attached, then the Detach Request is originated from the UE indicating "GPRS detach without switching off". The network responds with a Detach Accept after completing the security mode procedures. A PDP context activation is then requested by the user. The PS attach (ATTACH REQUEST) is then indirectly caused by a requested PDP context activation. The SS returns the ATTACH ACCEPT message to the UE. Now session management can proceed with PDP context activation.</p> <p>On receipt of the ACTIVATE PDP CONTEXT REQUEST message an ACTIVATE PDP CONTEXT ACCEPT is returned by the SS with the same requested QoS.</p>	

<b>GN_GI A_PDP_CR_STR_C 03</b>	
<b>Values for QoS – Maximum SDU size</b>	
VA_01	PT_IDreq: 8 000 octet/s (64 kbps) MBRFU_IDreq: 32 kbps MBRFD_IDreq: 32 kbps M_SDU_S_IDreq: 1 500 octets M_SDU_S_P: 1 500 octets
VA_02	PT_IDreq: 16 000 octet/s (128 kbps) MBRFU_IDreq: 64 kbps MBRFD_IDreq: 64 kbps M_SDU_S_IDreq: 1 502 octets M_SDU_S_P: 1 502 octets

<b>GN__GI A_PDP_CR_STR_C 03</b>	
<b>Values for QoS – Maximum SDU size</b>	
VA_03	PT_IDreq: 16 000 octet/s (128 kbps) MBRFU_IDreq: 64 kbps MBRFD_IDreq: 64 kbps M_SDU_S_IDreq: 1 520 octets M_SDU_S_P: 1 520 octets

GN__GI A_PDP_CR_STR_C 04	<b>GSM ref. to:</b> TS 124 008 [1] clauses 6.1.1 and 6.1.3.1.1	
<b>TSS reference:</b>	<b>GPRS R99 to external PDP network</b> /PDP context activation/successful/ACTIVATE PDP CONTEXT REQUEST	
<b>GSM selection criteria:</b>	BS 70	
<b>IP selection criteria:</b>		
<b>Test purpose:</b>	<p>Ensure that the Requested PDP Context Activation procedure allows the GGSN to route PDP PDUs between the SGSN and the external PDP network, and to start charging. The GGSN may further restrict QoS Negotiated given its capabilities and the current load. If the QoS offered by the network is acceptable to the mobile, then upon receipt of the ACTIVATE PDP CONTEXT ACCEPT message the MS shall initiate establishment of the logical link with the offered QoS.</p> <p>Ensure that the network can support the "Maximum Bit Rate for uplink and Maximum Bit Rate for downlink" parameter coded as MBRFU_IDreq and MBRFD_IDreq. The user data rate on the bearer is equal with the Maximum Bit Rate for uplink and Maximum Bit Rate for downlink. The user data SDU size on the bearer is defined as M_SDU_S_P. Ensure that the PDP PDU transfer with the offered parameters is performed correctly. Verify if the requested QoS parameters in the ACTIVATE PDP CONTEXT ACCEPT message are kept on the routed PDP PDUs.</p>	
<b>GSM parameter values:</b>	QoS Requested: PDP type organization: IETF allocated address PDP type number value: PIXIT Reliability class: 2 Delay class: <b>Delay class 1</b> Precedence class: Low priority Peak throughput: PT_IDreq Mean throughput: 50 000 000 octet/h (111,1 kbit/s) Delivery of erroneous SDU: Erroneous SDU are not delivered ("no") Delivery order: With delivery order ("yes") Traffic class: <b>Streaming class</b> Maximum SDU size: 1 500 octets Maximum bit rate for uplink: MBRFU_IDreq Maximum bit rate for downlink: MBRFD_IDreq Residual Bit Error Rate: $1 * 10^{-6}$ SDU error ratio: $1 * 10^{-6}$ Traffic handling priority: * (value is ignored) Transfer delay: 50 ms Guaranteed bit rate for uplink: MBRFU_IDreq Guaranteed bit rate for downlink: MBRFU_IDreq	
<b>IP parameter values:</b>	IP Address: GPRS_A_IP_ADD (PIXIT); GPRS_B_IP_ADD (PIXIT)	
<b>Comments:</b>	<p>If the UE is attached, then the Detach Request is originated from the UE indicating "GPRS detach without switching off". The network responds with a Detach Accept after completing the security mode procedures. A PDP context activation is then requested by the user. The PS attach (ATTACH REQUEST) is then indirectly caused by a requested PDP context activation. The SS returns the ATTACH ACCEPT message to the UE. Now session management can proceed with PDP context activation.</p> <p>On receipt of the ACTIVATE PDP CONTEXT REQUEST message an ACTIVATE PDP CONTEXT ACCEPT is returned by the SS with the same requested QoS.</p>	



Values for test purpose GN GI A_PDP_CR_STR_C 04	
VA_01	PT_IDreq: 16 000 octet/s (128 kbps) MBRFU_IDreq: 64 kbps MBRFD_IDreq: 64 kbps M_SDU_S_P: APL
VA_02	PT_IDreq: 16 000 octet/s (128 kbps) MBRFU_IDreq: 64 kbps MBRFD_IDreq: 112 kbps M_SDU_S_P: APL
VA_03	PT_IDreq: 16 000 octet/s (128 kbps) MBRFU_IDreq: 112 kbps MBRFD_IDreq: 16 kbps M_SDU_S_P: APL
VA_04	PT_IDreq: 64 000 octet/s (512 kbps) MBRFU_IDreq: 256 kbps MBRFD_IDreq: 256 kbps M_SDU_S_P: APL
VA_05	PT_IDreq: 64 000 octet/s (512 kbps) MBRFU_IDreq: 496 kbps MBRFD_IDreq: 16 kbps M_SDU_S_P: APL
VA_06	PT_IDreq: 64 000 octet/s (512 kbps) MBRFU_IDreq: 16 kbps MBRFD_IDreq: 496 kbps M_SDU_S_P: APL
VA_07	PT_IDreq: 128 000 octet/s (1 024 kbps) MBRFU_IDreq: 512 kbps MBRFD_IDreq: 512 kbps M_SDU_S_P: APL
VA_08	PT_IDreq: 128 000 octet/s (1 024 kbps) MBRFU_IDreq: 960 kbps MBRFD_IDreq: 16 kbps M_SDU_S_P: APL
VA_09	PT_IDreq: 128 000 octet/s (1 024 kbps) MBRFU_IDreq: 16 kbps MBRFD_IDreq: 960 kbps M_SDU_S_P: APL
VA_10	PT_IDreq: 256 000 octet/s (2 048 kbps) MBRFU_IDreq: 1 024 kbps MBRFD_IDreq: 1 024 kbps M_SDU_S_P: APL
VA_11	PT_IDreq: 256 000 octet/s (2 048 kbps) MBRFU_IDreq: 1 088 kbps MBRFD_IDreq: 16 kbps M_SDU_S_P: APL
VA_12	PT_IDreq: 256 000 octet/s (2 048 kbps) MBRFU_IDreq: 16 kbps MBRFD_IDreq: 1 088 kbps M_SDU_S_P: APL

GN_GI A_PDP_CR_STR_C 05	<b>GSM ref. to:</b> TS 124 008 [1] clauses 6.1.1 and 6.1.3.1.1	
<b>TSS reference:</b>	<b>GPRS R99 to external PDP network/PDP context activation/successful/ACTIVATE PDP CONTEXT REQUEST</b>	
<b>GSM selection criteria:</b>	BS 70	
<b>IP selection criteria:</b>		
<b>Test purpose:</b>	<p>Ensure that the Requested PDP Context Activation procedure allows the GGSN to route PDP PDUs between the SGSN and the external PDP network, and to start charging. The GGSN may further restrict QoS Negotiated given its capabilities and the current load. If the QoS offered by the network is acceptable to the mobile, then upon receipt of the ACTIVATE PDP CONTEXT ACCEPT message the MS shall initiate establishment of the logical link with the offered QoS.</p> <p>Ensure that the network can support the " Residual Bit Error Rate" and "SDU error ratio coded" as RBER_IDreq and SDU_ER_IDreq. The Reliability class is coded as RC_IDreq. The user data rate on the bearer is equal with the Maximum Bit Rate for uplink and Maximum Bit Rate for downlink. The user data SDU size on the bearer is defined as M_SDU_S_P.</p> <p>Ensure that the PDP PDU transfer with the offered parameters is performed correctly. Verify if the requested QoS parameters in the ACTIVATE PDP CONTEXT ACCEPT message are kept on the routed PDP PDUs.</p>	
<b>GSM parameter values:</b>	<p>QoS Requested: PDP type organization: IETF allocated address PDP type number value: PIXIT Reliability class: RC_IDreq Delay class: <b>Delay class 1</b> Precedence class: Low priority Peak throughput: 16 000 octet/s Mean throughput: 50 000 000 octet/h (111,1 kbit/s) Delivery of erroneous SDU: Erroneous SDU are not delivered ("no") Delivery order: With delivery order ("yes") Traffic class: <b>Streaming class</b> Maximum SDU size: 1 500 octets Maximum bit rate for uplink: 64 kbit/s Maximum bit rate for downlink: 64 kbit/s Residual Bit Error Rate: RBER_IDreq SDU error ratio: SDU_ER_IDreq Traffic handling priority: Priority level 2 Transfer delay: 50 ms Guaranteed bit rate for uplink: MBRFU_IDreq Guaranteed bit rate for downlink: MBRFU_IDreq</p>	
<b>IP parameter values:</b>	IP Address: GPRS_A_IP_ADD (PIXIT); GPRS_B_IP_ADD (PIXIT)	
<b>Comments:</b>	<p>If the UE is attached, then the Detach Request is originated from the UE indicating "GPRS detach without switching off". The network responds with a Detach Accept after completing the security mode procedures. A PDP context activation is then requested by the user. The PS attach (ATTACH REQUEST) is then indirectly caused by a requested PDP context activation. The SS returns the ATTACH ACCEPT message to the UE. Now session management can proceed with PDP context activation.</p> <p>On receipt of the ACTIVATE PDP CONTEXT REQUEST message an ACTIVATE PDP CONTEXT ACCEPT is returned by the SS with the same requested QoS.</p>	

Values for test purpose GN_GI A_PDP_CR_STR_C 05		
VA_01		RC_IDreq: 1 RBER_IDreq: 10 <sup>-5</sup> SDU_ER_IDreq: 10 <sup>-6</sup> M_SDU_S_P: APL
VA_02		RC_IDreq: 3 BER_ID: 10 <sup>-5</sup> SDU_ER_IDreq: 10 <sup>-4</sup> M_SDU_S_P: APL

Values for test purpose GN_GI A_PDP_CR_STR_C 05	
VA_04	RC_IDreq: 4 RBER_IDreq: 10 <sup>-5</sup> SDU_ER_IDreq: 10 <sup>-3</sup> M_SDU_S_P: APL
VA_05	RC_IDreq: 5 RBER_IDreq: 10 <sup>-3</sup> SDU_ER_IDreq: 10 <sup>-3</sup> M_SDU_S_P: APL

GN_GI A_PDP_CR_ STR_C 06	<b>GSM ref. to:</b> TS 124 008 [1] clauses 6.1.1 and 6.1.3.1.1	
<b>TSS reference:</b>	<b>GPRS R99 to external PDP network/PDP context activation/successful/ACTIVATE PDP CONTEXT REQUEST</b>	
<b>GSM selection criteria:</b>	BS 70	
<b>IP selection criteria:</b>		
<b>Test purpose:</b>	<p>Ensure that the Requested PDP Context Activation procedure allows the GGSN to route PDP PDUs between the SGSN and the external PDP network, and to start charging. The GGSN may further restrict QoS Negotiated given its capabilities and the current load. If the QoS offered by the network is acceptable to the mobile, then upon receipt of the ACTIVATE PDP CONTEXT ACCEPT message the MS shall initiate establishment of the logical link with the offered QoS.</p> <p>Ensure that the network can transport user data rate defined with parameter MBRFU_P. The bit rate for uplink and downlink and Peak Throughput are defined with the parameters MBRFU_IDreq MBRFD_IDreq and PT_IDreq.</p> <p>All packets which are sent over the Peak Throughput should be discarded.</p> <p>Ensure that the PDP PDU transfer with the offered parameters is performed correctly. Verify if the requested QoS parameters in the ACTIVATE PDP CONTEXT ACCEPT message are kept on the routed PDP PDUs.</p>	
<b>GSM parameter values:</b>	<p>QoS Requested: PDP type organization: IETF allocated address PDP type number value: PIXIT Reliability class: 2 Delay class: <b>Delay class 1</b> Precedence class: Low priority Peak throughput: PT_IDreq Mean throughput: 50 000 000 octet/h (111,1 kbit/s) Delivery of erroneous SDU: Erroneous SDU are not delivered ("no") Delivery order: With delivery order ("yes") Traffic class: <b>Streaming class</b> Maximum SDU size: 1 500 octets Maximum bit rate for uplink: MBRFU_IDreq Maximum bit rate for downlink: MBRFD_IDreq Residual Bit Error Rate: 1 * 10<sup>-6</sup> SDU error ratio: 1 * 10<sup>-5</sup> Traffic handling priority: * (value is ignored) Transfer delay: 50 ms Guaranteed bit rate for uplink: MBRFU_IDreq Guaranteed bit rate for downlink: MBRFU_IDreq</p>	
<b>IP parameter values:</b>	IP Address: GPRS_A_IP_ADD (PIXIT); GPRS_B_IP_ADD (PIXIT)	
<b>Comments:</b>	<p>If the UE is attached, then the Detach Request is originated from the UE indicating "GPRS detach without switching off". The network responds with a Detach Accept after completing the security mode procedures. A PDP context activation is then requested by the user. The PS attach (ATTACH REQUEST) is then indirectly caused by a requested PDP context activation. The SS returns the ATTACH ACCEPT message to the UE. Now session management can proceed with PDP context activation.</p> <p>On receipt of the ACTIVATE PDP CONTEXT REQUEST message an ACTIVATE PDP CONTEXT ACCEPT is returned by the SS with the same requested QoS.</p>	

Values for test purpose GN__GI A_PDP_CR_STR_C 06	
VA_01	PT_IDreq: 64 kbps MBRFU_IDreq: 32 kbps MBRFD_IDreq: 32 kbps MBR_P: 100 kbps
VA_02	PT_IDreq: 128 kbps MBRFU_IDreq: 64kbps MBRFD_IDreq: 64 kbps MBR_P: 150 kbps
VA_03	PT_IDreq: 256 kbps MBRFU_IDreq: 128 kbps MBRFD_IDreq: 128 kbps MBR_P: 300 kbps

Values APL for test for test purpose: GN__GI A_PDP_CR_STR_C 02, GN__GI A_PDP_CR_STR_C 04, GN__GI A_PDP_CR_STR_C 05	
APL: Video on demand	M_SDU_S_P: for downlink 5 % 100 octets 12 % 300 octets 8 % 500 octets 22 % 700 octets 22 % 900 octets 15 % 1 100 octets 15 % 1 300 octets 1 % 1 500 octets uplink 100 % 40 octets

<b>Conversational class; Application: H.323 [13]; SIP</b>	
GN__GI A_PDP_CR_ CON_C 01	<b>GSM ref. to:</b> TS 124 008 [1] clauses 6.1.1 and 6.1.3.1.1
<b>TSS reference:</b>	<b>GPRS R99 to external PDP network/PDP context activation/successful/ACTIVATE PDP CONTEXT REQUEST</b>
<b>GSM selection criteria:</b>	BS 70
<b>IP selection criteria:</b>	None
<b>Test purpose:</b>	<p>Ensure that the Requested PDP Context Activation procedure allows the GGSN to route PDP PDUs between the SGSN and the external PDP network, and to start charging. The GGSN may further restrict QoS Negotiated given its capabilities and the current load. If the QoS offered by the network is acceptable to the mobile, then upon receipt of the ACTIVATE PDP CONTEXT ACCEPT message the MS shall initiate establishment of the logical link with the offered QoS.</p> <p>Ensure that the network can support the "Packet data protocol address" parameters requested by the MS with the ACTIVATE PDP CONTEXT REQUEST message.</p> <p>Ensure that the PDP PDU transfer with the offered parameters is performed correctly. Verify if the requested QoS parameters in the ACTIVATE PDP CONTEXT ACCEPT message are kept on the routed PDP PDUs.</p>
<b>GSM parameter values:</b>	<p>QoS Requested: PDP type organization: IETF allocated address PDP type number value: PDP_TNV_ID Reliability class: 1 Delay class: <b>Delay class 1</b> Precedence class: Low priority Peak throughput: Up to 16 000 octet/s (128 kbit/s) Mean throughput: 50 000 000 octet/h (111,1 kbit/s) Delivery of erroneous SDU: Erroneous SDU are not delivered ("no") Delivery order: With delivery order ("yes") Traffic class: Conversational class Maximum SDU size: 1 500 octets Maximum bit rate for uplink: 64 kbps Maximum bit rate for downlink: 64 kbps Residual Bit Error Rate: <math>1 * 10^{-5}</math> SDU error ratio: <math>1 * 10^{-6}</math> Traffic handling priority: * (value is ignored) Transfer delay: 50 ms Guaranteed bit rate for uplink: 64 kbps Guaranteed bit rate for downlink: 64 kbps</p>
<b>IP parameter values:</b>	IP Address: GPRS_A_IP_ADD (PIXIT); GPRS_B_IP_ADD (PIXIT)
<b>Comments:</b>	<p>If the UE is attached, then the Detach Request is originated from the UE indicating "GPRS detach without switching off". The network responds with a Detach Accept after completing the security mode procedures. A PDP context activation is then requested by the user. The PS attach (ATTACH REQUEST) is then indirectly caused by a requested PDP context activation. The SS returns the ATTACH ACCEPT message to the UE. Now session management can proceed with PDP context activation.</p> <p>On receipt of the ACTIVATE PDP CONTEXT REQUEST message an ACTIVATE PDP CONTEXT ACCEPT is returned by the SS with the same requested QoS.</p>

<b>Values for test purpose GN__GI A_PDP_CR_CON_C 01</b>	
VA_01	PDP_TO_ID: IETF allocated address PDP_TNV_ID : IPv4 address
VA_02	PDP_TO_ID: IETF allocated address PDP_TNV_ID: IPv6 address

GN__GI A_PDP_CR_ CON_C 02	<b>GSM ref. to:</b> TS 124 008 [1] clauses 6.1.1 and 6.1.3.1.1	
<b>TSS reference:</b>	<b>GPRS R99 to external PDP network/PDP context activation/successful/ACTIVATE PDP CONTEXT REQUEST</b>	
<b>GSM selection criteria:</b>	BS 70	
<b>IP selection criteria:</b>		
<b>Test purpose:</b>	<p>Ensure that the Requested PDP Context Activation procedure allows the GGSN to route PDP PDUs between the SGSN and the external PDP network, and to start charging. The GGSN may further restrict QoS Negotiated given its capabilities and the current load. If the QoS offered by the network is acceptable to the mobile, then upon receipt of the ACTIVATE PDP CONTEXT ACCEPT message the MS shall initiate establishment of the logical link with the offered QoS.</p> <p>Ensure that the network can support the "QoS – " Transfer delay" parameters requested by the MS with the ACTIVATE PDP CONTEXT REQUEST message. The bit rate for uplink and downlink and Peak Throughput are defined with the parameters MBRFU_IDreq, MBRFD_IDreq and PT_IDreq. The user data SDU size on the bearer is defined as M_SDU_S_P.</p> <p>Ensure that the PDP PDU transfer with the offered parameters is performed correctly. Verify if the requested QoS parameters in the ACTIVATE PDP CONTEXT ACCEPT message are kept on the routed PDP PDUs.</p>	
<b>GSM parameter values:</b>	<p>QoS Requested: PDP type organization: IETF allocated address PDP type number value: PIXIT Reliability class: 1 Delay class: <b>Delay class 1</b> Precedence class: Low priority Peak throughput: PT_IDreq Mean throughput: 50 000 000 octet/h (111,1 kbit/s) Delivery of erroneous SDU: Erroneous SDU are not delivered ("no") Delivery order: With delivery order ("yes") Traffic class: Conversational class Maximum SDU size: 1 500 octets Maximum bit rate for uplink: MBRFU_IDreq Maximum bit rate for downlink: MBRFD_IDreq Residual Bit Error Rate: <math>1 * 10^{-5}</math> SDU error ratio: <math>1 * 10^{-6}</math> Traffic handling priority: * (value is ignored) Transfer delay: TD_IDreq Guaranteed bit rate for uplink: MBRFU_IDreq Guaranteed bit rate for downlink: MBRFU_IDreq</p>	
<b>IP parameter values:</b>	IP Address: GPRS_A_IP_ADD (PIXIT); GPRS_B_IP_ADD (PIXIT)	
<b>Comments:</b>	<p>If the UE is attached, then the Detach Request is originated from the UE indicating "GPRS detach without switching off". The network responds with a Detach Accept after completing the security mode procedures. A PDP context activation is then requested by the user. The PS attach (ATTACH REQUEST) is then indirectly caused by a requested PDP context activation. The SS returns the ATTACH ACCEPT message to the UE. Now session management can proceed with PDP context activation.</p> <p>On receipt of the ACTIVATE PDP CONTEXT REQUEST message an ACTIVATE PDP CONTEXT ACCEPT is returned by the SS with the same requested QoS.</p>	

Values for test purpose GN GI A_PDP_CR_CON_C 02	
VA_01	PT_IDreq: 16 000 octet/s (128 kbps) MBRFU_IDreq: 64 kbps MBRFD_IDreq: 64 kbps M_SDU_S_P: APL TD_IDreq: 50 ms
VA_02	PT_IDreq: 32 000 octet/s (256 kbps) MBRFU_IDreq: 128 kbps MBRFD_IDreq: 128 kbps M_SDU_S_P: APL TD_IDreq: 50 ms
VA_03	PT_IDreq: 64 000 octet/s (512 kbps) MBRFU_IDreq: 256 kbps MBRFD_IDreq: 256 kbps M_SDU_S_P: APL TD_IDreq: 50 ms
VA_04	PT_IDreq: 256 000 octet/s (2 048 kbps) MBRFU_IDreq: 1 024 kbps MBRFD_IDreq: 1 024 kbps M_SDU_S_P: APL octets TD_IDreq: 50 ms
VA_05	PT_IDreq: 256 000 octet/s (2 048 kbps) MBRFU_IDreq: 1 984 kbps MBRFD_IDreq: 64 kbps M_SDU_S_P: APL TD_IDreq: 50 ms
VA_06	PT_IDreq: 256 000 octet/s (2 048 kbps) MBRFU_IDreq: 64 kbps MBRFD_IDreq: 1 984 kbps M_SDU_S_P: APL TD_IDreq: 50 ms
VA_07	PT_IDreq: 16 000 octet/s (128 kbps) MBRFU_IDreq: 64 kbps MBRFD_IDreq: 64 kbps M_SDU_S_P: APL TD_IDreq: 100 ms
VA_08	PT_IDreq: 32 000 octet/s (256 kbps) MBRFU_IDreq: 128 kbps MBRFD_IDreq: 128 kbps M_SDU_S_P: APL TD_IDreq: 100 ms
VA_09	PT_IDreq: 64 000 octet/s (512 kbps) MBRFU_IDreq: 256 kbps MBRFD_IDreq: 256 kbps M_SDU_S_P: APL TD_IDreq: 100 ms
VA_10	PT_IDreq: 256 000 octet/s (2 048 kbps) MBRFU_IDreq: 1 024 kbps MBRFD_IDreq: 1 024 kbps M_SDU_S_P: APL octets TD_IDreq: 100 ms
VA_11	PT_IDreq: 256 000 octet/s (2 048 kbps) MBRFU_IDreq: 1 984 kbps MBRFD_IDreq: 64 kbps M_SDU_S_P: APL TD_IDreq: 100 ms
VA_12	PT_IDreq: 256 000 octet/s (2 048 kbps) MBRFU_IDreq: 64 kbps MBRFD_IDreq: 1 984 kbps M_SDU_S_P: APL TD_IDreq: 100 ms

GN__GI A_PDP_CR_ CON_C 03	<b>GSM ref. to:</b> TS 124 008 [1] clauses 6.1.1 and 6.1.3.1.1	
<b>TSS reference:</b>	<b>GPRS R99 to external PDP network/PDP context activation/successful/ACTIVATE PDP CONTEXT REQUEST</b>	
<b>GSM selection criteria:</b>	BS 70	
<b>IP selection criteria:</b>		
<b>Test purpose:</b>	<p>Ensure that the Requested PDP Context Activation procedure allows the GGSN to route PDP PDUs between the SGSN and the external PDP network, and to start charging. The GGSN may further restrict QoS Negotiated given its capabilities and the current load. If the QoS offered by the network is acceptable to the mobile, then upon receipt of the ACTIVATE PDP CONTEXT ACCEPT message the MS shall initiate establishment of the logical link with the offered QoS.</p> <p>Ensure that the network can support the "QoS – "Maximum SDU size" parameter coded as M_SDU_S_IDreq. The bit rate for uplink and downlink and Peak Throughput are defined with the parameters MBRFU_IDreq MBRFD_IDreq and PT_IDreq. The user data rate on the bearer is equal with the Maximum Bit Rate for uplink and Maximum Bit Rate for downlink. The user data SDU size on the bearer is defined as M_SDU_S_P.</p> <p>Ensure that the PDP PDU transfer with the offered parameters is performed correctly. Verify if the requested QoS parameters in the ACTIVATE PDP CONTEXT ACCEPT message are kept on the routed PDP PDUs.</p>	
<b>GSM parameter values:</b>	<p>QoS Requested: PDP type organization: IETF allocated address PDP type number value: PIXIT Reliability class: 1 Delay class: <b>Delay class 1</b> Precedence class: Low priority Peak Throughput: PT_IDreq Mean throughput: 50 000 000 octet/h (111,1 kbit/s) Delivery of erroneous SDU: Erroneous SDU are not delivered ("no") Delivery order: With delivery order ("yes") Traffic class: Conversational class Maximum SDU size: M_SDU_S_IDreq Maximum bit rate for uplink: MBRFU_IDreq Maximum bit rate for downlink: MBRFD_IDreq Residual Bit Error Rate: <math>1 * 10^{-5}</math> SDU error ratio: <math>1 * 10^{-6}</math> Traffic handling priority: Priority level 3 (value is ignored) Transfer delay: 50 ms Guaranteed bit rate for uplink: MBRFU_IDreq Guaranteed bit rate for downlink: MBRFU_IDreq</p>	
<b>IP parameter values:</b>	IP Address: GPRS_A_IP_ADD (PIXIT); GPRS_B_IP_ADD (PIXIT)	
<b>Comments:</b>	<p>If the UE is attached, then the Detach Request is originated from the UE indicating "GPRS detach without switching off". The network responds with a Detach Accept after completing the security mode procedures. A PDP context activation is then requested by the user. The PS attach (ATTACH REQUEST) is then indirectly caused by a requested PDP context activation. The SS returns the ATTACH ACCEPT message to the UE. Now session management can proceed with PDP context activation.</p> <p>On receipt of the ACTIVATE PDP CONTEXT REQUEST message an ACTIVATE PDP CONTEXT ACCEPT is returned by the SS with the same requested QoS.</p>	

<b>GN__GI A_PDP_CR_CON_C 03</b>	
<b>Values for QoS – Maximum SDU size</b>	
VA_01	PT_IDreq: 8 000 octet/s (64 kbps) MBRFU_IDreq: 32 kbps MBRFD_IDreq: 32 kbps M_SDU_S_IDreq: 1 500 octets M_SDU_S_P: 1 500 octets
VA_02	PT_IDreq: 16 000 octet/s (128 kbps) MBRFU_IDreq: 64 kbps MBRFD_IDreq: 64 kbps M_SDU_S_IDreq: 1 502 octets M_SDU_S_P: 1 502 octets



<b>GN_GI A_PDP_CR_CON_C 03</b>	
<b>Values for QoS – Maximum SDU size</b>	
VA_03	PT_IDreq: 16 000 octet/s (128 kbps) MBRFU_IDreq: 64 kbps MBRFD_IDreq: 64 kbps M_SDU_S_IDreq: 1 520 octets M_SDU_S_P: 1 520 octets

GN_GI A_PDP_CR_CON_C 04	<b>GSM ref. to:</b> TS 124 008 [1] clauses 6.1.1 and 6.1.3.1.1	
<b>TSS reference:</b>	<b>GPRS R99 to external PDP network/PDP context activation/successful/ACTIVATE PDP CONTEXT REQUEST</b>	
<b>GSM selection criteria:</b>	BS 70	
<b>IP selection criteria:</b>		
<b>Test purpose:</b>	<p>Ensure that the Requested PDP Context Activation procedure allows the GGSN to route PDP PDUs between the SGSN and the external PDP network, and to start charging. The GGSN may further restrict QoS Negotiated given its capabilities and the current load. If the QoS offered by the network is acceptable to the mobile, then upon receipt of the ACTIVATE PDP CONTEXT ACCEPT message the MS shall initiate establishment of the logical link with the offered QoS.</p> <p>Ensure that the network can support the "Maximum Bit Rate for uplink and Maximum Bit Rate for downlink" parameter coded as MBRFU_IDreq and MBRFD_IDreq. The user data rate on the bearer is equal with the Maximum Bit Rate for uplink and Maximum Bit Rate for downlink. The user data SDU size on the bearer is defined as M_SDU_S_P. Ensure that the PDP PDU transfer with the offered parameters is performed correctly. Verify if the requested QoS parameters in the ACTIVATE PDP CONTEXT ACCEPT message are kept on the routed PDP PDUs.</p>	
<b>GSM parameter values:</b>	<p>QoS Requested: PDP type organization: IETF allocated address PDP type number value: PIXIT Reliability class: 1 Delay class: <b>Delay class 1</b> Precedence class: Low priority Peak throughput: PT_IDreq Mean throughput: 50 000 000 octet/h (111,1 kbit/s) Delivery of erroneous SDU: Erroneous SDU are not delivered ("no") Delivery order: With delivery order ("yes") Traffic class: Conversational class Maximum SDU size: 1 500 octets Maximum bit rate for uplink: MBRFU_IDreq Maximum bit rate for downlink: MBRFD_IDreq Residual Bit Error Rate: <math>1 * 10^{-5}</math> SDU error ratio: <math>1 * 10^{-6}</math> Traffic handling priority: * (value is ignored) Transfer delay: 50 ms Guaranteed bit rate for uplink: MBRFU_IDreq Guaranteed bit rate for downlink: MBRFU_IDreq</p>	
<b>IP parameter values:</b>	IP Address: GPRS_A_IP_ADD (PIXIT); GPRS_B_IP_ADD (PIXIT)	
<b>Comments:</b>	<p>If the UE is attached, then the Detach Request is originated from the UE indicating "GPRS detach without switching off". The network responds with a Detach Accept after completing the security mode procedures. A PDP context activation is then requested by the user. The PS attach (ATTACH REQUEST) is then indirectly caused by a requested PDP context activation. The SS returns the ATTACH ACCEPT message to the UE. Now session management can proceed with PDP context activation.</p> <p>On receipt of the ACTIVATE PDP CONTEXT REQUEST message an ACTIVATE PDP CONTEXT ACCEPT is returned by the SS with the same requested QoS.</p>	

Values for test purpose GN GI A_PDP_CR_CON_C 04	
VA_01	PT_IDreq: 16 000 octet/s (128 kbps) MBRFU_IDreq: 64 kbps MBRFD_IDreq: 64 kbps M_SDU_S_P: APL
VA_02	PT_IDreq: 16 000 octet/s (128 kbps) MBRFU_IDreq: 64 kbps MBRFD_IDreq: 112 kbps M_SDU_S_P: APL
VA_03	PT_IDreq: 16 000 octet/s (128 kbps) MBRFU_IDreq: 112 kbps MBRFD_IDreq: 16 kbps M_SDU_S_P: APL
VA_04	PT_IDreq: 64 000 octet/s (512 kbps) MBRFU_IDreq: 256 kbps MBRFD_IDreq: 256 kbps M_SDU_S_P: APL
VA_05	PT_IDreq: 64 000 octet/s (512 kbps) MBRFU_IDreq: 496 kbps MBRFD_IDreq: 16 kbps M_SDU_S_P: APL
VA_06	PT_IDreq: 64 000 octet/s (512 kbps) MBRFU_IDreq: 16 kbps MBRFD_IDreq: 496 kbps M_SDU_S_P: APL
VA_07	PT_IDreq: 128 000 octet/s (1 024 kbps) MBRFU_IDreq: 512 kbps MBRFD_IDreq: 512 kbps M_SDU_S_P: APL
VA_08	PT_IDreq: 128 000 octet/s (1 024 kbps) MBRFU_IDreq: 960 kbps MBRFD_IDreq: 16 kbps M_SDU_S_P: APL
VA_09	PT_IDreq: 128 000 octet/s (1 024 kbps) MBRFU_IDreq: 16 kbps MBRFD_IDreq: 960 kbps M_SDU_S_P: APL
VA_10	PT_IDreq: 256 000 octet/s (2 048 kbps) MBRFU_IDreq: 1 024 kbps MBRFD_IDreq: 1 024 kbps M_SDU_S_P: APL
VA_11	PT_IDreq: 256 000 octet/s (2 048 kbps) MBRFU_IDreq: 1 088 kbps MBRFD_IDreq: 16 kbps M_SDU_S_P: APL
VA_12	PT_IDreq: 256 000 octet/s (2 048 kbps) MBRFU_IDreq: 16 kbps MBRFD_IDreq: 1 088 kbps M_SDU_S_P: APL

GN_GI A_PDP_CR_CON_C 05	<b>GSM ref. to:</b> TS 124 008 [1] clauses 6.1.1 and 6.1.3.1.1	
<b>TSS reference:</b>	<b>GPRS R99 to external PDP network/PDP context activation/successful/ACTIVATE PDP CONTEXT REQUEST</b>	
<b>GSM selection criteria:</b>	BS 70	
<b>IP selection criteria:</b>		
<b>Test purpose:</b>	<p>Ensure that the Requested PDP Context Activation procedure allows the GGSN to route PDP PDUs between the SGSN and the external PDP network, and to start charging. The GGSN may further restrict QoS Negotiated given its capabilities and the current load. If the QoS offered by the network is acceptable to the mobile, then upon receipt of the ACTIVATE PDP CONTEXT ACCEPT message the MS shall initiate establishment of the logical link with the offered QoS.</p> <p>Ensure that the network can support the "Residual Bit Error Rate" and "SDU error ratio coded" as RBER_IDreq and SDU_ER_IDreq.</p> <p>The Reliability class is coded as RC_IDreq.</p> <p>The user data rate on the bearer is equal with the Maximum Bit Rate for uplink and Maximum Bit Rate for downlink. The user data SDU size on the bearer is defined as M_SDU_S_P.</p> <p>Ensure that the PDP PDU transfer with the offered parameters is performed correctly. Verify if the requested QoS parameters in the ACTIVATE PDP CONTEXT ACCEPT message are kept on the routed PDP PDUs.</p>	
<b>GSM parameter values:</b>	<p>QoS Requested: PDP type organization: IETF allocated address PDP type number value: PIXIT Reliability class: RC_IDreq Delay class: <b>Delay class 1</b> Precedence class: Low priority Peak throughput: 16 000 octet/s Mean throughput: 50 000 000 octet/h (111,1 kbit/s) Delivery of erroneous SDU: Erroneous SDU are not delivered ("no") Delivery order: With delivery order ("yes") Traffic class: Conversational class Maximum SDU size: 1 500 octets Maximum bit rate for uplink: 64 kbit/s Maximum bit rate for downlink: 64 kbit/s Residual Bit Error Rate: RBER_IDreq SDU error ratio: SDU_ER_IDreq Traffic handling priority: Priority level 2 Transfer delay: 50 ms Guaranteed bit rate for uplink: 64 kbps Guaranteed bit rate for downlink: 64 kbit/s</p>	
<b>IP parameter values:</b>	IP Address: GPRS_A_IP_ADD (PIXIT); GPRS_B_IP_ADD (PIXIT)	
<b>Comments:</b>	<p>If the UE is attached, then the Detach Request is originated from the UE indicating "GPRS detach without switching off". The network responds with a Detach Accept after completing the security mode procedures. A PDP context activation is then requested by the user. The PS attach (ATTACH REQUEST) is then indirectly caused by a requested PDP context activation. The SS returns the ATTACH ACCEPT message to the UE. Now session management can proceed with PDP context activation.</p> <p>On receipt of the ACTIVATE PDP CONTEXT REQUEST message an ACTIVATE PDP CONTEXT ACCEPT is returned by the SS with the same requested QoS.</p>	

Values for test purpose GN_GI A_PDP_CR_CON_C 05	
VA_01	RC_IDreq: 1 RBER_IDreq: 10 <sup>-5</sup> SDU_ER_IDreq: 10 <sup>-6</sup> M_SDU_S_P: APL
VA_02	RC_IDreq: 3 BER_ID: 10 <sup>-5</sup> SDU_ER_IDreq: 10 <sup>-4</sup> M_SDU_S_P: APL
VA_04	RC_IDreq: 4 RBER_IDreq: 10 <sup>-5</sup> SDU_ER_IDreq: 10 <sup>-3</sup> M_SDU_S_P: APL

Values for test purpose GN GI A_PDP_CR_CON_C 05	
VA_05	RC_IDreq: 5 RBER_IDreq: 10 <sup>-3</sup> SDU_ER_IDreq: 10 <sup>-3</sup> M_SDU_S_P: APL
GN__GI A_PDP_CR_ CON_C 06	<b>GSM ref. to:</b> TS 124 008 [1] clauses 6.1.1 and 6.1.3.1.1
<b>TSS reference:</b>	<b>GPRS R99 to external PDP network/PDP context activation/successful/ACTIVATE PDP CONTEXT REQUEST</b>
<b>GSM selection criteria:</b>	BS 70
<b>IP selection criteria:</b>	
<b>Test purpose:</b>	Ensure that the Requested PDP Context Activation procedure allows the GGSN to route PDP PDUs between the SGSN and the external PDP network, and to start charging. The GGSN may further restrict QoS Negotiated given its capabilities and the current load. If the QoS offered by the network is acceptable to the mobile, then upon receipt of the ACTIVATE PDP CONTEXT ACCEPT message the MS shall initiate establishment of the logical link with the offered QoS. Ensure that the network can transport user data rate defined with parameter MBRFU_P. The bit rate for uplink and downlink and Peak Throughput are defined with the parameters MBRFU_IDreq MBRFD_IDreq and PT_IDreq. All packets which are sent over the Peak Throughput should be discarded. Ensure that the PDP PDU transfer with the offered parameters is performed correctly. Verify if the requested QoS parameters in the ACTIVATE PDP CONTEXT ACCEPT message are kept on the routed PDP PDUs.
<b>GSM parameter values:</b>	QoS Requested: PDP type organization: IETF allocated address PDP type number value: PIXIT Reliability class: 1 Delay class: <b>Delay class 1</b> Precedence class: Low priority Peak throughput: PT_IDreq Mean throughput: 50 000 000 octet/h (111,1 kbit/s) Delivery of erroneous SDU: Erroneous SDU are not delivered ("no") Delivery order: With delivery order ("yes") Traffic class: Conversational class Maximum SDU size: 1 500 octets Maximum bit rate for uplink: MBRFU_IDreq Maximum bit rate for downlink: MBRFD_IDreq Residual Bit Error Rate: 1 * 10 <sup>-5</sup> SDU error ratio: 1 * 10 <sup>-6</sup> Traffic handling priority: * (value is ignored) Transfer delay: 50 ms Guaranteed bit rate for uplink: MBRFU_IDreq Guaranteed bit rate for downlink: MBRFU_IDreq
<b>IP parameter values:</b>	IP Address: GPRS_A_IP_ADD (PIXIT); GPRS_B_IP_ADD (PIXIT)
<b>Comments:</b>	If the UE is attached, then the Detach Request is originated from the UE indicating "GPRS detach without switching off". The network responds with a Detach Accept after completing the security mode procedures. A PDP context activation is then requested by the user. The PS attach (ATTACH REQUEST) is then indirectly caused by a requested PDP context activation. The SS returns the ATTACH ACCEPT message to the UE. Now session management can proceed with PDP context activation. On receipt of the ACTIVATE PDP CONTEXT REQUEST message an ACTIVATE PDP CONTEXT ACCEPT is returned by the SS with the same requested QoS.

Values for test purpose GN GI A_PDP_CR_CON_C 06	
VA_01	PT_IDreq: 64 kbps MBRFU_IDreq: 32 kbps MBRFD_IDreq: 32 kbps MBR_P: 100 kbps
VA_02	PT_IDreq: 128 kbps MBRFU_IDreq: 64kbps MBRFD_IDreq: 64 kbps MBR_P: 150 kbps
VA_03	PT_IDreq: 256 kbps MBRFU_IDreq: 128 kbps MBRFD_IDreq: 128 kbps MBR_P: 300 kbps

Values APL for test for test purpose: A_PDP_CR_CON_C 02, A_PDP_CR_CON_C 04, A_PDP_CR_CON_C 05	
APL: Netmeeting (ITU-T recommendation H.323 [13])	Downlink : 27 % 100 octets 40 % 300 octets 31 % 500 octets Uplink 57 % 100 octets 20 % 300 octets 21 % 500 octets
APL: SIP	Downlink : 99 % 554 octets 1 % 118 octets Uplink 99 % 554 octets 1 % 118 octets

### 8.1.2 GPRS R98 to external PDP network

GN__GI A_PDP_CR_GEN 01_ R98	<b>GSM ref. to:</b> TS 100 940 [2]	
<b>TSS reference:</b>	<b>GPRS R98 to external PDP network/PDP context activation/successful/ACTIVATE PDP CONTEXT REQUEST</b>	
<b>GSM selection criteria:</b>	BS 70	
<b>IP selection criteria:</b>	none	
<b>Test purpose:</b>	<p>Ensure that the Requested PDP Context Activation procedure allows the GGSN to route PDP PDUs between the SGSN and the external PDP network, and to start charging. The GGSN may further restrict QoS Negotiated given its capabilities and the current load. If the QoS offered by the network is acceptable to the mobile, then upon receipt of the ACTIVATE PDP CONTEXT ACCEPT message the MS shall initiate establishment of the logical link with the offered QoS.</p> <p>An external IP application is started defined with PIXIT values</p> <p>Ensure that the PDP PDU transfer with the offered parameters is performed correctly.</p> <p>Verify if the requested QoS parameters in the REQUEST PDP CONTEXT ACTIVATION message are kept on the routed PDP PDUs.</p>	
<b>GSM parameter values:</b>	PDP type organization: PCO_ID PDP type number value: PDP_TNV_ID (PIXIT) Reliability class: RC_IDreq (PIXIT) Delay class: DC_IDreq (PIXIT) Precedence class: PC_IDreq (PIXIT) Peak throughput: PT_IDreq (PIXIT) Mean throughput: MT_IDreq (PIXIT)	
<b>IP application parameter values:</b>	Application name: IP_APLIC (PIXIT) Application parameters values : IP_PAR 1 to ...IP_PAR 3 (PIXIT)	
<b>Comments:</b>	If the UE is attached, then the Detach Request is originated from the UE indicating "GPRS detach without switching off". The network responds with a Detach Accept after completing the security mode procedures. A PDP context activation is then requested by the user. The PS attach (ATTACH REQUEST) is then indirectly caused by a requested PDP context activation. The SS returns the ATTACH ACCEPT message to the UE. Now session management can proceed with PDP context activation. On receipt of the ACTIVATE PDP CONTEXT REQUEST message an ACTIVATE PDP CONTEXT ACCEPT is returned by the SS with the same requested QoS.	

<b>Values for PDP type organization:</b>	
VA_01	PCO_ID: PPP for use with IP PDP type
VA_02	PCO_ID: OSP:HOSS PDP type
<b>Values for PDP type number value:</b>	
VA_01	PDP_TO_ID: IETF allocated address PDP_TNV_ID : IPv4 address
VA_02	PDP_TO_ID: IETF allocated address PDP_TNV_ID: IPv6 address
<b>Values for Reliability class</b>	
VA_01	RC_IDreq: Acknowledged GTP, LLC, and RLC; Protected data
VA_02	RC_IDreq: Unacknowledged GTP; Acknowledged LLC and RLC, Protected data
VA_03	RC_IDreq: Unacknowledged GTP and LLC; Acknowledged RLC, Protected data
VA_04	RC_IDreq: Unacknowledged GTP, LLC, and RLC, Protected data
VA_05	RC_IDreq: Unacknowledged GTP, LLC, and RLC, Unprotected data
<b>Values for QoS – Delay class</b>	
VA_01	DC_IDreq: Delay class 1
VA_02	DC_IDreq: Delay class 2
VA_03	DC_IDreq: Delay class 3
VA_04	DC_IDreq: Delay class 4
<b>Values for QoS – Precedence class</b>	
VA_01	PC_IDreq: High priority
VA_02	PC_IDreq: Normal priority
VA_03	PC_IDreq: Low priority
<b>Values for QoS – Peak Throughput</b>	
VA_01	PT_IDreq: Up to 1 000 octet/s
VA_02	PT_IDreq: Up to 2 000 octet/s
VA_03	PT_IDreq: Up to 4 000 octet/s
VA_04	PT_IDreq: Up to 8 000 octet/s
VA_05	PT_IDreq: Up to 16 000 octet/s
VA_06	PT_IDreq: Up to 32 000 octet/s
VA_07	PT_IDreq: Up to 64 000 octet/s
VA_08	PT_IDreq: Up to 128 000 octet/s
VA_09	PT_IDreq: Up to 256 000 octet/s
<b>Values for QoS – Mean throughput</b>	
VA_01	MT_IDreq: 100 octet/h
VA_02	MT_IDreq: 200 octet/h
VA_03	MT_IDreq: 500 octet/h
VA_04	MT_IDreq: 1000 octet/h
VA_05	MT_IDreq: 2000 octet/h
VA_06	MT_IDreq: 5000 octet/h
VA_07	MT_IDreq: 10 000 octet/h
VA_08	MT_IDreq: 20 000 octet/h
VA_09	MT_IDreq: 50 000 octet/h
VA_10	MT_IDreq: 100 000 octet/h
VA_11	MT_IDreq: 200 000 octet/h
VA_12	MT_IDreq: 500 000 octet/h
VA_13	MT_IDreq: 1 000 000 octet/h
VA_14	MT_IDreq: 2 000 000 octet/h
VA_15	MT_IDreq: 5 000 000 octet/h
VA_16	MT_IDreq: 10 000 000 octet/h
VA_17	MT_IDreq: 20 000 000 octet/h
VA_18	MT_IDreq: 50 000 000 octet/h
VA_19	MT_IDreq: Best effort

GN__GI A_PDP_CR_ GEN_R98_02	<b>GSM ref. to:</b> TS 100 940 [2]	
<b>TSS reference:</b>	<b>GPRS R98 to external PDP network/PDP context activation/successful/ACTIVATE PDP CONTEXT REQUEST</b>	
<b>GSM selection criteria:</b>	BS 70	
<b>IP selection criteria:</b>	None	
<b>Test purpose:</b>	<p>Ensure that the Requested PDP Context Activation procedure allows the GGSN to route PDP PDUs between the SGSN and the external PDP network, and to start charging. The GGSN may further restrict QoS Negotiated given its capabilities and the current load. If the QoS offered by the network is acceptable to the mobile, then upon receipt of the ACTIVATE PDP CONTEXT ACCEPT message the MS shall initiate establishment of the logical link with the offered QoS.</p> <p>Ensure that the network can support the "Packet data protocol address" parameters requested by the MS with the ACTIVATE PDP CONTEXT REQUEST message.</p> <p>An external IP application is started defined with PIXIT values</p> <p>Ensure that the PDP PDU transfer with the offered parameters is performed correctly.</p> <p>Verify if the requested QoS parameters in the REQUEST PDP CONTEXT ACTIVATION message are kept on the routed PDP PDUs.</p>	
<b>GSM parameter values:</b>	<p>QoS Requested:</p> <p>PDP type organization: IETF allocated address</p> <p>PDP type number value: PDP_TNV_ID</p> <p>Reliability class: 5 (Unacknowledged GTP, LLC, and RLC, Unprotected data)</p> <p>Delay class: Delay class 4</p> <p>Precedence class: Low priority</p> <p>Peak throughput: Up to 4 000 octet/s (32 kbit/s)</p> <p>Mean throughput: 10 000 000 octet/h (22,2 kbit/s)</p>	
<b>IP application parameter values:</b>	<p>Application name: IP_APLIC (PIXIT)</p> <p>Application parameters values : IP_PAR 1 to ...IP_PAR 3 (PIXIT)</p>	
<b>Comments:</b>	<p>If the UE is attached, then the Detach Request is originated from the UE indicating "GPRS detach without switching off". The network responds with a Detach Accept after completing the security mode procedures. A PDP context activation is then requested by the user. The PS attach (ATTACH REQUEST) is then indirectly caused by a requested PDP context activation. The SS returns the ATTACH ACCEPT message to the UE. Now session management can proceed with PDP context activation.</p> <p>On receipt of the ACTIVATE PDP CONTEXT REQUEST message an ACTIVATE PDP CONTEXT ACCEPT is returned by the SS with the same requested QoS.</p>	

<b>Values for test purpose GN</b>		<b>GI A_PDP_CR_GEN_R98_02</b>
VA_01		PDP_TO_ID: IETF allocated address PDP_TNV_ID : IPv4 address
VA_02		PDP_TO_ID: IETF allocated address PDP_TNV_ID: IPv6 address

GN_GI A_PDP_CR_GEN_ R98_03	<b>GSM ref. to:</b> TS 100 940 [2].	
<b>TSS reference:</b>	<b>GPRS R98 to external PDP network/PDP context activation/successful/ACTIVATE PDP CONTEXT REQUEST</b>	
<b>GSM selection criteria:</b>	BS 70	
<b>IP selection criteria:</b>		
<b>Test purpose:</b>	<p>Ensure that the Requested PDP Context Activation procedure allows the GGSN to route PDP PDUs between the SGSN and the external PDP network, and to start charging. The GGSN may further restrict QoS Negotiated given its capabilities and the current load. If the QoS offered by the network is acceptable to the mobile, then upon receipt of the ACTIVATE PDP CONTEXT ACCEPT message the MS shall initiate establishment of the logical link with the offered QoS.</p> <p>Ensure that the network can support the "QoS – " Peak throughput" parameters defined as PT_IDreq by the MS with the ACTIVATE PDP CONTEXT REQUEST message. The bit rate for is defined with the parameter PT_IDreq, the Delay class with the parameter <b>DC_IDreq</b>.</p> <p>An external IP application is started defined with PIXIT values</p> <p>Ensure that the PDP PDU transfer with the offered parameters is performed correctly. Verify if the requested QoS parameters in the REQUEST PDP CONTEXT ACTIVATION message are kept on the routed PDP PDUs.</p>	
<b>GSM parameter values:</b>	PDP type organization: IETF allocated address PDP type number value: IPv4 address Reliability class: 5 (Unacknowledged GTP, LLC, and RLC, Unprotected data) Delay class: <b>DC_IDreq</b> Precedence class: Low priority Peak throughput: <b>PT_IDreq</b> Mean throughput: 50 000 000 octet/h (111,1 kbit/s)	
<b>IP application parameter values:</b>	Application name: IP_APLIC (PIXIT) Application parameters values : IP_PAR 1 to ...IP_PAR 3 (PIXIT)	
<b>Comments:</b>	If the UE is attached, then the Detach Request is originated from the UE indicating "GPRS detach without switching off". The network responds with a Detach Accept after completing the security mode procedures. A PDP context activation is then requested by the user. The PS attach (ATTACH REQUEST) is then indirectly caused by a requested PDP context activation. The SS returns the ATTACH ACCEPT message to the UE. Now session management can proceed with PDP context activation. On receipt of the ACTIVATE PDP CONTEXT REQUEST message an ACTIVATE PDP CONTEXT ACCEPT is returned by the SS with the same requested QoS.	

	<b>Values for test purpose GN</b>	<b>GI A_PDP_CR_GEN_R98_03</b>
VA_01		TC_IDreq: Delay class 1 PT_IDreq: 2 000 octet/s (16 kbps)
VA_02		TC_IDreq: Delay class 1 PT_IDreq: 4 000 octet/s (32 kbps)
VA_03		TC_IDreq: Delay class 1 PT_IDreq: 8 000 octet/s (64 kbps)
VA_04		TC_IDreq: Delay class 1 PT_IDreq: 16 000 octet/s (128 kbps)
VA_05		TC_IDreq: Delay class 1 PT_IDreq: 32 000 octet/s (256 kbps)
VA_06		TC_IDreq: Delay class 2 PT_IDreq: 2 000 octet/s (16 kbps)
VA_07		TC_IDreq: Delay class 2 PT_IDreq: 4 000 octet/s (32 kbps)
VA_08		TC_IDreq: Delay class 2 PT_IDreq: 8 000 octet/s (64 kbps)
VA_09		TC_IDreq: Delay class 2 PT_IDreq: 16 000 octet/s (128 kbps)
VA_10		TC_IDreq: Delay class 2 PT_IDreq: 32 000 octet/s (256 kbps)
VA_11		TC_IDreq: Delay class 3 PT_IDreq: 2 000 octet/s (16 kbps)
VA_12		TC_IDreq: Delay class 3 PT_IDreq: 4 000 octet/s (32 kbps)



Values for test purpose GN	GI A_PDP_CR_GEN_R98_03
VA_13	TC_IDreq: Delay class 3 PT_IDreq: 8 000 octet/s (64 kbps)
VA_14	TC_IDreq: Delay class 3 PT_IDreq: 16 000 octet/s (128 kbps)
VA_15	TC_IDreq: Delay class 3 PT_IDreq: 32 000 octet/s (256 kbps)

GN__GI A_PDP_CR_GEN_R9 8_ 04	<b>GSM ref. to:</b> TS 100 940 [2]	
<b>TSS reference:</b>	<b>GPRS R98 to external PDP network/PDP context activation/successful/ACTIVATE PDP CONTEXT REQUEST</b>	
<b>GSM selection criteria:</b>	BS 70	
<b>IP selection criteria:</b>	none	
<b>Test purpose:</b>	<p>Ensure that the Requested PDP Context Activation procedure allows the GGSN to route PDP PDUs between the SGSN and the external PDP network, and to start charging. The GGSN may further restrict QoS Negotiated given its capabilities and the current load. If the QoS offered by the network is acceptable to the mobile, then upon receipt of the ACTIVATE PDP CONTEXT ACCEPT message the MS shall initiate establishment of the logical link with the offered QoS.</p> <p>Ensure that the network can support the " Reliability class " parameters defined as RC_IDreq by the MS with the ACTIVATE PDP CONTEXT REQUEST message.</p> <p>An external IP application is started defined with PIXIT values</p> <p>Ensure that the PDP PDU transfer with the offered parameters is performed correctly.</p> <p>Verify if the requested QoS parameters in the REQUEST PDP CONTEXT ACTIVATION message are kept on the routed PDP PDUs.</p>	
<b>GSM parameter values:</b>	PDP type organization: IETF allocated address PDP type number value: IPv4 address Reliability class: PIXIT Delay class: 1 Precedence class: Low priority Peak throughput: 4 000 octet/s (32 kbps) Mean throughput: 10 000 000 octet/h (22,2 kbit/s)	
<b>IP application parameter values:</b>	Application name: IP_APLIC (PIXIT) Application parameters values : IP_PAR 1 to ...IP_PAR 3 (PIXIT)	
<b>Comments:</b>	If the UE is attached, then the Detach Request is originated from the UE indicating "GPRS detach without switching off". The network responds with a Detach Accept after completing the security mode procedures. A PDP context activation is then requested by the user. The PS attach (ATTACH REQUEST) is then indirectly caused by a requested PDP context activation. The SS returns the ATTACH ACCEPT message to the UE. Now session management can proceed with PDP context activation. On receipt of the ACTIVATE PDP CONTEXT REQUEST message an ACTIVATE PDP CONTEXT ACCEPT is returned by the SS with the same requested QoS.	

Values for test purpose GN	GI A_PDP_CR_GEN_R98_03
VA_01	RC_IDreq: Acknowledged GTP, LLC, and RLC; Protected data
VA_02	RC_IDreq: Unacknowledged GTP; Acknowledged LLC and RLC, Protected data
VA_03	RC_IDreq: Unacknowledged GTP and LLC; Acknowledged RLC, Protected data
VA_04	RC_IDreq: Unacknowledged GTP, LLC, and RLC, Protected data
VA_05	RC_IDreq: Unacknowledged GTP, LLC, and RLC, Unprotected data

GN__GI A_PDP_CR_GEN_R9 8_05	<b>GSM ref. to:</b> TS 100 940 [2]	
<b>TSS reference:</b>	<b>GPRS R98 to external PDP network/PDP context activation/successful/ACTIVATE PDP CONTEXT REQUEST</b>	
<b>GSM selection criteria:</b>	BS 70	
<b>IP selection criteria:</b>	none	
<b>Test purpose:</b>	<p>Ensure that the Requested PDP Context Activation procedure allows the GGSN to route PDP PDUs between the SGSN and the external PDP network, and to start charging. The GGSN may further restrict QoS Negotiated given its capabilities and the current load. If the QoS offered by the network is acceptable to the mobile, then upon receipt of the ACTIVATE PDP CONTEXT ACCEPT message the MS shall initiate establishment of the logical link with the offered QoS.</p> <p>Ensure that the network can support the " Precedence class " parameters defined as PC_IDreq by the MS with the ACTIVATE PDP CONTEXT REQUEST message.</p> <p>An external IP application is started defined with PIXIT values.</p> <p>Ensure that the PDP PDU transfer with the offered parameters is performed correctly.</p> <p>Verify if the requested QoS parameters in the REQUEST PDP CONTEXT ACTIVATION message are kept on the routed PDP PDUs.</p>	
<b>GSM parameter values:</b>	PDP type organization: IETF allocated address PDP type number value: IPv4 address Reliability class: PIXIT Delay class: 1 Precedence class: Low priority Peak throughput: 4 000 octet/s (32 kbps) Mean throughput: 10 000 000 octet/h (22,2 kbit/s)	
<b>IP application parameter values:</b>	Application name: IP_APLIC (PIXIT) Application parameters values : IP_PAR 1 to ...IP_PAR 3 (PIXIT)	
<b>Comments:</b>	If the UE is attached, then the Detach Request is originated from the UE indicating "GPRS detach without switching off". The network responds with a Detach Accept after completing the security mode procedures. A PDP context activation is then requested by the user. The PS attach (ATTACH REQUEST) is then indirectly caused by a requested PDP context activation. The SS returns the ATTACH ACCEPT message to the UE. Now session management can proceed with PDP context activation. On receipt of the ACTIVATE PDP CONTEXT REQUEST message an ACTIVATE PDP CONTEXT ACCEPT is returned by the SS with the same requested QoS.	

<b>Values for test purpose GN__GI A_PDP_CR_GEN_R98_05</b>	
Values for QoS – Precedence class	
VA_01	PC_IDreq: High priority
VA_02	PC_IDreq: Normal priority
VA_03	PC_IDreq: Low priority

GN_GI A_PDP_CR_GEN_ R98_06	<b>GSM ref. to:</b> TS 100 940 [2]	
<b>TSS reference:</b>	<b>GPRS R98 to external PDP network/PDP context activation/successful/ACTIVATE PDP CONTEXT REQUEST</b>	
<b>GSM selection criteria:</b>	BS 70	
<b>IP selection criteria:</b>		
<b>Test purpose:</b>	<p>Ensure that the Requested PDP Context Activation procedure allows the GGSN to route PDP PDUs between the SGSN and the external PDP network, and to start charging. The GGSN may further restrict QoS Negotiated given its capabilities and the current load. If the QoS offered by the network is acceptable to the mobile, then upon receipt of the ACTIVATE PDP CONTEXT ACCEPT message the MS shall initiate establishment of the logical link with the offered QoS.</p> <p>Ensure that the network can transport user data rate defined with parameter MBRFU_P. The bit rate for Peak Throughput is defined with the parameter PT_IDreq. All packets which are sent over the Peak Throughput should be discarded.</p> <p>Ensure that the PDP PDU transfer with the offered parameters is performed correctly. Verify if the requested QoS parameters in the REQUEST PDP CONTEXT ACTIVATION message are kept on the routed PDP PDUs.</p>	
<b>GSM parameter values:</b>	PDP type organization: IETF allocated address PDP type number value: IPv4 address Reliability class: 5 Delay class: <b>Delay class 2</b> Precedence class: Low priority Peak throughput: PT_IDreq Mean throughput: 10 000 000 octet/h (22,2 kbit/s)	
<b>IP parameter values:</b>	IP Address: GPRS_A_IP_ADD (PIXIT); GPRS_B_IP_ADD (PIXIT).	
<b>Comments:</b>	If the UE is attached, then the Detach Request is originated from the UE indicating "GPRS detach without switching off". The network responds with a Detach Accept after completing the security mode procedures. A PDP context activation is then requested by the user. The PS attach (ATTACH REQUEST) is then indirectly caused by a requested PDP context activation. The SS returns the ATTACH ACCEPT message to the UE. Now session management can proceed with PDP context activation. On receipt of the ACTIVATE PDP CONTEXT REQUEST message an ACTIVATE PDP CONTEXT ACCEPT is returned by the SS with the same requested QoS.	

Values for test purpose GN_GI A_PDP_CR_GEN06_R98	
VA_01	PT_IDreq: 64 kbps MBRFU_IDreq: 32 kbps MBRFD_IDreq: 32 kbps MBR_P: 100 kbps
VA_02	PT_IDreq: 128 kbps MBRFU_IDreq: 64kbps MBRFD_IDreq: 64 kbps MBR_P: 150 kbps
VA_03	PT_IDreq: 256 kbps MBRFU_IDreq: 128 kbps MBRFD_IDreq: 128 kbps MBR_P: 300 kbps

GN_GI A_PDP_CR_GEN _R98_07	<b>GSM ref. to:</b> TS 100 940 [2]	
<b>TSS reference:</b>	<b>GPRS R98 to external PDP network/PDP context activation/successful/ACTIVATE PDP CONTEXT REQUEST</b>	
<b>GSM selection criteria:</b>	BS 70	
<b>IP selection criteria:</b>		
<b>Test purpose:</b>	<p>Ensure that the Requested PDP Context Activation procedure allows the GGSN to route PDP PDUs between the SGSN and the external PDP network, and to start charging. The GGSN may further restrict QoS Negotiated given its capabilities and the current load. If the QoS offered by the network is acceptable to the mobile, then upon receipt of the ACTIVATE PDP CONTEXT ACCEPT message the MS shall initiate establishment of the logical link with the offered QoS.</p> <p>Ensure that the network can transport user data rate defined with parameter MT_IDreq.</p> <p>Ensure that the PDP PDU transfer with the offered parameters is performed correctly.</p> <p>Verify if the requested QoS parameters in the REQUEST PDP CONTEXT ACTIVATION message are kept on the routed PDP PDUs.</p>	
<b>GSM parameter values:</b>	PDP type organization: IETF allocated address PDP type number value: IPv4 address Reliability class: 5 Delay class: <b>Delay class 2</b> Precedence class: Low priority Peak throughput: PT_IDreq Mean throughput: MT_IDreq	
<b>IP parameter values:</b>	IP Address: GPRS_A_IP_ADD (PIXIT); GPRS_B_IP_ADD (PIXIT)	
<b>Comments:</b>	If the UE is attached, then the Detach Request is originated from the UE indicating "GPRS detach without switching off". The network responds with a Detach Accept after completing the security mode procedures. A PDP context activation is then requested by the user. The PS attach (ATTACH REQUEST) is then indirectly caused by a requested PDP context activation. The SS returns the ATTACH ACCEPT message to the UE. Now session management can proceed with PDP context activation. On receipt of the ACTIVATE PDP CONTEXT REQUEST message an ACTIVATE PDP CONTEXT ACCEPT is returned by the SS with the same requested QoS.	

Values for test purpose GN_GI A_PDP_CR_GEN_R98_07	
VA_01	MT_IDreq: 100 octet/h PT_IDreq: 4 000 octet/s
VA_02	MT_IDreq: 200 octet/h PT_IDreq: 4 000 octet/s
VA_03	MT_IDreq: 500 octet/h PT_IDreq: 4 000 octet/s
VA_04	MT_IDreq: 1000 octet/h PT_IDreq: 4 000 octet/s
VA_05	MT_IDreq: 2000 octet/h PT_IDreq: 4 000 octet/s
VA_06	MT_IDreq: 5000 octet/h PT_IDreq: 4 000 octet/s
VA_07	MT_IDreq: 10 000 octet/h PT_IDreq: 4 000 octet/s
VA_08	MT_IDreq: 20 000 octet/h PT_IDreq: 4 000 octet/s
VA_09	MT_IDreq: 50 000 octet/h PT_IDreq: 4 000 octet/s
VA_10	MT_IDreq: 100 000 octet/h PT_IDreq: 4 000 octet/s
VA_11	MT_IDreq: 200 000 octet/h PT_IDreq: 4 000 octet/s
VA_12	MT_IDreq: 500 000 octet/h PT_IDreq: 4 000 octet/s
VA_13	MT_IDreq: 1 000 000 octet/h (2,2 kbit/s) PT_IDreq: 4 000 octet/s
VA_14	MT_IDreq: 2 000 000 octet/h PT_IDreq: 4 000 octet/s
VA_15	MT_IDreq: 5 000 000 octet/h PT_IDreq: 4 000 octet/s

Values for test purpose GN	GI A_PDP_CR_GEN_R98_07
VA_16	MT_IDreq: 10 000 000 octet/h (22,2 kbit/s) PT_IDreq: 4 000 octet/s
VA_17	MT_IDreq: 20 000 000 octet/h PT_IDreq: 8 000 octet/s
VA_18	MT_IDreq: 50 000 000 octet/h PT_IDreq: 16 000 octet/s
VA_19	MT_IDreq: Best effort

## 8.2 Basic GPRS scenarios

### 8.2.1 Successful

#### 8.2.1.1 Activate Secondary PDP Context Request

GN__GI A_SPDP_CR 01	<b>GSM ref. to:</b> TS 124 008 [1] clause 6.1.3.2.1	
<b>TSS reference:</b>	Packet Services GSM-IP Network/Control Plane/Successful/GPRS/ACTIVATE SECONDARY PDP CONTEXT REQUEST	
<b>GSM selection criteria:</b>	None	
<b>IP selection criteria:</b>	None	
<b>Test purpose:</b>	<p>Ensure that the network, on receipt of an ACTIVATE SECONDARY PDP CONTEXT REQUEST message from the MS with Linked TI of the previous ACTIVATE PDP CONTEXT REQUEST message, QoS Requested compatible with the specific user subscription and TFT, sends an ACTIVATE SECONDARY PDP CONTEXT ACCEPT message with QoS parameter values compatible with the user subscribed QoS and the requested QoS.</p> <p>The MS shall initiate establishment of the logical link for the LLC SAPI indicated by the network with the offered QoS and selected radio priority level if no logical link has been already established for that SAPI.</p>	
<b>GSM parameter values:</b>	<p>QoS Requested:            Reliability class: RC_IDreq            Delay class: DC_IDreq            Precedence class: PC_IDreq            Peak throughput: PT_IDreq            Mean throughput: MT_IDreq            QoS Negotiated            Reliability class: RC_IDneg            Delay class: DC_IDneg            Precedence class: PC_IDneg            Peak throughput: PT_IDneg            Mean throughput: MT_IDneg            Other parameters:            IMSI_QoSxx: IMSI associated to a specific QoS (PIXIT)            PDP type organization: IETF allocated address            PDP type number value: PDP_TNV_ID (PIXIT)            Delivery of erroneous SDU: DoesDU_ID (PIXIT)            Delivery order: DO_ID (PIXIT)            Traffic class: TC_ID (PIXIT)            Maximum SDU size: M_SDU_S_ID (PIXIT)            Maximum bit rate for uplink: MBRFU_ID (PIXIT)            Maximum bit rate for downlink: MBRFD_ID (PIXIT)            Residual Bit Error Rate: RBER_ID (PIXIT)            SDU error ratio: SDU_ER_ID (PIXIT)            Traffic handling priority: THP_ID (PIXIT)            Transfer delay: TD_ID (PIXIT)            TFT: TFT_ID (PIXIT)</p>	
<b>IP parameter values:</b>	IP Address: GPRS_A_IP_ADD (PIXIT); GPRS_B_IP_ADD (PIXIT) IP version = IPv4	
<b>Comments:</b>	For the corresponding test cases specific users IMSI_QoSxx with subscribed QoS parameters set as RC_IDneg, DC_IDneg, PC_IDneg, PT_IDneg, MT_IDneg shall be used.	

Values for test purpose GN_GI A_SPDP_CR 01	
VA_01	<b>RC_IDreq:</b> Unacknowledged GTP, LLC, and RLC, Unprotected data <b>DC_IDreq:</b> Delay class 4 (best effort) <b>PC_IDreq:</b> Low priority <b>PT_IDreq:</b> Up to 32 000 octet/s <b>MT_IDreq:</b> Best effort <b>RC_IDneg:</b> Unacknowledged GTP, LLC, and RLC, Unprotected data <b>DC_IDneg:</b> Delay class 4 (best effort) <b>PC_IDneg:</b> Low priority <b>PT_IDneg:</b> Up to 32 000 octet/s <b>MT_IDneg:</b> Best effort
VA_02	<b>RC_IDreq:</b> Subscribed reliability class <b>DC_IDreq:</b> Subscribed delay class <b>PC_IDreq:</b> Subscribed precedence <b>PT_IDreq:</b> Subscribed peak throughput <b>MT_IDreq:</b> Subscribed mean throughput <b>RC_IDneg:</b> Unacknowledged GTP, LLC, and RLC, Unprotected data <b>DC_IDneg:</b> Delay class 4 (best effort) <b>PC_IDneg:</b> Low priority <b>PT_IDneg:</b> Up to 32 000 octet/s <b>MT_IDneg:</b> Best effort

## 8.2.1.2 Modify PDP Context Request

GN__GI M_PDP_CR 01	<b>GSM ref. to:</b> TS 124 008 [1] clause 6.1.3.3.2
<b>TSS reference:</b>	Packet Services GSM-IP Network/Control Plane/Successful/GPRS/MODIFY PDP CONTEXT REQUEST
<b>GSM selection criteria:</b>	None
<b>IP selection criteria:</b>	None
<b>Test purpose:</b>	Ensure that the network, on receipt of a MODIFY PDP CONTEXT REQUEST message from the MS with TI of the previous ACTIVATE PDP CONTEXT REQUEST message, QoS Requested compatible with the specific user subscription and TFT, sends a MODIFY PDP CONTEXT ACCEPT message with negotiated QoS and radio priority level based on the new QoS profile and the negotiated LLC SAPI.
<b>GSM parameter values:</b>	QoS Requested Reliability class: RC_IDreq Delay class: DC_IDreq Precedence class: PC_IDreq Peak throughput: PT_IDreq Mean throughput: MT_IDreq QoS Negotiated Reliability class: RC_IDneg Delay class: DC_IDneg Precedence class: PC_IDneg Peak throughput: PT_IDneg Mean throughput: MT_IDneg Other parameters: IMSI_QoSxx: IMSI associated to a specific QoS (PIXIT) PDP type organization: IETF allocated address PDP type number value: PDP_TNV_ID (PIXIT) Delivery of erroneous SDU: DoeSDU_ID (PIXIT) Delivery order: DO_ID (PIXIT) Traffic class: TC_ID (PIXIT) Maximum SDU size: M_SDU_S_ID (PIXIT) Maximum bit rate for uplink: MBRFU_ID (PIXIT) Maximum bit rate for downlink: MBRFD_ID (PIXIT) Residual Bit Error Rate: RBER_ID (PIXIT) SDU error ratio: SDU_ER_ID (PIXIT) Traffic handling priority: THP_ID (PIXIT) Transfer delay: TD_ID (PIXIT) TFT: TFT_ID (PIXIT)
<b>IP parameter values:</b>	IP Address: GPRS_A_IP_ADD (PIXIT); GPRS_B_IP_ADD (PIXIT) IP version = IPv4
<b>Comments:</b>	For the corresponding test cases specific users IMSI_QoSxx with subscribed QoS parameters set as RC_IDneg, DC_IDneg, PC_IDneg, PT_IDneg, MT_IDneg shall be used.

Values for test purpose GN__GI M_PDP_CR 01_xx	
VA_01	<b>RC_IDreq:</b> Unacknowledged GTP, LLC, and RLC, Unprotected data <b>DC_IDreq:</b> Delay class 4 (best effort) <b>PC_IDreq:</b> Low priority <b>PT_IDreq:</b> Up to 32 000 octet/s <b>MT_Idreq:</b> Best effort <b>RC_IDneg:</b> Unacknowledged GTP, LLC, and RLC, Unprotected data <b>DC_IDneg:</b> Delay class 4 (best effort) <b>PC_IDneg:</b> Low priority <b>PT_IDneg:</b> Up to 32 000 octet/s <b>MT_Idneg:</b> Best effort

Values for test purpose GN_GI M_PDP_CR 01_xx	
VA_02	<b>RC_IDreq:</b> Subscribed reliability class <b>DC_IDreq:</b> Subscribed delay class <b>PC_IDreq:</b> Subscribed precedence <b>PT_IDreq:</b> Subscribed peak throughput <b>MT_IDreq:</b> Subscribed mean throughput <b>RC_IDneg:</b> Unacknowledged GTP, LLC, and RLC, Unprotected data <b>DC_IDneg:</b> Delay class 4 (best effort) <b>PC_IDneg:</b> Low priority <b>PT_IDneg:</b> Up to 32 000 octet/s <b>MT_IDneg:</b> Best effort

### 8.2.1.3 PDP context deactivation

#### 8.2.1.3.1 PDP context deactivation initiated by the UE

GN_GI D_PDP_CR 01	<b>GSM ref. to:</b> TS 124 008 [1] clause 6.1.3.4.1	
<b>TSS reference:</b>	Packet Services GSM-IP Network/Control Plane/Successful/GPRS/DEACTIVATE PDP CONTEXT REQUEST	
<b>GSM selection criteria:</b>	BS 70	
<b>IP selection criteria:</b>	None	
<b>Test purpose:</b>	A PDP context is activated by the user and accepted by the SS. The context deactivation is then requested by the user. The UE shall send a DEACTIVATE PDP CONTEXT REQUEST message to the SS. The SS shall then reply with a DEACTIVATE PDP CONTEXT ACCEPT message. The SS shall then wait for T3390 seconds to ensure T3390 has been stopped and that no further messages are sent from the UE. The SS shall then send a MODIFY PDP CONTEXT REQUEST for the deactivated context and the UE shall reply with an SM STATUS message with cause #81 "transaction identifier not known".	
<b>GSM parameter values:</b>	QoS Requested: PDP type organization: PCO_ID PDP type number value: PDP_TNV_ID (PIXIT) Reliability class: RC_IDreq (PIXIT) Delay class: DC_IDreq (PIXIT) Precedence class: PC_IDreq (PIXIT) Peak throughput: PT_IDreq (PIXIT) Mean throughput: MT_IDreq (PIXIT) Delivery of erroneous SDU: DoeSDU_IDreq (PIXIT) Delivery order: DO_IDreq (PIXIT) Traffic class: TC_IDreq (PIXIT) Maximum SDU size: M_SDU_S_IDreq(PIXIT) Maximum bit rate for uplink: MBRFU_IDreq (PIXIT) Maximum bit rate for downlink: MBRFD_IDreq (PIXIT) Residual Bit Error Rate: RBER_IDreq (PIXIT) SDU error ratio: SDU_ER_IDreq (PIXIT) Traffic handling priority: THP_IDreq (PIXIT) Transfer delay: TD_IDreq (PIXIT) Guaranteed bit rate for uplink: GBRU_IDreq (PIXIT) Guaranteed bit rate for downlink: BRD_IDreq (PIXIT) SM cause: CAUSE_VAL	
<b>IP parameter values:</b>	IP Address: GPRS_A_IP_ADD (PIXIT); GPRS_B_IP_ADD (PIXIT)	
<b>Comments:</b>		

Values for test purpose GN_GI D_PDP_CR 01	
VA_01	<b>CAUSE_VAL:</b> #25 (LLC or SNDCP failure (GSM only))
VA_02	<b>CAUSE_VAL:</b> #26 (insufficient resources)
VA_03	<b>CAUSE_VAL:</b> #36 (regular PDP context deactivation)
VA_04	<b>CAUSE_VAL:</b> #37 (QoS not accepted)



Expected sequence				
Step	Direction		Message	Comments
	UE	SS		
1		UE		Initiate a context activation
2	→		ACTIVATE PDP CONTEXT REQUEST	Activate a PDP context
3	←		ACTIVATE PDP CONTEXT ACCEPT	Accept the PDP context
4		UE		Initiate a context deactivation
5	→		DEACTIVATE PDP CONTEXT REQUEST	Request a deactivation of a PDP context
6	←		DEACTIVATE PDP CONTEXT ACCEPT	Accept the PDP context deactivation
7		SS		Wait for T3390 seconds to ensure no further deactivate request messages are sent
8	←		MODIFY PDP CONTEXT REQUEST (NETWORK TO UE DIRECTION)	Send a modify request to UE for the deactivated context.
9	→		SM STATUS	Cause set to #81

GN__GI D_PDP_CR 02	<b>GSM ref. to:</b> TS 124 008 [1] clause 6.1.3.4.1	
<b>TSS reference:</b>	Packet Services GSM-IP Network/Control Plane/Successful/GPRS/DEACTIVATE PDP CONTEXT REQUEST	
<b>GSM selection criteria:</b>	None	
<b>IP selection criteria:</b>	None	
<b>Test purpose:</b>	Ensure that the network, on receipt of a DEACTIVATE PDP CONTEXT REQUEST message from the MS with TI and NSAPI corresponding to a currently active PDP context and tear down indicator information element included, sends a DEACTIVATE PDP CONTEXT ACCEPT message and deactivates all active PDP contexts sharing the same PDP address as the one associated with the specific TI.	
<b>GSM parameter values:</b>	SM cause: CAUSE_VAL	
<b>IP parameter values:</b>		
<b>Comments:</b>		

Values for test purpose GN__GI D_PDP_CR 02	
VA_01	<b>CAUSE_VAL:</b> #25 (LLC or SMDCP failure (GSM only))
VA_02	<b>CAUSE_VAL:</b> #26 (insufficient resources)
VA_03	<b>CAUSE_VAL:</b> #36 (regular PDP context deactivation)
VA_04	<b>CAUSE_VAL:</b> #37 (QoS not accepted)

## 8.2.1.3.2 PDP context deactivation initiated by the network

GN__GI D_PDP_CR 03	<b>GSM ref. to:</b> TS 124 008 [1] clause 6.1.3.4.	
<b>TSS reference:</b>	Packet Services GSM-IP Network/Control Plane/Successful/GPRS/DEACTIVATE PDP CONTEXT REQUEST	
<b>GSM selection criteria:</b>	BS 70	
<b>IP selection criteria:</b>	None	
<b>Test purpose:</b>	A PDP context is activated by the user and accepted by the SS. A DEACTIVATE PDP CONTEXT REQUEST message is then sent by the SS. The UE shall reply with a DEACTIVATE PDP CONTEXT ACCEPT message. The SS shall then send a MODIFY PDP CONTEXT REQUEST for the deactivated context and the UE shall reply with an SM STATUS message with cause #81 "transaction identifier not known".	
<b>GSM parameter values:</b>	QoS Requested: PDP type organization: PCO_ID PDP type number value: PDP_TNV_ID (PIXIT) Reliability class: RC_IDreq (PIXIT) Delay class: DC_IDreq (PIXIT) Precedence class: PC_IDreq (PIXIT) Peak throughput: PT_IDreq (PIXIT) Mean throughput: MT_IDreq (PIXIT) Delivery of erroneous SDU: DoeSDU_IDreq (PIXIT) Delivery order: DO_IDreq (PIXIT) Traffic class: TC_IDreq (PIXIT) Maximum SDU size: M_SDU_S_IDreq(PIXIT) Maximum bit rate for uplink: MBRFU_IDreq (PIXIT) Maximum bit rate for downlink: MBRFD_IDreq (PIXIT) Residual Bit Error Rate: RBER_IDreq (PIXIT) SDU error ratio: SDU_ER_IDreq (PIXIT) Traffic handling priority: THP_IDreq (PIXIT) Transfer delay: TD_IDreq (PIXIT) Guaranteed bit rate for uplink: GBRU_IDreq (PIXIT) Guaranteed bit rate for downlink: BRD_IDreq (PIXIT)	
<b>IP parameter values:</b>	IP Address: GPRS_A_IP_ADD (PIXIT); GPRS_B_IP_ADD (PIXIT)	
<b>Comments:</b>		

Expected sequence				
Step	Direction		Message	Comments
	UE	SS		
1	UE			Initiate a context activation
2	→		ACTIVATE PDP CONTEXT REQUEST	Activate a PDP context
3	←		ACTIVATE PDP CONTEXT ACCEPT	Accept the PDP context
4	←		DEACTIVATE PDP CONTEXT REQUEST	Request a deactivation of a PDP context
5	→		DEACTIVATE PDP CONTEXT ACCEPT	Accept the PDP context deactivation.
6	←		MODIFY PDP CONTEXT REQUEST (NETWORK TO UE DIRECTION)	Send a modify request to UE for the deactivated context.
7	→		SM STATUS	Cause set to #81

## 8.2.1.4 Unsuccessful

## 8.2.1.4.1 Activate PDP Context Request-unsuccessful

GN__GI_U A_PDP_CR 01	<b>GSM ref. to:</b> TS 124 008 [1] clause 6.1.3.1.3	
<b>TSS reference:</b>	Packet Services GSM-IP Network/Control Plane/Unsuccessful/GPRS/ACTIVATE PDP CONTEXT REQUEST	
<b>GSM selection criteria:</b>	none	
<b>IP selection criteria:</b>	none	
<b>Test purpose:</b>	Ensure that the network, on receipt of an ACTIVATE PDP CONTEXT REQUEST message from the MS with an Access point name Information Element that is not a valid DNS entry, sends an ACTIVATE PDP CONTEXT REJECT message with cause code #27 (missing or unknown APN).	
<b>GSM parameter values:</b>	Access point name: unknownAPN (PIXIT) Reliability class (PIXIT) Delay class (PIXIT) Precedence class (PIXIT) Peak throughput (PIXIT) Mean throughput (PIXIT) PDP type organization: IETF allocated address PDP type number value: PDP_TNV_ID (PIXIT) Delivery of erroneous SDU: DoeSDU_ID (PIXIT) Delivery order: DO_ID (PIXIT) Traffic class: TC_ID (PIXIT) Maximum SDU size: M_SDU_S_ID (PIXIT) Maximum bit rate for uplink: MBRFU_ID (PIXIT) Maximum bit rate for downlink: MBRFD_ID (PIXIT) Residual Bit Error Rate: RBER_ID (PIXIT) SDU error ratio: SDU_ER_ID (PIXIT) Traffic handling priority: THP_ID (PIXIT) Transfer delay: TD_ID (PIXIT)	
<b>IP parameter values:</b>	IP Address: GPRS_A_IP_ADD (PIXIT); GPRS_B_IP_ADD (PIXIT) IP version = IPv4	
<b>Comments:</b>		

GN__GI_U A_PDP_CR 02	<b>GSM ref. to:</b> TS 124 008 [1] clause 6.1.3.1.3	
<b>TSS reference:</b>	Packet Services GSM-IP Network/Control Plane/Unsuccessful/GPRS/ACTIVATE PDP CONTEXT REQUEST	
<b>GSM selection criteria:</b>	none	
<b>IP selection criteria:</b>	none	
<b>Test purpose:</b>	Ensure that the network, on receipt of an ACTIVATE PDP CONTEXT REQUEST message from the MS with an unknown PDP address or type, sends an ACTIVATE PDP CONTEXT REJECT message with cause code #28 (unknown PDP address or type).	
<b>GSM parameter values:</b>	Reliability class (PIXIT) Delay class (PIXIT) Precedence class (PIXIT) Peak throughput (PIXIT) Mean throughput (PIXIT) PDP type organization: PDP_TO_ID PDP type number value: PDP_TNV_ID PDP address: PDP_ADDR_ID Delivery of erroneous SDU: DoeSDU_ID (PIXIT) Delivery order: DO_ID (PIXIT) Traffic class: TC_ID (PIXIT) Maximum SDU size: M_SDU_S_ID (PIXIT) Maximum bit rate for uplink: MBRFU_ID (PIXIT) Maximum bit rate for downlink: MBRFD_ID (PIXIT) Residual Bit Error Rate: RBER_ID (PIXIT) SDU error ratio: SDU_ER_ID (PIXIT) Traffic handling priority: THP_ID (PIXIT) Transfer delay: TD_ID (PIXIT)	
<b>IP parameter values:</b>	UDP destination. port number for request messages = UDP_ID (PIXIT) IP version = IPv4	
<b>Comments:</b>		

Values for test purpose GN__GI_U A_PDP_CR 03_xx	
VA_01	<b>PDP_TO_ID:</b> IETF allocated address <b>PDP_TNV_ID:</b> IPv4 address <b>PDP_ADDR_ID:</b> unkIPaddr (PIXIT)
VA_02	<b>PDP_TO_ID:</b> 0011 <b>PDP_TNV_ID:</b> 0001 <b>PDP_ADDR_ID:</b> <empty>

GN __GI_U A_PDP_CR 03	<b>GSM ref. to:</b> TS 124 008 [1] clause 6.1.3.1.3	
<b>TSS reference:</b>	Packet Services GSM-IP Network/Control Plane/Unsuccessful/GPRS/ACTIVATE PDP CONTEXT REQUEST	
<b>GSM selection criteria:</b>	None	
<b>IP selection criteria:</b>	None	
<b>Test purpose:</b>	Ensure that the network, on receipt of an ACTIVATE PDP CONTEXT REQUEST message from the MS with incorrect authentication information, sends an ACTIVATE PDP CONTEXT REJECT message with cause code #29 (user authentication failed).	
<b>GSM parameter values:</b>	Reliability class (PIXIT) Delay class (PIXIT) Precedence class (PIXIT) Peak throughput (PIXIT) Mean throughput (PIXIT) PDP type organization: IETF allocated address PDP type number value: IPv4 address Delivery of erroneous SDU: DoeSDU_ID (PIXIT) Delivery order: DO_ID (PIXIT) Traffic class: TC_ID (PIXIT) Maximum SDU size: M_SDU_S_ID (PIXIT) Maximum bit rate for uplink: MBRFU_ID (PIXIT) Maximum bit rate for downlink: MBRFD_ID (PIXIT) Residual Bit Error Rate: RBER_ID (PIXIT) SDU error ratio: SDU_ER_ID (PIXIT) Traffic handling priority: THP_ID (PIXIT) Transfer delay: TD_ID (PIXIT) Protocol configuration options – Protocol ID 1: ProtocolID1 Protocol configuration options – Protocol ID 1 contents: ProtocolIDContents1 Protocol configuration options – Protocol ID 2: ProtocolID2 Protocol configuration options – Protocol ID 2 contents: ProtocolIDContents2	
<b>IP parameter values:</b>	IP Address: GPRS_A_IP_ADD (PIXIT); GPRS_B_IP_ADD (PIXIT) IP version = IPv4	
<b>Comments:</b>	The ACTIVATE PDP CONTEXT REJECT shall contain a cause. The MS shall stop the timer T3380 and enter/remain in state PDP-INACTIVE.	

Values for test purpose GN __GI_U A_PDP_CR 04	
VA_01	ProtocolID1: PAP ProtocolIDContents1: <b>Code:</b> Authenticate Request <b>Peer ID:</b> <unknown user> (PIXIT) Password: "xxx" ProtocolID2: <empty> ProtocolIDContents2: <empty>
VA_02	ProtocolID1: PAP ProtocolIDContents1: <b>Code:</b> Authenticate Request <b>Peer ID:</b> <existing user> (PIXIT) <b>Password:</b> <wrong password> (PIXIT) ProtocolID2: <empty> ProtocolIDContents2: <empty>
VA_03	ProtocolID1: CHAP ProtocolIDContents1: <b>Code:</b> Challenge <b>Value:</b> (PIXIT) <b>Name:</b> (PIXIT) ProtocolID2: CHAP ProtocolIDContents2: <b>Code:</b> Response <b>Value:</b> (PIXIT) <b>Flags:</b> (PIXIT) <b>Name:</b> (PIXIT)

## 8.2.1.4.2 Activate Secondary PDP Context Request-unsuccessful

GN__GI_U A_SPDP_CR 01	<b>GSM ref. to:</b> TS 124 008 [1] clause 6.1.3.2.3	
<b>TSS reference:</b>	Packet Services GSM-IP Network/Control Plane/Unsuccessful/GPRS/ACTIVATE SECONDARY PDP CONTEXT REQUEST	
<b>GSM selection criteria:</b>	none	
<b>IP selection criteria:</b>	none	
<b>Test purpose:</b>	Ensure that the network, on receipt of an ACTIVATE SECONDARY PDP CONTEXT REQUEST message from the MS with Linked TI of the previous ACTIVATE PDP CONTEXT REQUEST message, QoS Requested compatible with the specific user subscription and TFT with semantic error (TFT operation is an operation other than "Create a new TFT"), sends an ACTIVATE SECONDARY PDP CONTEXT REJECT message with cause code #41 (semantic error in the TFT operation).	
<b>GSM parameter values:</b>	Reliability class: RC_ID (PIXIT) Delay class: DC_ID (PIXIT) Precedence class: PC_ID (PIXIT) Peak throughput: PT_ID (PIXIT) Mean throughput: MT_ID (PIXIT) PDP type number value: PDP_TNV_ID (PIXIT) Delivery of erroneous SDU: DoeSDU_ID (PIXIT) Delivery order: DO_ID (PIXIT) Traffic class: TC_ID (PIXIT) Maximum SDU size: M_SDU_S_ID (PIXIT) Maximum bit rate for uplink: MBRFU_ID (PIXIT) Maximum bit rate for downlink: MBRFD_ID (PIXIT) Residual Bit Error Rate: RBER_ID (PIXIT) SDU error ratio: SDU_ER_ID (PIXIT) Traffic handling priority: THP_ID (PIXIT) Transfer delay: TD_ID (PIXIT) TFT: TFT operation 110 (reserved)	
<b>IP parameter values:</b>	UDP destination. port number for request messages = UDP_ID (PIXIT) IP version = IPv4	
<b>Comments:</b>	The ACTIVATE PDP CONTEXT REJECT shall contain a cause. The MS shall stop the timer T3380 and enter/remain in state PDP-INACTIVE.	

GN__GI_U A_SPDP_CR 02_xx	<b>GSM ref. to:</b> TS 124 008 [1] clause 6.1.3.2.3	
<b>TSS reference:</b>	Packet Services GSM-IP Network/Control Plane/Unsuccessful/GPRS/ACTIVATE SECONDARY PDP CONTEXT REQUEST	
<b>GSM selection criteria:</b>	none	
<b>IP selection criteria:</b>	none	
<b>Test purpose:</b>	Ensure that the network, on receipt of an ACTIVATE SECONDARY PDP CONTEXT REQUEST message from the MS with Linked TI of the previous ACTIVATE PDP CONTEXT REQUEST message, QoS Requested compatible with the specific user subscription and TFT with syntactical error, sends an ACTIVATE SECONDARY PDP CONTEXT REJECT message with cause code #42 (syntactical error in the TFT operation).	
<b>GSM parameter values:</b>	Reliability class: RC_ID (PIXIT) Delay class: DC_ID (PIXIT) Precedence class: PC_ID (PIXIT) Peak throughput: PT_ID (PIXIT) Mean throughput: MT_ID (PIXIT) PDP type number value: PDP_TNV_ID (PIXIT) Delivery of erroneous SDU: DoeSDU_ID (PIXIT) Delivery order: DO_ID (PIXIT) Traffic class: TC_ID (PIXIT) Maximum SDU size: M_SDU_S_ID (PIXIT) Maximum bit rate for uplink: MBRFU_ID (PIXIT) Maximum bit rate for downlink: MBRFD_ID (PIXIT) Residual Bit Error Rate: RBER_ID (PIXIT) SDU error ratio: SDU_ER_ID (PIXIT) Traffic handling priority: THP_ID (PIXIT) Transfer delay: TD_ID (PIXIT) TFT: TFT_VAL	
<b>IP parameter values:</b>	UDP destination. port number for request messages = UDP_ID (PIXIT) IP version = IPv4	
<b>Comments:</b>	The ACTIVATE PDP CONTEXT REJECT shall contain a cause. The MS shall stop the timer T3380 and enter/remain in state PDP-INACTIVE.	

Values for test purpose GN__GI_U A_SPDP_CR 08_xx	
VA_01	<b>TFT_VAL:</b> TFT operation = "Create a new TFT", packet filter list in the TFT IE is empty
VA_02	<b>TFT_VAL:</b> mismatch between the number of packet filters subfield and the number of packet filters in the packet filter list

GN__GI_U A_SPDP_CR 03	<b>GSM ref. to:</b> TS 124 008 [1] clause 6.1.3.2.3	
<b>TSS reference:</b>	Packet Services GSM-IP Network/Control Plane/Unsuccessful/GPRS/ACTIVATE SECONDARY PDP CONTEXT REQUEST	
<b>GSM selection criteria:</b>	none	
<b>IP selection criteria:</b>	none	
<b>Test purpose:</b>	Ensure that the network, on receipt of an ACTIVATE SECONDARY PDP CONTEXT REQUEST message from the MS with Linked TI not corresponding to the TI of the previous ACTIVATE PDP CONTEXT REQUEST message, QoS Requested compatible with the specific user subscription and TFT, sends an ACTIVATE SECONDARY PDP CONTEXT REJECT message with cause code #43 (unknown PDP context).	
<b>GSM parameter values:</b>	Reliability class: RC_ID (PIXIT) Delay class: DC_ID (PIXIT) Precedence class: PC_ID (PIXIT) Peak throughput: PT_ID (PIXIT) Mean throughput: MT_ID (PIXIT) PDP type number value: PDP_TNV_ID (PIXIT) Delivery of erroneous SDU: DoeSDU_ID (PIXIT) Delivery order: DO_ID (PIXIT) Traffic class: TC_ID (PIXIT) Maximum SDU size: M_SDU_S_ID (PIXIT) Maximum bit rate for uplink: MBRFU_ID (PIXIT) Maximum bit rate for downlink: MBRFD_ID (PIXIT) Residual Bit Error Rate: RBER_ID (PIXIT) SDU error ratio: SDU_ER_ID (PIXIT) Traffic handling priority: THP_ID (PIXIT) Transfer delay: TD_ID (PIXIT) TFT: TFT_ID (PIXIT)	
<b>IP parameter values:</b>	IP Address: GPRS_A_IP_ADD (PIXIT); GPRS_B_IP_ADD (PIXIT) IP version = IPv4	
<b>Comments:</b>	The ACTIVATE PDP CONTEXT REJECT shall contain a cause. The MS shall stop the timer T3380 and enter/remain in state PDP-INACTIVE.	

GN__GI_U A_SPDP_CR 04	<b>GSM ref. to:</b> TS 124 008 [1] clause 6.1.3.2.3	
<b>TSS reference:</b>	Packet Services GSM-IP Network/Control Plane/Unsuccessful/GPRS/ACTIVATE SECONDARY PDP CONTEXT REQUEST	
<b>GSM selection criteria:</b>	none	
<b>IP selection criteria:</b>	none	
<b>Test purpose:</b>	Ensure that the network, on receipt of an ACTIVATE SECONDARY PDP CONTEXT REQUEST message from the MS with Linked TI corresponding to the TI of the previous ACTIVATE PDP CONTEXT REQUEST message, QoS Requested compatible with the specific user subscription and TFT with conflicting filter components, sends an ACTIVATE SECONDARY PDP CONTEXT REJECT message with cause code #44 (semantic error in packet filter(s)).	
<b>GSM parameter values:</b>	Reliability class: RC_ID (PIXIT) Delay class: DC_ID (PIXIT) Precedence class: PC_ID (PIXIT) Peak throughput: PT_ID (PIXIT) Mean throughput: MT_ID (PIXIT) PDP type number value: PDP_TNV_ID (PIXIT) Delivery of erroneous SDU: DoeSDU_ID (PIXIT) Delivery order: DO_ID (PIXIT) Traffic class: TC_ID (PIXIT) Maximum SDU size: M_SDU_S_ID (PIXIT) Maximum bit rate for uplink: MBRFU_ID (PIXIT) Maximum bit rate for downlink: MBRFD_ID (PIXIT) Residual Bit Error Rate: RBER_ID (PIXIT) SDU error ratio: SDU_ER_ID (PIXIT) Traffic handling priority: THP_ID (PIXIT) Transfer delay: TD_ID (PIXIT) TFT: conflicting filter components (such that no IP packet would ever fit this packet filter)	



<b>IP parameter values:</b>	IP Address: GPRS_A_IP_ADD (PIXIT); GPRS_B_IP_ADD (PIXIT) IP version = IPv4
<b>Comments:</b>	The ACTIVATE PDP CONTEXT REJECT shall contain a cause. The MS shall stop the timer T3380 and enter/remain in state PDP-INACTIVE.

GN__GI_U A_SPDP_CR 05_xx	<b>GSM ref. to:</b> TS 124 008 [1] clause 6.1.3.2.3
TSS reference:	Packet Services GSM-IP Network/Control Plane/Unsuccessful/GPRS/ACTIVATE SECONDARY PDP CONTEXT REQUEST
GSM selection criteria:	none
IP selection criteria:	none
Test purpose:	Ensure that the network, on receipt of an ACTIVATE SECONDARY PDP CONTEXT REQUEST message from the MS with Linked TI corresponding to the TI of the previous ACTIVATE PDP CONTEXT REQUEST message, QoS Requested compatible with the specific user subscription and TFT with conflicting filter components, sends an ACTIVATE SECONDARY PDP CONTEXT REJECT message with cause code #45 (syntactical error in packet filter(s)).
GSM parameter values:	Reliability class: RC_ID (PIXIT) Delay class: DC_ID (PIXIT) Precedence class: PC_ID (PIXIT) Peak throughput: PT_ID (PIXIT) Mean throughput: MT_ID (PIXIT) PDP type number value: PDP_TNV_ID (PIXIT) Delivery of erroneous SDU: DoeSDU_ID (PIXIT) Delivery order: DO_ID (PIXIT) Traffic class: TC_ID (PIXIT) Maximum SDU size: M_SDU_S_ID (PIXIT) Maximum bit rate for uplink: MBRFU_ID (PIXIT) Maximum bit rate for downlink: MBRFD_ID (PIXIT) Residual Bit Error Rate: RBER_ID (PIXIT) SDU error ratio: SDU_ER_ID (PIXIT) Traffic handling priority: THP_ID (PIXIT) Transfer delay: TD_ID (PIXIT) TFT: TFT_VAL
IP parameter values:	IP Address: GPRS_A_IP_ADD (PIXIT); GPRS_B_IP_ADD (PIXIT) IP version = IPv4
Comments:	The ACTIVATE PDP CONTEXT REJECT shall contain a cause. The MS shall stop the timer T3380 and enter/remain in state PDP-INACTIVE.

Values for test purpose GN__GI_U A_SPDP_CR 11_xx	
VA_01	<b>TFT_VAL:</b> TFT operation = "Create a new TFT", two packets with identical packet filter identifiers
VA_02	<b>TFT_VAL:</b> TFT operation = "Create a new TFT", two packets with identical packet filter precedence values

GN__GI_U A_SPDP_CR 06	<b>GSM ref. to:</b> TS 124 008 [1] clause 6.1.3.1.3	
<b>TSS reference:</b>	Packet Services GSM-IP Network/Control Plane/Unsuccessful/GPRS/ACTIVATE SECONDARY PDP CONTEXT REQUEST	
<b>GSM selection criteria:</b>	none	
<b>IP selection criteria:</b>	none	
<b>Test purpose:</b>	Ensure that the network, on receipt of an ACTIVATE SECONDARY PDP CONTEXT REQUEST message from the MS with Linked TI corresponding to the TI of the previous ACTIVATE PDP CONTEXT REQUEST message, QoS Requested compatible with the specific user subscription and no TFT, where the previously activated context has no TFT associated (i.e. no PDP context modification has taken place) sends an ACTIVATE SECONDARY PDP CONTEXT REJECT message with cause code #46 (PDP context without TFT already activated).	
<b>GSM parameter values:</b>	Reliability class: RC_ID (PIXIT) Delay class: DC_ID (PIXIT) Precedence class: PC_ID (PIXIT) Peak throughput: PT_ID (PIXIT) Mean throughput: MT_ID (PIXIT) PDP type number value: PDP_TNV_ID (PIXIT) Delivery of erroneous SDU: DoeSDU_ID (PIXIT) Delivery order: DO_ID (PIXIT) Traffic class: TC_ID (PIXIT) Maximum SDU size: M_SDU_S_ID (PIXIT) Maximum bit rate for uplink: MBRFU_ID (PIXIT) Maximum bit rate for downlink: MBRFD_ID (PIXIT) Residual Bit Error Rate: RBER_ID (PIXIT) SDU error ratio: SDU_ER_ID (PIXIT) Traffic handling priority: THP_ID (PIXIT) Transfer delay: TD_ID (PIXIT)	
<b>IP parameter values:</b>	IP Address: GPRS_A_IP_ADD (PIXIT); GPRS_B_IP_ADD (PIXIT) IP version = IPv4	
<b>Comments:</b>	The ACTIVATE PDP CONTEXT REJECT shall contain a cause. The MS shall stop the timer T3380 and enter/remain in state PDP-INACTIVE.	

## 8.2.1.4.3 PDP Context Modification - unsuccessful

GN__GI_UM_PDP_0 1	<b>GSM ref. to:</b> TS 124 008 [1] clause 6.1.3.3.3	
<b>TSS reference:</b>	Packet Services GSM-IP Network/Control Plane/Unsuccessful/GPRS/MODIFY PDP CONTEXT REQUEST	
<b>GSM selection criteria:</b>	none	
<b>IP selection criteria:</b>	none	
<b>Test purpose:</b>	Ensure that the network, on receipt of a MODIFY PDP CONTEXT REQUEST message from the MS with QoS Requested compatible with the specific user subscription and TFT with semantic error (TFT operation is an operation other than "Create a new TFT"), sends a MODIFY PDP CONTEXT REJECT message with cause code #41 (semantic error in the TFT operation).	
<b>GSM parameter values:</b>	Reliability class: RC_ID (PIXIT) Delay class: DC_ID (PIXIT) Precedence class: PC_ID (PIXIT) Peak throughput: PT_ID (PIXIT) Mean throughput: MT_ID (PIXIT) PDP type number value: PDP_TNV_ID (PIXIT) Delivery of erroneous SDU: DoeSDU_ID (PIXIT) Delivery order: DO_ID (PIXIT) Traffic class: TC_ID (PIXIT) Maximum SDU size: M_SDU_S_ID (PIXIT) Maximum bit rate for uplink: MBRFU_ID (PIXIT) Maximum bit rate for downlink: MBRFD_ID (PIXIT) Residual Bit Error Rate: RBER_ID (PIXIT) SDU error ratio: SDU_ER_ID (PIXIT) Traffic handling priority: THP_ID (PIXIT) Transfer delay: TD_ID (PIXIT) TFT: TFT operation 110 (reserved)	
<b>IP parameter values:</b>	IP Address: GPRS_A_IP_ADD (PIXIT); GPRS_B_IP_ADD (PIXIT) IP version = IPv4	
<b>Comments:</b>		

GN__GI_UM_PDP_02_xx	<b>GSM ref. to:</b> TS 124 008 [1] clause 6.1.3.3.3
<b>TSS reference:</b>	Packet Services GSM-IP Network/Control Plane/Unsuccessful/GPRS/MODIFY PDP CONTEXT REQUEST
<b>GSM selection criteria:</b>	none
<b>IP selection criteria:</b>	none
<b>Test purpose:</b>	Ensure that the network, on receipt of a MODIFY PDP CONTEXT REQUEST message from the MS with QoS Requested compatible with the specific user subscription and TFT with syntactical error, sends a MODIFY PDP CONTEXT REJECT message with cause code #42 (syntactical error in the TFT operation).
<b>GSM parameter values:</b>	Reliability class: RC_ID (PIXIT) Delay class: DC_ID (PIXIT) Precedence class: PC_ID (PIXIT) Peak throughput: PT_ID (PIXIT) Mean throughput: MT_ID (PIXIT) PDP type number value: PDP_TNV_ID (PIXIT) Delivery of erroneous SDU: DoeSDU_ID (PIXIT) Delivery order: DO_ID (PIXIT) Traffic class: TC_ID (PIXIT) Maximum SDU size: M_SDU_S_ID (PIXIT) Maximum bit rate for uplink: MBRFU_ID (PIXIT) Maximum bit rate for downlink: MBRFD_ID (PIXIT) Residual Bit Error Rate: RBER_ID (PIXIT) SDU error ratio: SDU_ER_ID (PIXIT) Traffic handling priority: THP_ID (PIXIT) Transfer delay: TD_ID (PIXIT) TFT: TFT_VAL
<b>IP parameter values:</b>	IP Address: GPRS_A_IP_ADD (PIXIT); GPRS_B_IP_ADD (PIXIT) IP version = IPv4
<b>Comments:</b>	

Values for test purpose GN__GI_UM_PDP_02_xx	
VA_01	<b>TFT_VAL:</b> TFT operation = "Create a new TFT", packet filter list in the TFT IE is empty
VA_02	<b>TFT_VAL:</b> mismatch between the number of packet filters subfield and the number of packet filters in the packet filter list

GN__GI_UM_PDP_0 3	<b>GSM ref. to:</b> TS 124 008 [1] clause 6.1.3.3.3	
<b>TSS reference:</b>	Packet Services GSM-IP Network/Control Plane/Unsuccessful/GPRS/MODIFY PDP CONTEXT REQUEST	
<b>GSM selection criteria:</b>	none	
<b>IP selection criteria:</b>	none	
<b>Test purpose:</b>	Ensure that the network, on receipt of a MODIFY PDP CONTEXT REQUEST message from the MS with TI not corresponding to the previous ACTIVATE PDP CONTEXT REQUEST message, sends a MODIFY PDP CONTEXT REJECT message with cause code #43 (unknown PDP context).	
<b>GSM parameter values:</b>	Reliability class: RC_ID (PIXIT) Delay class: DC_ID (PIXIT) Precedence class: PC_ID (PIXIT) Peak throughput: PT_ID (PIXIT) Mean throughput: MT_ID (PIXIT) PDP type number value: PDP_TNV_ID (PIXIT) Delivery of erroneous SDU: DoeSDU_ID (PIXIT) Delivery order: DO_ID (PIXIT) Traffic class: TC_ID (PIXIT) Maximum SDU size: M_SDU_S_ID (PIXIT) Maximum bit rate for uplink: MBRFU_ID (PIXIT) Maximum bit rate for downlink: MBRFD_ID (PIXIT) Residual Bit Error Rate: RBER_ID (PIXIT) SDU error ratio: SDU_ER_ID (PIXIT) Traffic handling priority: THP_ID (PIXIT) Transfer delay: TD_ID (PIXIT) TFT: TFT_ID (PIXIT)	
<b>IP parameter values:</b>	IP Address: GPRS_A_IP_ADD (PIXIT); GPRS_B_IP_ADD (PIXIT) IP version = IPv4	
<b>Comments:</b>		

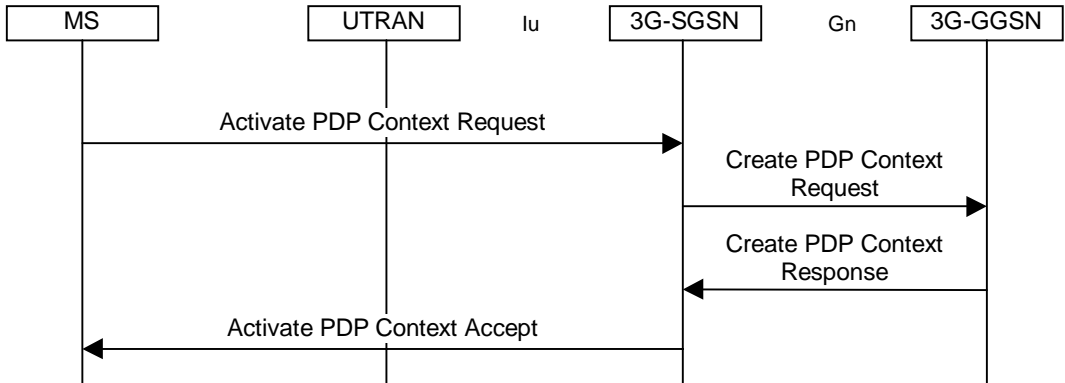
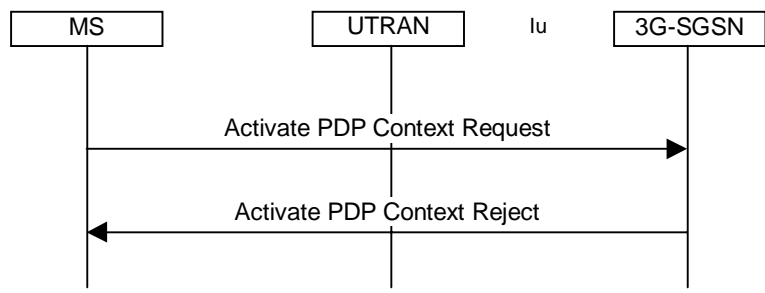
GN__GI_UM_PDP_0 4	<b>GSM ref. to:</b> TS 124 008 [1] clause 6.1.3.3.3	
<b>TSS reference:</b>	Packet Services GSM-IP Network/Control Plane/Unsuccessful/GPRS/MODIFY PDP CONTEXT REQUEST	
<b>GSM selection criteria:</b>	none	
<b>IP selection criteria:</b>	none	
<b>Test purpose:</b>	Ensure that the network, on receipt of a MODIFY PDP CONTEXT REQUEST message from the MS with TI not corresponding to the previous ACTIVATE PDP CONTEXT REQUEST message TFT with conflicting filter components, sends a MODIFY PDP CONTEXT REJECT message with cause code #44 (semantic error in packet filter(s)).	
<b>GSM parameter values:</b>	Reliability class: RC_ID (PIXIT) Delay class: DC_ID (PIXIT) Precedence class: PC_ID (PIXIT) Peak throughput: PT_ID (PIXIT) Mean throughput: MT_ID (PIXIT) PDP type number value: PDP_TNV_ID (PIXIT) Delivery of erroneous SDU: DoeSDU_ID (PIXIT) Delivery order: DO_ID (PIXIT) Traffic class: TC_ID (PIXIT) Maximum SDU size: M_SDU_S_ID (PIXIT) Maximum bit rate for uplink: MBRFU_ID (PIXIT) Maximum bit rate for downlink: MBRFD_ID (PIXIT) Residual Bit Error Rate: RBER_ID (PIXIT) SDU error ratio: SDU_ER_ID (PIXIT) Traffic handling priority: THP_ID (PIXIT) Transfer delay: TD_ID (PIXIT) TFT: conflicting filter components (such that no IP packet would ever fit this packet filter)	
<b>IP parameter values:</b>	IP Address: GPRS_A_IP_ADD (PIXIT); GPRS_B_IP_ADD (PIXIT) IP version = IPv4	
<b>Comments:</b>		

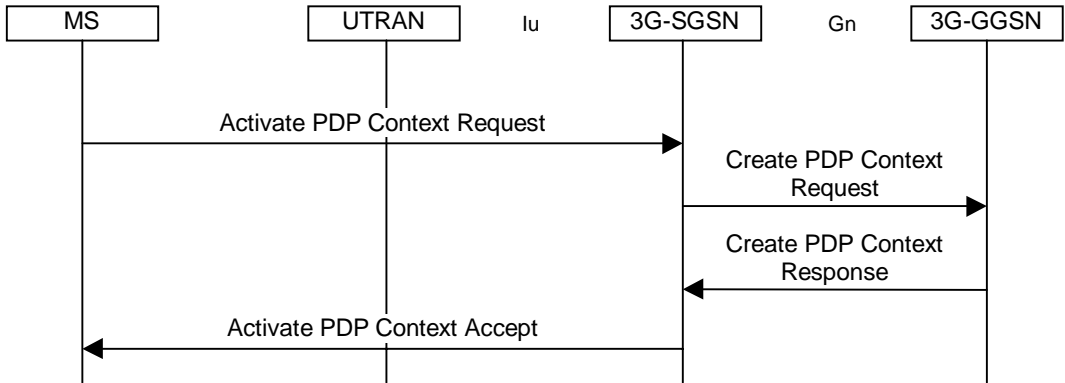
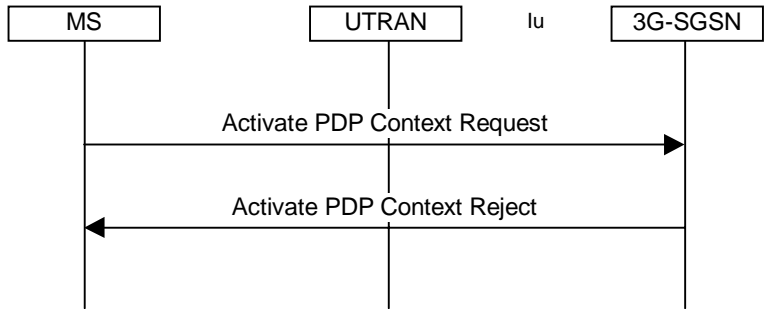
GN__GI_UM_PDP_05_xx	<b>GSM ref. to:</b> TS 124 008 [1] clause 6.1.3.3.3	
<b>TSS reference:</b>	Packet Services GSM-IP Network/Control Plane/Unsuccessful/GPRS/MODIFY PDP CONTEXT REQUEST	
<b>GSM selection criteria:</b>	none	
<b>IP selection criteria:</b>	none	
<b>Test purpose:</b>	Ensure that the network, on receipt of a MODIFY PDP CONTEXT REQUEST message from the MS with TI not corresponding to the previous ACTIVATE PDP CONTEXT REQUEST message TFT with conflicting filter components, sends a MODIFY PDP CONTEXT REJECT message with cause code #45 (syntactical error in packet filter(s)).	
<b>GSM parameter values:</b>	Reliability class: RC_ID (PIXIT) Delay class: DC_ID (PIXIT) Precedence class: PC_ID (PIXIT) Peak throughput: PT_ID (PIXIT) Mean throughput: MT_ID (PIXIT) PDP type number value: PDP_TNV_ID (PIXIT) Delivery of erroneous SDU: DoeSDU_ID (PIXIT) Delivery order: DO_ID (PIXIT) Traffic class: TC_ID (PIXIT) Maximum SDU size: M_SDU_S_ID (PIXIT) Maximum bit rate for uplink: MBRFU_ID (PIXIT) Maximum bit rate for downlink: MBRFD_ID (PIXIT) Residual Bit Error Rate: RBER_ID (PIXIT) SDU error ratio: SDU_ER_ID (PIXIT) Traffic handling priority: THP_ID (PIXIT) Transfer delay: TD_ID (PIXIT) TFT: TFT_VAL	
<b>IP parameter values:</b>	IP Address: GPRS_A_IP_ADD (PIXIT); GPRS_B_IP_ADD (PIXIT) IP version = IPv4	
<b>Comments:</b>		

Values for test purpose GN__GI_UM_PDP_05_xx	
VA_01	<b>TFT_VAL:</b> TFT operation = "Create a new TFT", two packets with identical packet filter identifiers
VA_02	<b>TFT_VAL:</b> TFT operation = "Create a new TFT", two packets with identical packet filter precedence values

## Annex A (normative): Other testings

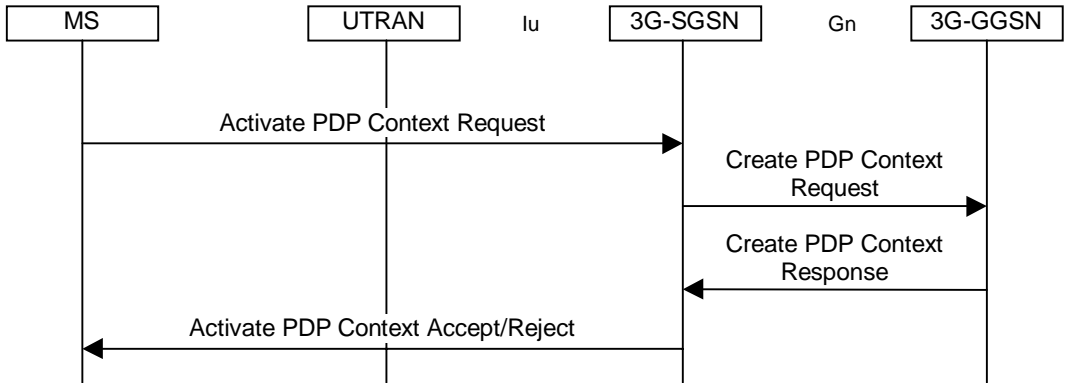
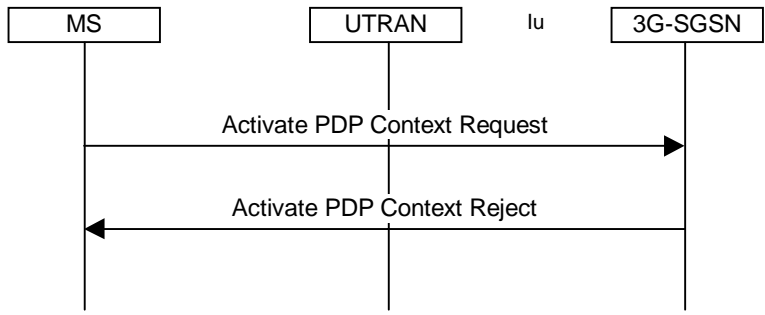
### A.1 Session Management Tests

GN_GI_SMT_01
Session Management – PDP Context Activation; APN SELECTION RULES, DYNAMIC PDP ADDRESS
GOAL: this test aims to demonstrate the SGSN capability to handle the APN on the base of the subscriber profile stored in the HLR and of the subscriber requests.
INTERFACES: <b>Iu</b> , <b>Gn</b> , Gi.
REQUIREMENTS: The subscriber has only one PDPC subscribed in the HLR, for a specific APN and dynamic IP address. The MS must be GPRS <i>attached</i> .
PROCEDURE DESCRIPTION: <b>Case A:</b> Perform a PDP Context Activation procedure without sending any APN. <b>Case B:</b> Perform a PDP Context Activation procedure sending an APN different from the subscribed one.
EXPECTED RESULTS: <b>Case A:</b> 1. Verify the following message flow:  <pre> sequenceDiagram     participant MS     participant UTRAN     participant SGSN as 3G-SGSN     participant GGSN as 3G-GGSN     MS-&gt;&gt;SGSN: Activate PDP Context Request     SGSN-&gt;&gt;GGSN: Create PDP Context Request     GGSN--&gt;&gt;SGSN: Create PDP Context Response     SGSN--&gt;&gt;MS: Activate PDP Context Accept     </pre>
2. Verify the following message field: <b>Create PDP context Request:</b> Selection Mode=<subscribed>.
3. Verify the successful activation of the PDPC.
<b>Case B:</b> 1. Verify the following message flow:  <pre> sequenceDiagram     participant MS     participant UTRAN     participant SGSN as 3G-SGSN     MS-&gt;&gt;SGSN: Activate PDP Context Request     SGSN--&gt;&gt;MS: Activate PDP Context Reject     </pre>
2. Verify the following message field: <b>Activate PDP Context Reject:</b> Cause="requested service option not subscribed"
3. Verify the unsuccessful activation of the PDPC.

GN_GI_SMT_02
Session Management – PDP Context Activation ; APN SELECTION RULES, STATIC PDP ADDRESS
GOAL: This test aims to demonstrate the SGSN capability to handle the APN on the base of the subscriber profile stored in the HLR and of the subscriber requests.
INTERFACES: <b>Iu</b> , <b>Gn</b> , Gi.
REQUIREMENTS: The subscriber has only one PDPC subscribed in the HLR, for a specific APN and static IP address. The MS must be GPRS <i>attached</i> .
PROCEDURE DESCRIPTION: <b>Case A:</b> Perform a PDP Context Activation procedure sending the APN and PDP address subscribed. <b>Case B:</b> Perform a PDP Context Activation procedure sending the APN subscribed and a PDP address different from the subscribed one.
EXPECTED RESULTS: <b>Case A:</b> 1. Verify the following message flow:  <pre> sequenceDiagram     participant MS     participant UTRAN     participant SGSN as 3G-SGSN     participant GGSN as 3G-GGSN     MS-&gt;&gt;SGSN: Activate PDP Context Request     SGSN-&gt;&gt;GGSN: Create PDP Context Request     GGSN--&gt;&gt;SGSN: Create PDP Context Response     SGSN--&gt;&gt;MS: Activate PDP Context Accept     </pre>
2. Verify the following message field: <b>Create PDP context Request:</b> Selection Mode=<subscribed>.
3. Verify the successful PDP Context activation.
<b>Case B:</b> 1. Verify the following message flow:  <pre> sequenceDiagram     participant MS     participant UTRAN     participant SGSN as 3G-SGSN     MS-&gt;&gt;SGSN: Activate PDP Context Request     SGSN--&gt;&gt;MS: Activate PDP Context Reject     </pre>
2. Verify the following message field: <b>Activate PDP Context Reject:</b> Cause="Unknown PDP address or PDP type".
3. Verify the unsuccessful PDP Context activation.



GN_GI_SMT_03
Session Management – PDP Context Activation ; APN SELECTION RULES, TWO PDPC SUBSCRIBED
GOAL: This test aims to demonstrate the SGSN capability to handle the APN on the base of the subscriber profile stored in the HLR and of the subscriber requests.
INTERFACES: <b>Iu</b> , <b>Gn</b> , Gi.
REQUIREMENTS: The subscriber has two PDPC subscribed in the HLR with two APN specified and dynamic IP address. The MS must be GPRS attached.
PROCEDURE DESCRIPTION: 1. Perform a PDPC activation procedure without sending any APN.
EXPECTED RESULTS: 1. Verify the following message flow:
<pre> sequenceDiagram     participant MS     participant UTRAN     participant 3G_SGSN as 3G-SGSN     UTRAN-&gt;&gt;3G_SGSN: Activate PDP Context Request     3G_SGSN--&gt;&gt;MS: Activate PDP Context Reject   </pre>
2. Verify the following message field: <b>Activate PDP Context Reject:</b> Cause="Missing or unknown APN"
3. Verify the unsuccessful PDP Context activation.

GN_GI_SMT_04
Session Management – PDP Context Activation ; APN SELECTION RULES, WILCARD SUBSCRIBED
GOAL: This test aims to demonstrate the SGSN capability to handle the APN on the base of the subscriber profile stored in the HLR and of the subscriber requests.
INTERFACES: <b>Iu</b> , <b>Gn</b> , Gi.
REQUIREMENTS: The subscriber has one PDPC subscribed in the HLR with <i>wildcard</i> APN. The MS must be GPRS attached.
PROCEDURE DESCRIPTION: <b>Case A:</b> Perform a PDPC Activation procedure without sending any APN. <b>Case B:</b> Perform a PDPC Activation procedure sending an APN known to the GSNs. <b>Case C:</b> Perform a PDPC Activation procedure sending an APN unknown to the GGSN (See note 1). <b>Case D:</b> Perform a PDPC Activation procedure sending an APN unknown to the SGSN (See note 2).
EXPECTED RESULTS: 1. Verify the following message flow:  <pre> sequenceDiagram     participant MS     participant UTRAN     participant SGSN as 3G-SGSN     participant GGSN as 3G-GGSN     MS-&gt;&gt;SGSN: Activate PDP Context Request     SGSN-&gt;&gt;GGSN: Create PDP Context Request     GGSN--&gt;&gt;SGSN: Create PDP Context Response     SGSN--&gt;&gt;MS: Activate PDP Context Accept/Reject     </pre>
<b>Case A:</b> 2. Verify the following message field: <b>Create PDP context Request:</b> Selection Mode=<chosen by SGSN>. 3. Verify the successful PDP Context activation.
<b>Case B:</b> 2. Verify the following message field: <b>Create PDP context Request:</b> Selection Mode=<MS provided APN>. 3. Verify the successful PDP Context activation.
<b>Case C:</b> 2. Verify the following message field: <b>Create PDP Context Response:</b> Cause="service not supported". <b>Activate PDP Context Reject:</b> Cause="activation rejected by GGSN". 3. Verify the unsuccessful PDP Context activation.
<b>Case D:</b> 1. Verify the following message flow:  <pre> sequenceDiagram     participant MS     participant UTRAN     participant SGSN as 3G-SGSN     MS-&gt;&gt;SGSN: Activate PDP Context Request     SGSN--&gt;&gt;MS: Activate PDP Context Reject     </pre>
2. Verify the following message field: <b>Activate PDP Context Reject:</b> Cause="missing or unknown APN". 3. Verify the unsuccessful PDP Context activation.
NOTE 1: The SGSN is able to resolve the APN received, but connecting to a GGSN for which the APN is not configured.
NOTE 2: The SGSN is not able to resolve the APN received by querying the DNS (both internal or external).

GN_GI_SMT_05
Session Management – PDP Context Deactivation; GGSN OR SGSN INITIATED
GOAL: This test aims to demonstrate the PDP Context Deactivation procedure completion, when initiated by SGSN or GGSN .
INTERFACES: <b>Iu</b> , <b>Gn</b> , Gi.
REQUIREMENTS: The subscriber has a valid GPRS subscription in the HLR. The MS must be GPRS attached and must have a PDP context activated.
PROCEDURE DESCRIPTION: Case A: Perform a PDPC deactivation procedure, GGSN initiated, by deleting the APN in use. Case B: Perform a PDPC deactivation procedure, SGSN initiated, by deleting the active PDP Context.
EXPECTED RESULTS: Case A. 1. Verify the following message flow:
<pre> sequenceDiagram     participant MS     participant UTRAN     participant SGSN as 3G-SGSN     participant GGSN as 3G-GGSN     GGSN-&gt;&gt;SGSN: Delete PDP Context Request     SGSN-&gt;&gt;MS: Deactivate PDP Context Request     MS-&gt;&gt;SGSN: Deactivate PDP Context Accept     SGSN-&gt;&gt;GGSN: Delete PDP Context Response   </pre>
Case B: 1. Verify the following message flow:
<pre> sequenceDiagram     participant MS     participant UTRAN     participant SGSN as 3G-SGSN     participant GGSN as 3G-GGSN     SGSN-&gt;&gt;GGSN: Delete PDP Context Request     GGSN-&gt;&gt;SGSN: Delete PDP Context Response     SGSN-&gt;&gt;MS: Deactivate PDP Context Request     MS-&gt;&gt;SGSN: Deactivate PDP Context Accept   </pre>
In both cases: 2. Verify the following message field: <b>Delete PDP Context Request:</b> Cause="regular deactivation". 3. Verify the GTP tunnel deletion from GGSN database. 4. Verify the successful PDP Context re-activation after restoring the previous configuration in the nodes .

GN\_GI\_SMT\_07

**Session Management** – PDP Context Deactivation; HLR INITIATED

GOAL: This test aims to demonstrate the PDP Context Deactivation procedure completion, when initiated by HLR.

INTERFACES: Iu, Gr, Gn, Gi.

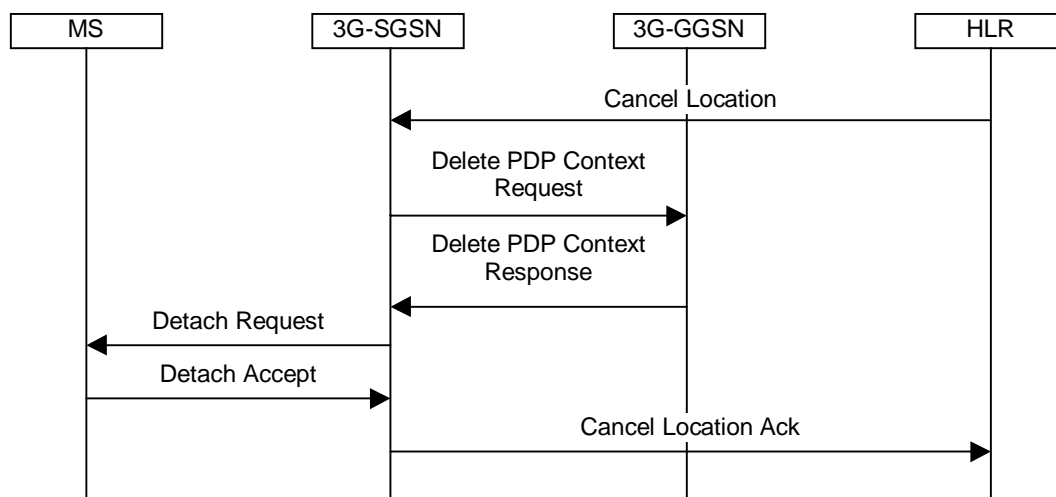
REQUIREMENTS: The subscriber has a valid GPRS subscription in the HLR. The MS must be GPRS attached and must have a PDP context activated.

## PROCEDURE DESCRIPTION:

1. Generate a *Cancellation Location* procedure on Gr interface by deleting the GPRS subscription stored in HLR.

## EXPECTED RESULTS:

1. Verify the following message flow:



2. Verify the following message field:

**Cancel Location:** Cancellation type = subscription withdrawn.

3. Verify the PDPC deletion in the SGSN.

4. Verify the release of the IP address previously assigned to the subscriber.

## A.2 Gi/Gn Interfaces Interoperability Tests

<b>GN_GI_II_01</b>
Gi/Gn Interface interoperability –Transparent Connection Mode; NO AUTHENTICATION, IP ADDRESS ASSIGNED BY GGSN
GOAL: This test aims to demonstrate the PDPC Activation procedure completion, using Transparent Access and IP address assigned by GGSN.
INTERFACES: <b>lu, Gn, Gi.</b>
REQUIREMENTS: The subscriber has a valid GPRS subscription in the HLR. The MS must be GPRS attached.
PROCEDURE DESCRIPTION: 1. Perform a PDPC Activation, with Transparent Access mode toward the GGSN. 2. Perform a data transfer. 3. Perform a PDPC Deactivation.
EXPECTED RESULTS: 1. Verify the successful connection to the Public Network and the MS is assignment of an IP address belonging to the operator pool. 2. Verify the release of the IP address previously assigned to the subscriber after the PDPC Deactivation.

<b>GN_GI_II_02</b>
Gi/Gn Interface interoperability –Transparent Connection Mode; NO AUTHENTICATION, IP ADDRESS ASSIGNED BY LOCAL DHCP
GOAL: This test aims to demonstrate the PDPC Activation procedure completion, using Transparent access and IP address assigned by a local DHCP.
INTERFACES: <b>lu, Gn, Gi.</b>
REQUIREMENTS: The subscriber has a valid GPRS subscription in the HLR. The MS must be GPRS attached. The APN must be configured in the GGSN with the address of an available DHCP server.
PROCEDURE DESCRIPTION: 1. Perform a PDPC Activation. 2. Perform a data transfer. 3. Perform a PDPC Deactivation.
EXPECTED RESULTS: 1. Verify the PDPC Activation procedure completion and an IP address belonging to the range of the specific APN is assigned to the MS by the DHCP server. 2. Verify that SGSN and GGSN parameters are coherent with those requested by the PDPC Activation procedure. 3. Verify data are correctly transferred to the subscriber. 4. Verify the release of the IP address previously assigned to the subscriber.

<b>GN_GI_II_03</b>
Gi/Gn Interface interoperability –Transparent Connection Mode; NO AUTHENTICATION, STATIC IP ADDRESS
GOAL: This test aims to demonstrate the PDPC Activation procedure completion, using Transparent access and static IP address.
INTERFACES: <b>lu, Gn, Gi.</b>
REQUIREMENTS: The subscriber has a valid GPRS subscription in the HLR. The MS must be GPRS attached.
PROCEDURE DESCRIPTION: 1. Perform a PDPC Activation with transparent access mode. 2. Perform a data transfer. 3. Perform a PDPC Deactivation.
EXPECTED RESULTS: 1. Verify the successful connection to the Public Network and the MS is assigned with the subscribed IP address. 2. Verify the release of the IP address previously assigned to the subscriber after the PDPC Deactivation.

GN\_GI\_II\_04

Gi/Gn Interface interoperability –Non Transparent Connection Mode; UNTUNNELLED WITH RADIUS/DHCP SERVER AUTHENTICATION

GOAL: This test aims to demonstrate the PDPC Activation procedure completion, using Non Transparent Access and IP address assigned by Radius/DHCP server.

INTERFACES: **Iu**, **Gn**, **Gi**.

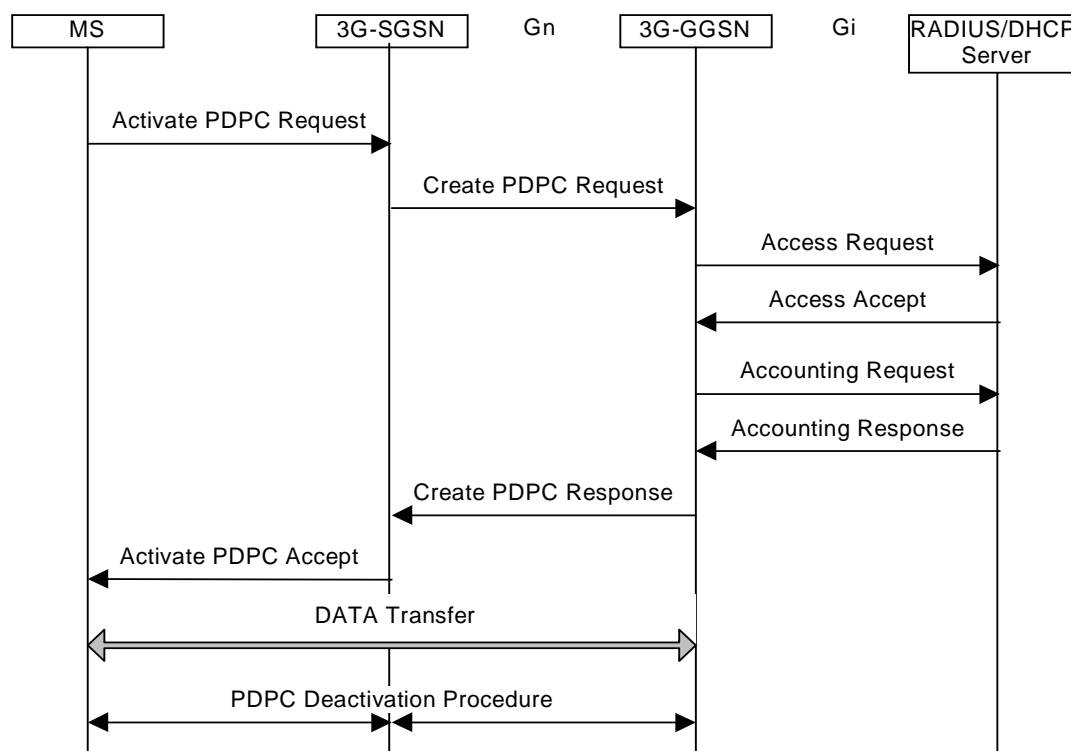
REQUIREMENTS: The subscriber has a valid GPRS subscription in the HLR. The MS must be GPRS attached. The APN must be configured in the GGSN with the address of an available Radius/DHCP server.

PROCEDURE DESCRIPTION:

1. Perform a PDPC Activation with Transparent Access mode.
2. Perform a data transfer.
3. Perform a PDPC Deactivation.

EXPECTED RESULTS:

1. Verify the following message flow:



2. Verify the following message fields:

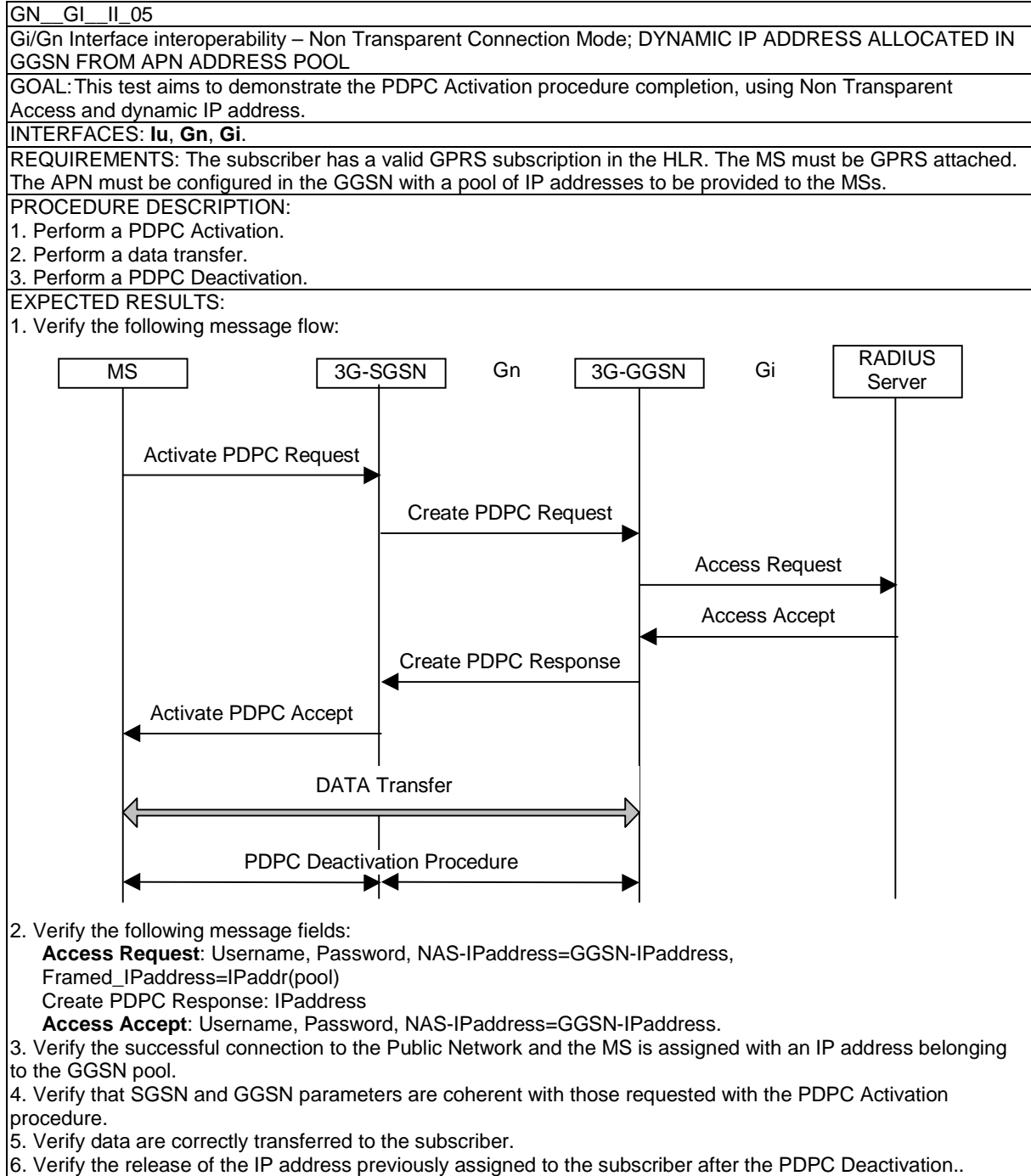
**Access Request:** Username, Password, NAS-IPaddress=GGSN-Ipaddress**Create PDPC Request:** Username, Password**Access Accept:** Username, Password, NAS-IPaddress=GGSN-Ipaddress, Framed-Ipaddress=IPAddr(Radius), Framed-IPnetmask (Radius) PrimaryDNS(Radius), secondaryDNS(Radius), Class**Accounting Request:** Username, NAS-IPaddress, Acct-session.id; Framed-Ipaddress, Class, Acc-Status-Type=START.**Create PDPC Response:** Ipaddress

3. Verify the successful connection to the Public Network and the MS is assigned with an IP address belonging to the Radius/DHCP pool.

4. Verify that SGSN and GGSN parameters are coherent with those requested by the PDPC Activation procedure.

5. Verify data are correctly transferred to the subscriber.

6. Verify the release of the IP address previously assigned to the subscriber after the PDPC Deactivation..



<b>GN_GI_II_06</b>
<b>Gi/Gn Interface interoperability – Non Transparent Connection Mode; L2TP/IPSEC TUNNELS</b>
<b>GOAL:</b> This test aims to demonstrate the PDPC Activation procedure completion, using Non Transparent Access and IPsec or L2TP Tunnelling.
<b>INTERFACES:</b> <b>Iu, Gn, Gi.</b>
<b>REQUIREMENTS:</b> The subscriber has a valid GPRS subscription in the HLR. The MS must be GPRS attached. The GGSN must be configured as endpoint of an IPsec or L2TP tunnel.
<b>PROCEDURE DESCRIPTION:</b> <ol style="list-style-type: none"> <li>1. Perform a PDPC Activation with Non Transparent access mode, providing a valid User ID and Password.</li> <li>2. Perform a data transfer.</li> <li>3. Perform a PDPC Deactivation.</li> </ol>
<b>EXPECTED RESULTS:</b> <ol style="list-style-type: none"> <li>1. Verify that the connection procedure to the Private Network is correct and that the MS is provided with a private IP address (ISP/Corporate Network).</li> <li>2. Verify data are correctly transferred to the subscriber.</li> <li>3. Verify the release of the IP address previously assigned to the subscriber after the PDPC Deactivation..</li> </ol>

<b>GN_GI_II_07</b>
<b>Gi/Gn Interface interoperability – Non Transparent Connection Mode; CORPORATE ACCESS WITH OUTBAND RADIUS AUTHENTICATION</b>
<b>GOAL:</b> This test aims to demonstrate the PDPC Activation procedure completion when accessing a Corporate Network, using Non Transparent Access and two IPsec Tunnels, one between GGSN and Radius server for Authentication and one for data transmission between GGS and Corporate GW .
<b>INTERFACES:</b> <b>Iu, Gn, Gi.</b>
<b>REQUIREMENTS:</b> The subscriber has a valid GPRS subscription in the HLR. The MS must be GPRS attached. The GGSN must be configured as endpoint of two different IPsec tunnels, one toward the Corporate for data transmission, and one toward the Radius server for Authentication procedure (Outband Radius Authentication).
<b>PROCEDURE DESCRIPTION:</b> <ol style="list-style-type: none"> <li>1. Perform a PDPC Activation with Non Transparent Access mode, providing a valid User ID and Password.</li> <li>2. Perform a data transfer.</li> <li>3. Perform a PDPC Deactivation.</li> </ol>
<b>EXPECTED RESULTS:</b> <ol style="list-style-type: none"> <li>1. Verify that the Authentication procedure is tunnelled toward Radius and correctly performed, that is the MS is provided with a private IP address.</li> <li>2. Verify that data are correctly tunnelled toward the Corporate and transferred to/from the subscriber .</li> <li>3. Verify the release of the IP address previously assigned to the subscriber after the PDPC Deactivation.</li> </ol>



## A.3 Performance Tests

GN_GI_PT_01	
<b>Performances – Round Trip Delay; ACCESS AND CORE NETWORK ROUND TRIP DELAY MEASUREMENT</b>	
GOAL: This test aims to verify the performances provided by the network through round trip delay value measurement of the TCP/IP packets.	
INTERFACES: <b>lu</b> , Gn, Gi, <b>serial</b> (See note 1).	
REQUIREMENTS: The subscriber has a valid GPRS subscription in the HLR. The MS must be GPRS attached and have a PDP Context active.	
PROCEDURE DESCRIPTION: 1. Generate IP packets with TCP transport and store the traces on serial and lu interfaces, using a sniffer and a protocol analyzer. 2. For every TCP connection, verify the following message flow:	
<pre> sequenceDiagram     participant Client     participant Server     Client-&gt;&gt;Server: 1. SYN (client options)     Server--&gt;&gt;Client: 2. ACK, SYN (server options)     Client-&gt;&gt;Server: 3. ACK     Client-&gt;&gt;Server: 4. GET HTTP     Server--&gt;&gt;Client: 5. ACK     Server-&gt;&gt;Client: 6. DATA HTTP     Client-&gt;&gt;Server: 7. ACK     Client-&gt;&gt;Server: 8. RST     Note over Server, Client: } Several occurrences   </pre>	
Take measure of the mean round trip delay value (time elapsed between a TCP/IP packet transmission and the reception of the correspondent Acknowledgement (See note 2).	
EXPECTED RESULTS: Verify the overall RTD value, measured on the serial interface, and evaluate the contribute of the Access Network and of the Core Network separately, measuring the RTD value for the same IP packets, on the lu interface.	
NOTE 1: For serial interface monitoring purpose, a Sniffer must be installed in the laptop.	
NOTE 2: Use the TCP messages "SYN" and "GET" to identify a TCP connection.	

GN_GI_PT_02	
<b>Performances – Throughput; THROUGHPUT MEASUREMENT</b>	
GOAL: This test aims to verify the performances provided by the network through IP packets mean and peak throughput measurement, both in downlink and in uplink.	
INTERFACES: <b>lu</b> , Gn, Gi, <b>serial</b> (See note).	
REQUIREMENTS: The subscriber has a valid GPRS subscription in the HLR. The MS must be GPRS attached and have a PDP Context active.	
PROCEDURE DESCRIPTION: 1. Generate IP packet traffic using an FTP application. 2. Measure the mean and peak transmission rate, both in downlink and in uplink, using a specific application (See note).	
EXPECTED RESULTS: Compare the throughput values measured to those requested. The following QoS parameters are involved: Peak throughput, Mean throughput, Maximum bit rate for uplink, Maximum bit rate for downlink.	
NOTE: For serial interface monitoring purpose, a Sniffer, Net Medic or another application that allows throughput measurements must be installed in the laptop.	

## Annex B (informative): Traffic models based on applications

### B.1 FTP application model

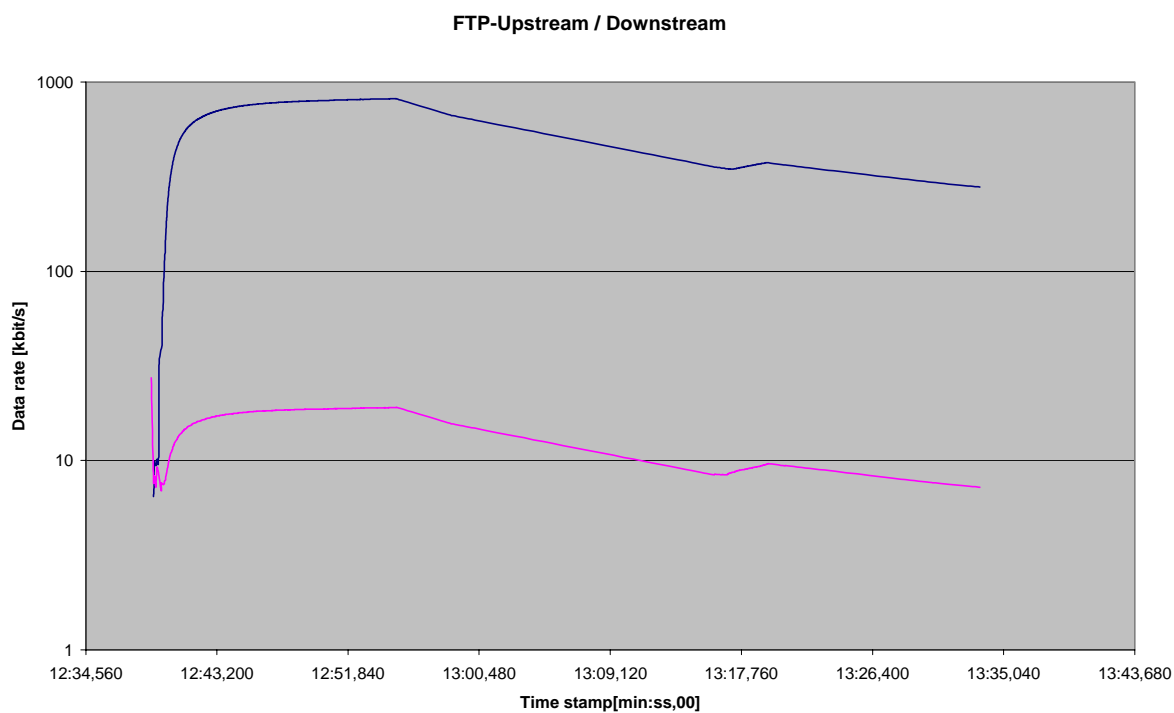


Figure B.1: FTP data rate for upstream [magenta] and downstream [blue]

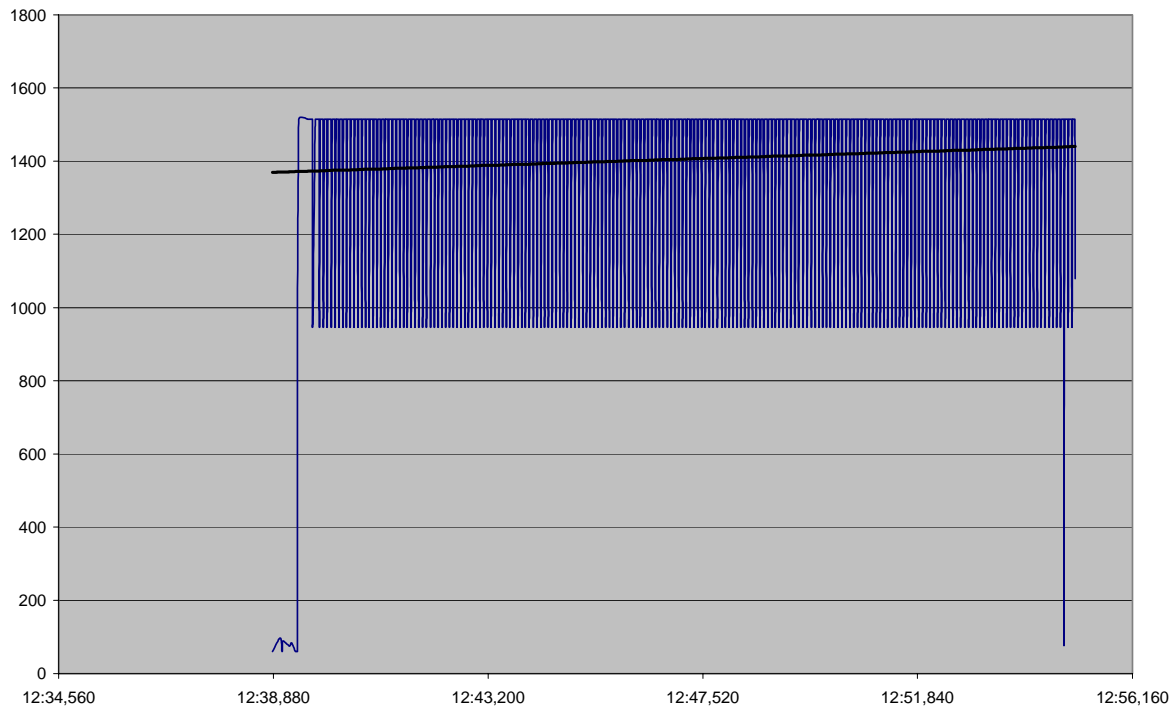


Figure B.2: FTP-Paket size downstream

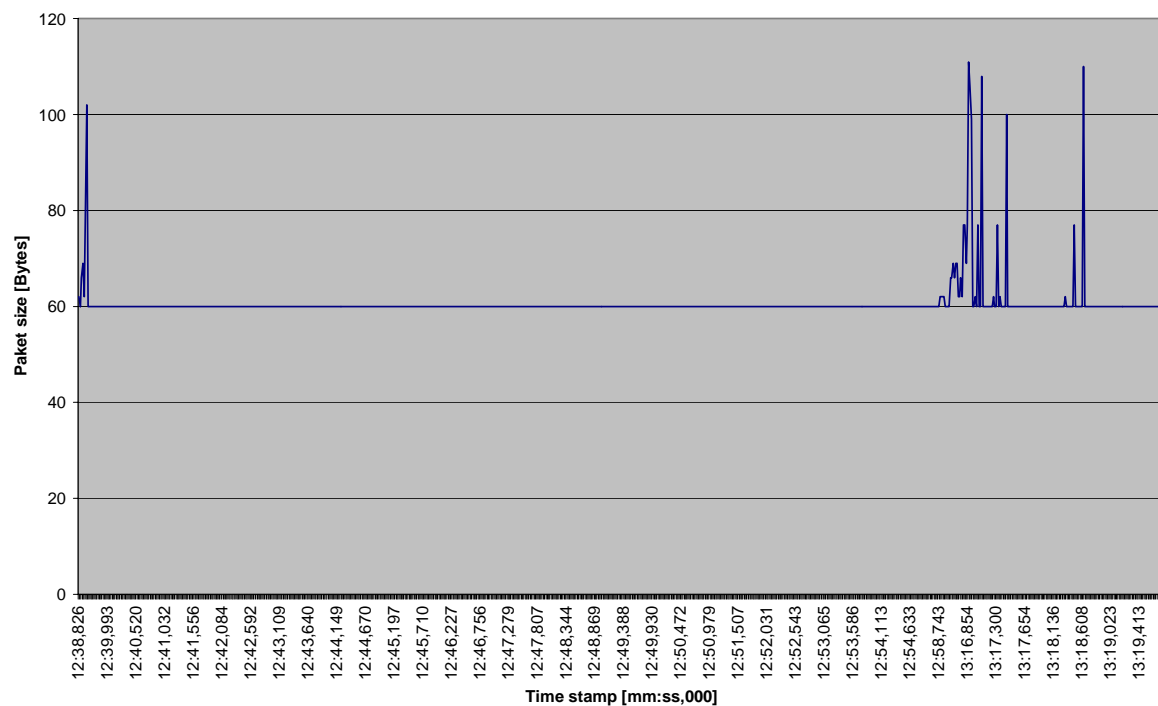


Figure B.3: FTP - Paket size upstream

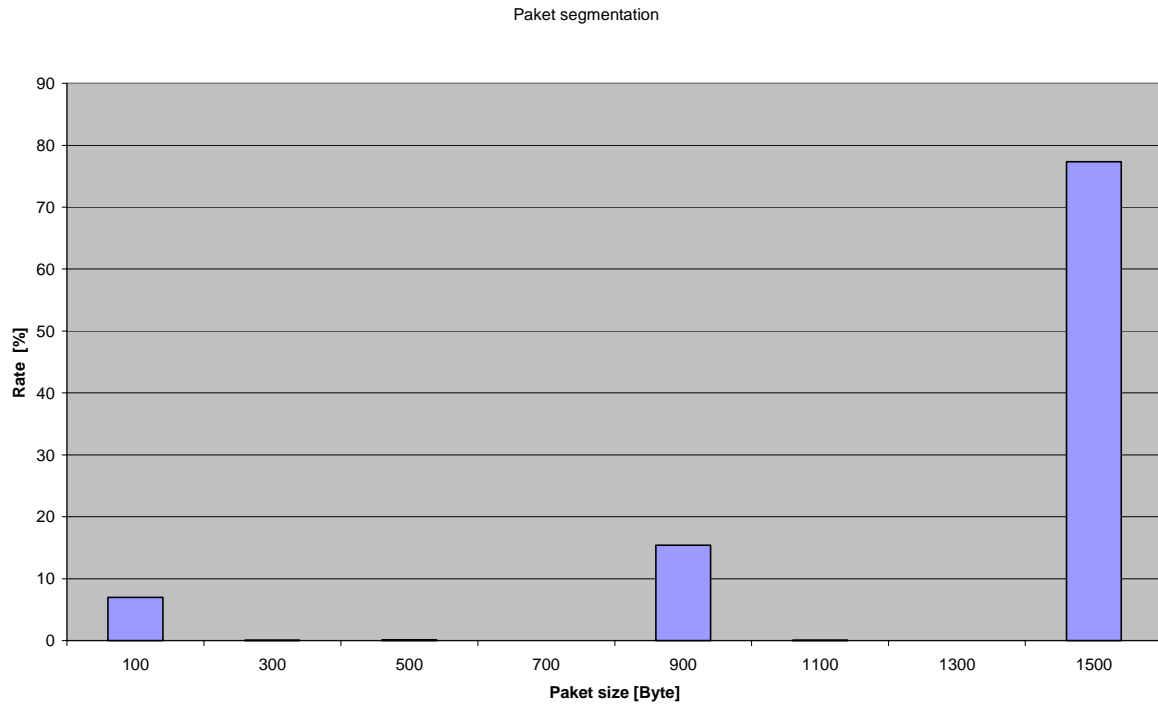


Figure B.4: FTP - Paket distribution for the downstream direction

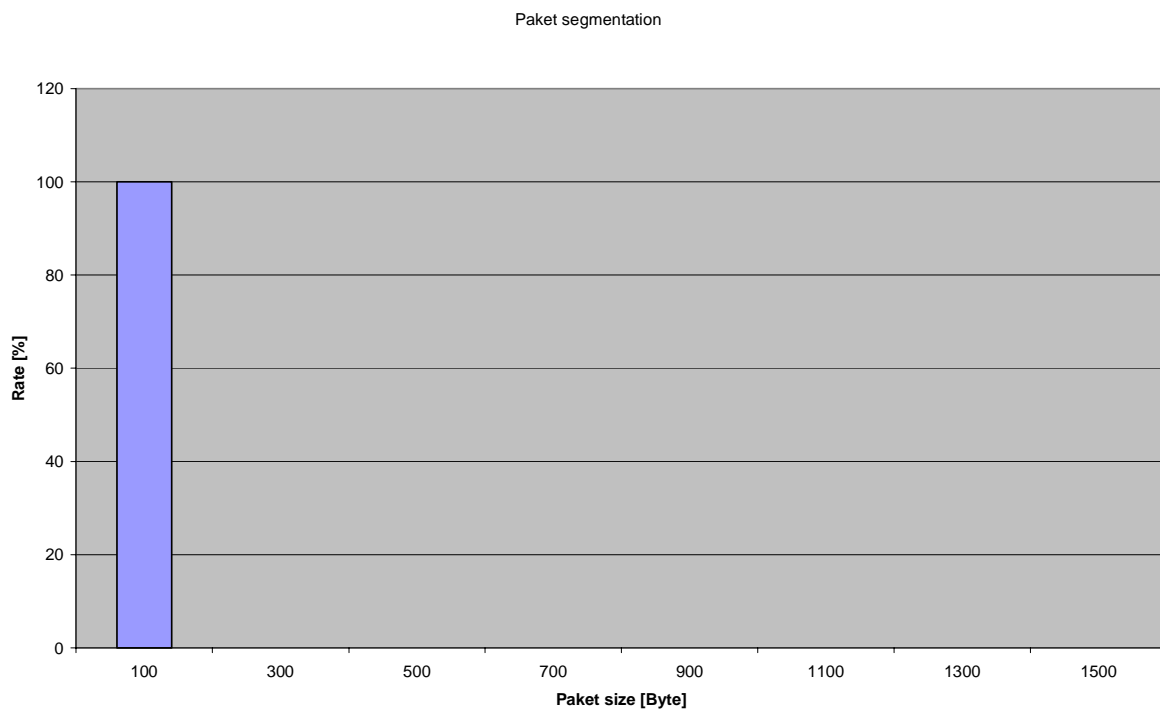
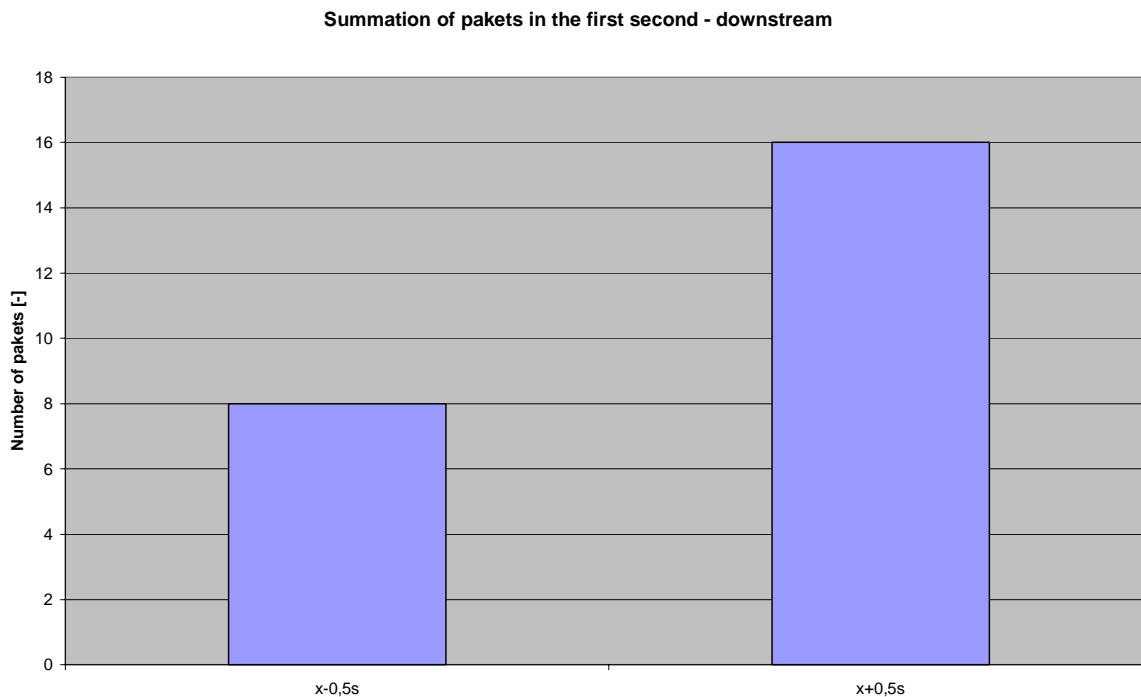
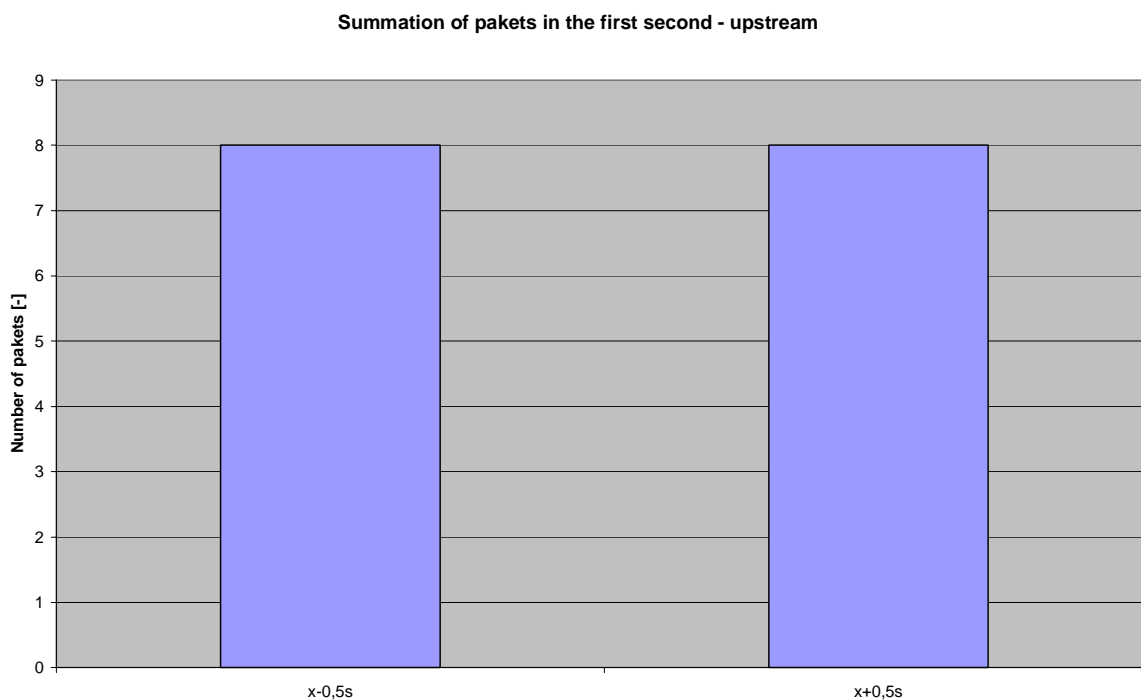


Figure B.5: FTP-Paket distribution for the upstream direction



**Figure B.6: FTP-Summation of pakets in the first second in the downstream direction**



**Figure B.7: FTP-Summation of pakets in the first second in the upstream direction**

## B.2 HTTP application model

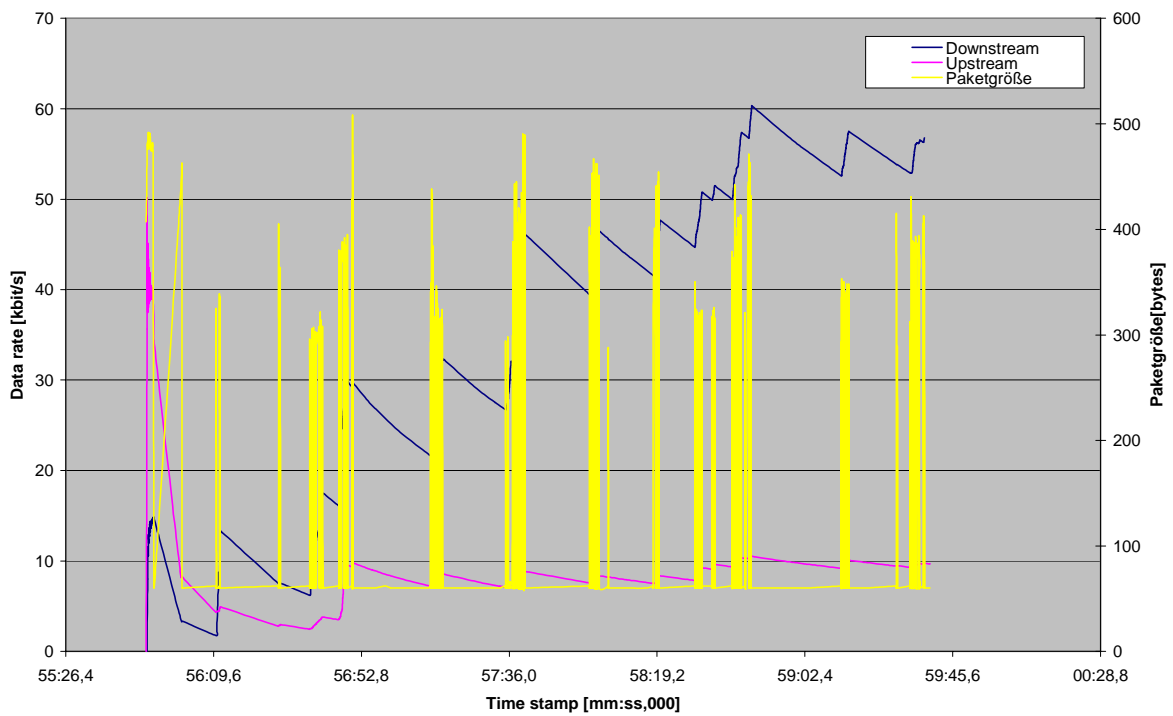


Figure B.8: HTTP data rate for upstream and downstream

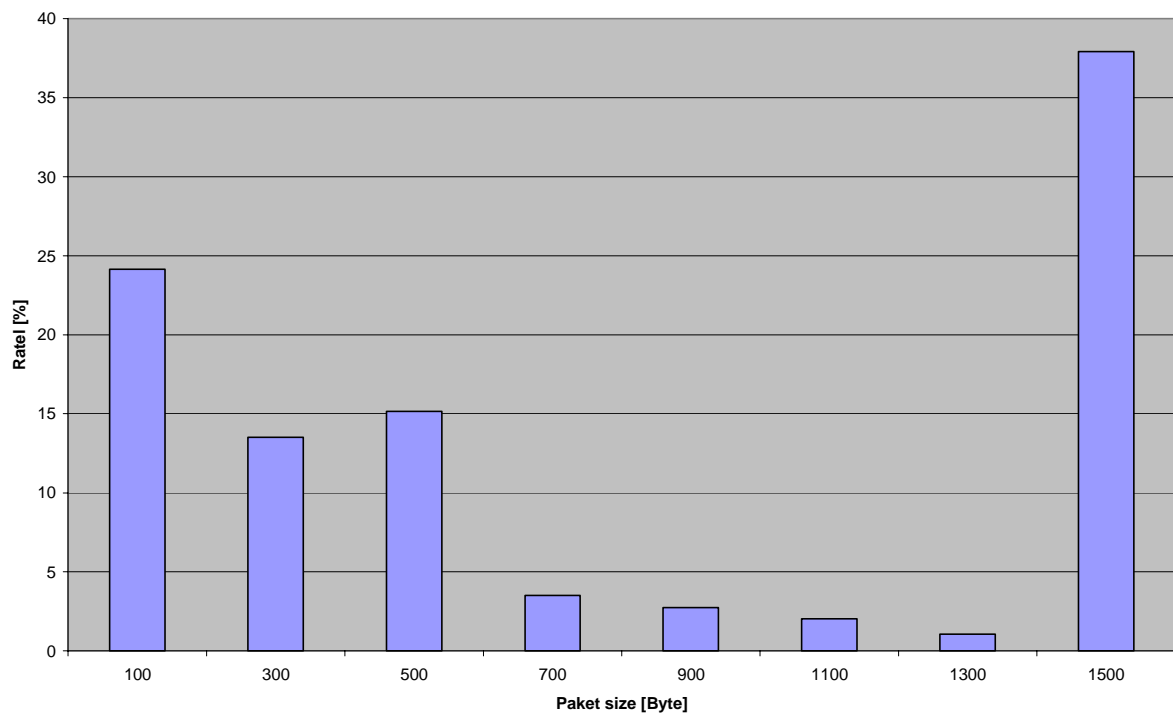


Figure B.9: HTTP-Paket distribution for the downstream direction

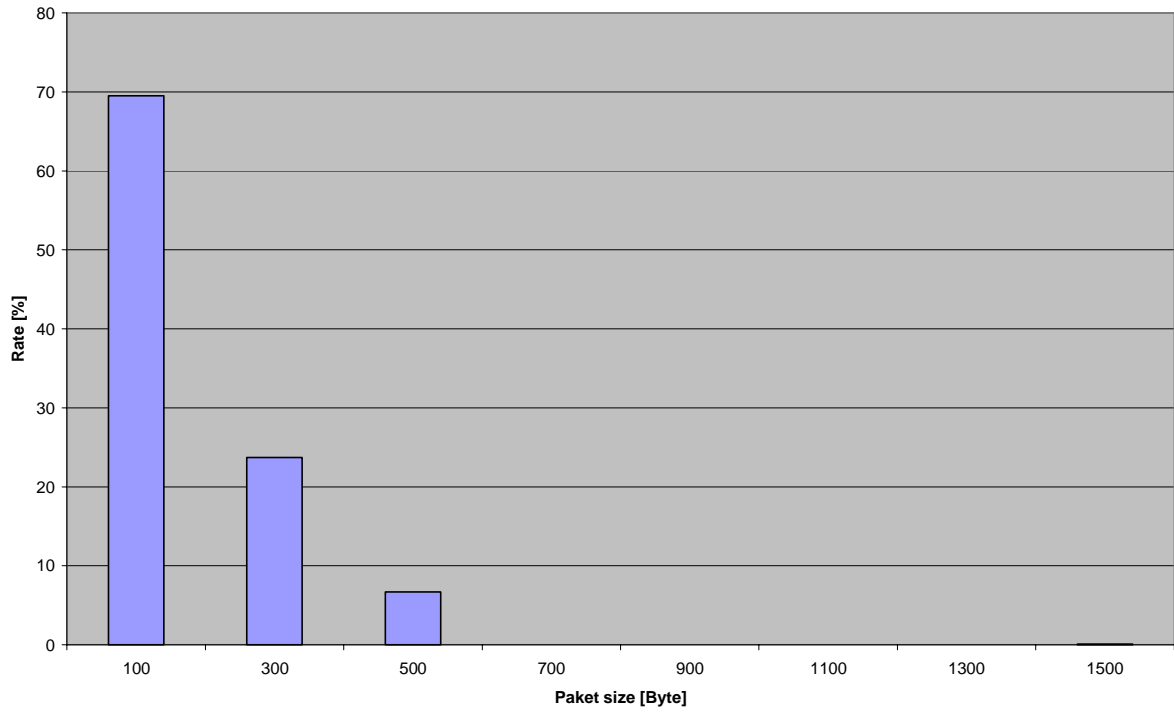


Figure B.10: HTTP-Paket distribution for the upstream direction

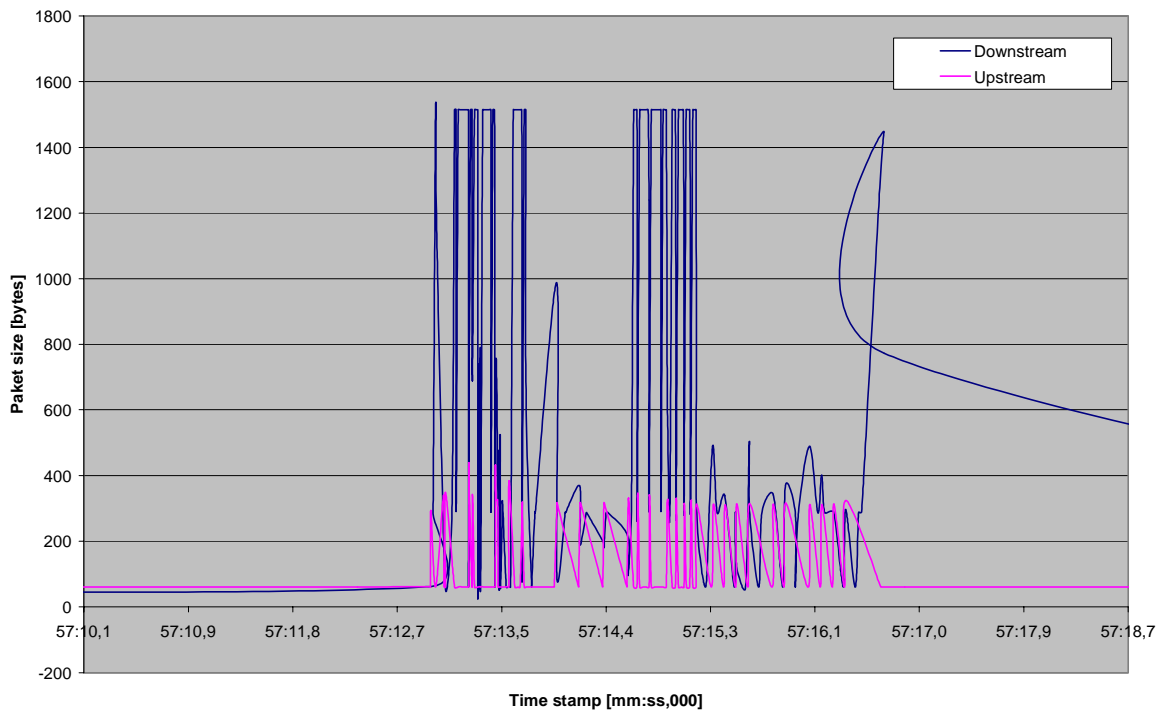
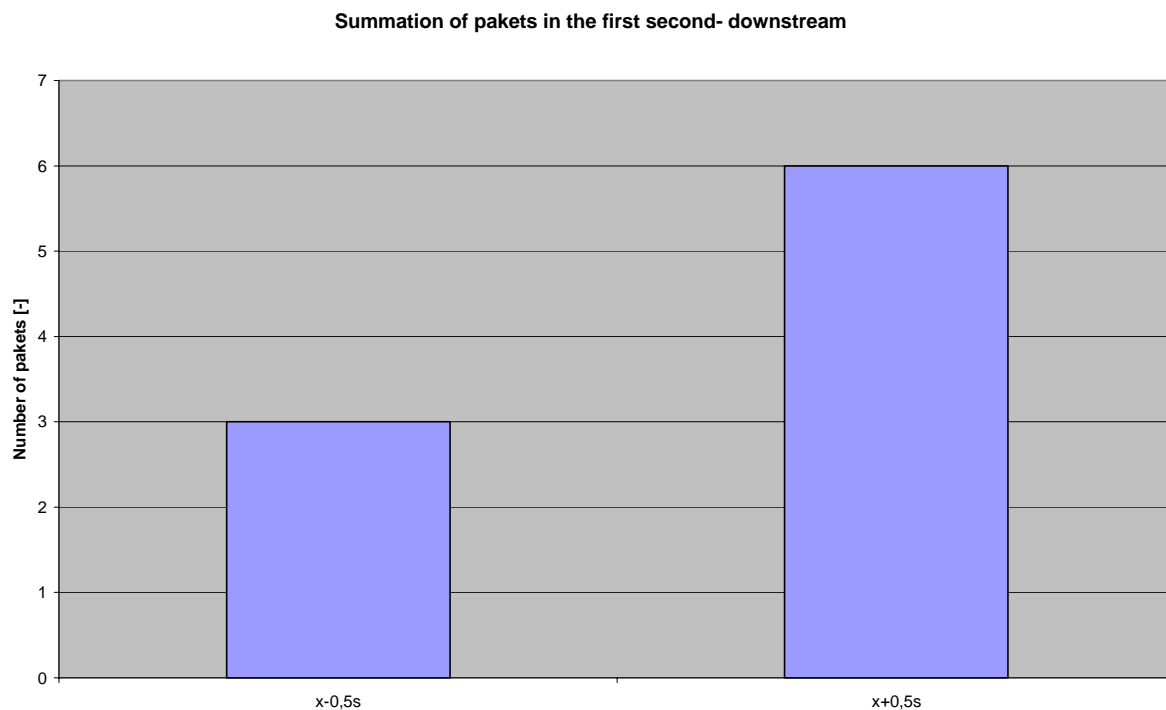
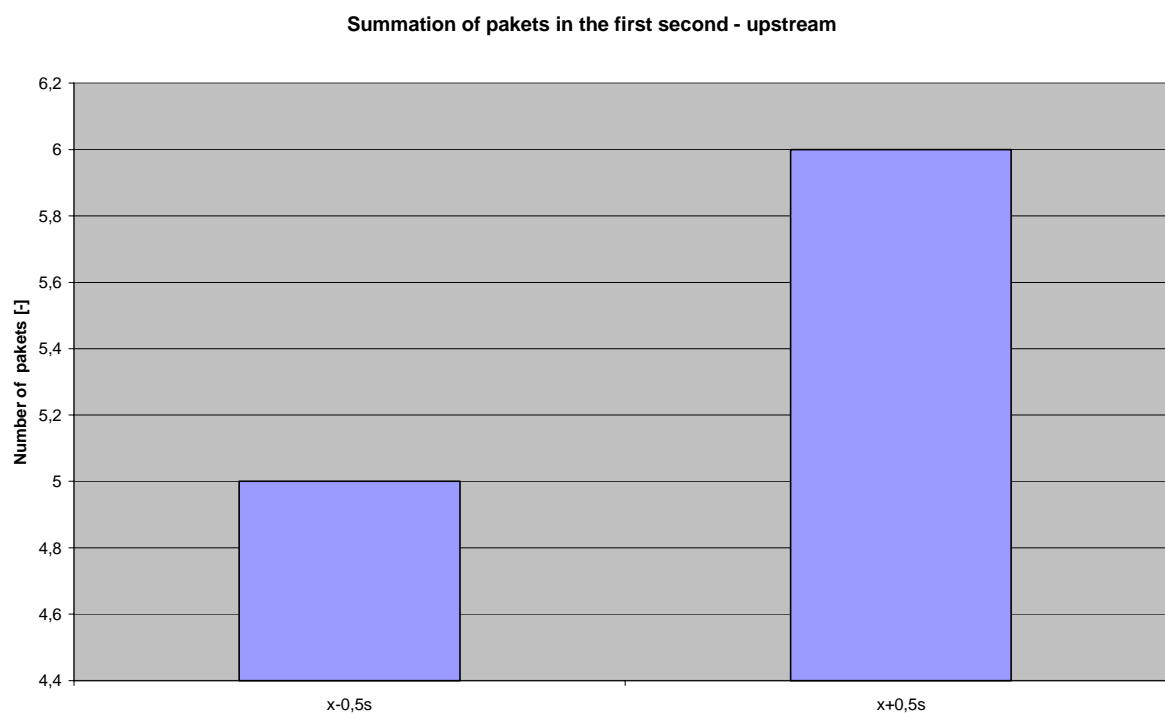


Figure B.11: HTTP paket size for upstream and downstream



**Figure B.12: HTTP-Summation of pakets in the first second in the downstream direction**



**Figure B.13: HTTP-Summation of pakets in the first second in the upstream direction**



Real stream application model

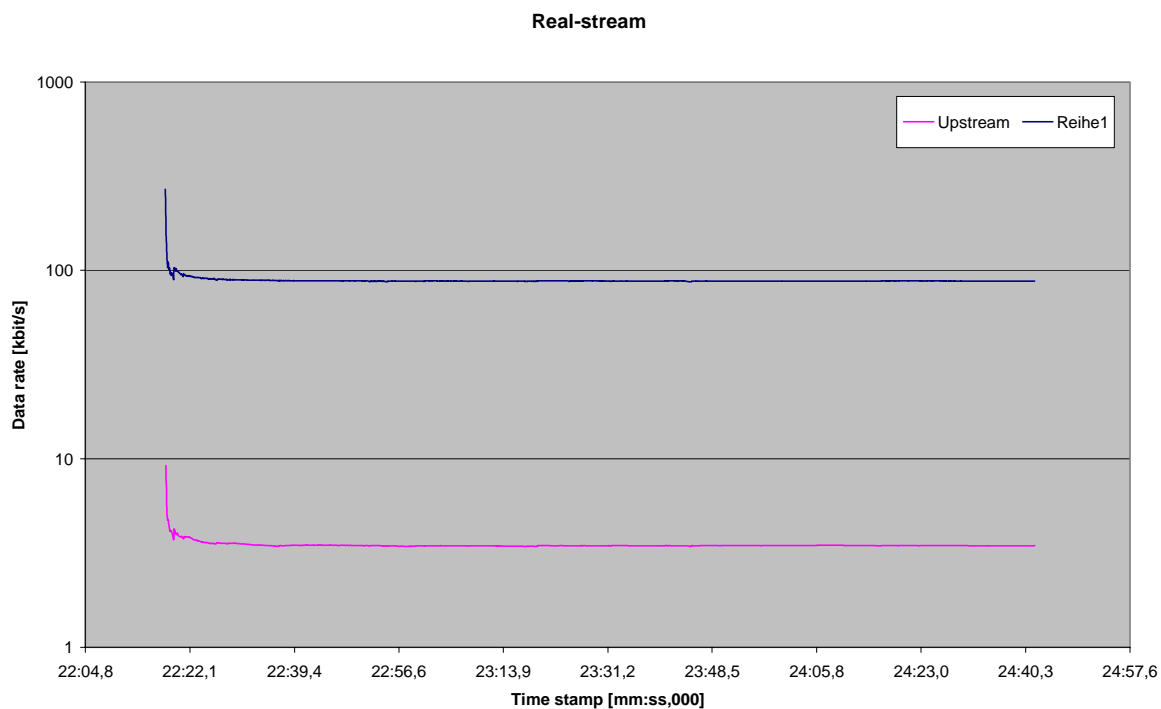


Figure B.14: Real stream data rate for upstream and downstream

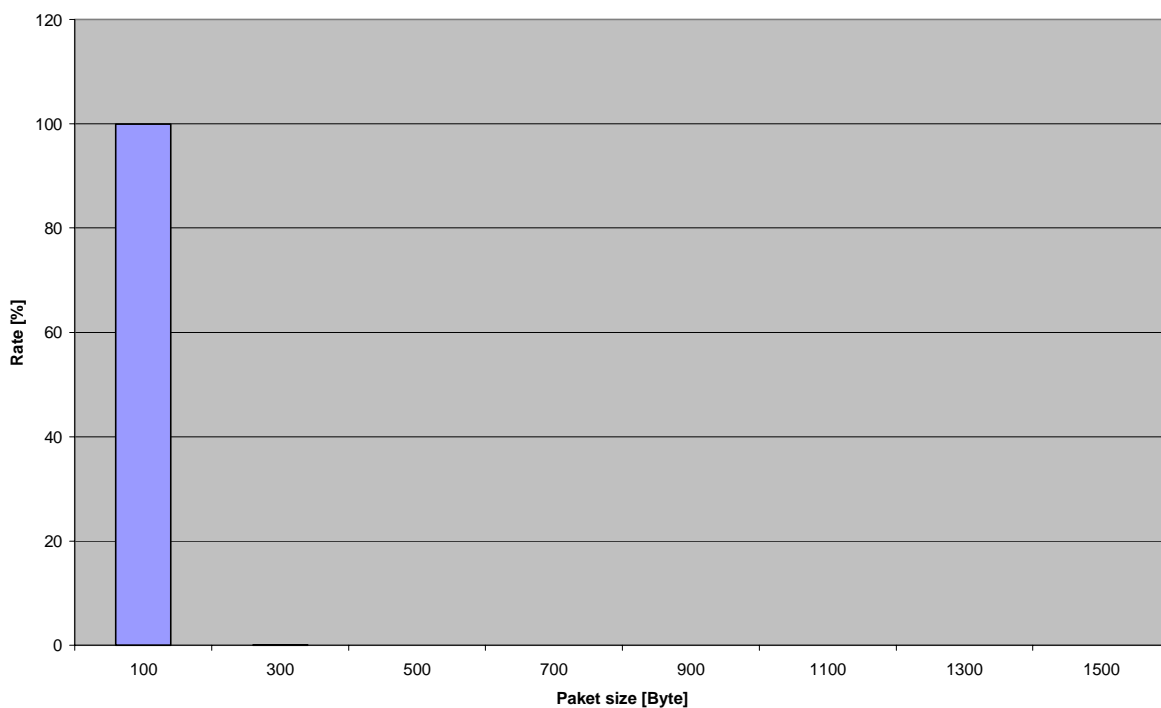


Figure B.15: Real stream – paket distribution for the upstream direction

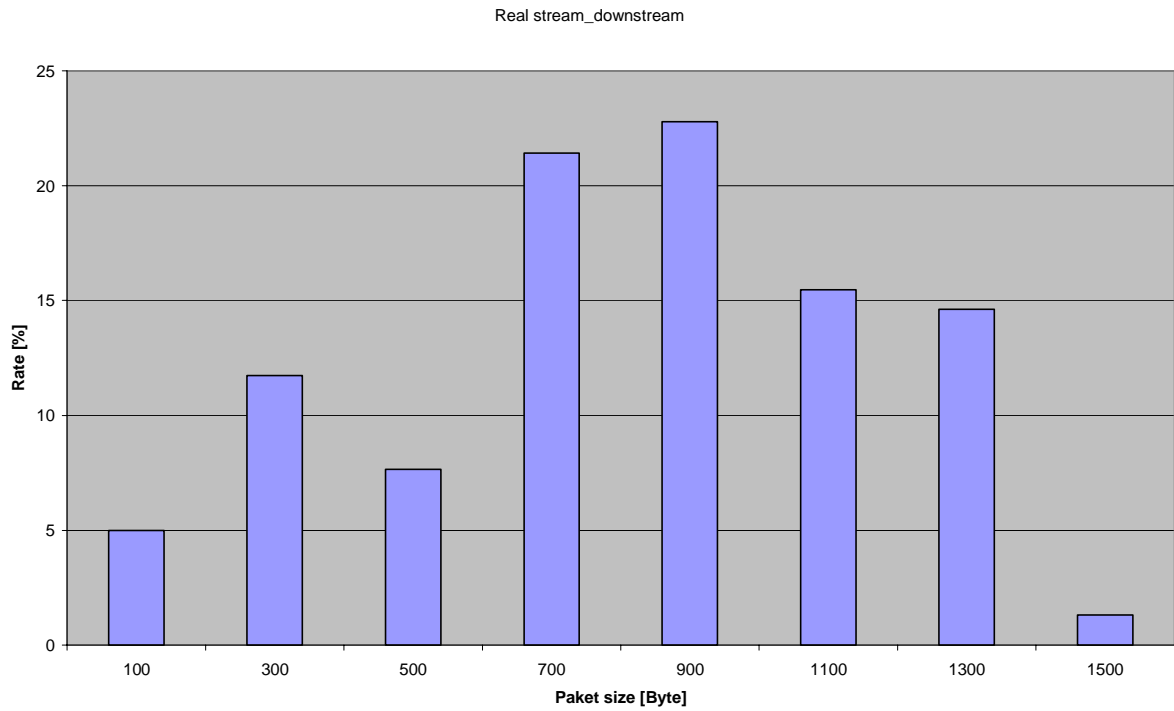


Figure B.16: Real stream-paket distribution in the downstream direction

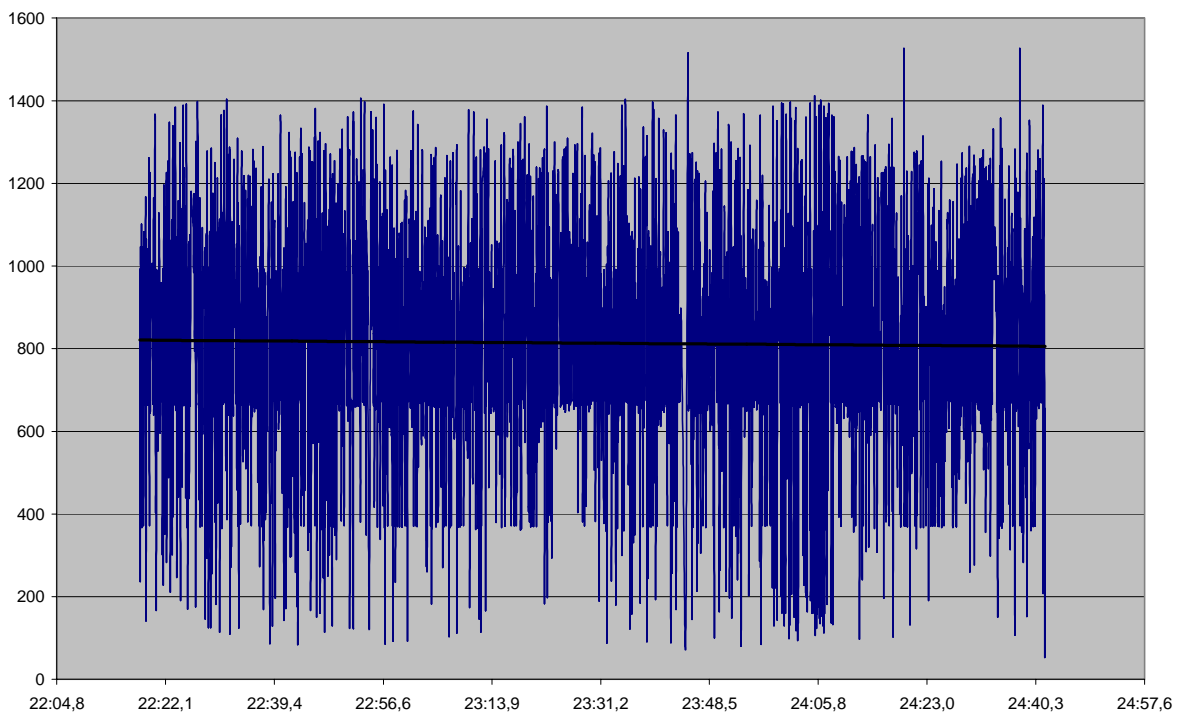
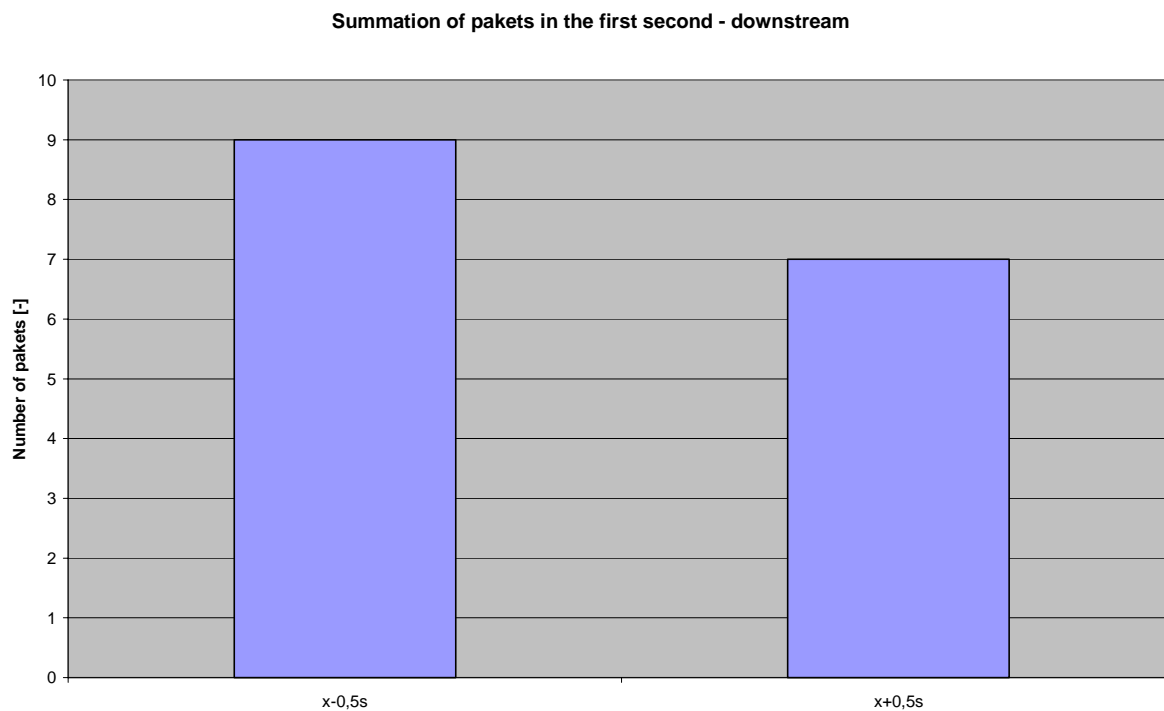
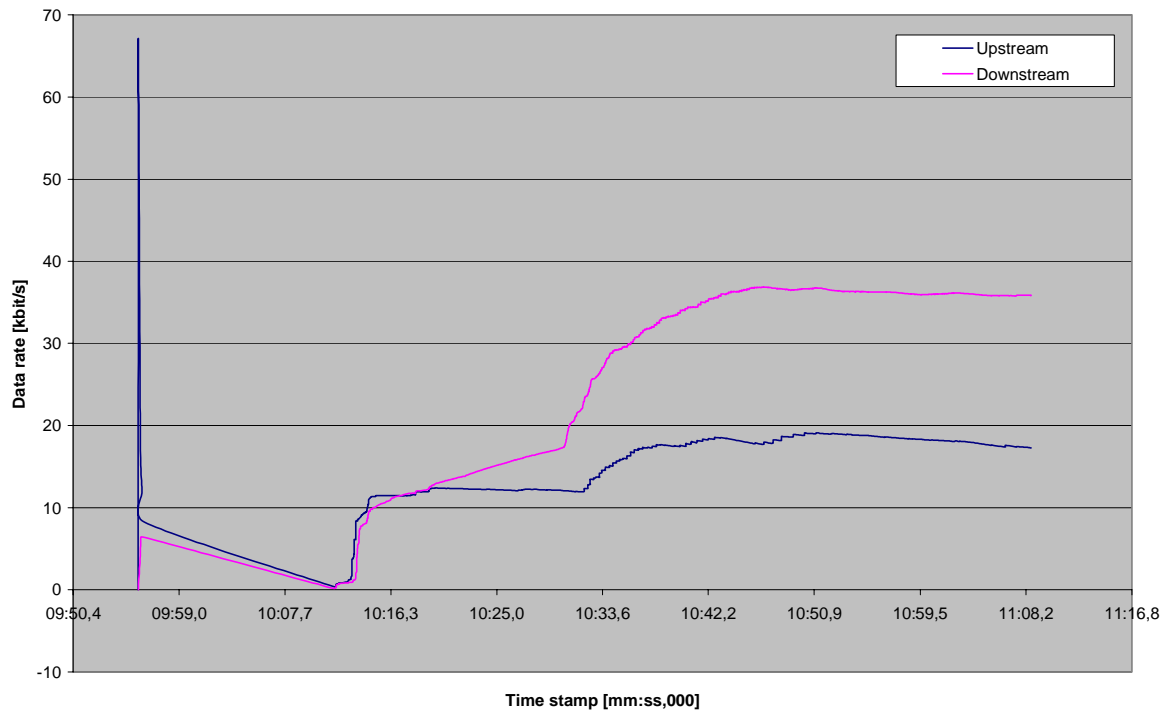


Figure B.17: Real stream-paket size downstream



**Figure B.18: Summation of packets in the first second in the downstream direction**

## B.3 H.323 application model (Netmeeting)



**Figure B.19: Data rate for upstream and downstream with Netmeeting**

Phase 1: 10 s transmission of a fix image without tone,

Phase 2: 14 s transmission of moving images without tone,

Phase 3: 40 s transmission of moving images and tone.

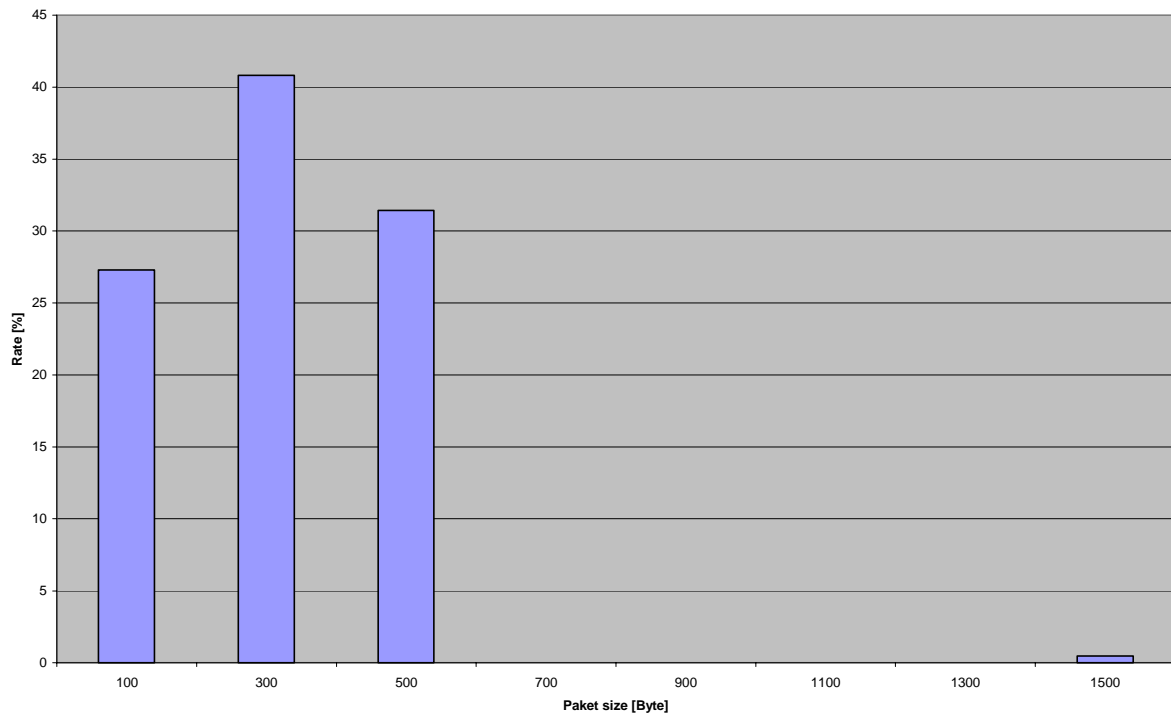


Figure B.20: H.323 paket distribution in the downstream direction

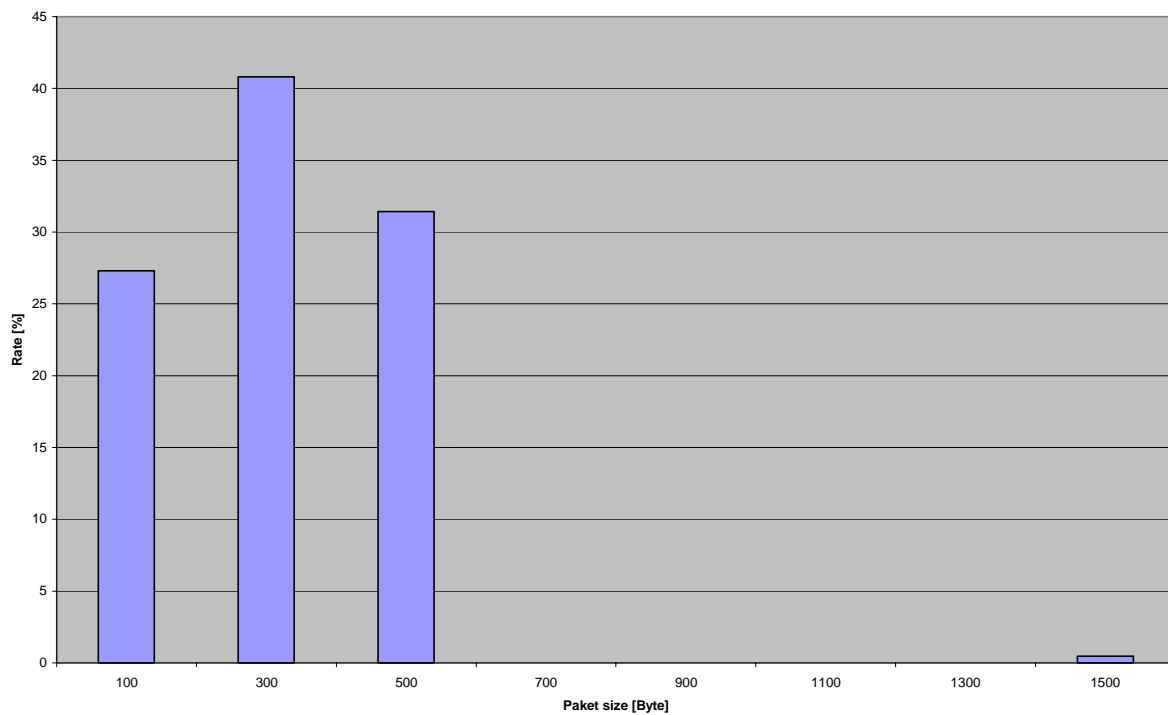


Figure B.21: H.323 paket distribution in the upstream direction

## B.4 SIP application model

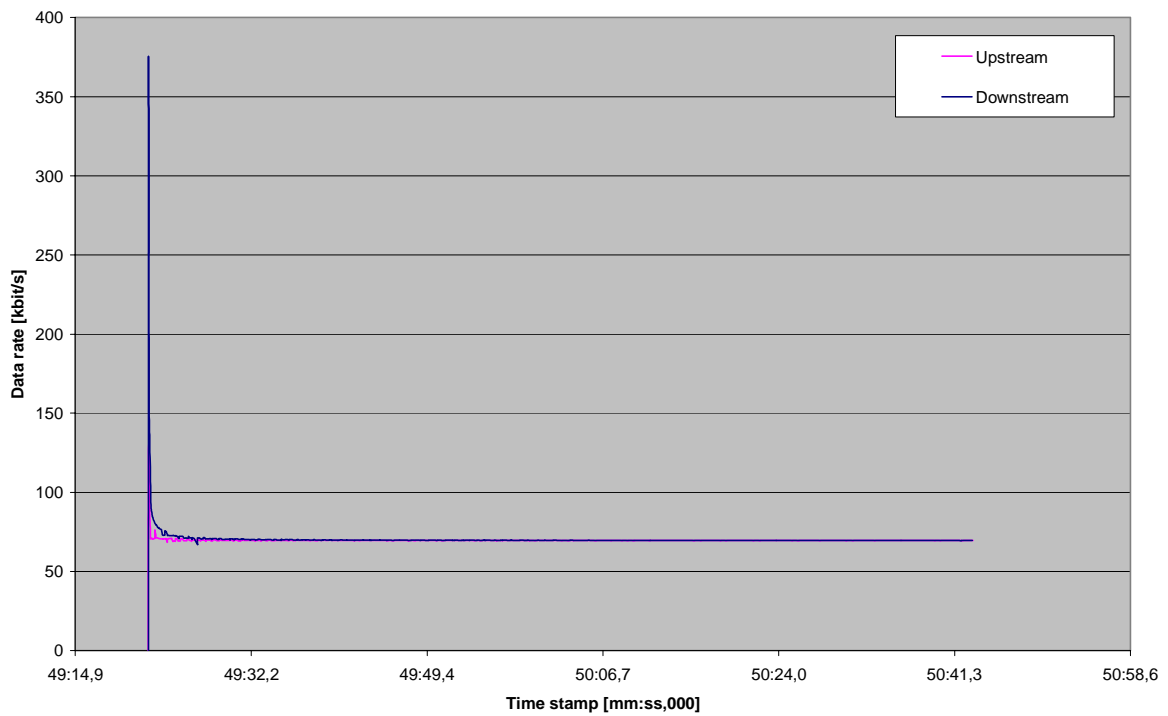


Figure B.22: SIP data rate for upstream and downstream

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## Annex C (informative): Bibliography

- ETSI TS 122 060: Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); General Packet Radio Service (GPRS); Service description; Stage 1 (3G TS 22.060 version 3.2.0 Release 1999)".
- ETSI TS 123 060: Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); General Packet Radio Service (GPRS); Service description; Stage 2 (3G TS 23.060 version 3.2.1 Release 1999)".
- ETSI TS 124 065: Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); General Packet Radio Service (GPRS); Mobile Station (MS) - Serving GPRS Support Node (SGSN); Subnetwork Dependent Convergence Protocol (SNDTCP) (3G TS 24.065 version 3.1.0 Release 1999)".
- ISO/IEC 9646-2: "Information Technology-OSI Conformance Testing Methodology and Framework, Part 2: Abstract Test Suite Specification".
- ISO/IEC 9646-3: "Information Technology-OSI Conformance Testing Methodology and Framework, Part 3: The Tree and Tabular Combined Notation".

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## History

<b>Document history</b>		
V1.1.1	September 2002	Publication