Test Plan

Plan Name: LTE_Supplementary_Signaling_Conformance_TestPlan
Plan Id: LTESUPSIGCONF
Version Number: 26
Release Date: October 2024
Latest Release Date: October 2024 : Open Access

2.40.7 UE requested PDN connectivity not accepted / Network reject with Extended Wait Timer

Introduction VZ_TC_LTESUPSIGCONF_1378305

LTE_Supplementary_Signaling_Conformance_Test_Plan

Device Test Plan

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Plan

Subject

LTE Supplementary Signaling Conformance

Revision History Rev.	Author	Description of Changes	Date

1.0	Verizon Wireless	Initial release.	2/11/2010
2.0	Verizon Wireless	Updates/Clarifications/Additions to the following sections: 1.4, 1.5, 4	3/25/2010
3.0	Verizon Wireless	Modified Section 2.3, added Sections 2.16-2.19 Updated references	6/25/2010
4.0	Verizon Wireless	Clarifications added to section 2.13	10/11/2010
5.0	Verizon Wireless	Modified sections 2.10, 2.11, 2.13, 2.14, 2.17, 2.18 Added sections 2.20, 2.21, 2.22	11/16/2011
6.0	Verizon Wireless	Modified sections 2.1, 2.2, 2.5, 2.6, 2.7, 2.8, 2.18 Added sections 2.23 to 2.29	4/13/2012
7.0	Verizon	Modified sections 2.13, 2.14	7/12/2012

	Wireless		
8.0	Verizon Wireless	Modified sections 2.1, 2.5, 2.7, 2.8, 2.16, 2.18-2.29 Added sections 2.30 to 2.31	10/2012
9.0	Verizon Wireless	Modified sections 2.1, 2.5, 2.6, 2.7, 2.8, 2.12, 2.13, 2.14, 2.15, 2.21, 2.22, 2.30, 2.31 Added section 2.32 Updated all 3GPP references to release 9	2/2013
10.0	Verizon Wireless	Modified sections 2.1, 2.5, 2.7, 2.8, 2.16, 2.18, 2.19, 2.20, 2.32 Added sections 2.33, 2.34, 2.35, 2.36	6/2013
11.0	Verizon Wireless	Modified sections 2.1, 2.5, 2.6, 2.7, 2.8, 2.16, 2.18, 2.19, 2.20, 2.21, 2.30, 2.32, 2.33	10/2013
12.0	Verizon Wireless	Modified sections 2.1, 2.5, 2.7, 2.8, 2.16, 2.18, 2.19, 2.20, 2.32	2/2014
13.0	Verizon Wireless	Modified sections: 2.3	6/2014

14.0	Verizon Wireless	Modified section 2.17 Added sections 2.37, 2.38, 2.39	10/2014
15.0	Verizon Wireless	Modified section 2.39	12/2014
16.0	Verizon Wireless	Modified sections 2.36, 2.39 Added section 2.40, 2.41, 2.42	2/2015
17.0	Verizon Wireless	Modified sections 2.5, 2.17, 2.37 Added sections 2.43, 2.44, 2.45, 2.46, 2.47, 2.48, 2.49, 2.50	6/2015
18.0	Verizon Wireless	Removed section 2.48 (moved to Multi-band Supplementary Signaling Conformance) Modified sections 2.34, 2.37 Added sections 2.51, 2.52, 2.53, 2.54, 2.55, 2.56, 2.57	10/2015
19.0	Verizon Wireless	Added section 2.58	2/2016
20.0	Verizon Wireless	Added section 2.59	6/2016
21.0	Verizon Wireless	Removed reference to 8.3.1.20 in test case 2.41, 523-1 for Rel 12	10/2016

		(v. 12.9.0) and section 8.3.1.20 is now VOID Updated applicability section for all test cases to apply to devices that support IMS.	
22.0	Verizon Wireless	Fixed a mistake in 2.42 on FGI bit, Step 2b featureGroupIndRel10-r10. Voided test case 2.57 and moved the test case to LTE Multi-band Supplementary Signaling Conformance test plan.	6/2017
23.0	Verizon Wireless	Reduced R11 feICIC test scope to support R10 eICIC	10/2017
24.0	Verizon Wireless	Retired 2.41 and modify 2.42 and 2.43 Modified TC 2.1, 2.17	2/2018
25	Verizon Wireless	Incorporated feedback from Chipset vendors	October 2018
26	Verizon Wireless	Modify TC 2.15 to make Step-4a optional.	Feb 2019

Introduction

This test plan is supplementary to the Verizon Wireless LTE 3GPP Band 13 Signaling Conformance Test Plan, to ensure compliance with the Verizon Wireless LTE 3GPP Band 13 Network Access requirements.

This publication is part of Verizon Wireless compliance with the FCCs rules for 700 MHz C Block (47 C.F.R. § 27.16), as explained in the FCCs Second Report and Order in WT Docket No. 06-150, "Service Rules for the 698-746, 747-762 and 777-792 MHz Bands" released on August 10, 2007.

In this document, the terms LTE (Long Term Evolution) and E-UTRA (Evolved Universal Terrestrial Radio Access) are considered equivalent.

Test Objectives

The objective of this document is to define the LTE supplementary signaling tests for LTE devices that are designed to operate in the Verizon Wireless LTE 3GPP Band 13 network. This includes the establishment and de-establishment of various types of connections, which involves Layer 2, 3 and NAS signaling.

This document will be used by test personnel to guide the manual execution of LTE supplementary signaling testing. This document will also be used to define the LTE supplementary signaling test for test automation development.

Additionally, this document includes tests related to PLMN operations.

Definitions

The following terms are used in this document:

Acronym/Term	Definition
3GPP	3rd Generation Partnership Project, manages GSM, EDGE, UMTS, HSPA, and LTE standards
APN	Access Point Name
Admin	Administrative
EMM	EPS Mobility Management
EPDCCH	Enhanced Physical Downlink Control Channel
E-UTRA	Evolved Universal Terrestrial Radio Access

EUTRAN	Evolved Universal Terrestrial Radio Access Network
FFS	For Future Study
HTTP	Hypertext Transfer Protocol
IMEI	International Mobile Equipment Identity
IMS	IP Multimedia Subsystem
IMSI	International Mobile Subscriber Identity
Legacy 3GPP	3GPP wireless standards preceding LTE (GSM/GPRS, EDGE, UMTS, HSPA, HSPA+)
LTE	Long Term Evolution
OTAPA	Over-the-Air Parameter Administration
OTASP	Over-the-Air Service Provisioning
PDN	Packet Data Network

QoS	Quality of Service
RAT	Radio Access Technology
RRC	Radio Resource Control
SCM	Smart Congestion Mitigation
SMS	Short Message Service
TCP	Transmission Control Protocol
UDP	User Datagram Protocol
UE	User Equipment
UICC	Universal Integrated Circuit Card
VzW	Verizon Wireless

3GPP Release 9 Specifications

Refer to the 3GPP Release 9 Specifications section of the Verizon Wireless LTE 3GPP Band 13 Network Access Requirements for details on the correct version for all 3GPP specification documents referenced in this test plan.

Entrance Criteria

All devices shall successfully pass this test plan per the Verizon Wireless LTE 3GPP Band 13 Lab Conformance Test Plan and in accordance with the Verizon Wireless LTE 3GPP Band 13 Device Conformance Test Process. Prior to testing, Verizon Wireless strongly recommends that all devices pass 3GPP standard signaling and RRM conformance per the Verizon Wireless LTE 3GPP Band 13 RF and RRM Conformance Test Plan and the Verizon Wireless LTE 3GPP Band 13 Signaling Conformance Test Plan.

Test Equipment Configuration

For details on test equipment currently approved by Verizon Wireless, refer to the Verizon Wireless LTE 3GPP Band 13 Test Equipment List.

A network system simulator is used to model the eNB, MME, S-GW, P-GW, PCRF, HSS/SPR and 3GPP AAA. The configuration of the simulator is described in: "3GPP TS 36.508, 3GPP EUTRA and EPC Common Test environments for User Equipment (UE) conformance testing". In this document, the terminology network simulator and serving station (SS) are used interchangeably. (For Connection Diagrams Please Refer to the Attached Diagrams Figure_1.jpeg and Figure_2.jpeg)

The UE under test is connected to a laptop computer, which is used to control the test configuration, generate and receive data traffic. The parameter "SMS_Over_IP_Networks_Indication" on the UE under test shall be disabled, i.e., set to "0".

Test Results Template

The header block for the test results should define: what device was tested, when it was tested, who tested it, and what equipment was used to test it. PRODUCT TESTED		Version
MFR/Model: <AAAAA/B-ccccc>	Hardware	Software

ESN/MEID: <xxxxxxxx>	<hwhwhwhwhwhw>	<SWSWSWSWSW>
Additional Information:		
Tester: <Name>		Test Date(s): <mm-dd-yy>
Test Equipment	Version	Calibration
<Instrument 1>	<version>	<mm-dd-yy>
<Instrument 2>	<version>	< mm-dd-yy >
<SW tool 1>	<version>	N/A
<SW tool 2>	<version>	< mm-dd-yy >

Test No.	Test	Expected	Actual	PASS/FAIL
2.1		EUTRAN Initial Attach (for IMS PDN with Piggybacking)	PASS	

2.2	RRC UE Feature Group Support	PASS
2.3	IPv6 Address Assignment	PASS
2.4	E-UTRAN Initial Attach (APN Disabled)	PASS
2.5	VOID	
2.6	VOID	
2.7	UE Initiated PDN Connection (EMM-Idle)	PASS
2.8	UE Initiated PDN Connection (EMM-Connected)	PASS
2.9	UE Initiated PDN Connection (APN disabled)	PASS
2.10	VOID	
2.11	VOID	
2.12	P-GW Initiated PDN Disconnect (EMM-Connected)	PASS
2.13	UE Initiated Detach for E-UTRAN (EMM-Connected) 3	PASS

	PDNs Scenario	
2.14	UE Initiated Detach for E-UTRAN (EMM-Idle) 3 PDNs Scenario	PASS
2.15	MME Initiated Detach (EMM-Connected) 3 PDNs Scenario	PASS
2.16	UE re-initiated connection to IMS PDN after disconnected	PASS
2.17	UE initiated LTE Detach Update to APN parameters	PASS
2.18	UE initiated PDN disconnection Update to APN parameters (EMM-Idle)	PASS
2.19	UE support of multiple DNS addresses	PASS
2.20	UE initiated PDN disconnection Update to APN parameters (EMM-Connected)	PASS
2.21	Network initiated EPS bearer modification without QoS update (EMM-Connected)	PASS
2.22	Network initiated EPS bearer modification with QoS update (EMM-Connected)	PASS

2.23	VOID	
2.24	VOID	
2.25	VOID	
2.26	VOID	
2.27	VOID	
2.28	VOID	
2.29	VOID	
2.30	Network Initiated EPS Dedicated Bearer Activation (EMM-Connected)	PASS
2.31	Network Initiated PDN Disconnect (No Data Usage Available)	PASS
2.32	UE Initiated Internet PDN Connection with QoS (EMM-Connected)	PASS

2.33		VOID
2.34	Time Retrieval via SIB16 Message	PASS
2.35	UE Indicates RACH Report Capability	PASS
2.36	UE Reports RACH Information Upon Request by Network	PASS
2.37	UE Initiated Tracking Area Update after Radio Link Failure	PASS
2.38	UE Response to PDN Disconnect Reject Code 43	PASS
2.39	UE Routes DNS Queries	PASS
2.40.1	Attach / Abnormal case / Network reject with Extended Wait Timer	PASS
2.40.2	Attach Procedure / EAB broadcast handling / ExtendedAccessBarring configured in the UE	PASS
2.40.3	Normal tracking area update / low priority override	PASS

2.40.4	Normal tracking area update / EAB broadcast handling / ExtendedAccessBarring configured in the UE / ExtendedAccessBarring and Override_ExtendedAccessBarring configured in the UE	PASS
2.40.5	UE requested PDN connectivity accepted / Dual priority / T3396 override	PASS
2.40.6	UE requested PDN connectivity accepted / Dual priority / T3346 override	PASS
2.40.7	UE requested PDN connectivity not accepted / Network reject with Extended Wait Timer	PASS
2.40.8	UE requested bearer resource modification / Dual priority / low priority override	PASS
2.41	feICIC GCF Signaling and Protocol Test Cases	PASS
2.42	feICIC Feature Group and UE Capability Support	PASS
2.43	RRCConnectionReconfiguration when CRS-AssistanceInfoList-r11 is present	PASS
2.44	DL CoMP UE Capability Support	PASS

2.45	DL CoMP handover with transmission mode change	PASS
2.46	UE Downlink Supervision	PASS
2.47	Non-Essential System Information Detection Failure	PASS
2.48	Inter-frequency Measurement Report Order	PASS
2.49	MDT GCF Signaling and Protocol Test cases	PASS
2.50	R10 Logged MDT UE capability Report	PASS
2.51	UE is paged in RRC connected state	PASS
2.52	Contention-free based HO with TTIB enabled	PASS
2.53	EPDCCH GCF Signalling and Protocol Conformance Test Cases	PASS
2.54	EPDCCH UE Capability Support	PASS
2.55	256QAM UE Capability Support	PASS

2.56	Handover with MCS&CQI Table Change	PASS
2.57	SCM Signalling and Protocol Conformance Test Cases (VOID)	PASS
2.58	Default and Dedicated Bearer Setup over Internet PDN Connection (EMM-Connected)	PASS

2.59	PSM GCF Signalling and Protocol Conformance Test Cases	PASS

2.59		PSM
PSM GCF Signalling and Protocol Conformance Test Cases		PASS

References

<Industry Standards References>

Change requests may cause modification to the specifications listed below. Please refer to www.3gpp.org for the latest version of the 3GPP specifications. Verizon Wireless LTE 3GPP Band 13 specifications are available at opennetwork.verizonwireless.com.

3GPP TS 24.301: Non-Access-Stratum (NAS) protocol for Evolved Packet System (EPS); Stage 3, Release 9

3GPP TS 23.401: General Packet Radio Service enhancements for EUTRAN access, Release 9

3GPP TS 36.300: Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); Overall description; Stage 2, Release 9

3GPP TS 36.331: Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification, Release 9

3GPP TS 36.508: Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access (E-UTRAN); Common Test Environments for User Equipment (UE) Conformance Testing, Release 9

3GPP TS 36.523-1, EUTRA and EPC User equipment conformance specification; Part 1: Protocol conformance specification, Release 9.

3GPP TS 36.521-3: Evolved Universal Terrestrial Radio Access (E-UTRA; User Equipment (UE) conformance specification Radio transmission and reception; Part 3: Radio Resource Management Conformance Testing, Release 9.

"Verizon Wireless LTE 3GPP Band 13 Network Access Requirements"

"Verizon Wireless LTE 3GPP Band 13 Lab Conformance Test Plan"

"Verizon Wireless LTE 3GPP Band 13 Device Conformance Test Process"

"Verizon Wireless LTE 3GPP Band 13 Test Equipment List"

"Verizon Wireless LTE 3GPP Band 13 RF and RRM Conformance Test Plan"

"Verizon Wireless LTE 3GPP Band 13 Signaling Conformance Test Plan"

"Verizon Wireless LTE SMS Requirements"
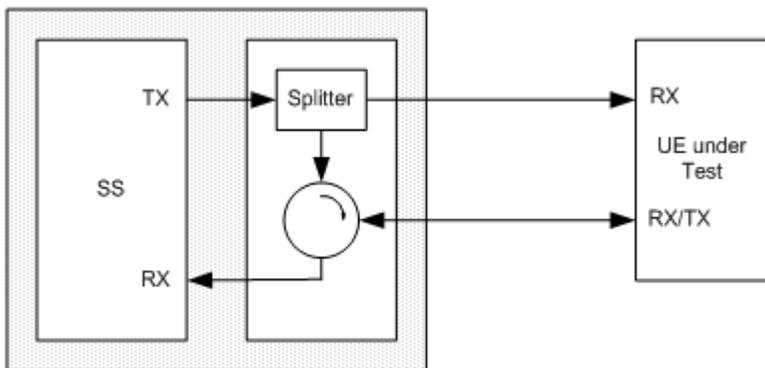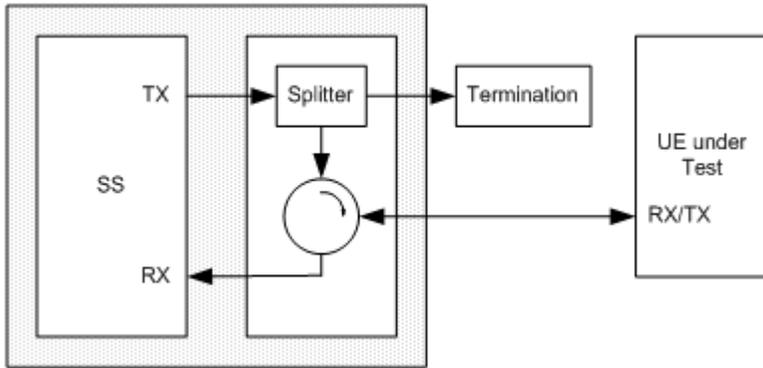
2.1 EUTRAN INITIAL ATTACH (WITH PIGGYBACKING) VZ_TC_LTESUPSIGCONF_5392

Definition

The procedure of EUTRAN Initial Attach with the establishment of an IMS PDN connection through piggybacking is tested. This is performed after the UE is synchronized to the network.

Traceability:

- "Verizon Wireless LTE 3GPP Band 13 Network Access Requirements"
- 3GPP TS 36.300: *Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); Overall description; Stage 2*, Release 9
- 3GPP TS 36.331: *Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification*, Release 9
- 3GPP TS 24.301: *Non-Access-Stratum (NAS) protocol for Evolved Packet System (EPS); Stage 3*, Release 9

Applicability:

This test applies to all devices that support IMS and are designed to operate in the Verizon Wireless LTE 3GPP Band 13 network.

Design Steps			
Step Name			
Step 1			
Pre-Conditions			
Procedures			
The network simulator is configured for signal conformance testing as described in Section *Test Equipment Configuration* and powered on. The device (UE) under test is then connected to the network simulator. After the UE is powered on, acquired and synchronized to the network, the following procedures should be either initiated by the UE or performed in response to messages received by the UE. Enable the Class 1 and Class 2 APNs, i.e., corresponding to the IMS PDN and Administrative PDN. Reset the UE.			

Step	Procedure	U - S	Message	Verdict
1	RRC connection establishment	-	-	N/A
1a	Check: Does the UE send the EMM:Attach	=>	EMM:Attach Request	Pass if

	Request and ESM:PDN Connectivity Request messages together with the *RRCConnectionSetupComplete* message?		ESM:PDN Connectivity Request	message sent
1b	Check: Does the "EPS Attach type" = EPS Attach or Combined EPS/IMSI Attach in the Attach Request message?			Pass if type is correct
1c	Check: Is the "Request Type" = Initial Request?			Pass if type is correct
1d	Check: Is the PDN type = IPv4v6?			Pass if type is correct
1e	Check: Is the ESM Information Transfer Flag set to "1" in the ESM:PDN Connectivity Request message?			Pass if the flag is correct
1f	Check: Is the APN not included?			Pass if APN is not included
1g	Check: Is the Protocol Option (PCO) = • DNS IPv6 address • P-CSCF IPv6 address • IPv4 Link MTU • MSISDN • Operator reserved PCO container ID=FF00H, with MCC=311 and MNC=480			Pass if protocol option is correct
2	Network simulator sends an ESM Information request message to UE	<=	ESM: ESM Information Request	N/A
2a	Check: Does UE send the ESM: ESM Information Response with the APN ?	=>	ESM: ESM Information Response	Pass if message sent
3	Network simulator sends the Attach Accept/Activate Default EPS Bearer Context	<=	Attach Accept Activate Default EPS	N/A

	Request messages with the following information elements:
	- ATTACH ACCEPT:
	
	  • GUTI
	
	  • EMM Cause = 18 (if "EPS Attach Type" was Combined EPS/IMSI Attach)
	- ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST:
	
	  • "APN-AMBR"
	  • "Protocol Configuration Options" =
	    • DNS IP address
	    • P-CSCF IP addresses
	    • IPv6 prefix
	    • IPv4 Link MTU
	    • MSISDN
	    • Operator reserved PCO container ID=FF00H, with MCC=311 and MNC=480
			Bearer Context Request	

3a	Check: Does the UE transmit the ATTACH COMPLETE and ACTIVATE DEFAULT EPS BEARER CONTEXT ACCEPT messages?	=>	ATTACH COMPLETE + ACTIVATE DEFAULT EPS BEARER CONTEXT ACCEPT	Pass if message sent

Expected Results

The device shall meet the verdicts in the Table above.

2.2 RRC UE FEATURE GROUP SUPPORT VZ_TC_LTESUPSIGCONF_5393

Definition

This procedure is to test the compliance of UE Feature Group Indicator support to the VzW requirements.

Traceability:

- "Verizon Wireless LTE 3GPP Band 13 Network Access Requirements"
- 3GPP TS 36.331: *Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification*, Release 9

Applicability:

This test applies to all devices that support IMS and are designed to operate in the Verizon Wireless LTE 3GPP Band 13 network.

Design Steps				
Step Name				
Step 1				
Pre-Conditions				
Procedures				
The network simulator is configured for signal conformance testing as described in Section *Test Equipment Configuration* and powered on. The device (UE) under test is then connected to the network simulator. After the UE is powered on, acquired and synchronized to the network, the following procedures should be either initiated by the UE or performed in response to messages received by the UE.				

Step	Procedure	Message Sequence		Verdict
		U - S	**Message**	
1	UE performs the Initial Attach procedure to the LTE network as in Test 2.1	-	-	N/A
2	Configure the network simulator to send the Capability Inquiry message to the UE	<=	Capability Inquiry	N/A
2a	Check: Does UE respond to the enquiry by sending the UE Capability Information message to eNB?	=>	UE Capability Information	Pass if message sent
2b	Check: Does the featureGroupIndicators field in the UE-EUTRA-Capability IE indicate the feature groups supported by the UE?			Pass if contents are correct

Expected Results
Supported feature groups shall vary depending on UE requirements.
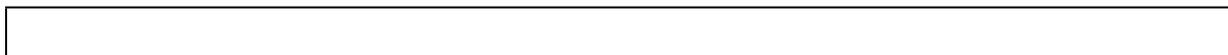
2.3 IPV6 ADDRESS ASSIGNMENT VZ_TC_LTESUPSIGCONF_5394

Definition

This procedure is to test the compliance of the device in obtaining an IPv6 address assignment.

Traceability:

- "Verizon Wireless LTE 3GPP Band 13 Network Access Requirements"

3GPP TS 36.331: *Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification*, Release 9

- RFC 4861, section 4.6.2
- RFC 4862

Applicability:

This test applies to all devices that support IMS and are designed to operate in the Verizon Wireless LTE 3GPP Band 13 network.

Design Steps				
Step Name				
Step 1				
Pre-Conditions				
Procedures				
The network simulator is configured for signal conformance testing as described in Section *Test Equipment Configuration* and powered on. The device (UE) under test is then connected to the network simulator. After the UE is powered on, acquired and synchronized to the network, the following procedures should be either initiated by the UE or performed in response to messages received by the UE.				

Step	Procedure	Message Sequence		Verdict
		U - S	**Message**	
1	Configure the UE to perform the Initial Attach procedure to the LTE network	-	-	N/A
2	Ensure the Initial Attach procedure in Section 2.1 is completed			N/A
2a	Check: Confirm that the UE does not send out any Neighbor Solicitation messages during the			Pass if no Neighbor Solicitation messages sent

	initial Attach procedure.			
2b	Check: Does the UE send out the Router Solicitations to P-GW, using the link-local address, which is formed using the interface id received in the "PDN Address" information element of the ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST message?	=>	Router Solicitations	Pass if message sent with the correct link-local address
3	Network simulator sends the router advertisement, with the "ValidLifetime" value set to 3 minutes, and the "RouterLifetime" value set to 5 minutes.	<=	Router Advertisement	N/A
3a	Check: Examine the source IP address of an IPv6 packet to verify the construction of an IPv6 address by appending an interface id to the IPv6 prefix in the Router Advertisement message?			Pass if IPv6 address is constructed correctly
4	After the first router advertisement is sent for 2 minutes, Network simulator sends another router advertisement with the same IPv6 prefix, the ValidLifetime" value set to 8 minutes, and the "RouterLifetime" value set to 6 minutes.	<=	Router Advertisement	N/A
5	Wait for 5 minutes			

5a	Check: Does the UE send a new Router Solicitation message?			Fail if the message is sent earlier than 4.5 min after receiving the router advertisement

Expected Results

UE shall meet the verdicts in the Table above.

2.4 EUTRAN INITIAL ATTACH (APN DISABLED) VZ_TC_LTESUPSIGCONF_5395

Definition

The function of APN disable is tested under the procedure of EUTRAN Initial Attach.

Traceability:

- "Verizon Wireless LTE 3GPP Band 13 Network Access Requirements"
- 3GPP TS 36.300: *Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); Overall description; Stage 2*, Release 9
- 3GPP TS 36.331: *Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification*, Release 9
- 3GPP TS 24.301: *Non-Access-Stratum (NAS) protocol for Evolved Packet System (EPS); Stage 3*, Release 9

Applicability:

This test applies to all devices that support IMS and are designed to operate in the Verizon Wireless LTE 3GPP Band 13 network.

Design Steps
Step Name
Step 1
Pre-Conditions
Procedures

The network simulator is configured for signal conformance testing as described in Section **Test Equipment Configuration** and powered on. The device (UE) under test is then connected to the network simulator. Power on the UE. Configure the Class 1 and Class 2 APNs of the UE as shown in APN Test Case 1 in Table 2.4.21. Reset the UE and perform the test procedures as described in Table 2.4.22.

Table 2.4.21   APN Test Case Configuration

APN Test Case	Class 1 APN (IMS PDN)	Class 2 APN (Administrative PDN)
1	Disable	Enable
2	Enable	Disable
3	Disable	Disable

Table 2.4.22   Test Procedures for Initial Attach with disabled APN

Step	Procedure	Message Sequence		Verdict
		U - S	**Message**	

1	RRC connection establishment	-	-	N/A
1a	Check: Does the UE send the random access preamble?	=>		Fail if message sent
2	Configure Class 1 and Class 2 APNs for APN Test Case 2; reset the UE and repeat steps 1, 1a			N/A
2a	Check: Does the UE send the random access preamble?	=>		Fail if message sent
3	Configure Class 1 and Class 2 APNs for APN Test Case 3; reset the UE and repeat steps 1, 1a			N/A
3a	Check: Does the UE send the random access preamble?	=>		Fail if message sent

Expected Results

UE shall meet the verdicts in the Table above. The UE shall not attempt to establish a connection.

2.7 UE INITIATED PDN CONNECTION (EMM-IDLE) VZ_TC_LTESUPSIGCONF_5397

Definition

The UE has already completed the initial attach to the network such that it is EMM registered. However, there has been no active traffic between the UE and the network such that the UE is in RRC idle and EMM-idle states. With the trigger from the user or an application (e.g., polling email server), the UE initiates a Service Request to return to the RRC-connected and EMM-connected states. Consequently, UE requests for the setup of a connection to the Internet PDN, as triggered by initiating an Internet connection.

Traceability:

- "Verizon Wireless LTE 3GPP Band 13 Network Access Requirements"
- 3GPP TS 36.300: *Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); Overall description; Stage 2*, Release 9
- 3GPP TS 36.331: *Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification*, Release 9, Section 5
- 3GPP TS 24.301: *Non-Access-Stratum (NAS) protocol for Evolved Packet System (EPS); Stage 3*, Release 9, Section 5.6.1
- 3GPP TS 23.401: Release 9, Section 5.3.4

Applicability:

This test applies to all devices that support IMS and are designed to operate in the Verizon Wireless LTE 3GPP Band 13 network.

Design Steps				
Step Name				
Step 1				
Pre-Conditions				
Procedures				
The UE under test shall have already completed the Initial Attach procedure resulting in the setup of a default IMS PDN bearer, and completed the IMS registration successfully. This procedure tests the setup of connection to an additional PDN.				
Step	Procedure	Message Sequence		Verdict
		U - S	Message	

1	network simulator sends a RRC connection release message to the UE.	<=	RRC Connection Release	N/A
1a	Check: Does UE release all its RRC connections?			Pass if all RRC connections are released
2	Initiate data activity that will cause the UE to connect to the Internet	-	-	N/A
2a	Check: Does the *RRCConnectionRequest* message carry a *ue-Identity* S-TMSI?	=>	*RRCConnectionRequest*	Pass if message carries the correct UE identifier
2b	Check: Does the UE send the EMM: Service Request message together with the *RRCConnectionSetupComplete* message?	=>	EMM: Service Request *RRCConnectionSetupComplete*	Pass if message sent
3	Wait for 1 minute to allow the service request procedure to be completed	=>		N/A
4	UL information transfer			N/A
4a	Check: Does UE send an ESM: PDN Connectivity Request message?	=>	UL Information Transfer ESM: PDN Connectivity Request	Pass if message sent
4b	Check: Is the "Request Type" = Initial Request?			Pass if type is correct
4c	Check: Is the PDN type = IPv4v6?			Pass if type is correct
4d	Check: Is the ESM Information Transfer Flag omitted in the ESM:PDN Connectivity Request message?			Pass if the flag is omitted

4e	Check: Does the UE include an APN corresponding to the Internet PDN that is enabled?			Pass if the Internet APN is included
4f	Check: Is the Protocol Option (PCO) = • DNS • IPv4 Link MTU • Operator reserved PCO container ID=FF00H, with MCC=311 and MNC=480 Check: Does Protocol Option (PCO) NOT include P-CSCF IPv6 addresses?			Pass if protocol option is correct
5	Network simulator sends an Activate Default EPS Bearer Context Request message to the UE, with the following information elements: • "APN-AMBR" • "Protocol Configuration Options" = • DNS IP addresses. • IPv4 address • IPv6 prefix • IPv4 Link MTU • Operator reserved PCO container ID=FF00H, with MCC=311 and MNC=480			N/A
5a	Check: Does the UE get assigned an IPv4 address?			Pass if IPv4 address is assigned
6	RRC Connection Reconfiguration			N/A
6a	Check: Does the UE send an ESM: Activate Default EPS Bearer Context Accept message?	=>	Activate Default EPS Bearer Context Accept	Pass if message sent

Expected Results

UE shall meet the verdicts in the Table above.

2.8 UE INITIATED PDN CONNECTION (EMM-CONNECTED)
VZ_TC_LTESUPSIGCONF_5398

Definition

The UE has already completed the initial attach to the network such that it is EMM registered. It is in EMM-connected and RRC-connected states with a default bearer for the IMS PDN. UE requests for the setup of a new PDN bearer depending on the new traffic type to be supported, e.g., Admin PDN for OTADM, Internet PDN for web browsing, or Verizon Wireless Application PDN for Verizon Wireless applications.

Traceability:

- "Verizon Wireless LTE 3GPP Band 13 Network Access Requirements"
- 3GPP TS 36.300: *Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); Overall description; Stage 2*, Release 9
- 3GPP TS 36.331: *Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification*, Release 9, Section 5
- 3GPP TS 24.301: *Non-Access-Stratum (NAS) protocol for Evolved Packet System (EPS); Stage 3*, Release 9
- 3GPP TS 23.401: Release 9

Applicability:

This test applies to all devices that support IMS and are designed to operate in the Verizon Wireless LTE 3GPP Band 13 network.

Design Steps			
Step Name			
Step 1			
Pre-Conditions			
Procedures			
The UE under test shall have already completed the Initial Attach procedure resulting in the setup of a default IMS PDN bearer. This procedure tests the setup of connections to three additional PDNs, i.e., an Admin PDN, an Internet PDN, and a Verizon Wireless Application PDN.			

Step	Procedure	Message Sequence		Verdict
		U - S	**Message**	
1	Start with UE in EMM registered/EMM connected state			N/A

2	Initiate data activity that will cause the UE to connect to the Internet			N/A
3	Check: Does UE send an UL Information Transfer message ESM: PDN Connectivity Request message?	=>	UL Information Transfer ESM: PDN Connectivity Request	Pass if message sent
3a	Check: Is the "Request Type" = Initial Request?			Pass if type is correct
3b	Check: Is the PDN type = IPv4v6?			Pass if type is correct
3c	Check: Is the ESM Information Transfer Flag omitted in the ESM:PDN Connectivity Request message?			Pass if type is correct
3d	Check: Is an enabled APN included for an Internet PDN?			Pass if type is correct
3e	Check: Is the Protocol Option (PCO) = • DNS • IPv4 Link MTU • Operator reserved PCO container ID=FF00H, with MCC=311 and MNC=480? Check: Does Protocol Option (PCO) NOT include P-CSCF IPv6 addresses?			Pass if type is correct

4	Network simulator sends an Activate Default EPS Bearer Context Request message to the UE, with the following information elements:
	
	• "APN-AMBR"
	• "Protocol Configuration Options" =
	  • DNS IP addresses.
	  • IPv4 address
				N/A

	- IPv6 prefix - IPv4 Link MTU - Operator reserved PCO container ID=FF00H, with MCC=311 and MNC=480			
5	RRC Connection Reconfiguration			N/A
5a	Check: Does the UE send an ESM: Activate Default EPS Bearer Context Accept message?	=>	Activate Default EPS Bearer Context Accept	Pass if message sent
6	Network simulator sends the Package #0 SMS message to the UE to trigger an Admin PDN connection request			N/A
7	Repeat Steps 3 to 5 to set up a Default bearer for an Admin PDN.			N/A
7a	Check: Does the UE get an IPv4 and an IPv6			Pass if an IPv4 and an

	address for the Admin PDN?			IPv6 address is assigned
8	Repeat Steps 3 to 5 to set up a Default bearer for the Verizon Wireless Application PDN.			N/A
8a	Check: Does the UE get an IPv4 and an IPv6 address for the Verizon Wireless Application PDN?			Pass if an IPv4 and an IPv6 address is assigned

Expected Results

UE shall meet the verdicts in the Table above.

2.9 UE INITIATED PDN CONNECTION (APN DISABLED) VZ_TC_LTESUPSIGCONF_5399

Definition

The function of APN disable is tested after UE has completed the Initial Attach to EUTRAN.

Traceability:

- "Verizon Wireless LTE 3GPP Band 13 Network Access Requirements"
- 3GPP TS 36.300: *Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); Overall description; Stage 2*, Release 9
- 3GPP TS 36.331: *Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification*, Release 9
- 3GPP TS 24.301: *Non-Access-Stratum (NAS) protocol for Evolved Packet System (EPS); Stage 3*, Release 9

Applicability:

This test applies to all devices that support IMS and are designed to operate in the Verizon Wireless LTE 3GPP Band 13 network.

Design Steps			
Step Name			
Step 1			
Pre-Conditions			
Procedures			
The network simulator is configured for signal conformance testing as described in Section ***Test Equipment Configuration*** and powered on. The device (UE) under test is then connected to the network simulator. Power on the UE. Configure the class-3 APN that corresponds to the Internet PDN to "disable" for the UE. Reset the UE.			

Step	Procedure	Message Sequence		Verdict
		U - S	**Message**	
1	Complete Initial attach procedure to the network simulator as described in Test Case ID: *VZ_TC_LTESUPSIGCONF_539 (EUTRAN INITIAL ATTACH (WITH PIGGYBACKING))*			N/A

2	Initiate data activity that will cause the UE to connect to the Internet.			N/A
2a	Check: Does UE send an UL Information Transfer message ESM: PDN Connectivity Request message?	=>		Fail if message sent

Expected Results

UE shall meet the verdicts in the Table above. The UE shall not attempt to establish a connection to the disabled Internet PDN.

2.12 NETWORK INITIATED PDN DISCONNECT (EMM-CONNECTED)
VZ_TC_LTESUPSIGCONF_5400

Definition

The UE has already completed the initial attach to the network so that it is EMM registered and is in EMM-Connected and RRC-connected states. The network requests for disconnection from a PDN after idle timeout.

Traceability:

- "Verizon Wireless LTE 3GPP Band 13 Network Access Requirements"
- 3GPP TS 36.300: *Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); Overall description; Stage 2*, Release 9
- 3GPP TS 36.331: *Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification*, Release 9
- 3GPP TS 24.301: *Non-Access-Stratum (NAS) protocol for Evolved Packet System (EPS); Stage 3*, Release 9
- 3GPP TS 23.401: Release 9

Applicability:

This test applies to all devices that support IMS and are designed to operate in the Verizon Wireless LTE 3GPP Band 13 network.

Design Steps				
Step Name				
Step 1				
Pre-Conditions				
Procedures				
The UE under test should have already completed the Initial Attach procedure resulting in the setup of a default IMS PDN bearer. An Internet PDN connection has been set up according to VZ_TC_LTESUPSIGCONF_5397 (UE INITIATED PDN CONNECTION [EMM-IDLE]).				

Step	Procedure	Message Sequence		Verdict
		U - S	**Message**	
1	Start with an UE stopping an Internet application			N/A
2	Network simulator sends a PDN Disconnect request			N/A

3	RRC Connection Reconfiguration			N/A
3a	Network simulator sends the RRC Connection Reconfiguration message to the UE, with the ESM:Deactivate EPS Bearer Context Request message	<=	RRC Connection Reconfiguration Deactivate EPS Bearer Context Request	N/A
3b	Check: Does the UE send the RRC Connection Reconfiguration Complete message?	=>	RRC Connection Reconfiguration Complete	Pass if message sent
4	UL information transfer			N/A
4a	Check: Does the UE send an UL information Transfer message that carries the ESM: Deactivate EPS Bearer Context Accept message?	=>	Deactivate EPS Bearer Context Accept	Pass if message sent
5	Network initiated UE context Release			N/A
5a	Network simulator sends the RRC connection Release message to the UE	<=	RRC connection Release	N/A
5b	Check: Does UE send an RLC Acknowledgement to the SS?	=>	RLC ACK	Pass if message sent

Expected Results

UE shall meet the verdicts in the Table above.

2.13 UE INITIATED DETACH FOR E-UTRAN (EMM-CONNECTED) 3 PDNS SCENARIO VZ_TC_LTESUPSIGCONF_5401

Definition

The UE has already completed the initial attach to the network so that it is EMM registered and is in EMM-Connected and RRC-connected states. UE requests for detach from the EUTRAN, e.g., when the UE is soft reset.

Traceability:

- "Verizon Wireless LTE 3GPP Band 13 Network Access Requirements"
- 3GPP TS 36.300: *Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); Overall description; Stage 2*, Release 9
- 3GPP TS 36.331: *Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification*, Release 9
- 3GPP TS 24.301: *Non-Access-Stratum (NAS) protocol for Evolved Packet System (EPS); Stage 3*, Release 9
- 3GPP TS 23.401: Release 9

Applicability:

This test applies to all devices that support IMS and are designed to operate in the Verizon Wireless LTE 3GPP Band 13 network.

Design Steps				
Step Name				
Step 1				
Pre-Conditions				
Procedures				
The UE under test should have already completed the Initial Attach procedure resulting in the setup of a default IMS PDN bearer.				
Step	Procedure	Message Sequence		Verdict
		U - S	Message	
1	The UE has established 3 PDN connections according to Test Case:VZ_TC_LTESUPSIGCONF_5398 (UE INITIATED PDN CONNECTION [EMM-CONNECTED])			N/A

2	Soft reset the UE using appropriate AT Command			N/A
3	Check: Does the UE send a SIP SUBSCRIBE message to IMS with Expires=0 (to terminate subscription to the reg events package)?	=>		Pass if message sent
4	Check: Does the UE send a SIP REGISTER message to IMS with Expires=0 indicating UE de-registration with IMS?	=>		Pass if message sent
5	UL information transfer			N/A
5a	Check: Does the UE send an UL Information Transfer with the EMM: Detach Request message?	=>	UL Information Transfer EMM: Detach Request	Pass if message sent

Expected Results

UE shall meet the verdicts in the Table above.

2.14 UE INITIATED DETACH FOR E-UTRAN (EMM-IDLE) - 3 PDNS SCENARIO VZ_TC_LTESUPSIGCONF_5402

Definition

The UE has already completed the initial attach to the network so that it is EMM registered, but it is in EMM-Idle and RRC-Idle states. A RRC connection needs to be established before UE can request for detach from the EUTRAN, e.g., when the UE is powered off.

Traceability:

- "Verizon Wireless LTE 3GPP Band 13 Network Access Requirements"
- 3GPP TS 36.300: *Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); Overall description; Stage 2*, Release 9
- 3GPP TS 36.331: *Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification*, Release 9
- 3GPP TS 24.301: *Non-Access-Stratum (NAS) protocol for Evolved Packet System (EPS); Stage 3*, Release 9
- 3GPP TS 23.401: Release 9

Applicability:

This test applies to all devices that support IMS and are designed to operate in the Verizon Wireless LTE 3GPP Band 13 network.

Design Steps				
Step Name				
Step 1				
Pre-Conditions				
Procedures				
The UE under test should have already completed the Initial Attach procedure resulting in the setup of a default IMS PDN bearer. VZ_TC_LTESUPSIGCONF_5398				
Step	Procedure	Message Sequence		Verdict
		U - S	Message	
1	The UE has established 3 PDN connections according to Test Case ID:VZ_TC_LTESUPSIGCONF_5398 (UE INITIATED PDN CONNECTION [EMM-CONNECTED]).			N/A
2	Turn off the UE power.			N/A

3	RRC Connection Establishment			N/A
4	RRC connection reconfiguration			N/A
4a	Check: Does the UE send the RRC Connection Reconfiguration Complete message?	=>	RRC Connection Reconfiguration Complete	Pass if message sent
5	Check: Does the UE send a SIP SUBSCRIBE message to IMS with Expires=0 (to terminate subscription to the reg events package)?	=>		Pass if message sent
6	Check: Does the UE send a SIP REGISTER message to IMS with Expires=0 indicating UE de-registration with IMS?	=>		Pass if message sent
7	UL information transfer			N/A
7a	Check: Does the UE send an UL Information Transfer with the EMM: Detach Request message?	=>	UL Information Transfer EMM: Detach Request	Pass if message sent

Expected Results

UE shall meet the verdicts in the Table above.

2.15 MME INITIATED DETACH (EMM-CONNECTED) -3 PDNS SCENARIO
VZ_TC_LTESUPSIGCONF_5403

Definition

The UE has already completed the initial attach to the network so that it is EMM registered and is in EMM-Connected and RRC-connected states. The network simulator initiates detach of the UE from the EUTRAN, e.g., radio link to the UE failed or the UE is powered off.

Traceability:

- "Verizon Wireless LTE 3GPP Band 13 Network Access Requirements"
- 3GPP TS 36.300: *Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); Overall description; Stage 2*, Release 9
- 3GPP TS 36.331: *Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification*, Release 9
- 3GPP TS 24.301: *Non-Access-Stratum (NAS) protocol for Evolved Packet System (EPS); Stage 3*, Release 9
- 3GPP TS 23.401: Release 9

Applicability:

This test applies to all devices that support IMS and are designed to operate in the Verizon Wireless LTE 3GPP Band 13 network.

Design Steps				
Step Name				
Step 1				
Pre-Conditions				
Procedures				
The UE under test should have already completed the Initial Attach procedure resulting in the setup of a default IMS PDN bearer.				
Step	Procedure	Message Sequence		Verdict
		U - S	Message	
1	The UE has established 3 PDN connections			N/A

	according to Test CaseID:VZ_TC_LTESUPSIGCONF_5398 (UE INITIATED PDN CONNECTION [EMM_CONNECTED])			
2	Network simulator sends a DL Information Transfer message with the EMM: Detach Request message to the UE	ß	DL Information Transfer EMM: Detach Request	N/A
3	UL information transfer			N/A
3a	Check: Does the UE send a UL Information Transfer message to the eNB carrying the EMM:Detach Accept message for the MME?	à	UL Information Transfer EMM: Detach Accept	Pass if message sent
4	Network simulator sends the RRC connection Release message to the UE and an indication to release all RABs and detach from the network	ß	RRC connection Release	N/A
4a (Note: This step is optional)	Check: Does UE send an RLC Acknowledgement to the eNB? Note : Depending on configuration, UE may not send RLC ACK even if RRC release is received. In this condition, Step-4a need to be consider as optional.	à	RLC ACK	Pass if message sent (depending on configuration)

Expected Results
UE shall meet the verdicts in the Table above.

2.16 UE RE-INITIATED CONNECTION TO IMS PDN AFTER DISCONNECTED VZ_TC_LTESUPSIGCONF_5404

Definition

The UE has been disconnected from the IMS PDN while still connected to another PDN, e.g., Internet PDN. In this scenario, the UE has to request for a re-connection to the IMS PDN. These procedures test the UEs capability to re-connect to the IMS PDN while connecting to the Internet PDN, immediately following a disconnection from the IMS PDN.

Traceability:

- "Verizon Wireless LTE 3GPP Band 13 Network Access Requirements"
- 3GPP TS 36.300: *Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); Overall description; Stage 2*, Release 9
- 3GPP TS 36.331: *Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification*, Release 9, Section 5
- 3GPP TS 24.301: *Non-Access-Stratum (NAS) protocol for Evolved Packet System (EPS); Stage 3*, Release 9
- 3GPP TS 23.401: Release 9

Applicability:

This test applies to all devices that support IMS and are designed to operate in the Verizon Wireless LTE 3GPP Band 13 network.

Design Steps				
Step Name				
Step 1				
Pre-Conditions				
Procedures				
The UE under test shall have already completed the initial Attach procedure to connect to the IMS PDN and established a connection to the Internet PDN.				
Step	**Procedure**	**Message Sequence**		**Verdict**
		U - S	**Message**	
1	Network simulator initiates the PDN disconnect from the IMS PDN	<=		

2	Check: Is the UE disconnected from the IMS PDN?			Pass if UE is disconnected from the IMS PDN
3	Check: Does UE send an UL Information Transfer message ESM: PDN Connectivity Request message?	=>	UL Information Transfer ESM: PDN Connectivity Request	Pass if message sent
3a	Check: Is the "Request Type" = Initial Request?			Pass if type is correct
3b	Check: Is the PDN type = IPv4v6?			Pass if type is correct
3c	Check: Is the ESM Information Transfer Flag omitted in the ESM:PDN Connectivity Request message?			Pass if type is correct
3d	Check: Is APN = 1 included for the IMS PDN?			Pass if type is correct
3e	Check: Is the Protocol Option (PCO) = • DNS • IPv4 Link MTU • Operator reserved PCO container ID=FF00H, with MCC=311 and MNC=480?			Pass if type is correct

4	Network simulator sends an Activate Default EPS Bearer Context Request message to the UE, with the following information elements:
	
	• "APN-AMBR"
	• "Protocol Configuration Options" =
	  • DNS and P-CSCF IP addresses.
	  • IPv4 address
		<=	Activate Default EPS Bearer Context Request	N/A

	• IPv6 prefix • IPv4 Link MTU • Operator reserved PCO container ID=FF00H, with MCC=311 and MNC=480			
5	Check: Does the UE send an ESM: Activate Default EPS Bearer Context Accept message?	=>	Activate Default EPS Bearer Context Accept	Pass if message sent
6	Check: Does the UE get a new IPv6 address for the IMS PDN?			Pass if an IPv6 address is created

Expected Results

UE shall meet the verdicts in the Table above.

2.17 UE INITIATED LTE DETACH UPDATE TO APN PARAMETERS
VZ_TC_LTESUPSIGCONF_5405

Definition

The UE receives an APN update from the network while connected only to the IMS PDN. Consequently, the UE is required to initiate a detach procedure to detach from the network, followed by an attach request to connect to the IMS PDN.

Traceability:

- "Verizon Wireless LTE 3GPP Band 13 Network Access Requirements"
- 3GPP TS 36.300: *Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); Overall description; Stage 2*, Release 9
- 3GPP TS 36.331: *Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification*, Release 9, Section 5
- 3GPP TS 24.301: *Non-Access-Stratum (NAS) protocol for Evolved Packet System (EPS); Stage 3*, Release 9
- 3GPP TS 23.401: Release 9

Applicability:

This test applies to all devices that support IMS and are designed to operate in the Verizon Wireless LTE 3GPP Band 13 network.

Design Steps				
Step Name				
Step 1				
Pre-Conditions				
Procedures				
The UE under test shall have already completed the initial Attach procedure to connect to the IMS PDN.				
Step	Procedure	Message Sequence		Verdict
		U-S	Message	
1	Change the network identifier for Class 1 APN , e.g., APN 1 is changed from "IMS" to "VZWIMS" .	<=		N/A
2	UE initiates the Detach procedure to detach from the network			N/A

2a	Check: Does the UE send an UL Information Transfer with the EMM: Detach Request message?	=>	UL Information Transfer EMM: Detach Request	Pass if message sent
3	Network simulator sends a DL Information Transfer message to the UE carrying the EMM:Detach Accept message.	<=	DL Information Transfer EMM: Detach Accept	N/A
4	UE initiates the Attach procedure as described in Section 2.1	=>	UL Information Transfer EMM: Attach Request	N/A
4a	Check: Does the UE send the "Attach Request" message with fields set as described in Section 2.1?			Pass if message sent
4b	Network simulator sends an ESM Information request message to UE	<=	ESM: ESM Information Request	N/A
4c	Check: Does UE send the ESM: ESM Information Response with the APN set to "VZWIMS"?	=>	ESM: ESM Information Response	Pass if message sent
4d	Check: Does the UE get an IPv4 or IPv6 address for the IMS PDN?			Pass if an IPv4 or IPv6 address is assigned for the IMS PDN
	NOTE: The IMS APN network identifier stored on the UE should be changed back to the original default value of "IMS" for the remainder of the test cases in this test plan.			

Expected Results

UE shall meet the verdicts in the Table above.

2.18 UE INITIATED PDN DISCONNECTION UPDATE TO APN PARAMETERS (EMM-IDLE) VZ_TC_LTESUPSIGCONF_5406

Definition

The APN related parameters, e.g., APN identifier and API IP Type, have been modified while UE is in RRC idle and EMM-Idle states and connected to one of the PDNs, e.g., Internet PDN. In this scenario, the UE has to request for a disconnection from the PDN and then request for a re-connection to the PDN using the new APN parameters.

Traceability:

- "Verizon Wireless LTE 3GPP Band 13 Network Access Requirements"
- 3GPP TS 36.300: *Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); Overall description; Stage 2*, Release 9
- 3GPP TS 36.331: *Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification*, Release 9, Section 5
- 3GPP TS 24.301: *Non-Access-Stratum (NAS) protocol for Evolved Packet System (EPS); Stage 3*, Release 9
- 3GPP TS 23.401: Release 9
- 3GPP TS 23.003: *Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS);Numbering, addressing and identification*, section 9.1.1

Applicability:

This test applies to all devices that support IMS and are designed to operate in the Verizon Wireless LTE 3GPP Band 13 network.

Design Steps				
Step Name				
Step 1				
Pre-Conditions				
Procedures				
The UE under test shall have already completed the initial Attach procedure to connect to the IMS PDN and established a connection to the Internet PDN.				
Step	Procedure	Message Sequence		Verdict
		U - S	Message	
1	Start with UE in EMM registered/EMM idle state			N/A

1a	Check: Is UE in EMM/Idle ?			Pass if all RRC connections are released
2	APN Management			
2a	Change the network identifierfor APN 3 to a new value of 63 octets in length .	<=		N/A
2b	Change the APN IP Type for APN 3 to "IPv4"	<=		N/A
3	RRC connection establishment			N/A
3a	Check: Does the *RRCConnectionRequest* message carry a *ue-Identity* S-TMSI?	=>	*RRCConnectionRequest*	Pass if message carries the correct UE identifier
3b	Check: Does the UE send the EMM: Service Request message together with the *RRCConnectionSetupComplete* message?	=>	EMM: Service Request *RRCConnectionSetupComplete*	Pass if message sent
4	RRC connection reconfiguration			N/A
4a	Check: Does the UE send the RRC Connection Reconfiguration Complete message?	=>	RRC Connection Reconfiguration Complete	Pass if message sent
5	UL information transfer			N/A

5a	Check: Does UE send an UL Information Transfer message that carries the ESM: PDN Disconnect Request message to disconnect from the Internet PDN?	=>	UL Information Transfer ESM: PDN Disconnect Request	Pass if message sent
6	RRC Connection Reconfiguration			N/A
6a	Check: Does the UE send the RRC Connection Reconfiguration Complete message?	=>	RRC Connection Reconfiguration Complete	Pass if message sent
7	UL information transfer			N/A
7a	Check: Does the UE send an UL information Transfer message that carries the- ESM: Deactivate EPS Bearer Context Accept message?	=>	Deactivate EPS Bearer Context Accept	Pass if message sent
8	Check: Does UE send an UL Information Transfer message ESM: PDN Connectivity Request message?	=>	UL Information Transfer ESM: PDN Connectivity Request	Pass if message sent
8a	Check: Is the "Request Type" = Initial Request?			Pass if type is correct
8b	Check: Is the PDN type = IPv4?			Pass if type is correct
8c	Check: Is the ESM Information Transfer Flag omitted in the ESM:PDN Connectivity Request message?			Pass if type is correct
8d	Check: Is APN = 3 included for the updated			Pass if type is correct

	PDN?			
8e	Check: Is the Protocol Option (PCO) = • DNS • IPv4 Link MTU • Operator reserved PCO container ID=FF00H, with MCC=311 and MNC=480?			Pass if type is correct

9	Network simulator sends an Activate Default EPS Bearer Context Request message to the UE, with the following information elements:
	
	• "APN-AMBR"
	• "Protocol Configuration Options" =
	  • DNS server IP addresses.
	  • IPv4 address
	  • IPv4 Link MTU
	  • Operator reserved PCO container ID=FF00H, with MCC=311 and MNC=480
		<=	Activate Default EPS Bearer Context Request	N/A

10	Check: Does the UE send an ESM: Activate Default EPS Bearer Context Accept message?	=>	Activate Default EPS Bearer Context Accept	Pass if message sent

11	Check: Does the UE get a new IPv4 address for the updated PDN?			Pass if a new IPv4 address is supported

Expected Results

UE shall meet the verdicts in the Table above.

2.19 UE SUPPORT OF MULTIPLE DNS ADDRESSES VZ_TC_LTESUPSIGCONF_5407

Definition

The UE is required to support up to 2 IPv4 DNS server addresses, and up to 2 IPv6 DNS server addresses. This capability is verified in the current test case.

Traceability:

- "Verizon Wireless LTE 3GPP Band 13 Network Access Requirements"
- 3GPP TS 36.300: *Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); Overall description; Stage 2*, Release 9
- 3GPP TS 36.331: *Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification*, Release 9, Section 5
- 3GPP TS 24.301: *Non-Access-Stratum (NAS) protocol for Evolved Packet System (EPS); Stage 3*, Release 9
- 3GPP TS 23.401: Release 9

Applicability:

This test applies to all devices that support IMS and are designed to operate in the Verizon Wireless LTE 3GPP Band 13 network.

Design Steps				
Step Name				
Step 1				
Pre-Conditions				
Procedures				
The UE under test shall have already completed the initial Attach procedure to connect to the IMS PDN.				
Step	Procedure	Message Sequence		Verdict
		U - S	**Message**	
1	Start an Internet application			
2	Check: Does UE send an UL Information Transfer message ESM: PDN Connectivity Request message?	=>	UL Information Transfer ESM: PDN Connectivity Request	Pass if message sent

2a	Check: Is the "Request Type" = Initial Request?			Pass if type is correct
2b	Check: Is the PDN type = IPv4v6?			Pass if type is correct
2c	Check: Is the ESM Information Transfer Flag omitted in the ESM:PDN Connectivity Request message?			Pass if type is correct
2d	Check: Is APN included for the Internet PDN?			Pass if type is correct
2e	Check: Is the Protocol Option (PCO) = • DNS • IPv4 Link MTU • Operator reserved PCO container ID=FF00H, with MCC=311 and MNC=480?			Pass if type is correct

3	Network simulator sends an Activate Default EPS Bearer Context Request message to the UE, with the following information elements:
	
	• "APN-AMBR"
	• "Protocol Configuration Options" =
	  • P-CSCF IP addresses.
	  • IPv4 address
	  • IPv6 prefix
	  • 2 IPv4 DNS addresses
	  • 2 IPv6 DNS addresses
	  • IPv4 Link MTU
	  • Operator reserved PCO container ID=FF00H, with MCC=311 and MNC=480
		<=	Activate Default EPS Bearer Context Request	N/A

4a	Check: Does the UE send an ESM: Activate Default EPS Bearer Context Accept message?	=>	Activate Default EPS Bearer Context Accept	Pass if message sent

5	Check: Does the UE show the support of 2 IPv4 DNS and 2 IPv6 DNS addresses?			Pass if all 2 IPv4 and 2 IPv6 DNS addresses are supported

Expected Results

UE shall meet the verdicts in the Table above.

2.20 UE INITIATED PDN DISCONNECTION UPDATE TO APN PARAMETERS (EMM-CONNECTED) VZ_TC_LTESUPSIGCONF_5408

Definition

The APN related parameters, e.g., APN identifiers, have been modified while UE is in EMM-Connected and RRC connected states and connected to one of the PDNs, e.g., Internet PDN. In this scenario, the UE has to request for a disconnection from the PDN and then request for a re-connection to the PDN using the new APN parameters.

Traceability:

- "Verizon Wireless LTE 3GPP Band 13 Network Access Requirements"
- 3GPP TS 36.300: *Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); Overall description; Stage 2*, Release 9
- 3GPP TS 36.331: *Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification*, Release 9, Section 5
- 3GPP TS 24.301: *Non-Access-Stratum (NAS) protocol for Evolved Packet System (EPS); Stage 3*, Release 9
- 3GPP TS 23.401: Release 9

Applicability:

This test applies to all devices that support IMS and are designed to operate in the Verizon Wireless LTE 3GPP Band 13 network.

Design Steps			
Step Name			
Step 1			
Pre-Conditions			
Procedures			
The UE under test shall have already completed the initial Attach procedure to connect to the IMS PDN and established a connection to the Internet PDN.			
Step	Procedure	Message Sequence	Verdict
		U - S	Message	
1	Start with an UE in the EMM connected state			N/A

2	Change the network identifiers for APN 3, e.g., APN 3 is changed to "Enterprise" .	<=		N/A
3	UL information transfer			N/A
3a	Check: Does UE send an UL Information Transfer message that carries the ESM: PDN Disconnect Request message to disconnect from the Internet PDN?	=>	UL Information Transfer ESM: PDN Disconnect Request	Pass if message sent
4	RRC Connection Reconfiguration			N/A
4a	Check: Does the UE send the RRC Connection Reconfiguration Complete message?	=>	RRC Connection Reconfiguration Complete	Pass if message sent
5	UL information transfer			N/A
5a	Check: Does the UE send an UL information Transfer message that carries the- ESM: Deactivate EPS Bearer Context Accept message?	=>	Deactivate EPS Bearer Context Accept	Pass if message sent
6	Check: Does UE send an UL Information Transfer message ESM: PDN Connectivity Request message?	=>	UL Information Transfer ESM: PDN Connectivity Request	Pass if message sent
6a	Check: Is the "Request Type" = Initial Request?			Pass if type is correct
6b	Check: Is the PDN type = IPv4v6?			Pass if type is correct
6c	Check: Is the ESM Information Transfer Flag omitted in the ESM:PDN Connectivity Request message?			Pass if type is correct
6d	Check: Is APN = 3 included for the Enterprise PDN?			Pass if type is correct
6e	Check: Is the Protocol Option (PCO) = • DNS • IPv4 Link MTU			Pass if type is correct

	• Operator reserved PCO container ID=FF00H, with MCC=311 and MNC=480?			

7	Network simulator sends an Activate Default EPS Bearer Context Request message to the UE, with the following information elements:
	
	• "APN-AMBR"
	• "Protocol Configuration Options" =
	    • DNS and P-CSCF IP addresses.
	    • IPv4 address
	    • IPv6 prefix
	    • IPv4 Link MTU
	    • Operator reserved PCO container ID=FF00H, with MCC=311 and MNC=480
		<=	Activate Default EPS Bearer Context Request	N/A

8	Check: Does the UE send an ESM: Activate Default EPS Bearer Context Accept message?	=>	Activate Default EPS Bearer Context Accept	Pass if message sent
9	Check: Does the UE get a new IPv4 and an IPv6 address for the Enterprise PDN?			Pass if both IPv4 and IPv6 addresses are supported

Expected Results

UE shall meet the verdicts in the Table above.

2.21 NETWORK INITIATED EPS BEARER MODIFICATION WITHOUT QOS UPDATE (EMM-CONNECTED) VZ_TC_LTESUPSIGCONF_5409

Definition

The UE has already completed the initial attach to the network so that it is EMM registered and is in EMM-Connected and RRC-connected states. The network requests for modification of the TFT of the default EPS bearer for the Internet PDN.

Traceability:

- "Verizon Wireless LTE 3GPP Band 13 Network Access Requirements"
- 3GPP TS 36.300: *Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); Overall description; Stage 2*, Release 9
- 3GPP TS 36.331: *Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification*, Release 9
- 3GPP TS 24.301: *Non-Access-Stratum (NAS) protocol for Evolved Packet System (EPS); Stage 3*, Release 9
- 3GPP TS 23.401: Release 9

Applicability:

This test applies to all devices that support IMS and are designed to operate in the Verizon Wireless LTE 3GPP Band 13 network.

Design Steps
Step Name
Step 1
Pre-Conditions
Procedures
The UE under test should have already completed the Initial Attach procedure resulting in the setup of a default IMS PDN bearer and a default Internet PDN bearer. This procedure tests the modification of the default EPS bearer for the Internet PDN.

Step	Procedure	Message Sequence		Verdict
		U - S	**Message**	
1	UE has established a default EPS bearer for the IMS PDN and a default EPS bearer for the Internet PDN			N/A
2	Network simulator sends a DL Information Transfer message to the UE carrying the Modify EPS Bearer Context	<=	DL Information Transfer Modify EPS Bearer Context Request	N/A

	Request message, with the following information elements:
	
	   o "EPS bearer Identity"
	   o "TFT" with "number of packet filters"=15
	   o "Protocol Configuration Options" = Operator reserved PCO container ID=FF00H, with MCC=311 and MNC=480. Action = 3 (Redirect)			

3	UL information transfer			N/A
3a	Check: Does the UE send an UL information Transfer message that carries the ESM: Modify EPS Bearer Context Accept message?	=>	Modify EPS Bearer Context Accept	Pass if message sent

Expected Results

UE shall meet the verdicts in the Table above.

2.22 NETWORK INITIATED EPS BEARER MODIFICATION WITH QOS UPDATE (EMM-CONNECTED) VZ_TC_LTESUPSIGCONF_5410

Definition

The UE has already completed the initial attach to the network so that it is EMM registered and is in EMM-Connected and RRC-connected states. The network requests for QoS modification/rate throttling of the default EPS bearer for the IMS PDN.

Traceability:

- "Verizon Wireless LTE 3GPP Band 13 Network Access Requirements"
- 3GPP TS 36.300: *Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); Overall description; Stage 2*, Release 9
- 3GPP TS 36.331: *Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification*, Release 9
- 3GPP TS 24.301: *Non-Access-Stratum (NAS) protocol for Evolved Packet System (EPS); Stage 3*, Release 9
- 3GPP TS 23.401: Release 9

Applicability:

This test applies to all devices that support IMS and are designed to operate in the Verizon Wireless LTE 3GPP Band 13 network.

Design Steps				
Step Name				
Step 1				
Pre-Conditions				
Procedures				
The UE under test should have already completed the Initial Attach procedure resulting in the setup of a default IMS PDN bearer.				
Step	Procedure	Message Sequence		Verdict
		U - S	Message	
1	UE has established a default EPS bearer for the IMS PDN			N/A
2	RRC Connection Reconfiguration			N/A
2a	Network simulator sends the RRC Connection Reconfiguration message to the UE, with the ESM:Modify EPS Bearer Context Request	<=	RRC Connection Reconfiguration Modify EPS Bearer Context	N/A

			Request	

	message with the following information elements:
	  o "EPS bearer Identity"
	  o "New EPS QoS"
	  o "Protocol Configuration Options" = Operator reserved PCO container ID=FF00H, with MCC=311 and MNC=480. Action = 4 (Rate Throttling)			

2b	Check: Does the UE send the RRC Connection Reconfiguration Complete message?	=>	RRC Connection Reconfiguration Complete	Pass if message sent
3	UL information transfer			N/A
3a	Check: Does the UE send an UL information Transfer message that carries the ESM: Modify EPS Bearer Context Accept message?	=>	Modify EPS Bearer Context Accept	Pass if message sent

Expected Results

UE shall meet the verdicts in the Table above.

2.30 NETWORK INITIATED EPS DEDICATED BEARER ACTIVATION (EMM-CONNECTED) VZ_TC_LTESUPSIGCONF_5411

Definition

The UE has already completed the initial attach to the network so that it is EMM registered and is in EMM-Connected and RRC-Connected states. The network requests activation of a dedicated EPS bearer with TFT for the Internet PDN.

Traceability:

- "Verizon Wireless LTE 3GPP Band 13 Network Access Requirements"
- 3GPP TS 36.300: *Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); Overall description; Stage 2*, Release 9
- 3GPP TS 36.331: *Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification*, Release 9
- 3GPP TS 24.301: *Non-Access-Stratum (NAS) protocol for Evolved Packet System (EPS); Stage 3*, Release 9
- 3GPP TS 23.401: Release 9

Applicability:

This test applies to all devices that support IMS and are designed to operate in the Verizon Wireless LTE 3GPP Band 13 network.

Design Steps				
Step Name				
Step 1				
Pre-Conditions				
Procedures				
The UE under test should have already completed the Initial Attach procedure resulting in the setup of a default IMS PDN bearer and a default Internet PDN bearer. This procedure tests the activation of a dedicated EPS bearer for the Internet PDN.				
Step	Procedure	Message Sequence		Verdict
		U - S	Message	
1	UE has established a default EPS bearer for the IMS PDN and a default EPS bearer for the Internet PDN			N/A
2	Network simulator sends a DL	<=	DL Information Transfer	N/A

	Information Transfer message to the UE carrying two Activate Dedicated EPS Bearer Context Request messages, with the following information elements: • ACTIVATE DEDICATED EPS BEARER CONTEXT REQUEST: o "EPS bearer Identity" o "Linked EPS bearer identity" o "TFT" with "number of packet filters"=9 • ACTIVATE DEDICATED EPS BEARER CONTEXT REQUEST: o "EPS bearer Identity" o "Linked EPS bearer identity" o "TFT" with "number of packet filters"=7		Activate Dedicated EPS Bearer Context Request Activate Dedicated EPS Bearer Context Request	
3	UL information transfer			N/A
3a	Check: Does the UE send an UL information Transfer message that carries the ESM: Activate Dedicated EPS Bearer Context Accept message?	=>	Activate Dedicated EPS Bearer Context Accept	Pass if message sent
3b	Check: Does the UE send an UL information Transfer message that carries the ESM: Activate Dedicated EPS Bearer Context Accept message?	=>	Activate Dedicated EPS Bearer Context Accept	Pass if message sent

Expected Results

UE shall meet the verdicts in the Table above.

2.31 NETWORK INITIATED PDN DISCONNECT (NO DATA USAGE AVAILABLE) VZ_TC_LTESUPSIGCONF_5412

Definition

The UE has already completed the initial attach to the network so that it is EMM registered and is in EMM-Connected and RRC-Connected states. The network requests for disconnection from a PDN after account has no data usage available.

Traceability:

- "Verizon Wireless LTE 3GPP Band 13 Network Access Requirements"

- 3GPP TS 36.300: *Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); Overall description; Stage 2*, Release 9
- 3GPP TS 36.331: *Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification*, Release 9
- 3GPP TS 24.301: *Non-Access-Stratum (NAS) protocol for Evolved Packet System (EPS); Stage 3*, Release 9
- 3GPP TS 23.401: Release 9

Applicability:

This test applies to all devices that support IMS and are designed to operate in the Verizon Wireless LTE 3GPP Band 13 network.

Design Steps			
Step Name			
Step 1			
Pre-Conditions			
Procedures			
The UE under test should have already completed the Initial Attach procedure resulting in the setup of a default IMS PDN bearer. An Internet PDN connection has been set up according to Test Case ID: VZ_TC_LTESUPSIGCONF_5397 (UE INITIATED PDN CONNECTION[EMM-IDLE])			

Step	Procedure	Message Sequence		Verdict
		U - S	Message	
1	Start with UE running an Internet application			N/A
2	RRC Connection Reconfiguration			N/A

2a	Network simulator sends the RRC Connection Reconfiguration message to the UE, with the ESM:Deactivate EPS Bearer Context Request message with the following information elements: • "Protocol Configuration Options" = • Operator reserved PCO container ID=FF00H, with MCC=311 and MNC=480. Action = 1 (Terminate)	<=	RRC Connection Reconfiguration Deactivate EPS Bearer Context Request	N/A
2b	Check: Does the UE send the RRC Connection Reconfiguration Complete message?	=>	RRC Connection Reconfiguration Complete	Pass if message sent
3	UL information transfer			N/A
3a	Check: Does the UE send an UL information Transfer message that carries the ESM: Deactivate EPS Bearer Context Accept message?	=>	Deactivate EPS Bearer Context Accept	Pass if message sent

Expected Results

UE shall meet the verdicts in the Table above.

2.32 UE INITIATED INTERNET PDN CONNECTION WITH QOS (EMM-CONNECTED) VZ_TC_LTESUPSIGCONF_5413

Definition

The UE has already completed the initial attach to the network such that it is EMM registered. It is in EMM-connected and RRC-connected states with a default bearer for the IMS PDN. UE requests for the setup of a new connection to the Internet PDN.

Traceability:

- "Verizon Wireless LTE 3GPP Band 13 Network Access Requirements"
- 3GPP TS 36.300: *Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); Overall description; Stage 2*, Release 9
- 3GPP TS 36.331: *Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification*, Release 9, Section 5
- 3GPP TS 24.301: *Non-Access-Stratum (NAS) protocol for Evolved Packet System (EPS); Stage 3*, Release 9
- 3GPP TS 23.401: Release 9

Applicability:

This test applies to all devices that support IMS and are designed to operate in the Verizon Wireless LTE 3GPP Band 13 network.

Design Steps			
Step Name			
Step 1			
Pre-Conditions			
Procedures			
The UE under test shall have already completed the Initial Attach procedure resulting in the setup of a default IMS PDN bearer. This procedure tests the setup of connections to the Internet PDN.			
This test requires a PC to generate the packets specified in tables 5-13 and send these packets through the UE. Depending on the UE under test, the PC may be connected to the UE via either a tethered or LAN connection.			

Step	Procedure	Message Sequence		Verdict
		U - S	Message	

1	Start with UE in EMM registered/EMM connected state			N/A
2	Initiate data activity that will cause the UE to connect to the Internet PDN			N/A
3	Check: Does UE send an UL Information Transfer message ESM: PDN Connectivity Request message?	=>	UL Information Transfer ESM: PDN Connectivity Request	Pass if message sent
3a	Check: Is the "Request Type" = Initial Request?			Pass if type is correct
3b	Check: Is the PDN type = IPv4v6?			Pass if type is correct
3c	Check: Is the ESM Information Transfer Flag omitted in the ESM:PDN Connectivity Request message?			Pass if type is correct
3d	Check: Is an enabled APN included for the Internet PDN?			Pass if type is correct
3e	Check: Is the Protocol Option (PCO) = • DNS • IPv4 Link MTU			Pass if type is correct

		• Operator reserved PCO container ID=FF00H, with MCC=311 and MNC=480? Check: Does Protocol Option (PCO) NOT include P-CSCF IPv6 addresses?			
4		RRC Connection Reconfiguration			N/A

		Network simulator sends an Activate Default EPS Bearer Context Request and two Activate Dedicated EPS Bearer Context Request messages to the UE, with the following information elements:
		
		• ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST:
		
		• "APN-AMBR"
		• "Protocol Configuration Options" =
		   • DNS IP addresses.
		   • IPv4 address
		   • IPv6 prefix
		   • IPv4 Link MTU
		   • Operator reserved PCO container ID=FF00H, with MCC=311 and MNC=480
			<=	Activate Default EPS Bearer Context Request
				   Activate Dedicated EPS Bearer Context Request messages
					N/A

	• ACTIVATE DEDICATED EPS BEARER CONTEXT REQUEST: • "EPS bearer Identity" • "Linked EPS bearer identity" • "TFT" with elements as specified in table 3 for dedicated bearer 1. • ACTIVATE DEDICATED EPS BEARER CONTEXT REQUEST: • "EPS bearer Identity" • "Linked EPS bearer identity" • "TFT" with elements as specified in table 3 for dedicated bearer 2.			
5	Check: Does the UE send an ESM: Activate Default EPS Bearer Context Accept message?	=>	Activate Default EPS Bearer Context Accept	Pass if message sent

6	Check: Does the UE send an ESM: Activate Dedicated EPS Bearer Context Accept message?	=>	Activate Dedicated EPS Bearer Context Accept	Pass if message sent
7	Check: Does the UE send an ESM: Activate Dedicated EPS Bearer Context Accept message?	=>	Activate Dedicated EPS Bearer Context Accept	Pass if message sent
	EXCEPTION: Test steps 8 to 9 are repeated for N=1 to 11			
8	PC transmits one IP packet according to Table 4 for sub-test index=N	-	-	

	9	Check: Does UE send the IP Packet on the data radio bearer as specified by Table 4 for sub-test index=N?	-	-	Pass if packet sent on specified bearer

The following table shall be used to create the traffic flow templates sent to the UE:

Packet Filter ID	Bearer	Packet Filter Evaluation Precedence	IPv4 / IPv6 Remote Address and Subnet Mask	Protocol Identifier (IPv4) / Next Header (IPv6)	Single Local Port / Local Port Range (UE)	Single Remote Port / Remote Port Range (Network)	IPSec SPI range	Type of Service (IPv4)/Traffic Class (IPv6) and Mask	Flow Label (IPv6)
1	Dedicated Bearer 1	1						TOS/Traffic Class: 10100000 Mask: 11100000	
2	Dedicated Bearer 2	2						TOS/Traffic Class: 10000000 Mask: 11000000	
3	Dedicated Bearer 2	3						TOS/Traffic Class: 01100000 Mask: 11100000	
4	Dedicated Bearer 2	4		1 (ICMP)					

5	Dedicated Bearer 2	5		50 IPSec (ESP)			0x0F80F0000		
6	Dedicated Bearer 2	6		51 IPSec (AH)					
7	Dedicated Bearer 2	7		17 (UDP)					
8	Dedicated Bearer 2	8		6 (TCP)					

Table 3: Traffic Flow Template Contents

The following table identifies sub-test parameters and test requirements.

Sub-test Index	Test data (IP Packet)	Expected DRB associated with the EPS bearer context for the matching packet filter	Packet filter component under test	Comment
1	1	DRB2	Type of service/Traffic class	The IP packet is only matching Packet Filter 1 and 2. The IP packet is returned on DRB2 as Packet Filter 1 is evaluated before Packet Filter 2.
2	2	DRB3	Type of service/Traffic class	The IP packet is only matching Packet Filter 2. The IP packet is returned on DRB3.
3	3	DRB3	Type of service/Traffic class	The IP packet is only matching Packet Filter 3. The IP packet is returned on DRB3.
4	4	DRB3	Protocol identifier/Next header match	The IP packet is only matching Packet Filter 4. The IP packet is returned on DRB3.
5	5	DRB3	IPSec SPI value match	The IP packet is only matching Packet Filter 5. The IP packet is returned on DRB3.
6	6	DRB3	Protocol identifier/Next header match	The IP packet is only matching Packet Filter 6. The IP packet is returned on DRB3.
7	7	DRB3	Protocol identifier/Next header match	The IP packet is only matching Packet Filter 7. The IP packet is returned on

				DRB3.
8	8	DRB3	Protocol identifier/Next header match	The IP packet is only matching Packet Filter 8. The IP packet is returned on DRB3.
9	9	DRB1	Protocol identifier/Next header does not match	No packet filter matches. The IP packet is returned on DRB1 (default bearer)
10	10	DRB1	Type of service/Traffic class does not match	No packet filter matches. The IP packet is returned on DRB1 (default bearer)
11	11	DRB1	Security parameter index does not match	No packet filter matches. The IP packet is returned on DRB1 (default bearer)

Table 4: Sub-test test parameters and test requirements

The following tables define test packet contents.

Table 5: IP Packet #1

Information element	Value/Remark	Comment
Type of service/Traffic class	10111000	Significant for packet filters 1, 2, and 3. Value matches packet filters 1 and 2.

Table 6: IP Packet #2

Information element	Value/Remark	Comment
Protocol identifier/Next header	17	Significant for packet filters 1, 2, 3, 4, 5, and 6. Value matches packet filters 1 and 2. Value does not match packet filters 3, 4, 5, or 6.
Type of service/Traffic class	10000000	Significant for packet filters 1, 2, and 3. Value matches packet filter 2.

Table 7: IP Packet #3

Information element	Value/Remark	Comment
Type of service/Traffic class	01100000	Significant for packet filters 1, 2, and 3. Value matches packet filter 3.

Table 8: IP Packet #4

Information element	Value/Remark	Comment
Protocol identifier/Next header	1	Significant for packet filters 4, 5, 6, 7, and 8. Value matches packet filter 4. Value does not match packet filters 5, 6, 7, or 8.

Table 9: IP Packet #5

Information element	Value/Remark	Comment
Protocol identifier/Next header	50	Significant for packet filters 4, 5, 6, 7, and 8. Value matches packet filter 5. Value does not match packet filters 4, 6, 7, or 8.
IPsec Security parameter index	0x0F80F0000	Significant for packet filter 5. Value matches packet filter 5.

Table 10: IP Packet #6

Information element	Value/Remark	Comment
Protocol identifier/Next header	51	Significant for packet filters 4, 5, 6, 7, and 8. Value matches packet filter 6. Value does not match packet filters 4, 5, 7, or 8.

Table 11: IP Packet #7

Protocol identifier/Next header	17	Significant for packet filters 4, 5, 6, 7, and 8. Value matches packet filter 7. Value does not match packet filters 4, 5, 6, or 8.

Table 12: IP Packet #8

Protocol identifier/Next header	6	Significant for packet filters 4, 5, 6, 7, and 8. Value matches packet filter 8. Value does not match packet filters 4, 5, 6, or 7.

Table 13: IP Packet #9

Information element	Value/Remark	Comment
Protocol identifier/Next header	46	Significant for packet filters 4, 5, 6, 7, and 8. Value does not match packet filters 4, 5, 6, 7, or 8.

Table 14: IP Packet #10

Information element	Value/Remark	Comment
Type of service/Traffic class	01000000	Significant for packet filters 1, 2, and 3. Value does not match packet filters 1,2, or 3.

Table 15: IP Packet #11

Information element	Value/Remark	Comment
IPsec Security parameter index	0x0F90F0000	Significant for packet filter 5. Value does not match packet filter 5.

Expected Results

UE shall meet the verdicts in the Table above.

2.34 TIME RETRIEVAL VIA SIB16 MESSAGE VZ_TC_LTESUPSIGCONF_5414

Definition

This procedure is to test the ability of the UE to retrieve time information via the RRC SIB16 message.

Traceability:

- *"Verizon Wireless LTE 3GPP Band 13 Network Access Requirements,"* section 3.2.11
- 3GPP TS 36.331: *Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification*, Release 11
- 3GPP TS 24.301: *Non-Access-Stratum (NAS) protocol for Evolved Packet System (EPS); Stage 3*, Release 9

Applicability:

This test applies to all devices that support IMS and are designed to operate in the Verizon Wireless LTE 3GPP Band 13 network.

Design Steps			
Step Name			
Step 1			
Pre-Conditions			
Procedures			
The network simulator is configured for signal conformance testing as described in Section *Test Equipment Configuration* and powered on. The device (UE) under test is then connected to the network simulator. The following procedures should be either initiated by the UE or performed in response to messages received by the UE.			

Step	Procedure	Message Sequence		Verdict
		U-S	**Message**	
1	Power on the UE	-	-	N/A

2	Configure the network simulator to broadcast the SystemInformationBlockType16 message with the following information elements: • systemTimeInfoUTC • dayLightSavingIndicator • localTimeOffset • leapSeconds	<=	SystemInformationBlock16	
3	UE performs the Initial Attach procedure to the LTE network as in Test 2.1	-	-	N/A
4	Configure the network simulator to send the EMM Information message to the UE with the following information elements. Ensure the information element values are different from those broadcast in SIB 16: • Local time zone • Universal time and local time zone • Network daylight saving time	=>	EMM Information	N/A
5	Check: Does UE display proper time based on data received in SystemInformationBlockType16 message?			Pass if displayed time is correct

Expected Results

UE shall meet verdict in the Table above.

2.35 UE INDICATES RACH REPORT CAPABILITY VZ_TC_LTESUPSIGCONF_5415

Definition

This procedure validates that the UE indicates its capability to support the RACH information report
when requested by the network:

- son-Parameters-r9::rach-report-r9 = supported

Traceability:

- "Verizon Wireless LTE 3GPP Band 13 Network Access Requirements" , section 4.1.15
- 3GPP TS 36.331: *Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC);*
  Protocol specification, Release 10, section 6.3.6

Applicability:

This test applies to all release 10 devices that support IMS and are designed to operate in the Verizon
Wireless LTE 3GPP Band 13 network.

Design Steps			
Step Name			
Step 1			
Pre-Conditions			
Procedures			
The test procedure defined in 3GPP TS 523-1, V11.1.1, section 8.5.4 "UE capability transfer" shall be followed with the following change in red:			
Information Element	**Value/Remark**	**Comment**	**Condition**
UECapabilityInformation ::= SEQUENCE {			
nonCriticalExtension SEQUENCE {			
&&&.			
son-Parameters-r9	Checked	This is an optional field indicating if the UE supports rach report	rach-report-r9 shall be set to "supported"
Expected Results			
UE shall meet the verdicts in the Table above.			

2.36 UE REPORTS RACH INFORMATION UPON REQUEST BY NETWORK
VZ_TC_LTESUPSIGCONF_5450

Definition

The UE reports the stored RACH information in a rach-report via UEInformationResponse message when requested by the network.

- The number of preambles sent for the last successfully completed random access procedure
- Whether contention was detected for at least one of the transmitted preambles during the procedure

Traceability:

- "Verizon Wireless LTE 3GPP Band 13 Network Access Requirements", section 4.1.15
- 3GPP TS 36.331: *Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification*, Release 10, section 5.6.5.3

Applicability:

This test applies to all release 10 devices that support IMS and are designed to operate in the Verizon Wireless LTE 3GPP Band 13 network.

Design Steps				
Step Name				
Step 1				
Pre-Conditions				
Procedures				
The UE under test should have already completed the Initial Attach procedure resulting in the setup of a default IMS PDN bearer. An Internet PDN connection has been set up according to Section 2.7 and the UE is in RRC connected state and has data to send or receive (inactivity timer will not expire). The UE should have already indicated its RACH information report capability in UECapabilityInformation in Test Case ID: VZ_TC_LTESUPSIGCONF_5415 (UE INDICATES RACH REPORT CAPABILITY)				
Step	**Procedure**	**Message Sequence**		**Verdict**
		U - S	**Message**	
1	Start with UE in RRC Connected state and connect the UE to a PC such that there is data to be sent to maintain RRC connection			N/A

2	SS sends *UEInformationRequest* message with *rach-reportReq* set to true,	<=	*UEInformationRequest*	N/A
3	Upon receiving *UEInformationRequest* message, if *rach-reportReq* is set to true,			N/A
3a	Check: Does the UE send an *UEInformationResponse* message including *rach-Report* containing the following IEs: • *numberOfPreamblesSent=1* • *contentionDetected=false*	=>	*UEInformationResponse*	Pass if yes
4	TE emulator sends disconnects RRC connection and transition the UE to RRC Idle mode.	<=	RRCConnectionRelease	N/A
5	Configure the network emulator to ignore the next two random access preambles from the device. On the 3rd access preamble, indicates contention resolution not successful in MSG4 by setting a different Contention Resolution ID (not matching the CCCH SDU transmitted in Msg3). On the 4th access preamble, allow random access to be successful.	-	-	-
6	Initiate a data call, verify that UE sends a set of random access preamble attempts for T300 seconds following RACH parameters set by the emulator and successfully establish RRC connection.	=> . . . <= => <=	PRACH Preamble . . . Msg2 Msg3 Msg4	N/A

7	SS sends *UEInformationRequest* message with *rach-reportReq* set to true,	<=	*UEInformationRequest*	N/A
8	Upon receiving *UEInformationRequest* message, if *rach-reportReq* is set to true,	-	-	N/A
8a	Check: Does the UE send an *UEInformationResponse* message including *rach-Report* containing the following IEs: • *numberOfPreamblesSent=4* • *contentionDetected=true*	=>	*UEInformationResponse*	Pass if yes
9	• Power Off the device			

Expected Results

UE shall meet the verdicts in the Table above.

2.37 UE INITIATED TRACKING AREA UPDATE AFTER RADIO LINK FAILURE VZ_TC_LTESUPLSIG_8310

Definition

The procedure tests the execution of the tracking area update procedure after a radio link failure (RLF).

Traceability:

- "Verizon Wireless LTE 3GPP Band 13 Network Access Requirements"
- 3GPP TS 36.300: *Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); Overall description; Stage 2*, Release 9
- 3GPP TS 36.331: *Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification*, Release 9
- 3GPP TS 24.301: *Non-Access-Stratum (NAS) protocol for Evolved Packet System (EPS); Stage 3*, Release 9

Applicability:

This test applies to all devices that support IMS and are designed to operate in the Verizon Wireless LTE 3GPP Band 13 network.

Design Steps
Step Name
Step 1
Pre-Conditions
Procedures

System Simulator:
- cell A (belongs to TAI-1, home PLMN) transmit power is set to -85 dBm;
- cell B (belongs to TAI-2, home PLMN) transmit power is set to "off1".

Step	Procedure	U - S	Message	Verdict
1	Start with UE in RRC Connected state on cell A and connect the UE to a PC such that there is data to be sent to maintain RRC connection	-	-	N/A
2	Set cell A transmit power to off Set cell B transmit power to -85 dBm	-	-	N/A
2a	The following messages are sent and shall be received on cell B.	-	-	N/A
3	Check: Does the UE send *RRCConnectionReestablishmentRequest* message on Cell B?	=>	*RRCConnectionReestablishmentRequest*	Pass if message sent
4	The network simulator transmits *RRCConnectionReestablishment* message.	<=	*RRCConnectionReestablishment*	N/A

5	The UE transmits *RRCConnectionReestablishmentComplete* message.	=>	*RRCConnectionReestablishmentComplete*	Pass if message sent
6	The network simulator transmits *RRCConnectionReconfiguration* message.	<=	*RRCConnectionReconfiguration*	N/A
7	The UE transmits *RRCConnectionReconfigurationComplete* message.	=>	*RRCConnectionReconfigurationComplete*	Pass if message sent
8	Check: Does the UE transmit an UL Information Transfer message EMM: TRACKING AREA UPDATE REQUEST message?	=>	TRACKING AREA UPDATE REQUEST	Pass if message sent
9	The network simulator transmits a TRACKING AREA UPDATE ACCEPT message with a new value for GUTI IE.	<=	TRACKING AREA UPDATE ACCEPT	N/A
10	Check: Does the UE transmit a TRACKING AREA UPDATE COMPLETE message?	=>	TRACKING AREA UPDATE COMPLETE	Pass if message sent

Expected Results

UE shall meet the verdicts in the Table above.

2.38 UE RESPONSE TO PDN DISCONNECT REJECT CODE 43
VZ_TC_LTESUPSIGCONF_8314

Description:

The UE receives a PDN DISCONNECT REJECT message with error code #43 ("invalid EPS bearer identity") in response to a request to disconnect one of the PDNs. Consequently, the UE is required to initiate a PDN connectivity request procedure to re- connect to the PDN.

Traceability:

- "Verizon Wireless LTE 3GPP Band 13 Network Access Requirements"
- 3GPP TS 36.300: *Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); Overall description; Stage 2*, Release 9
- 3GPP TS 36.331: *Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification*, Release 9
- 3GPP TS 24.301: *Non-Access-Stratum (NAS) protocol for Evolved Packet System (EPS); Stage 3*, Release 9

Applicability:

This test applies to all devices that support IMS and are designed to operate in the Verizon Wireless LTE 3GPP Band 13 network.

Design Steps
Step Name
Step 1
Pre-Conditions
Procedures

The UE under test shall have already completed the initial Attach procedure to connect to the IMS PDN and established a connection to the Internet PDN.

Step	Procedure	Message Sequence		Verdict
		U - S	**Message**	
1	Change the network identifier for Class 3 APN , e.g., APN 3 is changed to "Enterprise" .	<-		N/A
2	Check: Does UE send an UL Information Transfer message that carries the ESM: PDN Disconnect Request message to disconnect from the Internet PDN.	->	UL Information Transfer ESM: PDN Disconnect Request	Pass if message sent
3	Network simulator sends a PDN Disconnect Reject message with error code #43 to the UE	<-	ESM: PDN Disconnect Reject	N/A
4	UE initiates the PDN Connectivity Request			N/A

	procedure to re-connect to the Enterprise APN.			
4a	Check: Does the UE send an UL Information Transfer with the ESM: PDN Connectivity Request message?	->	UL Information Transfer ESM: PDN Connectivity Request	Pass if message sent
5	Network simulator sends DL Information Transfer message to the UE carrying the ESM:Activate Default EPS Bearer Context Request message.	<-	DL Information Transfer ESM: Activate Default EPS Bearer Context Request	N/A
6	Check: Does the UE send an ESM: Activate Default EPS Bearer Context Accept message?	->	Activate Default EPS Bearer Context Accept	Pass if message sent
7	Check: Does the UE get an IPv4 or IPv6 address for the Enterprise PDN?			Pass if an IPv4 or IPv6 address is assigned for the Enterprise PDN

Expected Results

UE shall meet the verdicts in the Table above.

2.39 UE ROUTES DNS QUERIES VZ_TC_LTESUPSIGCONF_8368

Description:

This test verifies that UE-initiated DNS queries intended for Internet-based DNS servers are sent over the Internet PDN..

Traceability:

- "Verizon Wireless LTE 3GPP Band 13 Network Access Requirements"
- 3GPP TS 36.300: *Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); Overall description; Stage 2*, Release 9
- 3GPP TS 36.331: *Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification*, Release 9
- 3GPP TS 24.301: *Non-Access-Stratum (NAS) protocol for Evolved Packet System (EPS); Stage 3*, Release 9

Applicability:

This test applies to all devices that support IMS and are designed to operate in the Verizon Wireless LTE 3GPP Band 13 network.

Design Steps
Step Name
Step 1
Pre-Conditions
Procedures

Test Procedure Test 1
The UE under test shall have already completed the Initial Attach procedure resulting in the setup of a default IMS PDN bearer. This procedure tests the setup of connections to the Internet PDN and routing of DNS queries over the default Internet PDN bearer.

This test requires a PC to generate DNS queries and send these queries through the UE. Depending on the UE under test, the PC may be connected to the UE via either a tethered or LAN connection.

Configure the network simulator to provide the same DNS Server IPv6 address in the Protocol Configuration Options (PCO) IE of the Activate Default EPS Bearer Context Request message for both the IMS and Internet PDNs.

Step	Procedure	Message Sequence		Verdict
		U - S	Message	
1	Start with UE in EMM registered/EMM connected state with a connection to the IMS PDN			N/A
2	Initiate data activity that will cause the UE to connect to the Internet PDN			N/A
3	Check: Does UE send an UL Information Transfer message ESM: PDN Connectivity Request message?	=>	UL Information Transfer ESM: PDN Connectivity Request	Pass if message sent

3a	Check: Is the "Request Type" = Initial Request?			Pass if type is correct
3b	Check: Is the PDN type = IPv4v6?			Pass if type is correct
3c	Check: Is the ESM Information Transfer Flag omitted in the ESM:PDN Connectivity Request message?			Pass if type is correct
3d	Check: Is an enabled APN included for the Internet PDN?			Pass if type is correct
3e	Check: Is the Protocol Option (PCO) = • DNS • IPv4 Link MTU • Operator reserved PCO container ID=FF00H, with MCC=311 and MNC=480? Check: Does Protocol Option (PCO) NOT include P-CSCF IPv6 addresses?			Pass if type is correct
4	RRC Connection Reconfiguration			N/A

4a	Network simulator sends an Activate Default EPS Bearer Context Request message to the UE, with the following information elements:
	• "APN-AMBR"
	• "EPS bearer Identity"
	• "PDN Address"=
	    • IPv4 address
	    • IPv6 interface ID
	• "Protocol Configuration Options" =
	    • DNS IP addresses.
	    • IPv4 Link MTU
	    • Operator reserved PCO container ID=FF00H, with MCC=311 and MNC=480
	
	Note: the DNS server IPv6 address provided should be the same as the DNS server IPv6 address provided in Step 1.
		<=	Activate Default EPS Bearer Context Request	N/A

5	Check: Does the UE send an ESM: Activate Default EPS Bearer Context Accept message?	=>	Activate Default EPS Bearer Context Accept	Pass if message sent
6	Network simulator sends an IPv6 Router Advertisement, with the "IPv6 Prefix" value included.	<=	Router Advertisement	N/A
7	PC transmits an IPv6 DNS AAAA query to www.test-ipv6.com			
7a	Check: Does UE send the DNS Packet as follows?: • Is packet sent from source IPv6 address with IP prefix set to value received in step 6? • Is packet sent to IPv6 DNS server address as specified in Step 4a?	-	-	Pass if packet sent with specified source/destination addresses on specified bearer

	• Is packet sent on EPS bearer as specified in Step 4a?			

Test Procedure Test 2

The UE under test shall have already completed the initial Attach procedure to connect to the IMS PDN. This procedure tests the setup of connections to the Internet and IMS PDNs and routing of DNS queries over the default Internet PDN bearer.

This test requires a PC to generate DNS queries and send these queries through the UE. Depending on the UE under test, the PC may be connected to the UE via either a tethered or LAN connection.

Configure the network simulator to provide the same DNS Server IPv6 address in the Protocol Configuration Options (PCO) IE of the Activate Default EPS Bearer Context Request message for both the IMS and Internet PDNs.

Step	Procedure	Message Sequence		Verdict
		U - S	**Message**	
1	Start with UE in EMM registered/EMM connected state with a connection to the IMS PDN.			N/A
2	Initiate data activity that will cause the UE to connect to the Internet PDN			N/A
3	Check: Does UE send an UL Information Transfer message ESM: PDN Connectivity Request message?	=>	UL Information Transfer ESM: PDN Connectivity Request	Pass if message sent
3a	Check: Is the "Request Type" = Initial Request?			Pass if type is correct
3b	Check: Is the PDN type = IPv4v6?			Pass if type is correct
3c	Check: Is the ESM Information Transfer Flag omitted in the ESM:PDN Connectivity Request message?			Pass if type is correct
3d	Check: Is an enabled APN included for the Internet PDN?			Pass if type is correct
3e	Check: Is the Protocol Option (PCO) = • DNS • IPv4 Link MTU • Operator reserved PCO container ID=FF00H, with MCC=311 and MNC=480? Check: Does Protocol Option (PCO) NOT include P-CSCF IPv6 addresses?			Pass if type is correct
4	RRC Connection Reconfiguration			N/A

4a	Network simulator sends an Activate Default EPS Bearer Context Request message to the UE, with the following information elements:
	• "APN-AMBR"
	• "EPS bearer Identity"
	• "PDN Address"=
	    o IPv4 address
	    o IPv6 interface ID
	• "Protocol Configuration Options" =
	    o DNS IP addresses.
	    o IPv4 Link MTU
		<=	Activate Default EPS Bearer Context Request	N/A

	o Operator reserved PCO container ID=FF00H, with MCC=311 and MNC=480			
5	Check: Does the UE send an ESM: Activate Default EPS Bearer Context Accept message?	=>	Activate Default EPS Bearer Context Accept	Pass if message sent
6	Network simulator sends an IPv6 Router Advertisement, with the "IPv6 Prefix" value included.	<=	Router Advertisement	N/A
7	Network simulator initiates the PDN disconnect from the IMS PDN	<=		
8	Check: Is the UE disconnected from the IMS PDN?			Pass if UE is disconnected from the IMS PDN
9	Check: Does UE send an UL Information Transfer message ESM: PDN Connectivity Request message?	=>	UL Information Transfer ESM: PDN Connectivity Request	Pass if message sent
9a	Check: Is the "Request Type" = Initial Request?			Pass if type is correct
9b	Check: Is the PDN type = IPv4v6?			Pass if type is correct
9c	Check: Is the ESM Information Transfer Flag omitted in the ESM:PDN Connectivity Request message?			Pass if type is correct
9d	Check: Is APN = 1 included for the IMS PDN?			Pass if type is correct
9e	Check: Is the Protocol Option (PCO) = • DNS • IPv4 Link MTU Operator reserved PCO container ID=FF00H, with MCC=311 and MNC=480?			Pass if type is correct
10	Network simulator sends an Activate Default EPS Bearer Context Request message to the UE, with the following information elements: • "APN-AMBR" "Protocol Configuration Options" = o DNS and P-CSCF IP addresses. o IPv4 address o IPv6 prefix o IPv4 Link MTU o Operator reserved PCO container ID=FF00H, with MCC=311 and MNC=480 Note: the DNS server IPv6 address provided should be the same as the DNS server IPv6 address provided in Step 4a.	<=	Activate Default EPS Bearer Context Request	N/A
11	Check: Does the UE send an ESM: Activate Default EPS Bearer Context Accept message?	=>	Activate Default EPS Bearer Context Accept	Pass if message sent
12	Check: Does the UE get a new IPv6 address for the IMS PDN?			Pass if an IPv6 address is created
13	PC transmits an IPv6 DNS AAAA query to www.test-ipv6.com			
13a	Check: Does UE send the DNS Packet as follows?:	-	-	Pass if packet sent with

					specified source/destination addresses on specified bearer
	• Is packet sent from source IPv6 address with IP prefix set to value received in step 6? • Is packet sent to IPv6 DNS server address as specified in Step 4a? • Is packet sent on EPS bearer as specified in Step 4a?				

Expected Results

UE shall meet the verdicts in the Table above.

2.40 LOW PRIORITY, DELAY TOLERANT, AND EAB SIGNALING TEST CASES VZ_TC_LTESUPSIGCONF_8792

Definition

In order to comply with Verizon Wireless low priority, delay tolerant, and extended access barring signaling requirements, devices shall pass all applicable test cases listed in 3GPP TS 36.523-1 : *Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); User Equipment (UE) conformance specification; Part 1: Protocol conformance specification*, Release 12.

Traceability:

- *"Verizon Wireless LTE 3GPP Band 13 Network Access Device Requirements,"* section 4.1.21.
- 3GPP TS 36.331: *Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification*, Release 11
- 3GPP TS 24.301: *Non-Access-Stratum (NAS) protocol for Evolved Packet System (EPS); Stage 3*, Release 11
- 3GPP TS 36.523-1 : *Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); User Equipment (UE) conformance specification; Part 1: Protocol conformance specification*, Release 12.

Applicability:

This test applies to all devices that support IMS and are designed to support the Verizon Wireless LTE 3GPP Band 13 network.

Design Steps
Step Name
Step1
Pre-Conditions
Procedures

The following test cases from 3GPP TS 36.523-1 shall be executed for the UE under test.

523-1 Section	Title
9.2.1.1.27	"Attach / Abnormal case / Network reject with Extended Wait Timer"
9.2.1.1.27a	"Attach Procedure / EAB broadcast handling / ExtendedAccessBarring configured in the UE"
9.2.3.1.8a	"Normal tracking area update / low priority override"
9.2.3.1.8b	"Normal tracking area update / EAB broadcast handling / ExtendedAccessBarring configured in the UE / ExtendedAccessBarring and Override_ExtendedAccessBarring configured in the UE"
10.5.1a	"UE requested PDN connectivity accepted / Dual priority / T3396 override"
10.5.1b	"UE requested PDN connectivity accepted / Dual priority / T3346 override"
10.5.4	"UE requested PDN connectivity not accepted / Network reject with Extended Wait Timer"
10.8.8	"UE requested bearer resource modification / Dual priority / low priority override"

Expected Results

Device shall successfully pass all applicable test cases in TS 36.523-1, Release 12

2.42 eICIC FEATURE GROUP and UE Capability SUPPORT VZ_TC_LTE Supplementary Signal Conformance_8811

Definition

This procedure is to test the compliance of UE Feature Group Indicator support and eICIC capability report support to the VzW requirements.

Traceability:

1. "Verizon Wireless LTE 3GPP Band 13 Network Access Requirements"
2. 3GPP TS 36.331: *Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification*, Release 11, section 6.3.6

Applicability:

This test applies to all devices that support IMS and are designed to operate in the Verizon Wireless LTE 3GPP Band 13 network.

Design Steps				
Step Name				
Step 1				
Pre-Conditions				
Procedures				
The network simulator is configured for signal conformance testing as described in Section *Test Equipment Configuration* and powered on. The device (UE) under test is then connected to the network simulator. After the UE is powered on, acquired and synchronized to the network, the following procedures should be either initiated by the UE or performed in response to messages received by the UE. Table 8.5.4.1.3.3-2: UECapabilityInformation defined in 3GPP TS 523-1, V12.2.0, section 8.5.4 "UE capability transfer" shall be followed:				
Step	**Procedure**	**Message Sequence**		**Verdict**
		U - S	Message	

1	UE performs the Initial Attach procedure to the LTE network as in Test 2.1	-	-	N/A
2	Configure the network simulator to send the Capability Inquiry message to the UE	<=	Capability Inquiry	N/A
2a	Check: Does UE respond to the enquiry by sending the UE Capability Information message to eNB?	=>	UE Capability Information	Pass if message sent
2b	Check: Does featureGroupIndRel10-* in the UE-EUTRA-Capability-v1020-IEs indicate the feature group 115 supported by the UE?			Pass if contents are correct

Expected Results

UE shall meet the verdicts in the Table above.

2.43 RRCConnectionReConfiguration when CRS-AssistanceInfoList-r11 is present
VZ_TC_LTE Supplementary Signalign Conformance_9490

Definition

This procedure is to test the compliance of UE handling of CRS-AssistanceInfoList in Attach, Handover and Re-establishment procedures (RRCConnectionConfiguration message).

Traceability:

1. "Verizon Wireless LTE 3GPP Band 13 Network Access Requirements"
2. 3GPP TS 36.331: *Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification*, Release 11, section 6.3.6

Applicability:

This test applies to all devices that support IMS and are designed to operate in the Verizon Wireless LTE 3GPP Band 13 network.

Design Steps
Step Name
Step 1
Pre-Conditions
The test configuration shall consist of three (3) cells. One serving and two neighbor cells with configurations below: • All the cells have the same EARFCNs on B13 • Signal strength of the cells are configured as per T0 parameters below
Procedures
The network simulator is configured for signal conformance testing as described in Section *Test Equipment Configuration* and powered on. The device (UE) under test is then connected to the network simulator. After the UE is powered on, acquired and synchronized to the network, the following procedures should be either initiated by the UE or performed in response to messages received by the UE.

Step	Procedure	U-S	Message	Verdict
1	UE performs the Initial Attach procedure to the LTE network	-	-	N/A
2	Configure the network simulator to send the Capability Inquiry message to the UE	<=	Capability Inquiry	N/A
2a	UE respond to the enquiry by sending the UE Capability Information message to eNB	=>	UE Capability Information	N/A
3	The crs-InterfHandl-r11 field in phyLayerParameters-v1130 IE supported by the UE and set to "supported".			N/A

4	The TE simulator sends RRCConnectionReconfiguration message with RadioResourceConfigDedicated with CRS-AssistanceInfoList-r11 for the 2 neighbors (Cell 2 and Cell 3) that contains: • 2 antenna ports per PCIs and • The respectivephysical cell id of the neighboring cells • No MBSFN configuration	<=	RRCConnectionReconfiguration	N/A
5	Check: does UE send RRCConnectionReconfigurationComplete message?	=>	RRCConnectionReconfigurationComplete	Pass if yes
6	The TE simulator sends RRCConnectionRelease to transition UE to idle mode	<=	RRCConnectionRelease	N/A
7	The TE simulator pages the UE and establish data bearers for TCP data transfer			N/A
8	Verify that data transfer with maximum traffic (full buffer) can be successfully maintained			Pass if yes
9	The TE simulator transmits an *RRCConnectionReconfiguration* message and sets up A3-offset threshold (offset) = 0dB. The TE simulator changes Cell 1, Cell 2 and Cell 3 parameters according to the row "T1" in table below.			N/A
10	The UE transmits an *RRCConnectionReconfigurationComplete* message on Cell 1 to confirm the setup of intra frequency measurement.	=>	*RRCConnectionReconfigurationComplete*	N/A
11	The UE transmit a *MeasurementReport* message on Cell 1 to report event A3 for cell1 with the measured **RSRP** values for Cell 1(Pcell), and Cell 2 (neighbor).	=>	*MeasurementReport*	N/A

12	The TE simulator transmits an *RRCConnectionReconfiguration* (HO CMD) message on Cell 1 to order the UE to perform intra frequency handover to Cell 2 and contains the following IEs:
	
	• MeasurementConfiguration
	   o Sets up A3-0ffset threshold (offset) = 0dB on Cell 2
	• MobilityControlInfo
	• UERelatedInformation
	• RadioResouceConfigDedicated
	   o CRS-IC assistance information for the target cell is NOT present
		<=	*RRCConnectionReconfiguration*	N/A

13	Check: does the UE send *RRCConnectionReconfigurationComplete* message on Cell 2 to complete HO signaling?	=>	*RRCConnectionReconfigurationComplete*	Pass if yes
14	Verify the data session continues (HO successful)	-	-	Pass
15	The TE simulator transmits an *RRCConnectionReconfiguration*			N/A

	message with RadioResourceConfigDedicated with CRS-AssistanceInfoList-r11 for the 2 neighbors (Cell 1 and Cell 3) that contains: • 2 antenna ports per PCIs and • The respectivephysical cell id of the neighboring cells (cell 1 and cell 3) • No MBSFN configuration The TE simulator changes Cell 1, Cell 2 and Cell 3 parameters according to the row "T2" in table below.			
16	The UE transmit a *MeasurementReport* message on Cell 2 to report event A3 for cell3 with the measured **RSRP** values for Cell 2 (Pcell), and 3 (neighbor)?	=>	*MeasurementReport*	N/A

17	The TE simulator transmits an *RRCConnectionReconfiguration* (HO CMD) message on Cell 2 to order the UE to perform intra frequency handover to Cell 3 and contains the following IEs:
	
	• fullConfig-r9
	• MeasurementConfiguration
	    o A2 threshold in Cell3 for RSRP to -80dbm in the associated *measObjectEUTRA* IE.
	• MobilityControlInfo
	• UERelatedInformation
	• RadioResouceConfigDedicated
	    o CRS-IC assistance information for the target cell (cell 3) is present (cell 1 and cell 2)
	
	        • 2 antenna ports per PCIs and
	        • The respectivephysical cell id of the neighboring cells (cell 1 and cell 2)
	
	        •
	
	•
	
	    o MBSFN configuration on cell 3:
	        □ Radio Frame Allocation Period (RFAP) = 80 ms
	        □ fourFrames - 0 (Offset = 0)
	        □ fourFrames:
	        □ 000000 100100 100100 100000
		<=	*RRCConnectionReconfiguration*	N/A

	•			
18	Check: does the UE send *RRCConnectionReconfigurationComplete* message on Cell 3 to complete HO signaling?	=>	*RRCConnectionReconfigurationComplete*	Pass if yes
19	Verify the data session continues (HO successful) on Cell 3. The TE simulator changes Cell 1, Cell 2 and Cell 3 parameters according to the row "T3" in table below.	-	-	N/A
20	Void	-	-	-

21	The TE simulator transmits an *RRCConnectionReconfiguration* message on Cell 3 to order the UE to perform intra frequency handover to Cell 1 and contains the following IEs:
	
	 • MeasurementConfiguration
	     o Sets up A3-offset threshold (offset) = 0dB on Cell 1
	 • MobilityControlInfo
	 • UERelatedInformation
	 • RadioResouceConfigDedicated
	     o CRS-IC assistance information for the target cell is NOT present
	     o No MBSFN configuration
		<=	*RRCConnectionReconfiguration*	N/A

22	The UE transmits an *RRCConnectionReestablishmentRequest* message on Cell 3.	=>	*RRCConnectionReestablishmentRequest*	N/A
23	The TE simulator transmits an *RRCConnectionReestablishment* message to resume SRB1 operation and re-activate security on Cell 3.	<=	*RRCConnectionReestablishment*	N/A
24	The UE transmits an *RRCConnectionReestablishmentComplete* message on Cell 3.	=>	*RRCConnectionReestablishmentComplete*	N/A
25	The TE simulator sends RRCConnectionReconfiguration message with RadioResourceConfigDedicated with CRS-AssistanceInfoList-r11 for the 2 neighbors (Cell 1 and Cell 2) that contains: • 2 antenna ports per PCIs and • The respectivephysical cell id of the neighboring cells • No MBSFN configuration	<=	RRCConnectionReconfiguration	N/A
26	Check: does UE send RRCConnectionReconfigurationComplete message?	=>	RRCConnectionReconfigurationComplete	Pass if yes
27	Power off the UE			

	Parameter	Unit	Cell 1	Cell 2	Cell 3	Remark
T0	Cell-specific RS EPRE	dBm/15kHz	-80	"Off"	"Off"	This is to make sure that UE connects to the Cell 1 as serving cell
T1	Cell-specific RS EPRE	dBm/15kHz	-90	-83	-90	This is to make sure that UE can perform HO to Cell 2
T2	Cell-specific RS EPRE	dBm/15kHz	-90	-90	-83	This is to make sure that UE meets the condition for HO to cell 3.
T3	Cell-specific RS EPRE	dBm/15kHz	"Off"	-96	-90	This is to make sure that UE meets the condition for re-establishing back to Cell 3

Expected Results

UE shall meet the verdicts in the Table above.

2.44 DL CoMP UE CAPABILITY SUPPORT VZ_TC_LTESUPSIGCONF_9439

Definition

This procedure is to test the compliance of UE capability support for DL CoMP (Coordinated Multi-Point).

Traceability:

1. "Verizon Wireless LTE 3GPP Band 13 Network Access Requirements"
2. 3GPP TS 36.331: *Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification*, Release 11, section 6.3.6
3. 3GPP TS 36.523-1 : *Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); User Equipment (UE) conformance specification; Part 1: Protocol conformance specification*, Release 12, section 8.5.4.

Applicability:

This test applies to all devices that support IMS and are designed to operate in the Verizon Wireless LTE 3GPP Band 13 network.

Design Steps
Step Name
Step 1
Pre-Conditions
Procedures
The network simulator is configured for signal conformance testing as described in Section **Test Equipment Configuration** and powered on. The device (UE) under test is then connected to the network simulator. After the UE is powered on, acquired and synchronized to the network, the following procedures should be either initiated by the UE or performed in response to messages received by the UE. Table 8.5.4.1.3.3-2: UECapabilityInformation defined in 3GPP TS 523-1, Release 12, section 8.5.4 "UE capability transfer" shall be followed.

Step	Procedure	Message Sequence		Verdict
		U - S	**Message**	
1	UE performs the Initial Attach procedure to the LTE network as in	-	-	N/A

	Test 2.1			
2	Configure the network simulator to send the Capability Inquiry message to the UE	<=	Capability Inquiry	N/A
2a	Check: Does UE respond to the enquiry by sending the UE Capability Information message to eNB?	=>	UE Capability Information	Pass if message sent
2b	Check: Does UE include supportedCSI-Proc-r11 field in all bands in all band combinations?			Pass if contents are correct

Expected Results

UE shall meet the verdicts in the Table above.

2.45 DL CoMP HANDOVER WITH TRANSMISSION MODE CHANGE
VZ_TC_LTESUPSIGCONF_9440

Definition

This test verifies UE handover between eNB supporting TM10 and eNB not supporting TM10 is successful.

Traceability:

1. "Verizon Wireless LTE 3GPP Band 13 Network Access Requirements"
2. 3GPP TS 36.331: *Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification*, Release 11, section 5.3.5.4 and 5.3.10.6.
3. 3GPP TS 36.523-1 : *Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); User Equipment (UE) conformance specification; Part 1: Protocol conformance specification*, Release 12, section 8.2.4.

Applicability:

This test applies to all devices that support IMS and are designed to operate in the Verizon Wireless LTE 3GPP Band 13 network.

Design Steps
Step Name
Step 1
Pre-Conditions
Procedures
The network simulator is configured for signal conformance testing as described in Section ***Test Equipment Configuration*** and powered on. The device (UE) under test is then connected to the network simulator. After the UE is powered on, acquired and synchronized to the network, the following procedures should be either initiated by the UE or performed in response to messages received by the UE.

1. Set the initial conditions as per section 8.2.4.12.3.1 of 3GPP TS 36.523-1: *Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); User Equipment (UE) conformance specification; Part 1: Protocol conformance specification* for a 10 MHz channel in Band 13 with the following exceptions:

   a. Cell 1 has 2 CRS antenna ports and supports TM4. Cell 2 has 2 CRS antenna ports and supports TM10.

2. Follow the test procedure sequence as per section 8.2.4.12.3.2 of 3GPP TS 36.523-1: *Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); User Equipment (UE) conformance specification; Part 1: Protocol conformance specification* with the following exceptions:

   a. The *RRCConnectionReconfiguration* message in Step 1 of Table 8.2.4.12.3.2-1 shall include radioResourceConfigDedicated

IE with physicalConfigDedicated message content set according to Tables 9.2.4.1_F.4.3-1 through 9.2.4.1_F.4.3-8 of 3GPP TS 36.521-1: *Evolved Universal Terrestrial Radio Access (E-UTRA); User Equipment (UE) conformance specification; Radio transmission and reception; Part 1: conformance testing*.

b. The *RRCConnectionReconfiguration* message in Step 4 of Table 8.2.4.12.3.2-1 shall include radioResourceConfigDedicated IE with physicalConfigDedicated message content set according to Tables 9.2.2.1.4.3-1 through 9.2.2.1.4.3-3 of 3GPP TS 36.521-1: *Evolved Universal Terrestrial Radio Access (E-UTRA); User Equipment (UE) conformance specification; Radio transmission and reception; Part 1: conformance testing*.

c. Table 8.2.4.12.3.3-6 shall not apply.

Expected Results

UE shall meet the verdicts in the test procedure above.

2.46 UE DOWNLINK SUPERVISION VZ_TC_LTE Supplementary Signaling Conformance_9503

Definition

The procedure verifies that non-standardized DL supervision failure will not block the PCI for more than 5 second (for connectivity or reselection).

Traceability

- "Verizon Wireless LTE 3GPP Band 13 Network Access Requirements"
- 3GPP TS 36.331: *Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification*, Release 9

Applicability

This test applies to all devices that support IMS and are designed to operate in the Verizon Wireless LTE 3GPP Band 13 network.

Design Steps				
Step Name				
Step 1				
Pre-Conditions				
Procedures				
System Simulator: - cell A (belongs to TAI-1, home PLMN) transmit power is set to -85 dBm;				

Step	Procedure	Message Sequence		Verdict
		U - S	**Message**	
1	Start with UE in RRC Connected state on cell A and connect the UE to a PC such that there is data to be sent to maintain RRC connection	-	-	N/A
2	Set cell A transmit power to off for 3 seconds	-	-	N/A
3	Set cell A transmit power back on to -85dbm	-	-	N/A
4	Check: Does the UE send *RRCConnectionReestablishmentRequest* message or *RRCConnectionRequest* message on Cell A within 7 seconds after the beginning of step 2 (inclusive of the 3 second power off time)?	=>	*RRCConnectionReestablishmentRequest*	Pass if message sent
5	Power off the device			

Expected Results				
UE shall meet the verdicts in the Table above.				

2.47 NON-ESSENTIAL SYSTEM INFORMATION DETECTION FAILURE

VZ_TC_LTE Supplementary Signal Conformance_9504

Definition

The procedure tests the UE behavior after HO when non-essential SIBs (e.g., SIB3 and SIB5) are not readable.

Traceability

- "Verizon Wireless LTE 3GPP Band 13 Network Access Requirements"
- 3GPP TS 36.331: *Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification*, Release 9

Applicability

This test applies to all devices that support IMS and are designed to operate in the Verizon Wireless LTE 3GPP Band 13 network.

Design Steps

Step Name

Step 1

Pre-Conditions

Procedures

System Simulator:
- cell A (belongs to TAI-1, home PLMN) transmit power is set to -85 dBm;
- cell B (belongs to TAI-1, home PLMN) transmit power is set to "off".

Step	Procedure	U - S	Message	Verdict
1	Start with UE in RRC Connected state on cell A and connect the UE to a PC such that there is data to be sent to maintain RRC connection	-	-	N/A
2	Reduce the power on cell A to -90dbm, set cell B power on at -83dbm. (there is no need to configure HO trigger as we simply use a forced HO).	-	-	N/A
3	The TE simulator sends RRCConnectionConfiguration message on cell A to direct the UE to HO to cell B	<=	*RRCConnectionReconfiguration*	N/A
4	The UE sends RRCConnectionReconfigurationComplete on cell B	=>	*RRCConnectionReconfigurationComplete*	N/A
5	The TE simulator transmits MIB, SIB1, and SIB2 periodically (each SIB is on their own, no bundling) without transmitting	-	-	N/A

	SIB3, SIB5 or SIB8: • SIB1 specifies SIB3/5/8 confoguration so that UE will try to decode them			
6	Verify that the RRC connection continues for the next 5 minutes without any RLF or RRC re-establishment.	-	-	N/A
7	Power off the device			

Expected Results

UE shall meet the verdicts in the Table above.

2.49 MDT GCF Signaling and Protocol Test cases VZ_TC_LTE Supplementary Signaling Conformance Test Plan_9533

Design Steps
Step Name
Step 1
Pre-Conditions
Procedures
All steps in intra-LTE MDT test cases specified in the following sections of 3GPP TS 36.523-1, *Evolved Universal Terrestrial Radio Access (E-UTRA); and Evolved Packet Core (EPC); User Equipment (UE) Conformance Specification; Part 1: Protocol Conformance Specification:* • 8.6.1, Immediate MDT • 8.6.2, Logged MDT • 8.6.4, Logged Radio Link Failure • 8.6.6, Logged Handover Failure • 8.6.8, Connection Establishment Failure • 8.6.11, RACH Optimization If GCF test cases are available for the above sections, GCF test results are sufficient. Otherwise, test results verified by specific test equipment vendors shall be submitted.
Expected Results
As stated in the above sections of 3GPP TS 36.523-1, *Evolved Universal Terrestrial Radio Access (E-UTRA); and Evolved Packet Core (EPC); User Equipment (UE) Conformance Specification; Part 1: Protocol Conformance Specification.*

2.50 R10 Logged MDT UE capability Report VZ_TC_LTE Supplementary Signaling Conformance Test Plan_9534

Design Steps

Step Name

Step 1

Pre-Conditions

Procedures

The network simulator is configured for signal conformance testing as described in Section *Test Equipment Configuration* and powered on. The device (UE) under test is then connected to the network simulator. After the UE is powered on, acquired and synchronized to the network, the following procedures should be either initiated by the UE or performed in response to messages received by the UE.

Table 8.5.4.1.3.3-2: UECapabilityInformation defined in 3GPP TS 523-1, Release 12, section 8.5.4 "UE capability transfer" shall be followed.

Step	Procedure	Message Sequence		Verdict
		U - S	Message	
1	UE performs the Initial Attach procedure to the LTE network as in Test 2.1	-	-	N/A
2	Configure the network simulator to send the Capability Inquiry message to the UE	<=	Capability Inquiry	N/A
2a	Check: Does UE respond to the enquiry by sending the UE Capability Information message to eNB?	=>	UE Capability Information	Pass if message sent
2b	Check: Does UE include loggedMeasurementsIdle-r10 in UE-BasedNetwPerfMeasParameters-r10 IE?			Pass if contents are correct
2c	Check: Does UE include standaloneGNSS-Location-r10 in UE-BasedNetwPerfMeasParameters-r10 IE?			Pass if contents are correct

Expected Results

UE shall meet the verdicts in the Table above.

2.51 UE IS PAGED IN RRC_CONNECTED STATE VZ_TC_LTE Supplementary Signalign Conformance_9706

Definition:

The procedure tests UE handling of pages from network during RRC connected state

Traceability:

- "Verizon Wireless LTE 3GPP Band 13 Network Access Requirements"
- 3GPP TS 36.331: *Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification*, Release 9

Applicability:

This test applies to all devices that support IMS and are designed to operate in the Verizon Wireless LTE 3GPP Band 13 network.

Design Steps			
Step Name			
Step 1			
Pre-Conditions			
Procedures			

System Simulator:
- cell A (belongs to TAI-1, home PLMN) transmit power is set to -85 dBm;

Step	Procedure	Message Sequence		Verdict
		U - S	**Message**	
1	Start with UE in RRC Connected state on cell A and connect the UE to a PC such that there is data to be sent to maintain RRC connection	-	-	N/A
2	Set the TE to page the UE within the 1st 10 seconds after the RRC connection (after RRCConnectionSetupComplete message from the UE).	< -	PAGE message	N/A
3	Check: Does the UE respond to the Page message	-	-	Pass if no
4	After 10 seconds have passed since RRC connection setup, send another PAGE message to the UE		PAGE message	N/A
5	Check: Does the UE send *Page Response message* back to TE?	->	*Page Response in the form of RRC Connection Setup*	Pass if message sent

6	Power off the device			

Expected Results

UE shall meet the verdicts in the Table above.

2.52 CONTENTION-FREE HANDOVER CARRYING with TTIB ENABLED
VZ_TC_LTE Supplementary Signalign Conformance_9710

Definition
The procedure tests UE handling of TTIB enabled configuration when accessing target cell during contention-free HO

Traceability
- "Verizon Wireless LTE 3GPP Band 13 Network Access Requirements"
- 3GPP TS 36.331: *Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification*, Release 9

Applicability
This test applies to all devices that support IMS and are designed to operate in the Verizon Wireless LTE 3GPP Band 13 network.

Design Steps
Step Name
Step 1
Pre-Conditions
Procedures

System Simulator:
- cell A (belongs to TAI-1, home PLMN) transmit power is set to -85 dBm;

Step	Procedure	Message Sequence		Verdict
		U - S	**Message**	
1	Start with UE in RRC Connected state on cell A and connect the UE to a PC such that there is data to be sent to maintain RRC connection	-	-	N/A
2	Enable cell B (different PCI, same EARFCN) with transmit power set to --85dBm and antennuate cell As power by 10dB			
3	TE sends RRCConnectionReconfiguration to the UE with the following fields: • ttibundling field in the radioResourceConfigDedicated IE under MAC-MainConfig is set to enabled • A pre-defined preamble assignment for the UE to use at RACH of the target cell	<-	*RRCConnectionReconfiguration* message	N/A

4	UE sends PRACH preamble using the pre-assigned preamble signature in step 3	->	*PRACH Preamble*	N/A
5	TE sends *PRACH response*	<-	*PRACH Response*	N/A
6	Check: Does the UE send *RRCConnectionReconfiguration* using TTIB configuration?	->	*RRCConnectionReconfiguration*	Pass if message sent using TTIB
7	Enable cell B (different EARFCN) with transmit power set to --85dBm and antennuate cell As power by 5dB			
8	TE sends RRCConnectionReconfiguration to the UE on Cell A with the following fields indicating Cell B as the target cell: • ttibundling field in the radioResourceConfigDedicated IE under MAC-MainConfig is set to enabled • A pre-defined preamble assignment for the UE to use at RACH of the target cell	<-	*RRCConnectionReconfiguration* message	N/A
9	UE sends PRACH preamble using the pre-assigned preamble signature in step 3	->	*PRACH Preamble*	N/A
10	TE sends *PRACH response*	<-	*PRACH Response*	N/A
11	Check: Does the UE send *RRCConnectionReconfigurationComplete* using TTIB configuration?	->	*RRCConnectionReconfigurationComplete*	Pass if message sent using TTIB
12	Power off the device			

Expected Results

UE shall meet the verdicts in the Table above.

2.53 EPDCCH GCF Signalling and Protocol Conformance Test Cases

VZ_TC_LTESUPSIGCONF_9808

Definition

In order to comply with Verizon Wireless EPDCCH (Enhanced Physical Downlink Control Channel) requirements, devices shall pass all applicable test cases listed in

- 3GPP TS 36.523-1 : *Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); User Equipment (UE) conformance specification; Part 1: Protocol conformance specification*, Release 12.

Traceability:

- *"Verizon Wireless LTE 3GPP Band 13 Network Access Device Requirements,"*
- 3GPP TS 36.331: *Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification*, Release 11
- 3GPP TS 36.523-1 : *Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); User Equipment (UE) conformance specification; Part 1: Protocol conformance specification*, Release 12.

Applicability:

This test applies to all devices that support IMS and are designed to support the Verizon Wireless LTE 3GPP Band 13 network.

Design Steps
Step Name
Step 1
Pre-Conditions
Procedures
All the test steps in the following sections in 3GPP TS 36.523-1 shall be followed for EPDCCH signaling and protocol conformance tests:

3GPP TS 36.523-1 Protocol conformance test cases	Title
7.1.3.14	Correct handling of DL assignment / Dynamic case / EPDCCH
7.1.3.15	Correct handling of DL assignment / Semi-persistent case / EPDCCH

Expected Results
As specified in 3GPP test cases.

2.54 EPDCCH UE CAPABILITY SUPPORT VZ_TC_LTESUPSIGCONF_9809

Definition

This procedure is to test the compliance of UE capability support for EPDCCH (Enhanced Physical Downlink Control Channel).

Traceability:

1. "Verizon Wireless LTE 3GPP Band 13 Network Access Requirements"
2. 3GPP TS 36.331: *Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification*, Release 11, section 6.3.6
3. 3GPP TS 36.523-1 : *Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); User Equipment (UE) conformance specification; Part 1: Protocol conformance specification*, Release 12, section 8.5.4.

Applicability:

This test applies to all devices that support IMS and are designed to operate in the Verizon Wireless LTE 3GPP Band 13 network.

Design Steps			
Step Name			
Step 1			
Pre-Conditions			
Procedures			
The network simulator is configured for signal conformance testing as described in Section *Test Equipment Configuration* and powered on. The device (UE) under test is then connected to the network simulator. After the UE is powered on, acquired and synchronized to the network, the following procedures should be either initiated by the UE or performed in response to messages received by the UE. Table 8.5.4.1.3.3-2: UECapabilityInformation defined in 3GPP TS 523-1, Release 12, section 8.5.4 "UE capability transfer" shall be followed.			

Step	Procedure	Message Sequence		Verdict
		U - S	**Message**	
1	UE performs the Initial Attach procedure to the LTE network as in Test 2.1	-	-	N/A
2	Configure the network simulator to send the Capability	<=	Capability Inquiry	N/A

	Inquiry message to the UE			
2a	Check: Does UE respond to the enquiry by sending the UE Capability Information message to eNB?	=>	UE Capability Information	Pass if message sent
2b	Check: Does UE include ePDCCH-r11 field in phyLayerParameters-v1130 IE and set to "supported"?			Pass if contents are correct

Expected Results

UE shall meet the verdicts in the Table above.

2.55 256QAM UE Capacity Support VZ_TC_LTESUPSIGCONF_9813

Definition

This procedure is to test the compliance of UE capability support for 256QAM.

Traceability:

1. "Verizon Wireless LTE 3GPP Band 13 Network Access Requirements"
2. 3GPP TS 36.331: *Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification*, Release 12, section 6.3.6
3. 3GPP TS 36.523-1 : *Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); User Equipment (UE) conformance specification; Part 1: Protocol conformance specification*, Release 12, section 8.5.4.

Applicability:

This test applies to all devices that support IMS and 256QAM and are designed to operate in the Verizon Wireless LTE 3GPP Band 13 network.

Design Steps
Step Name
Step 1
Pre-Conditions
Procedures

The network simulator is configured for signal conformance testing as described in Section *Test Equipment Configuration* and powered on. The device (UE) under test is then connected to the network simulator. After the UE is powered on, acquired and synchronized to the network, the following procedures should be either initiated by the UE or performed in response to messages received by the UE.

Table 8.5.4.1.3.3-2: UECapabilityInformation defined in 3GPP TS 523-1, Release 12, section 8.5.4 "UE capability transfer" shall be followed.

Step	Procedure	Message Sequence		Verdict
		U - S	**Message**	
1	UE performs the Initial Attach procedure to the LTE network as in Test 2.1	-	-	N/A
2	Configure the network simulator to send the Capability Inquiry message to the UE	<=	Capability Inquiry	N/A

2a	Check: Does UE respond to the enquiry by sending the UE Capability Information message to eNB?	=>	UE Capability Information	Pass if message sent
2b	Check: Does UE include dl-256QAM-r12 field in SupportedBandEUTRA-v1250 IE and set to "supported" for all supported frequency bands?			Pass if contents are correct

Expected Results

UE shall meet the verdicts in the Table above.

2.56 HANDOVER WITH MCS&CQI TABLE CHANGE VZ_TC_LTESUPSIGCONF_9814

Definition

This test verifies UE handover between eNB supporting 256QAM modulation and eNB not supporting 256QAM modulation is successful.

Traceability:

1. "Verizon Wireless LTE 3GPP Band 13 Network Access Requirements"
2. 3GPP TS 36.331: *Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification*, Release 12, section 5.3.5.4
3. 3GPP TS 36.523-1 : *Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); User Equipment (UE) conformance specification; Part 1: Protocol conformance specification*, Release 12, section 8.2.4.

Applicability:

This test applies to all devices that support IMS and 256QAM and are designed to operate in the Verizon Wireless LTE 3GPP Band 13 network.

Design Steps
Step Name
Step 1
Pre-Conditions
Procedures

The network simulator is configured for signal conformance testing as described in Section *Test Equipment Configuration* and powered on. The device (UE) under test is then connected to the network simulator. After the UE is powered on, acquired and synchronized to the network, the following procedures should be either initiated by the UE or performed in response to messages received by the UE.
 	
1. Set the initial conditions as per section 8.2.4.12.3.1 of 3GPP TS 36.523-1: *Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); User Equipment (UE) conformance specification; Part 1: Protocol conformance specification* for a 10 MHz channel in Band 13 with the following exceptions:
    a. Both Cell 1 and Cell 2 have 2 antenna ports.
    b. Cell 2 supports 256QAM modulation. Cell 1 does not support 256QAM modulation.
2. Follow the test procedure sequence as per section 8.2.4.12.3.2 of 3GPP TS 36.523-1: *Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); User Equipment (UE) conformance specification; Part 1: Protocol conformance specification* with the following exceptions:

a. The *RRCConnectionReconfiguration* message in Step 1 of Table 8.2.4.12.3.2-1 shall include altCQI-Table-r12 field with the setting of allSubframes, in CQI-ReportConfig-v1250 information element, as included in PhysicalConfigDedicated information element. Note: The *RRCConnectionReconfiguration* message in Step 4 of Table 8.2.4.12.3.2-1 shall not include altCQI-Table-r12 field

b. Table 8.2.4.12.3.3-6 shall not apply.

Expected Results

UE shall meet the verdicts in the test procedure above.

2.57 SCM Signalling and Protocol Conformance Test Cases (VOID)
VZ_TC_LTESUPSIGCONF_9815

Definition

In order to comply with Verizon Wireless SCM (Smart Congestion Mitigation) requirements, devices shall pass all applicable test cases listed in

- 3GPP TS 36.523-1 : *Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); User Equipment (UE) conformance specification; Part 1: Protocol conformance specification*, Release 12.

Traceability:

- "Verizon Wireless LTE 3GPP Band 13 Network Access Device Requirements".
- "Verizon Wireless LTE Data Devices Requirements".
- 3GPP TS 36.331: *Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification*, Release 12, section 5.3.3.2.
- 3GPP TS 36.523-1 : *Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); User Equipment (UE) conformance specification; Part 1: Protocol conformance specification*, Release 12, section 13.5.

Applicability:

This test applies to all devices that support VoLTE and are designed to operate in the Verizon Wireless LTE 3GPP Band 13 network.

Design Steps
Step Name
Step 1
Pre-Conditions
The device shall be in IMS registered state for VoLTE and SMS, using Digest AKAv2 as the IMS authentication method. For IMS registration, refer to "Verizon Wireless LTE 3GPP Band 13 Network Access Device Requirements" and "Verizon Wireless LTE IMS Registration and Retry Test Plan".
Procedures
All the test steps in the following sections in 3GPP TS 36.523-1 shall be followed for SCM signaling and protocol conformance tests:

3GPP TS 36.523-1 Protocol conformance test cases
Title
13.5.4 MTSI MO speech call / SCM / 0% access probability skip for MTSI MO speech call
13.5.5 MTSI MO video call / SCM / 0% access probability skip for MTSI MO video call
13.5.6 MTSI MO SMS / SCM / 0% access probability skip for MTSI MO SMS over IP
Expected Results
As specified in 3GPP test cases.

2.58 DEFAULT AND DEDICATED BEARER SETUP OVER INTERNET PDN CONNECTION (EMM-CONNECTED) VZ_TC_LTESUPSIGCONF_10300

Definition

The UE has already completed the initial attach to the network such that it is EMM registered. It is in EMM-connected and RRC-connected states with a default bearer for the IMS PDN. UE requests for the setup of a new connection to the Internet PDN.

Traceability:

- "Verizon Wireless LTE 3GPP Band 13 Network Access Requirements"
- 3GPP TS 36.300: *Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); Overall description; Stage 2*, Release 9
- 3GPP TS 36.331: *Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification*, Release 9, Section 5
- 3GPP TS 24.301: *Non-Access-Stratum (NAS) protocol for Evolved Packet System (EPS); Stage 3*, Release 9

Applicability:

This test applies to all devices that support IMS and are designed to operate in the Verizon Wireless LTE 3GPP Band 13 network.

Design Steps
Step Name
Step 1
Pre-Conditions
Procedures

The UE under test shall have already completed the Initial Attach procedure resulting in the setup of a default IMS PDN bearer. This procedure tests the setup of default and dedicated bearers with specified QCI values on the Internet PDN.

Step	Procedure	Message Sequence		Verdict
		U - S	**Message**	
1	Start with UE in EMM registered/EMM connected state			N/A
2	Initiate data activity that will cause the UE to connect to the Internet PDN			N/A
3	Check: Does UE send an UL Information	=>	UL Information Transfer	Pass if message sent

	Transfer message ESM: PDN Connectivity Request message?		ESM: PDN Connectivity Request	
3a	Check: Is the "Request Type" = Initial Request?			Pass if type is correct
3b	Check: Is the PDN type = IPv4v6?			Pass if type is correct
3c	Check: Is the ESM Information Transfer Flag omitted in the ESM:PDN Connectivity Request message?			Pass if type is correct
3d	Check: Is an enabled APN included for the Internet PDN?			Pass if type is correct
3e	Check: Is the Protocol Option (PCO) = • DNS • IPv4 Link MTU • Operator reserved PCO container ID=FF00H, with MCC=311 and MNC=480? Check: Does Protocol Option (PCO) NOT include P-CSCF IPv6 addresses?			Pass if type is correct
4	RRC Connection Reconfiguration			N/A

| | Network simulator sends an Activate Default EPS Bearer Context Request and an Activate Dedicated EPS Bearer Context Request message to the UE, with the following information elements: ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST:

 • "EPS bearer Identity"
 • "EPS QoS" with QCI set to 254
 • "Protocol Configuration Options" =
   • DNS IP addresses.
   • IPv4 address
   • IPv6 prefix
   • IPv4 Link MTU
   • Operator reserved PCO container ID=FF00H, with MCC=311 and MNC=480
 ACTIVATE DEDICATED EPS BEARER CONTEXT REQUEST:

 • "EPS bearer Identity"
 • "Linked EPS bearer identity"
 • "EPS QoS" with QCI set to 253
 • "TFT" with elements as specified in table 14 for dedicated bearer 1 | <= | Activate Default EPS Bearer Context Request Activate Dedicated EPS Bearer Context Request | N/A |

5	Check: Does the UE send an ESM: Activate Default EPS Bearer Context Accept message?	=>	Activate Default EPS Bearer Context Accept	Pass if message sent
6	Check: Does the UE send an ESM: Activate Dedicated EPS Bearer Context Accept message?	=>	Activate Dedicated EPS Bearer Context Accept	Pass if message sent
7	RRC Connection Reconfiguration			N/A
	Network simulator sends an Activate Dedicated EPS Bearer Context Request message to the UE, with the following information elements: ACTIVATE DEDICATED EPS BEARER CONTEXT REQUEST: • "EPS bearer Identity" • "Linked EPS bearer identity" • "EPS QoS" with QCI set to 128 • "TFT" with elements as specified in table 14 for dedicated bearer 2	<=	Activate Dedicated EPS Bearer Context Request	N/A
8	Check: Does the UE send an ESM: Activate Dedicated EPS Bearer Context Accept message?	=>	Activate Dedicated EPS Bearer Context Accept	Pass if message sent
9	Repeat steps 7 and 8 two times, first with "EPS QOS" with QCI set to 129, then with "EPS QoS" with QCI set to 130.	-	-	N/A

The following table shall be used to create the traffic flow templates sent to the UE:

Packet Filter ID	Bearer	Packet Filter Evaluation Precedence	IPv4 / IPv6 Remote Address and Subnet Mask	Protocol Identifier (IPv4) / Next Header (IPv6)	Single Local Port / Local Port Range (UE)	Single Remote Port / Remote Port Range (Network)	IPSec SPI range	Type of Service (IPv4)/Traffic Class (IPv6) and Mask	Flow Label (IPv6)
1	Dedicated	1						TOS/Traffic	

	Bearer 1						Class: 10100000 Mask: 11100000	
2	Dedicated Bearer 2	2					TOS/Traffic Class: 10000000 Mask: 11000000	

Table 14: Traffic Flow Template Contents

Expected Results

The device shall meet the verdicts in the Table above.

2.59 PSM GCF Signalling and Protocol Conformance Test Cases VZ_TC_LTESUPSIGCONF_10628

Definition

In order to comply with Verizon Wireless PSM (Power Saving Mode) requirements, devices shall pass all applicable test cases listed in 3GPP TS 36.523-1 : *Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); User Equipment (UE) conformance specification; Part 1: Protocol conformance specification*, Release 12.

Traceability:

- *"Verizon Wireless LTE 3GPP Band 13 Network Access Device Requirements,"* section 4.1.21.2.
- 3GPP TS 24.301: *Non-Access-Stratum (NAS) protocol for Evolved Packet System (EPS); Stage 3*, Release 12.
- 3GPP TS 36.523-1 : *Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); User Equipment (UE) conformance specification; Part 1: Protocol conformance specification*, Release 12.

Applicability:

This test applies to all devices that support IMS and PSM and are designed to operate in the Verizon Wireless LTE 3GPP Band 13 network.

Design Steps	
Step Name	
Step 1	
Pre-Conditions	
Procedures	
All the test steps in the following sections in 3GPP TS 36.523-1 shall be followed for PSM signaling and protocol conformance tests:	
3GPP TS 36.523-1 Protocol conformance test cases	**Title**
9.2.1.1.7c	"Attach / Success / PSM"
9.2.3.1.1a	"Normal tracking area update / Accepted / PSM"
9.2.3.1.5b	"Periodic tracking area update / Accepted / PSM / T3412 Extended Value"
Expected Results	

As specified in 3GPP test cases.

2.40.1 Attach / Abnormal case / Network reject with Extended Wait Timer
VZ_TC_LTESUPSIGCONF_3783421

2.40.2 Attach Procedure / EAB broadcast handling / ExtendedAccessBarring configured in the UE VZ_TC_LTESUPSIGCONF_3783501

2.40.7 UE requested PDN connectivity not accepted / Network reject with Extended Wait Timer VZ_TC_LTESUPSIGCONF_3783584

RequirementCoverageForTestPlan

2.1 EUTRAN INITIAL ATTACH (WITH PIGGYBACKING) VZ_TC_LTESUPSIGCONF_5392

Requirement Name	Requirement Plan Id	Created By	Created Date
APN CONTENT	LTEB13NAC	Admin User	11-07-0013 14:25:57
APN CONTENT (ALL DEVICES)	LTEDATA	Admin User	11-07-0013 14:36:26
APN's (ALL DEVICES)	LTEDATA	Admin User	11-07-0013 14:36:52
FACTORY LTE PROGRAMMING - APN'S	LTEB13NAC	Admin User	11-07-0013 14:27:24
IMS PDN Bearer	LTEB13NAC	Admin User	11-07-0013 14:25:32
IMS PDN DEDICATED BEARER SETUP	LTEB13NAC	Admin User	11-07-0013 14:26:32
IP ADDRESS ASSIGNMENT - NORMAL OPERATION	LTEB13NAC	Admin User	11-07-0013 14:26:34
IP MOBILITY	LTEB13NAC	Admin User	11-07-0013 14:25:38
LTE RF AND RRM CONFORMANCE REQUIREMENTS	LTEDATA	Admin User	11-07-0013 14:36:57

NAS MESSAGING DURING LTE NETWORK ATTACHMENT - ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST Message	LTEB13NAC	Admin User	11-07-0013 14:26:44
NAS MESSAGING DURING LTE NETWORK ATTACHMENT - ATTACH ACCEPT Message	LTEB13NAC	Admin User	11-07-0013 14:26:43
NAS MESSAGING DURING LTE NETWORK ATTACHMENT - ATTACH REQUEST Message	LTEB13NAC	Admin User	11-07-0013 14:26:38
NAS MESSAGING DURING LTE NETWORK ATTACHMENT - ESM INFORMATION RESPONSE Message	LTEB13NAC	Admin User	11-07-0013 14:26:41
NAS MESSAGING DURING LTE NETWORK ATTACHMENT - PDN CONNECTIVITY REQUEST Message	LTEB13NAC	Admin User	11-07-0013 14:26:40
PDN CONNECTION FOR NETWORK ATTACHMENT - NORMAL OPERATION	LTEB13NAC	Admin User	11-07-0013 14:26:29
PDN CONNECTION REQUESTS	LTEB13NAC	Admin User	11-07-0013 14:25:54
PDN Connection Request During Attach	LTEB13NAC	Admin User	11-07-0013 14:25:33
PDN Type	LTEB13NAC	Admin User	11-07-0013 14:25:30

2.2 RRC UE FEATURE GROUP SUPPORT VZ_TC_LTESUPSIGCONF_5393

Requirement Name	Requirement Plan Id	Created By	Created Date

RRC Feature Group Support	LTEDATA	Admin User	11-07-0013 14:34:52
RRC UE FEATURE GROUP SUPPORT - MANDATORY FGI'S	LTEB13NAC	Admin User	11-07-0013 14:24:29
RRC UE FEATURE GROUP SUPPORT - OPTIONAL FGI'S	LTEB13NAC	Admin User	11-07-0013 14:24:30
RRC UE FEATURE GROUP SUPPORT - RRC MESSAGING	LTEB13NAC	Admin User	11-07-0013 14:24:32
UE Capability Enquiry- FGI Indicators	LTEDATA	Admin User	11-07-0013 14:34:58

2.3 IPV6 ADDRESS ASSIGNMENT VZ_TC_LTESUPSIGCONF_5394

Requirement Name	Requirement Plan Id	Created By	Created Date
APN CONTENT	LTEB13NAC	Admin User	11-07-0013 14:25:57
APN CONTENT (ALL DEVICES)	LTEDATA	Admin User	11-07-0013 14:36:26
IMS PDN Bearer	LTEB13NAC	Admin User	11-07-0013 14:25:32
IP ADDRESS ASSIGNMENT - NORMAL OPERATION	LTEB13NAC	Admin User	11-07-0013 14:26:34
IP MOBILITY	LTEB13NAC	Admin User	11-07-0013 14:25:38

IPV6 ADDRESS LIFETIME	LTEB13NAC	Admin User	11-07-0013 14:27:13
LINK-LOCAL ADDRESS AND GLOBALLY ROUTABLE IPV6 ADDRESS FORMATION	LTEB13NAC	Admin User	11-07-0013 14:27:12
PDN CONNECTION REQUESTS	LTEB13NAC	Admin User	11-07-0013 14:25:54
PDN Connection Request During Attach	LTEB13NAC	Admin User	11-07-0013 14:25:33

2.4 EUTRAN INITIAL ATTACH (APN DISABLED) VZ_TC_LTESUPSIGCONF_5395

Requirement Name	Requirement Plan Id	Created By	Created Date
APN CONTENT (ALL DEVICES)	LTEDATA	Admin User	11-07-0013 14:36:26
APN ENABLE/DISABLE	LTEB13NAC	Admin User	11-07-0013 14:25:56
FACTORY LTE PROGRAMMING - APN'S	LTEB13NAC	Admin User	11-07-0013 14:27:24
LTE RF AND RRM CONFORMANCE REQUIREMENTS	LTEDATA	Admin User	11-07-0013 14:36:57
LTE SIGNALING	LTEB13NAC	Admin User	11-07-0013 14:25:24

2.7 UE INITIATED PDN CONNECTION (EMM-IDLE) VZ_TC_LTESUPSIGCONF_5397

Requirement Name	Requirement Plan Id	Created By	Created Date
APN CONTENT	LTEB13NAC	Admin User	11-07-0013 14:25:57
APN CONTENT (ALL DEVICES)	LTEDATA	Admin User	11-07-0013 14:36:26
APN's (ALL DEVICES)	LTEDATA	Admin User	11-07-0013 14:36:52
FACTORY LTE PROGRAMMING - APN'S	LTEB13NAC	Admin User	11-07-0013 14:27:24
IP ADDRESS ASSIGNMENT - IMS TEST MODE OPERATION	LTEB13NAC	Admin User	11-07-0013 14:26:35
IP MOBILITY	LTEB13NAC	Admin User	11-07-0013 14:25:38
IPV6/IPV4 SUPPORT	LTEB13NAC	Admin User	11-07-0013 14:25:26
LTE RF AND RRM CONFORMANCE REQUIREMENTS	LTEDATA	Admin User	11-07-0013 14:36:57
LTE SIGNALING	LTEB13NAC	Admin User	11-07-0013 14:25:24
NAS MESSAGING DURING ON DEMAND PDN CONNECTION ESTABLISHMENT - ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST Message	LTEB13NAC	Admin User	11-07-0013 14:26:55
NAS MESSAGING DURING ON DEMAND PDN	LTEB13NAC	Admin	11-07-0013

CONNECTION ESTABLISHMENT - PDN CONNECTIVITY REQUEST Message		User	14:26:53
ON -DEMAND PDN CONNECTION ESTABLISHMENT - NORMAL OPERATION	LTEB13NAC	Admin User	11-07-0013 14:26:46
On-Demand PDN Bearer	LTEB13NAC	Admin User	11-07-0013 14:25:35
On-Demand PDN Connection Request	LTEB13NAC	Admin User	11-07-0013 14:25:36
PDN CONNECTION REQUESTS	LTEB13NAC	Admin User	11-07-0013 14:25:54
PDN Type	LTEB13NAC	Admin User	11-07-0013 14:25:30
UE PDN Support	LTEB13NAC	Admin User	11-07-0013 14:25:27

2.8 UE INITIATED PDN CONNECTION (EMM-CONNECTED)
VZ_TC_LTESUPSIGCONF_5398

Requirement Name	Requirement Plan Id	Created By	Created Date
APN CONTENT	LTEB13NAC	Admin User	11-07-0013 14:25:57
APN CONTENT (ALL DEVICES)	LTEDATA	Admin User	11-07-0013 14:36:26
APN's (ALL DEVICES)	LTEDATA	Admin User	11-07-0013 14:36:52

DEFAULT BEARERS AND IP ADDRESSES FOR ON-DEMAND PDN CONNECTIONS	LTEB13NAC	Admin User	11-07-0013 14:26:49
FACTORY LTE PROGRAMMING - APN'S	LTEB13NAC	Admin User	11-07-0013 14:27:24
IP ADDRESS ASSIGNMENT - IMS TEST MODE OPERATION	LTEB13NAC	Admin User	11-07-0013 14:26:35
IP MOBILITY	LTEB13NAC	Admin User	11-07-0013 14:25:38
LTE RF AND RRM CONFORMANCE REQUIREMENTS	LTEDATA	Admin User	11-07-0013 14:36:57
LTE SIGNALING	LTEB13NAC	Admin User	11-07-0013 14:25:24
NAS MESSAGING DURING ON DEMAND PDN CONNECTION ESTABLISHMENT - ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST Message	LTEB13NAC	Admin User	11-07-0013 14:26:55
NAS MESSAGING DURING ON DEMAND PDN CONNECTION ESTABLISHMENT - PDN CONNECTIVITY REQUEST Message	LTEB13NAC	Admin User	11-07-0013 14:26:53
ON -DEMAND PDN CONNECTION ESTABLISHMENT - NORMAL OPERATION	LTEB13NAC	Admin User	11-07-0013 14:26:46
On-Demand PDN Bearer	LTEB13NAC	Admin User	11-07-0013 14:25:35
On-Demand PDN Connection Request	LTEB13NAC	Admin User	11-07-0013 14:25:36
PDN CONNECTION REQUESTS	LTEB13NAC	Admin	11-07-0013

		User	14:25:54
PDN Type	LTEB13NAC	Admin User	11-07-0013 14:25:30
UE PDN Support	LTEB13NAC	Admin User	11-07-0013 14:25:27

2.9 UE INITIATED PDN CONNECTION (APN DISABLED) VZ_TC_LTESUPSIGCONF_5399

Requirement Name	Requirement Plan Id	Created By	Created Date
APN ENABLE/DISABLE	LTEB13NAC	Admin User	11-07-0013 14:25:56
APN's (ALL DEVICES)	LTEDATA	Admin User	11-07-0013 14:36:52
FACTORY LTE PROGRAMMING - APN'S	LTEB13NAC	Admin User	11-07-0013 14:27:24
LTE RF AND RRM CONFORMANCE REQUIREMENTS	LTEDATA	Admin User	11-07-0013 14:36:57

2.12 NETWORK INITIATED PDN DISCONNECT (EMM-CONNECTED) VZ_TC_LTESUPSIGCONF_5400

Requirement Name	Requirement Plan Id	Created By	Created Date

APN's (ALL DEVICES)	LTEDATA	Admin User	11-07-0013 14:36:52
FACTORY LTE PROGRAMMING - APN'S	LTEB13NAC	Admin User	11-07-0013 14:27:24
LTE RF AND RRM CONFORMANCE REQUIREMENTS	LTEDATA	Admin User	11-07-0013 14:36:57
LTE SIGNALING	LTEB13NAC	Admin User	11-07-0013 14:25:24
NETWORK INITIATED PDN DISCONNECTION	LTEB13NAC	Admin User	11-07-0013 14:26:57

2.13 UE INITIATED DETACH FOR E-UTRAN (EMM-CONNECTED) 3 PDNS SCENARIO VZ_TC_LTESUPSIGCONF_5401

Requirement Name	Requirement Plan Id	Created By	Created Date
APN CONTENT	LTEB13NAC	Admin User	11-07-0013 14:25:57
APN CONTENT (ALL DEVICES)	LTEDATA	Admin User	11-07-0013 14:36:26
APN's (ALL DEVICES)	LTEDATA	Admin User	11-07-0013 14:36:52
FACTORY LTE PROGRAMMING - APN'S	LTEB13NAC	Admin User	11-07-0013 14:27:24
IP MOBILITY	LTEB13NAC	Admin User	11-07-0013 14:25:38

LTE NETWORK DETACHMENT	LTEB13NAC	Admin User	11-07-0013 14:27:07
LTE RF AND RRM CONFORMANCE REQUIREMENTS	LTEDATA	Admin User	11-07-0013 14:36:57
LTE SIGNALING	LTEB13NAC	Admin User	11-07-0013 14:25:24
ON -DEMAND PDN CONNECTION ESTABLISHMENT - NORMAL OPERATION	LTEB13NAC	Admin User	11-07-0013 14:26:46
On-Demand PDN Bearer	LTEB13NAC	Admin User	11-07-0013 14:25:35
On-Demand PDN Connection Request	LTEB13NAC	Admin User	11-07-0013 14:25:36
PDN CONNECTION REQUESTS	LTEB13NAC	Admin User	11-07-0013 14:25:54
PDN Type	LTEB13NAC	Admin User	11-07-0013 14:25:30
UE PDN Support	LTEB13NAC	Admin User	11-07-0013 14:25:27

2.14 UE INITIATED DETACH FOR E-UTRAN (EMM-IDLE) - 3 PDNS SCENARIO VZ_TC_LTESUPSIGCONF_5402

Requirement Name	Requirement Plan Id	Created By	Created Date
APN CONTENT	LTEB13NAC	Admin	11-07-0013

		User	14:25:57
APN CONTENT (ALL DEVICES)	LTEDATA	Admin User	11-07-0013 14:36:26
APN's (ALL DEVICES)	LTEDATA	Admin User	11-07-0013 14:36:52
FACTORY LTE PROGRAMMING - APN'S	LTEB13NAC	Admin User	11-07-0013 14:27:24
LTE NETWORK DETACHMENT	LTEB13NAC	Admin User	11-07-0013 14:27:07
LTE RF AND RRM CONFORMANCE REQUIREMENTS	LTEDATA	Admin User	11-07-0013 14:36:57
LTE SIGNALING	LTEB13NAC	Admin User	11-07-0013 14:25:24
ON -DEMAND PDN CONNECTION ESTABLISHMENT - NORMAL OPERATION	LTEB13NAC	Admin User	11-07-0013 14:26:46
On-Demand PDN Bearer	LTEB13NAC	Admin User	11-07-0013 14:25:35
On-Demand PDN Connection Request	LTEB13NAC	Admin User	11-07-0013 14:25:36
PDN CONNECTION REQUESTS	LTEB13NAC	Admin User	11-07-0013 14:25:54
PDN Type	LTEB13NAC	Admin User	11-07-0013 14:25:30
UE PDN Support	LTEB13NAC	Admin User	11-07-0013 14:25:27

2.15 MME INITIATED DETACH (EMM-CONNECTED) -3 PDNS SCENARIO VZ_TC_LTESUPSIGCONF_5403

Requirement Name	Requirement Plan Id	Created By	Created Date
APN CONTENT	LTEB13NAC	Admin User	11-07-0013 14:25:57
APN CONTENT (ALL DEVICES)	LTEDATA	Admin User	11-07-0013 14:36:26
IP MOBILITY	LTEB13NAC	Admin User	11-07-0013 14:25:38
LTE SIGNALING	LTEB13NAC	Admin User	11-07-0013 14:25:24
ON -DEMAND PDN CONNECTION ESTABLISHMENT - NORMAL OPERATION	LTEB13NAC	Admin User	11-07-0013 14:26:46
On-Demand PDN Bearer	LTEB13NAC	Admin User	11-07-0013 14:25:35
On-Demand PDN Connection Request	LTEB13NAC	Admin User	11-07-0013 14:25:36
PDN CONNECTION REQUESTS	LTEB13NAC	Admin User	11-07-0013 14:25:54
PDN Type	LTEB13NAC	Admin User	11-07-0013 14:25:30
UE PDN Support	LTEB13NAC	Admin User	11-07-0013 14:25:27

2.16 UE RE-INITIATED CONNECTION TO IMS PDN AFTER DISCONNECTED VZ_TC_LTESUPSIGCONF_5404

Requirement Name	Requirement Plan Id	Created By	Created Date
NAS MESSAGING DURING ON DEMAND PDN CONNECTION ESTABLISHMENT - ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST Message	LTEB13NAC	Admin User	11-07-0013 14:26:55
NAS MESSAGING DURING ON DEMAND PDN CONNECTION ESTABLISHMENT - PDN CONNECTIVITY REQUEST Message	LTEB13NAC	Admin User	11-07-0013 14:26:53
NETWORK INITIATED PDN DISCONNECTION	LTEB13NAC	Admin User	11-07-0013 14:26:57

2.17 UE INITIATED LTE DETACH UPDATE TO APN PARAMETERS VZ_TC_LTESUPSIGCONF_5405

Requirement Name	Requirement Plan Id	Created By	Created Date
LTE SIGNALING	LTEB13NAC	Admin User	11-07-0013 14:25:24
NAS MESSAGING DURING LTE NETWORK ATTACHMENT - ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST Message	LTEB13NAC	Admin User	11-07-0013 14:26:44

NAS MESSAGING DURING LTE NETWORK ATTACHMENT - ATTACH ACCEPT Message	LTEB13NAC	Admin User	11-07-0013 14:26:43
NAS MESSAGING DURING LTE NETWORK ATTACHMENT - ATTACH REQUEST Message	LTEB13NAC	Admin User	11-07-0013 14:26:38
NAS MESSAGING DURING LTE NETWORK ATTACHMENT - ESM INFORMATION RESPONSE Message	LTEB13NAC	Admin User	11-07-0013 14:26:41
NAS MESSAGING DURING LTE NETWORK ATTACHMENT - PDN CONNECTIVITY REQUEST Message	LTEB13NAC	Admin User	11-07-0013 14:26:40
UE Initiated PDN Disconnection Update to APN Related Parameters	LTEB13NAC	Admin User	11-07-0013 14:26:58

2.18 UE INITIATED PDN DISCONNECTION UPDATE TO APN PARAMETERS (EMM-IDLE) VZ_TC_LTESUPSIGCONF_5406

Requirement Name	Requirement Plan Id	Created By	Created Date
APN STORAGE AND UPDATES	LTEB13NAC	Admin User	11-07-0013 14:26:03
APN Update Capability	LTEDATA	Admin User	11-07-0013 14:36:33
APN's (ALL DEVICES)	LTEDATA	Admin User	11-07-0013 14:36:52
FACTORY LTE PROGRAMMING - APN'S	LTEB13NAC	Admin User	11-07-0013 14:27:24

LTE RF AND RRM CONFORMANCE REQUIREMENTS	LTEDATA	Admin User	11-07-0013 14:36:57
LTE SIGNALING	LTEB13NAC	Admin User	11-07-0013 14:25:24
NAS MESSAGING DURING ON DEMAND PDN CONNECTION ESTABLISHMENT - ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST Message	LTEB13NAC	Admin User	11-07-0013 14:26:55
NAS MESSAGING DURING ON DEMAND PDN CONNECTION ESTABLISHMENT - PDN CONNECTIVITY REQUEST Message	LTEB13NAC	Admin User	11-07-0013 14:26:53
UE Initiated PDN Disconnection Update to APN Related Parameters	LTEB13NAC	Admin User	11-07-0013 14:26:58

2.19 UE SUPPORT OF MULTIPLE DNS ADDRESSES VZ_TC_LTESUPSIGCONF_5407

Requirement Name	Requirement Plan Id	Created By	Created Date
DNS SERVER IP ADDRESS ASSIGNMENT	LTEB13NAC	Admin User	11-07-0013 14:27:18
DNS Server Support	LTEB13NAC	Admin User	11-07-0013 14:25:45
NAS MESSAGING DURING ON DEMAND PDN CONNECTION ESTABLISHMENT - ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST Message	LTEB13NAC	Admin User	11-07-0013 14:26:55
NAS MESSAGING DURING ON DEMAND PDN	LTEB13NAC	Admin	11-07-0013

CONNECTION ESTABLISHMENT - PDN CONNECTIVITY REQUEST Message		User	14:26:53

2.20 UE INITIATED PDN DISCONNECTION UPDATE TO APN PARAMETERS (EMM-CONNECTED) VZ_TC_LTESUPSIGCONF_5408

Requirement Name	Requirement Plan Id	Created By	Created Date
APN STORAGE AND UPDATES	LTEB13NAC	Admin User	11-07-0013 14:26:03
APN Update Capability	LTEDATA	Admin User	11-07-0013 14:36:33
APN's (ALL DEVICES)	LTEDATA	Admin User	11-07-0013 14:36:52
FACTORY LTE PROGRAMMING - APN'S	LTEB13NAC	Admin User	11-07-0013 14:27:24
LTE RF AND RRM CONFORMANCE REQUIREMENTS	LTEDATA	Admin User	11-07-0013 14:36:57
NAS MESSAGING DURING ON DEMAND PDN CONNECTION ESTABLISHMENT - ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST Message	LTEB13NAC	Admin User	11-07-0013 14:26:55
NAS MESSAGING DURING ON DEMAND PDN CONNECTION ESTABLISHMENT - PDN CONNECTIVITY REQUEST Message	LTEB13NAC	Admin User	11-07-0013 14:26:53
UE Initiated PDN Disconnection Update to APN Related Parameters	LTEB13NAC	Admin User	11-07-0013 14:26:58

2.21 NETWORK INITIATED EPS BEARER MODIFICATION WITHOUT QOS UPDATE (EMM-CONNECTED) VZ_TC_LTESUPSIGCONF_5409

Requirement Name	Requirement Plan Id	Created By	Created Date
BEARER QOS	LTEB13NAC	Admin User	11-07-0013 14:25:41
NAS MESSAGING FOR NETWORK INITIATED BEARER MODIFICATION - MODIFY EPS BEARER CONTEXT REQUEST Message	LTEB13NAC	Admin User	11-07-0013 14:28:26

2.22 NETWORK INITIATED EPS BEARER MODIFICATION WITH QOS UPDATE (EMM-CONNECTED) VZ_TC_LTESUPSIGCONF_5410

Requirement Name	Requirement Plan Id	Created By	Created Date
BEARER QOS	LTEB13NAC	Admin User	11-07-0013 14:25:41
NAS MESSAGING FOR NETWORK INITIATED BEARER MODIFICATION - MODIFY EPS BEARER CONTEXT REQUEST Message	LTEB13NAC	Admin User	11-07-0013 14:28:26

2.30 NETWORK INITIATED EPS DEDICATED BEARER ACTIVATION (EMM-CONNECTED) VZ_TC_LTESUPSIGCONF_5411

Requirement Name	Requirement Plan Id	Created By	Created Date

NETWORK INITIATED BEARER MODIFICATION AND DEACTIVATION PROCEDURES	LTEB13NAC	Admin User	11-07-0013 14:28:25
Traffic Flow Template Support	LTEB13NAC	Admin User	11-07-0013 14:28:30

2.31 NETWORK INITIATED PDN DISCONNECT (NO DATA USAGE AVAILABLE) VZ_TC_LTESUPSIGCONF_5412

Requirement Name	Requirement Plan Id	Created By	Created Date
NAS MESSAGING FOR NETWORK INITIATED BEARER DEACTIVATION PROCEDURES - DEACTIVATE EPS BEARER CONTEXT REQUEST Message	LTEB13NAC	Admin User	11-07-0013 14:28:28

2.32 UE INITIATED INTERNET PDN CONNECTION WITH QOS (EMM-CONNECTED) VZ_TC_LTESUPSIGCONF_5413

Requirement Name	Requirement Plan Id	Created By	Created Date
BEARER QOS	LTEB13NAC	Admin User	11-07-0013 14:25:41
NAS MESSAGE PIGGYBACKING SUPPORT - PDN BEARER ACTIVATION AFTER ATTACH	LTEB13NAC	Admin User	11-07-0013 14:28:34
Traffic Flow Template Support	LTEB13NAC	Admin User	11-07-0013 14:28:30

2.34 TIME RETRIEVAL VIA SIB16 MESSAGE VZ_TC_LTESUPSIGCONF_5414

Requirement Name	Requirement Plan Id	Created By	Created Date
SYSTEM TIME AND LOCAL TIME	LTEB13NAC	Admin User	11-07-0013 14:26:14

2.35 UE INDICATES RACH REPORT CAPABILITY VZ_TC_LTESUPSIGCONF_5415

Requirement Name	Requirement Plan Id	Created By	Created Date
RACH INFORMATION REPORTING	LTEB13NAC	Admin User	11-07-0013 14:29:27
RADIO LINK AND HANDOVER FAILURE REPORTING	LTEB13NAC	Admin User	11-07-0013 14:29:26

2.36 UE REPORTS RACH INFORMATION UPON REQUEST BY NETWORK VZ_TC_LTESUPSIGCONF_5450

Requirement Name	Requirement Plan Id	Created By	Created Date
RACH INFORMATION REPORTING	LTEB13NAC	Admin User	11-07-0013 14:29:27
RADIO LINK AND HANDOVER FAILURE REPORTING	LTEB13NAC	Admin User	11-07-0013 14:29:26

2.37 UE INITIATED TRACKING AREA UPDATE AFTER RADIO LINK FAILURE VZ_TC_LTESUPLSIG_8310

Requirement Name	Requirement Plan Id	Created By	Created Date
TRACKING AREA UPDATE REQUEST Message after RLF	LTEB13NAC	Admin User	05-19-0014 21:35:18

2.38 UE RESPONSE TO PDN DISCONNECT REJECT CODE 43 VZ_TC_LTESUPSIGCONF_8314

Requirement Name	Requirement Plan Id	Created By	Created Date
UE Initiated PDN Disconnection Update to APN Related Parameters	LTEB13NAC	Admin User	11-07-0013 14:26:58

2.39 UE ROUTES DNS QUERIES VZ_TC_LTESUPSIGCONF_8368

Requirement Name	Requirement Plan Id	Created By	Created Date
DNS SERVER PER PDN	LTEB13NAC	Admin User	11-07-0013 14:27:19

2.40 LOW PRIORITY, DELAY TOLERANT, AND EAB SIGNALING TEST CASES VZ_TC_LTESUPSIGCONF_8792

Requirement Name	Requirement Plan Id	Created By	Created Date
Low Priority Access & Delay Tolerant UE Feature Support	LTEB13NAC	Admin User	09-18-0014 13:33:05

2.42 eICIC FEATURE GROUP and UE Capability SUPPORT VZ_TC_LTE Supplementary Signal Conformance_8811

Requirement Name	Requirement Plan Id	Created By	Created Date
CRS IC WITHOUT ABS	LTEB13NAC	Admin User	12-19-0014 15:35:02
CRS Interference Management	LTEB13NAC	Admin User	09-12-0014 15:07:23
Req-2	LTEB13NAC	Admin User	09-12-0014 14:49:38

2.43 RRCConnectionReConfiguration when CRS-AssistanceInfoList-r11 is present VZ_TC_LTE Supplementary Signalign Conformance_9490

Requirement Name	Requirement Plan Id	Created By	Created Date
CRS IC WITHOUT ABS	LTEB13NAC	Admin User	12-19-0014 15:35:02

2.44 DL CoMP UE CAPABILITY SUPPORT VZ_TC_LTESUPSIGCONF_9439

Requirement Name	Requirement Plan Id	Created By	Created Date
RRC Signaling for TM10	LTEB13NAC	Admin User	01-27-0015 16:38:03

2.45 DL CoMP HANDOVER WITH TRANSMISSION MODE CHANGE VZ_TC_LTESUPSIGCONF_9440

Requirement Name	Requirement Plan Id	Created By	Created Date
RRC Signaling for TM10	LTEB13NAC	Admin User	01-27-0015 16:38:03

2.46 UE DOWNLINK SUPERVISION VZ_TC_LTE Supplementary Signaling Conformance_9503

Requirement Name	Requirement Plan Id	Created By	Created Date
Downlink Supervision Failures	LTEB13NAC	Admin User	05-14-0015 18:51:00

2.47 NON-ESSENTIAL SYSTEM INFORMATION DETECTION FAILURE VZ_TC_LTE Supplementary Signal Conformance_9504

Requirement Name	Requirement Plan Id	Created By	Created Date
Non-Essential SIB Information	LTEB13NAC	Admin User	05-14-0015 18:52:37

2.53 EPDCCH GCF Signalling and Protocol Conformance Test Cases VZ_TC_LTESUPSIGCONF_9808

Requirement Name	Requirement Plan Id	Created By	Created Date
Enhanced Physical Downlink Control Channel (ePDCCH)	LTEB13NAC	Admin User	05-14-0015 11:35:59

2.54 EPDCCH UE CAPABILITY SUPPORT VZ_TC_LTESUPSIGCONF_9809

Requirement Name	Requirement Plan Id	Created By	Created Date
Enhanced Physical Downlink Control Channel (ePDCCH)	LTEB13NAC	Admin User	05-14-0015 11:35:59

2.55 256QAM UE Capacity Support VZ_TC_LTESUPSIGCONF_9813

Requirement Name	Requirement Plan Id	Created By	Created Date
DL 256QAM Support	LTEB13NAC	Admin User	09-17-0015 20:31:06

2.56 HANDOVER WITH MCS&CQI TABLE CHANGE VZ_TC_LTESUPSIGCONF_9814

Requirement Name	Requirement Plan Id	Created By	Created Date
DL 256QAM Support	LTEB13NAC	Admin User	09-17-0015 20:31:06

2.57 SCM Signalling and Protocol Conformance Test Cases (VOID) VZ_TC_LTESUPSIGCONF_9815

Requirement Name	Requirement Plan Id	Created By	Created Date
Smart Congestion Mitigation Requirements	LTEDATA	Admin User	01-16-0015 12:19:45

2.59 PSM GCF Signalling and Protocol Conformance Test Cases VZ_TC_LTESUPSIGCONF_10628

Requirement Name	Requirement Plan Id	Created By	Created Date
Power Saving Mode (PSM)	LTEB13NAC	Admin User	01-14-0016 19:01:02