



## Requirement Plan

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Revision History

Version	Author	Description of Changes	Date
1.0	Verizon Wireless	Initial Release	November 2009
1.1	Verizon Wireless	Update to section 4.2.1.2	December 2009
1.2	Verizon Wireless	Updates to sections 4.2.1.3.3, 4.2.1.3.10, 4.2.1.3.11, 5.1.1.1, 5.1.1.2.2.1, 5.1.1.5, 6.1, 7	February 2010
2.0	Verizon Wireless	Added section 5.1.1.1.1	May 2010
3.0	Verizon Wireless	Added section 5.1.1 Merged section 5.1.1.1.1 into section 5.1.1 Updates to sections 4.2.1.3.5, 4.2.1.3.9, 5.1.2.1, 6.1, 7	June 2010

4.0	Verizon Wireless	Updates to sections 4.2.1.3.3 and 7 to clarify IPSec requirements, Section 4.2.1.3.4 removed	August 2010
5.0	Verizon Wireless	Updates to sections 4.2.1.3.1, 4.2.1.3.2, 4.2.1.3.9, 4.2.1.3.10, 5.1.1.3.1, 5.1.1.3.2, 5.1.1.3.1.3, 5.1.1.3.2.2, 5.1.2.1, 5.1.2.3, 5.1.2.6, 5.1.2.10, 6.1	September 2010
6.0	Verizon Wireless	Updates to sections 1.2, 4.2.1.3.1, 5.1.1.1, 5.1.1.2, 5.1.2.1, 5.1.2.1.1, 5.1.2.1.2, 5.1.2.2.3, 5.1.2.3, 5.1.2.5, 5.1.2.10, 7 Updates to Release 9 throughout the document	December 2010
7.0	Verizon Wireless	Updates to sections 1, 5.1.2.2.1, 5.1.2.2.2, 5.1.2.2.2.2, 5.1.2.3, 5.1.2.4, 5.1.2.5, 7	March 2011
8.0	Verizon Wireless	Updates to sections 1.1, 4.2.1.3.11, 5.1.2.2.2.1, 5.1.2.3, 5.1.2.4	June 2011

9.0	Verizon Wireless	Updates to sections 4.2.1.3.2, 7	September 2011
10.0	Verizon Wireless	Updates to sections 4.2.1.3.1, 4.2.1.3.8, 5.1.2.1.1	December 2011
11.0	Verizon Wireless	Updates to sections 4.2.1.3.10, 5.1.1.3, 5.1.1.4	February 2012
12.0	Verizon Wireless	Updates to sections 5.1.1.3, 5.1.1.4, 5.1.1.5, 5.1.2.1, 5.1.2.9	April 2012
13.0	Verizon Wireless	Updates to sections 5.1.1.3.3, 5.1.1.3.5	July 2012
14.0	Verizon Wireless	Updates to section 5.1.2.2.3, 5.1.2.7  All IMS registration related requirements moved to the Verizon Wireless LTE 3GPP Band 13 Network Access Requirements.	February 2013

15.0	Verizon Wireless	Update to section 5.1.2.1.6 P-Access-Network-Info header included in SIP MESSAGE method for any SMS message that is sent.	April 2014
16.0	Verizon Wireless	Update to section 5.1.2.2.2.2 for support of CDMALess devices	June 2015
17.0	Verizon Wireless	Added section 4.2.2 for support of SMS Over NAS	October 2015
18.0	Verizon Wireless	Added requirement for SMS Retry using SMS Over NAS	February 2016
19.0	Byunghun Choi	Added requirement for Text-To-988 over IMS by FCC	Jun 2022
20.0	Device Technologies	Updated Scope for the test plan.	October 2023

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.

### 1.1.1 APPLICABILITY VZ\_REQ\_LTESMS\_30219

These requirements apply to devices designed to operate on the Verizon Wireless LTE 3GPP Band 13 network. 3GPP Band 13 is per 3GPP TS 36.101: *Evolved Universal Terrestrial Radio Access (E-UTRA); User Equipment (UE) radio transmission and reception*.

Support for user text SMS messages is optional for data-centric devices that are not held up to the head.

For any questions related to this document, please contact Verizon Wireless through the Verizon Wireless Open Development website.

#### 1.1.1.1 All devices shall support administrative SMS messages for the OTADM application and the SIM OTA application (Ann VZ\_REQ\_LTESMS\_29573)

All devices shall support administrative SMS messages for the OTADM application and the SIM OTA application (Announcement 04-2011-2).

### 1.1.2 3GPP RELEASE 9 SPECIFICATIONS VZ\_REQ\_LTESMS\_30221

Please refer to the *3GPP Release 9 Specifications* section of the *Verizon Wireless LTE 3GPP Band 13 Network Access Device Requirement* Ref. [12].

### I.1.3 GLOSSARY/DEFINITIONS VZ\_REQ\_LTESMS\_30223

This section defines acronyms and terms used throughout the document.

Term [Abbreviation (if Applicable)]	Definition
3GPP	3 <sup>rd</sup> Generation Partnership Project, manages LTE, GSM, and UMTS standards
DNS	Domain Name System
FFS	For Future Study
FQDN	Fully Qualified Domain Name
IMS	IP Multimedia Subsystem
IMSI	International Mobile Station Identity
ISIM	IP Multimedia Services Identity Module
MDN	Mobile Directory Number
MO	Mobile Originated
MT	Mobile Terminated
P-CSCF	Proxy- CSCF server
SDP	Session Description Protocol
SIP	Session Initiation Protocol. Note that in this document the term SIP refers to Session Initiation Protocol, and it does not refer to Simple IP.
SMS	Short Message Service
UICC	Universal Integrated Circuit Card
USIM	Universal Subscriber Identity Module

#### 1.1.4 REQUIREMENTS LANGUAGE VZ\_REQ\_LTESMS\_30233

This document uses the following verbal forms in conjunction with requirements:

- "*Shall*" or "*Shall not*" indicates the requirement is mandatory
- "*Should*" indicates the requirement is recommended but not mandatory
- "*May*" indicates the requirement is optional

#### 1.2 USER INTERFACE VZ\_REQ\_LTESMS\_30208

##### 1.2.1 User Interface VZ\_REQ\_LTESMS\_29525

The user interface for SMS is provided by the device user interface or the connection manager user interface for tethered devices. For tethered data devices, the connection manager software runs on the host Personal Computer, and the PC is then connected to the LTE data device.

#### 1.3 HARDWARE SPECIFICATIONS VZ\_REQ\_LTESMS\_30210

##### 1.3.1 Hardware Requirements reference VZ\_REQ\_LTESMS\_29526

For hardware related requirements see the document Verizon Wireless LTE 3GPP Band 13 Network Access Device Requirements.

## 1.4 SOFTWARE SPECIFICATIONS VZ\_REQ\_LTESMS\_30212

The requirements defined in this section provide SMS functionality for LTE devices operating on the Verizon Wireless LTE 3GPP Band 13 network.

### 1.4.1 DEVICE BASED VZ\_REQ\_LTESMS\_30235

#### 1.4.1.1 SUPPORT FOR ISIM AND USIM VZ\_REQ\_LTESMS\_30247

##### *1.4.1.1.1* Support for ISIM and USIM VZ\_REQ\_LTESMS\_29527

The SMS over IMS functionality requires that the device support the ISIM module and the USIM module on the UICC. The details on the ISIM, USIM, and UICC requirements are found in the Verizon Wireless LTE 3GPP Band 13 Network Access Device Requirements, Ref. [12].

### 1.4.2 NETWORK TO/FROM DEVICE VZ\_REQ\_LTESMS\_30236

#### 1.4.2.1 IMS VZ\_REQ\_LTESMS\_30253

VOID

**NOTE:** *Please refer to the Verizon Wireless LTE 3GPP Band 13 Network Access Requirements for all IMS registration related requirements.*

### **1.4.2.1.1 SMS OVER IMS - OVERVIEW** VZ\_REQ\_LTESMS\_30258

#### **1.4.2.1.1.1 SMS over IMS - overview** VZ\_REQ\_LTESMS\_29575

This section provides a high level description of how the SMS functionality is provided on the LTE device. Shortly after the device powers up and finds the LTE RF signal, the device attaches to the LTE network and gets an IPv6 address. The SMS over IMS client on the device then performs IMS registration with the network. If the IMS registration is successful, then the device is ready to transmit and receive SMS messages.

#### **1.4.2.1.1.2 MO SMS** VZ\_REQ\_LTESMS\_29576

For Mobile Originated SMS, the user enters the text for the SMS message on the device user interface or the connection manager software (which is running on the PC) for tethered devices. For tethered devices, the connection manager software then relays the text of the message to the device. Using the SMS over IMS method, the device generates the MO SMS as a SIP MESSAGE (containing the SMS text) and transmits the SIP MESSAGE over the LTE network.

#### **1.4.2.1.1.3 MT SMS** VZ\_REQ\_LTESMS\_29578

For Mobile Terminated SMS, the network pages the device and then delivers to the device the MT SMS in a SIP MESSAGE format. From the SIP MESSAGE, the device extracts the payload containing the text of the SMS message. It then determines whether the SMS is a text message for the end user or the SMS is an application directed message. When the SMS is for the end user, the device then displays the text using the device user interface or relays the text of the SMS message to the connection manager software for devices tethered to a PC.

**1.4.2.1.1.4 TEXT-TO-988** VZ\_REQ\_LTESMS\_4105999311951475

The device shall be able to send/receive SMS to/from 988 (Suicide Prevention Lifeline) over IMS. This is a mandatory requirement by FCC-21-119 order.

**1.4.2.1.2 DEVICE- NETWORK ATTACHMENT** VZ\_REQ\_LTESMS\_30259

VOID

**1.4.2.1.3 IMS REGISTRATION** VZ\_REQ\_LTESMS\_30260

VOID

**1.4.2.1.3.1 PROXY-CSCF DISCOVERY** VZ\_REQ\_LTESMS\_30262

VOID

**1.4.2.1.3.2 REGISTRATION WITH THE PROXY-CSCF AND S-CSCF**  
VZ\_REQ\_LTESMS\_30263

VOID

**1.4.2.1.3.3 AUTHENTICATION DURING REGISTRATION** VZ\_REQ\_LTESMS\_30265

VOID

**1.4.2.1.3.4 FEATURE TAG FOR IMS REGISTRATION VOID** VZ\_REQ\_LTESMS\_30266

Feature tag requirements for IMS registration have been removed.

**1.4.2.1.3.5 URI FORMATTING** VZ\_REQ\_LTESMS\_30269

VOID

**1.4.2.1.3.6 SUBSCRIPTION TO THE REG EVENT PACKAGE** VZ\_REQ\_LTESMS\_30270

VOID

**1.4.2.1.3.7 REREGISTRATION** VZ\_REQ\_LTESMS\_30271

VOID

**1.4.2.1.3.8 DEREGISTRATION** VZ\_REQ\_LTESMS\_30272

VOID

**1.4.2.1.3.9 DEVICE IDENTITY AND RELATED PARAMETERS** VZ\_REQ\_LTESMS\_30273

VOID

***NOTE:*** *Device identity and device identity related parameters are needed for both IMS registration and the implementation of the SMS over IMS service. Please refer to the IMS registration sections of the Verizon Wireless LTE 3GPP Band 13 Network Access Requirements for requirements on the device identity and device identity related parameters for IMS.*

**1.4.2.1.3.10 DEVICE POWER DOWN PROCEDURE** VZ\_REQ\_LTESMS\_30274

VOID

**1.4.2.1.3.11 SMS OVER IMS CONTROL** VZ\_REQ\_LTESMS\_30275

VOID

***NOTE:*** *Please refer to the IMS registration sections of the Verizon Wireless LTE 3GPP Band 13 Network Access Requirements for requirements on SMS over IMS control.*

#### 1.4.2.1.4 SIP TIMER VALUES VZ\_REQ\_LTESMS\_30261

#### 1.4.2.1.4.1 SIP TIMERS FOR IMS VZ\_REQ\_LTESMS\_30276

VOID

**NOTE:** *The SIP timers for IMS apply to both SIP signaling for IMS registration and SIP signaling for the SMS over IMS service. Please refer to the IMS registration sections of the Verizon Wireless LTE 3GPP Band 13 Network Access Requirements for requirements on the SIP timers for IMS.*

#### 1.4.2.2 SMS Over NAS VZ\_REQ\_LTESMS\_40090

##### 1.4.2.2.1 LTE devices VZ\_REQ\_LTESMS\_40091

The planned Verizon low cost LTE Cat 1/0 device launch on existing LTE network requires a Non-IMS SMS service for device wakeup (a.k.a. shoulder tap). The planned NAS SMS service is based on 3GPP standards.

LTE data-centric devices which do not support IMS shall support SMS over NAS method, for handling MO and MT SMS messages.

All LTE devices shall support SMS over NAS method for outbound roaming when the roaming network does not support VoLTE, or when IMS registration fails.

IMS capable devices shall not be allowed to fall back to SMS over NAS when operating on the VzW network if IMS registration fails.

When operating in SMS over NAS mode, the device shall provide an interface to applications on the device to handle:

- Wakeup/shoulder tap
- Submit response (interim deliver status)
- Delivery receipt
- MO (device initiated) messages

When operating in SMS over NAS mode, the device shall send acknowledgement to the network (MME) in response to receipt of SMS wakeup message from OMA-DM server.

When operating in SMS over NAS mode, the maximum message size shall be 140 bytes. Multi-segmented messages are not supported in SMS over NAS mode.

Please refer to LTE 3GPP Band 13 Network Access Requirements and LTE Data Devices Requirements documents for additional SMS over NAS device requirements.

#### **1.4.2.2.2 SMS over NAS Retry** VZ\_REQ\_LTESMS\_41132

LTE data-centric devices which do not support IMS and which support SMS over NAS method shall also support retry mechanism for sending MO SMS using SMS over NAS method. The device makes an initial attempt to send the MO SMS. The device shall support a retry mechanism where the device waits 30 seconds and then performs a second attempt to send the MO SMS using SMS over NAS.

If the second attempt to send MO SMS succeeds, then the device shall provide this feedback to the device user interface or the connection manager software for tethered devices.

If the second attempt to send MO SMS is a failure, then the device shall provide a failure indication to the device user interface or the connection manager software for tethered devices.

## **1.5 SCENARIOS** VZ\_REQ\_LTESMS\_30215

**1.5.1 NETWORK & DEVICE** VZ\_REQ\_LTESMS\_30237**1.5.1.1 IMS REGISTRATION** VZ\_REQ\_LTESMS\_30277**1.5.1.1.1 NORMAL SMS OPERATION** VZ\_REQ\_LTESMS\_30279

VOID

**1.5.1.1.1.1 MSISDN AND MSISDN-BASED SIP URI VALIDITY** VZ\_REQ\_LTESMS\_30285

VOID

**1.5.1.1.2 LIMITED ACCESS SMS OPERATION** VZ\_REQ\_LTESMS\_30281

VOID

**1.5.1.1.3 IMS REGISTRATION ERRORS** VZ\_REQ\_LTESMS\_30282

**1.5.1.1.3.1 IMS REGISTRATION FAILURE OR REJECTION BY THE NETWORK (GENERAL CASE)** VZ\_REQ\_LTESMS\_30286

VOID

**1.5.1.1.3.2 NETWORK REJECTS THE IMS REGISTRATION WITH A SIP 404 NOT FOUND MESSAGE** 14 VZ\_REQ\_LTESMS\_30296

VOID

**1.5.1.1.3.35.1.1.3.1.2 NETWORK REJECTS THE IMS REGISTRATION WITH A SIP 403 FORBIDDEN MESSAGE** 14 VZ\_REQ\_LTESMS\_30297

VOID

**1.5.1.1.3.4 NETWORK FAILS TO RESPOND TO AN IMS REGISTRATION BEFORE THE SIP TIMEOUT TIMER EXPIRES OR NETWORK REJECTS THE IMS REGISTRATION WITH A SIP 503 SERVICE UNAVAILABLE OR SIP 408 REQUEST TIMEOUT MESSAGE**  
VZ\_REQ\_LTESMS\_30298

VOID

**1.5.1.1.3.5 IMS REREGISTRATION FAILURE OR REJECTION BY THE NETWORK (GENERAL CASE) VZ\_REQ\_LTESMS\_30287**

VOID

**1.5.1.1.3.6 NETWORK REJECTS THE IMS REREGISTRATION WITH A SIP 404 NOT FOUND MESSAGE 14 VZ\_REQ\_LTESMS\_30299**

VOID

**1.5.1.1.3.7 NETWORK FAILS TO RESPOND TO AN IMS REREGISTRATION BEFORE THE SIP TIMEOUT TIMER EXPIRES OR NETWORK REJECTS THE IMS REREGISTRATION WITH A SIP 503 SERVICE UNAVAILABLE OR SIP 408 REQUEST TIMEOUT MESSAGE VZ\_REQ\_LTESMS\_30301**

VOID

**1.5.1.1.3.8 IMS REGISTRATION/RE-REGISTRATION RETRY ALGORITHM VZ\_REQ\_LTESMS\_30288**

VOID

**1.5.1.1.3.9 NETWORK REJECTS THE IMS REGISTRATION/RE-  
REGISTRATION WITH A 'SIP 400' OR 'SIP 402' MESSAGE**  
**VZ\_REQ\_LTESMS\_30289**

VOID

**1.5.1.1.3.10 NETWORK REJECTS THE IMS REGISTRATION/RE-  
REGISTRATION WITH A 'SIP 403' OR 'SIP 404' MESSAGE**  
**VZ\_REQ\_LTESMS\_30290**

VOID

**1.5.1.1.3.11 IMS REGISTRATION TIMER EXPIRES WHILE THROTTLING**  
**VZ\_REQ\_LTESMS\_30291**

VOID

**1.5.1.1.3.12 IMS REGISTRATION/RE-REGISTRATION THROTTLING  
ACROSS SYSTEM TRANSITIONS** **VZ\_REQ\_LTESMS\_30292**

VOID

**1.5.1.1.3.13 RESET OF THROTTLING COUNTERS AND TIMERS ON  
POWER CYCLE AND ON USIM/ISIM REPLACEMENT/REFRESH**  
**VZ\_REQ\_LTESMS\_30293**

VOID

**1.5.1.1.3.14 SIP 501 IN RESPONSE TO A DEREGISTRATION REQUEST**  
VZ\_REQ\_LTESMS\_30294

VOID

**1.5.1.1.4 IMS REGISTRATION ON SYSTEM TRANSITIONS** VZ\_REQ\_LTESMS\_30283

VOID

**1.5.1.1.5 IMS REGISTRATION DUE TO NEW IMS PDN BEARER  
ACTIVATION** VZ\_REQ\_LTESMS\_30284

VOID

**1.5.1.2 SMS OVER IMS** VZ\_REQ\_LTESMS\_30278

**1.5.1.2.1 SIP FOR SENDING/RECEIVING SMS MESSAGES** VZ\_REQ\_LTESMS\_30302

**1.5.1.2.1.1 USERS CANCELS MO SMS - VOID** VZ\_REQ\_LTESMS\_30317

Requirement "User Cancels MO SMS" has been removed.

**1.5.1.2.1.2 DELIVERY ACKNOWLEDGEMENTS** VZ\_REQ\_LTESMS\_30318**1.5.1.2.1.3 Message Status Acknowledgements: The device shall support SMS acknowledgments that are sent as the payload of S** VZ\_REQ\_LTESMS\_29536

Message Status Acknowledgements: The device shall support SMS acknowledgments that are sent as the payload of SMS over IMS messages.

**1.5.1.2.1.4 The device shall support the use of SMS over IMS in sending Mobile Originated SMS messages and in receiving Mobi** VZ\_REQ\_LTESMS\_29529

The device shall support the use of SMS over IMS in sending Mobile Originated SMS messages and in receiving Mobile Terminated SMS messages using the SIP MESSAGE method.

**1.5.1.2.1.5 The device shall support processing of MESSAGE requests including support for all mandatory headers listed in se** VZ\_REQ\_LTESMS\_29530

The device shall support processing of MESSAGE requests including support for all mandatory headers listed in section A.2.1.4.7A of the 3GPP IMS Stage 3 standard Ref. [2].

### 1.5.1.2.1.6 In addition the following optional Headers shall be supported: User-Agent Allow Request-Disposition The de VZ\_REQ\_LTESMS\_29531

In addition the following optional Headers shall be supported:

User-Agent  
Allow  
Request-Disposition

The device shall support the header Content-Type application/vnd.3gpp2.sms when using the 3GPP2 SMS format and the Content-Type application/vnd.3gpp.sms when using the 3GPP SMS format for SMS. The media type application indicates that the device must process the SIP MESSAGE payload before the message is displayed to the user (in other words, the payload content is not in an Ascii text format).

### 1.5.1.2.1.7 The following are the key rules in formatting the headers of the SIP MESSAGE: The Request-URI header and the To VZ\_REQ\_LTESMS\_29532

The following are the key rules in formatting the headers of the SIP MESSAGE:

- The Request-URI header and the To: header shall be set to the **tel URI** of the destination. The tel URI contains the digit string entered by the user as the destination. The digit string may equal the MDN of the destination mobile device or the digit string may correspond to a short code.
- The Request-Disposition header shall contain the "no-fork" directive
- The Content-Type header shall be set to application/vnd.3gpp2.sms when the format is 3GPP2.
- The From: header shall contain the IMS Public User Identify of the device. This is a SIP URI with the MDN of the device presented in an E.164 format.
- The P-Access-Network-Info header shall be included in SIP MESSAGE method for any SMS message that is sent. If the device is attached to IMS APN over LTE, "access-type" shall be set to "3GPP-E-UTRAN-FDD" and "access-info" to "utran-cell-id-3gpp", computed as per Section 7.2A.4.3 in Ref [2].

The SMS device shall be able to process the following SIP responses:

202 Accepted  
200 OK  
4xx  
5xx

**1.5.1.2.1.8 For a success scenario, the (originating end) SMS device in a Mobile Originated SMS (MO-SMS) scenario will receive** VZ\_REQ\_LTESMS\_29533

For a success scenario, the (originating end) SMS device in a Mobile Originated SMS (MO-SMS) scenario will receive a 200 OK response or a 202 Accepted response from the network.

Note that the Transport Layer parameter "Bearer Reply Option" for a 3GPP2 format SMS message (as defined in 3GPP2 C.S0015-A, Ref. [5]) shall not be used.

**1.5.1.2.1.9 The maximum SMS message size (SMS payload) that can be supported is 256 bytes and the total size of the SIP message** VZ\_REQ\_LTESMS\_29534

The maximum SMS message size (SMS payload) that can be supported is 256 bytes and the total size of the SIP message shall not exceed 1300 bytes. The device shall support MO and MT concatenated short messages (see 3GPP TS 23.040, Ref. [11]). The individual segments shall be sent as separate SIP MESSAGEs.

**1.5.1.2.1.10 The device shall not use SigComp to compress the SIP messages.** VZ\_REQ\_LTESMS\_29535

The device shall not use SigComp to compress the SIP messages.

**1.5.1.2.1.11 The device shall support W3c Specification Extensible Markup Language (XML) 1.0 (Fifth Edition) (<http://www.w3.org>)** VZ\_REQ\_LTESMS\_29574

The device shall support W3c Specification Extensible Markup Language (XML) 1.0 (Fifth Edition) (<http://www.w3.org/TR/REC-xml>) for XML format of SIP messages. Double quotes and single quotes shall be supported for text strings in SIP notify messages received by the device.

**1.5.1.2.2 SMS MESSAGE FORMAT** VZ\_REQ\_LTESMS\_30303

#### 1.5.1.2.2.1 MT SMS MESSAGES VZ\_REQ\_LTESMS\_30320

1.5.1.2.2.2 The device shall be capable of receiving SMS messages in both 3GPP and 3GPP2 SMS formats. The device shall inspect VZ\_REQ\_LTESMS\_29538

The device shall be capable of receiving SMS messages in both 3GPP and 3GPP2 SMS formats. The device shall inspect the incoming SMS message, determine the SMS format, decode the SMS format, and respond per the applicable standard.

1.5.1.2.2.3 The 3GPP2 SMS format and response is per 3GPP2 C.S0015-A, Ref. [5], and the 3GPP2 SMS over IMS standard, Ref. VZ\_REQ\_LTESMS\_29539

The 3GPP2 SMS format and response is per 3GPP2 C.S0015-A, Ref. [5], and the 3GPP2 SMS over IMS standard, Ref. [4]. The 3GPP SMS format and response is per 3GPP TS 23.204 (Support of Short Message Service (SMS) over generic 3GPP Internet Protocol (IP) access; Stage 2), Ref. [6].

#### 1.5.1.2.2.4 MO SMS MESSAGES VZ\_REQ\_LTESMS\_30322

javascript:void(0)

#### 1.5.1.2.2.5 3GPP2 MESSAGE FORMAT FOR MO SMS MESSAGES VZ\_REQ\_LTESMS\_30326

**1.5.1.2.2.6 The device shall support the device configurable parameter smsformat which can have the value 3gpp2 or the val VZ\_REQ\_LTESMS\_29540**

The device shall support the device configurable parameter smsformat which can have the value 3gpp2 or the value 3gpp. This parameter shall be stored on the device in non-volatile memory and shall be configurable over-the-air using OTADM procedures (refer to the OTADM and Factory LTE Programming sections of the LTE 3GPP Band 13 Network Access requirements document, Ref. [12] for additional details). For Type 3 and Type 4 CDMA/LTE devices, the value of the smsformat parameter shall always be configured to '3gpp'. For all other devices, the default value is 3gpp2.

**1.5.1.2.2.7 When the parameter smsformat is set to the value 3gpp2, the format of the MO SMS message is based on 3GPP2 C.S VZ\_REQ\_LTESMS\_29541**

When the parameter smsformat is set to the value 3gpp2, the format of the MO SMS message is based on 3GPP2 C.S0015-A, Ref. [5]. The device shall take the 3GPP2 C.S0015-A transport layer message (including the SMS teleservices layer information) and use this in a binary format as the payload of the SIP MESSAGE. This method for constructing the SIP MESSAGE is described in the 3GPP2 SMS over IMS standard, Ref. [4].

**1.5.1.2.2.8 The Content-Type header of the SIP MESSAGE shall be set to the value application/vnd.3gpp2.sms to indicate that VZ\_REQ\_LTESMS\_29542**

The Content-Type header of the SIP MESSAGE shall be set to the value application/vnd.3gpp2.sms to indicate that the payload format is 3GPP2 SMS.

**1.5.1.2.2.9 3GPP MESSAGE FORMAT FOR MO SMS MESSAGES VZ\_REQ\_LTESMS\_30328**

**1.5.1.2.2.10 When the parameter smsformat is set to the value 3gpp, or when constructing the Delivery Report for the receive VZ\_REQ\_LTESMS\_29543**

When the parameter smsformat is set to the value 3gpp, or when constructing the Delivery Report for the received 3GPP MT SMS, or when constructing SIP message for the received SMS from UICC, the format of the MO SMS message is based on 3GPP and the SIP MESSAGE is constructed and sent as defined in 3GPP TS 23.204 (Support of Short Message Service (SMS) over generic 3GPP Internet Protocol (IP) access; Stage 2), Ref. [6].

**1.5.1.2.2.11 The Content-Type header of the SIP MESSAGE shall be set to the value application/vnd.3gpp.sms to indicate that t** VZ\_REQ\_LTESMS\_29544

The Content-Type header of the SIP MESSAGE shall be set to the value application/vnd.3gpp.sms to indicate that the payload format is 3GPP SMS.

**1.5.1.2.2.12 CHARACTER SETS** VZ\_REQ\_LTESMS\_30324

**1.5.1.2.2.13 The device shall support the following character sets for both MO and MT SMS messages:7-bit ASCII (ANSI X3.4)** VZ\_REQ\_LTESMS\_29545

The device shall support the following character sets for both MO and MT SMS messages:

7-bit ASCII (ANSI X3.4)

GSM 7-bit (3gpp TS 23.038)

UCS-2 (ISO/IEC 10646-1)

**1.5.1.2.2.14 In addition, the device shall support the following character sets for MT SMS messages: IA5 (ITU-T T.50, Inte** VZ\_REQ\_LTESMS\_29546

In addition, the device shall support the following character sets for MT SMS messages:

IA5 (ITU-T T.50, International Reference Alphabet)

Latin(ISO 8859-1)

GSM 8-bit (3gpp TS 23.038)

**1.5.1.2.2.15** The device shall support the SMS message format as defined in 3GPP2, and it shall also support the SMS message format defined in VZ\_REQ\_LTESMS\_29537

The device shall support the SMS message format as defined in 3GPP2, and it shall also support the SMS message format as defined in 3GPP. A configurable parameter, defined below, shall be used to select the SMS message format as either 3GPP2 format or 3GPP format for MO SMS messages.

### **1.5.1.2.3 STORAGE OF SMS MESSAGES** VZ\_REQ\_LTESMS\_30304

**1.5.1.2.3.1** Void- VZ\_REQ\_LTESMS\_29547

Void

**1.5.1.2.3.2** Void VZ\_REQ\_LTESMS\_29548

Void

### **1.5.1.2.4 RETRY REQUIREMENTS FOR MO SMS USING SMS OVER IMS** VZ\_REQ\_LTESMS\_30305

**1.5.1.2.4.1 The device makes an initial attempt to send the MO SMS. The initial attempt is considered to have failed when th VZ\_REQ\_LTESMS\_29549**

The device makes an initial attempt to send the MO SMS. The initial attempt is considered to have failed when the device either receives a SIP error code response from the network (a 4xx series or 5xx series error code) or a SIP timer expiration occurs.

**1.5.1.2.4.2 The device shall support a retry mechanism where it waits 30 seconds and then performs a second attempt to send VZ\_REQ\_LTESMS\_29550**

The device shall support a retry mechanism where it waits 30 seconds and then performs a second attempt to send the MO SMS.

**1.5.1.2.4.3 If the MO SMS is in 3gpp format, device shall in the second attempt use the same TP-Message-Reference (TP-MR) as VZ\_REQ\_LTESMS\_29551**

If the MO SMS is in 3gpp format, device shall in the second attempt use the same TP-Message-Reference (TP-MR) as in the initial attempt and set the TP-Reject-Duplicates (TP-RD) bit to 1 (see 3GPP TS 23.040, Ref. [11]).

**1.5.1.2.4.4 If the MO SMS is in 3gpp2 format, device shall in the second attempt use the same MESSAGE\_ID as in the initial a VZ\_REQ\_LTESMS\_29552**

If the MO SMS is in 3gpp2 format, device shall in the second attempt use the same MESSAGE\_ID as in the initial attempt.

**1.5.1.2.4.5 If the second attempt to send the MO SMS succeeds, then the device shall provide this feedback to the device use VZ\_REQ\_LTESMS\_29553**

If the second attempt to send the MO SMS succeeds, then the device shall provide this feedback to the device user interface or the connection manager software for tethered devices. If the second attempt to send the MO SMS is a failure, then if the device has successfully completed Combined EPS/IMSI Attach for SMS (see LTE 3GPP Band 13 Network Access Requirements document) the device shall make a third attempt to send MO SMS using SMS over NAS method. If the third attempt to send MO SMS is a failure, the device shall provide a failure indication to the device user interface or the connection manager software for tethered devices.

If the second attempt to send the MO SMS is a failure, and the device has not successfully completed Combined EPS/IMSI Attach for SMS (see LTE 3GPP Band 13 Network Access Requirements) then the device shall provide a failure indication to the device user interface or the connection manager software for tethered devices.

**1.5.1.2.5 RECEIVING A MT SMS USING SMS OVER IMS** VZ\_REQ\_LTESMS\_30306

**1.5.1.2.5.1 If the device has an active IMS registration, then it shall be ready to accept MT SMS that are received using th** VZ\_REQ\_LTESMS\_29555

If the device has an active IMS registration, then it shall be ready to accept MT SMS that are received using the SMS over IMS method.

**1.5.1.2.5.2 When a SMS text message for the end user arrives, it shall be written to the API that is used by the devices us** VZ\_REQ\_LTESMS\_29556

When a SMS text message for the end user arrives, it shall be written to the API that is used by the devices user interface or the API that is used by the connection manager software (for tethered devices) to access the text of the SMS messages. In addition, the SMS message shall be written to the device or UICC card according to the rules defined in "Storage of SMS Messages" specification in section 5.1.2.3.

**1.5.1.2.5.3 If it successfully receives the MT SMS, then the device shall generate and send the network a 200 OK response.** VZ\_REQ\_LTESMS\_29557

If it successfully receives the MT SMS, then the device shall generate and send the network a 200 OK response.

**1.5.1.2.5.4 If the MT SMS is in the 3GPP format, the device shall send the Delivery report. If requested, the device shall s** VZ\_REQ\_LTESMS\_29558

If the MT SMS is in the 3GPP format, the device shall send the Delivery report. If requested, the device shall send the Status report.

**1.5.1.2.5.5 For MT application directed SMS, see section 5.1.2.10, Application Directed SMS.** VZ\_REQ\_LTESMS\_29559

For MT application directed SMS, see section 5.1.2.10, Application Directed SMS.

**1.5.1.2.6 FORMAT OF INCOMING MT SMS** VZ\_REQ\_LTESMS\_30308

**1.5.1.2.6.1 The device shall support both the 3GPP2 and the 3GPP message formats, and shall be able to receive MT messages i** VZ\_REQ\_LTESMS\_29560

The device shall support both the 3GPP2 and the 3GPP message formats, and shall be able to receive MT messages in either format. The format of the MT SMS can be determined from the Content-Type header.

If the Content-Type header has a value of application/vnd.3gpp2.sms, then the device shall decode the message using the 3GPP2 format.

If the Content-Type header has a value of application/vnd.3gpp.sms, then the device shall decode the message using the 3GPP format.

**1.5.1.2.7 VALIDATION TEST FOR MT SMS** VZ\_REQ\_LTESMS\_30309

OBSOLETE requirement

**1.5.1.2.8 USER NOTIFICATIONS/ USER INTERFACE** VZ\_REQ\_LTESMS\_30310**1.5.1.2.8.1 The user interface and the user notifications for this SMS feature are handled by the device user interface or t** VZ\_REQ\_LTESMS\_29561

The user interface and the user notifications for this SMS feature are handled by the device user interface or the connection manager software for tethered devices. The device shall use the appropriate mechanism to exchange SMS information with the connection manager software (for tethered devices).

**1.5.1.2.9 CALL FLOWS** VZ\_REQ\_LTESMS\_30311**1.5.1.2.9.1 MOBILE ORIGINATED 3GPP2 SMS (MO-SMS)** VZ\_REQ\_LTESMS\_30330**1.5.1.2.9.2 Mobile Originated 3GPP2 SMS Call Flow (MO-SMS)** VZ\_REQ\_LTESMS\_29563

The device shall support the Mobile Originated call flow for 3GPP2 format SMS over IMS. A typical call flow is shown in Figure 1. Note that in step 6, the network will either send a 200 OK response (shown in the drawing) or a 202 Accepted response as an acknowledgement.

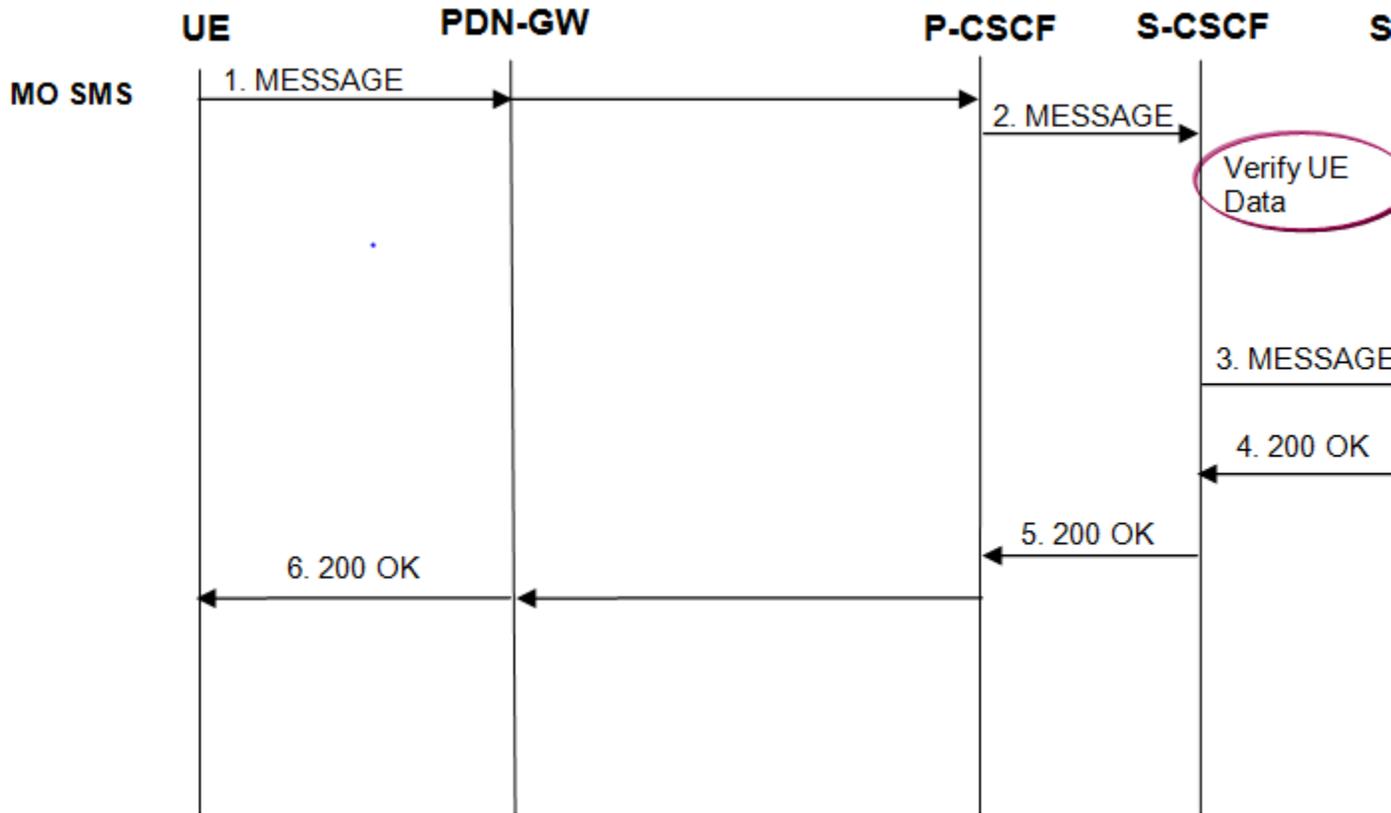


Figure 1: Mobile Originated 3GPP2 SMS Call Flow

**1.5.1.2.9.3 MESSAGE request in step 1 of Mobile Originated 3GPP2 SMS Call Flow in Figure 1 shall contain vnd.3gpp2.sms paylo VZ\_REQ\_LTESMS\_29564**

MESSAGE request in step 1 of Mobile Originated 3GPP2 SMS Call Flow in Figure 1 shall contain vnd.3gpp2.sms payload. The payload shall contain a binary encoded SMS transport layer SMS Point-to-Point message (refer to 3gpp2 C.50015)

Device shall not include Transport Layer "Bearer Reply Option" parameter in 3gpp2 MO SMS message (MESSAGE request in step 1).

**1.5.1.2.9.4 MOBILE TERMINATED 3GPP2 SMS (MT-SMS) VZ\_REQ\_LTESMS\_30331**

1.5.1.2.9.5 Mobile Terminated 3GPP2 SMS (MT-SMS) call flow VZ\_REQ\_LTESMS\_29565

The device shall support the Mobile Terminated call flow for 3GPP2 format SMS over IMS. A typical call flow is shown in Figure 2.

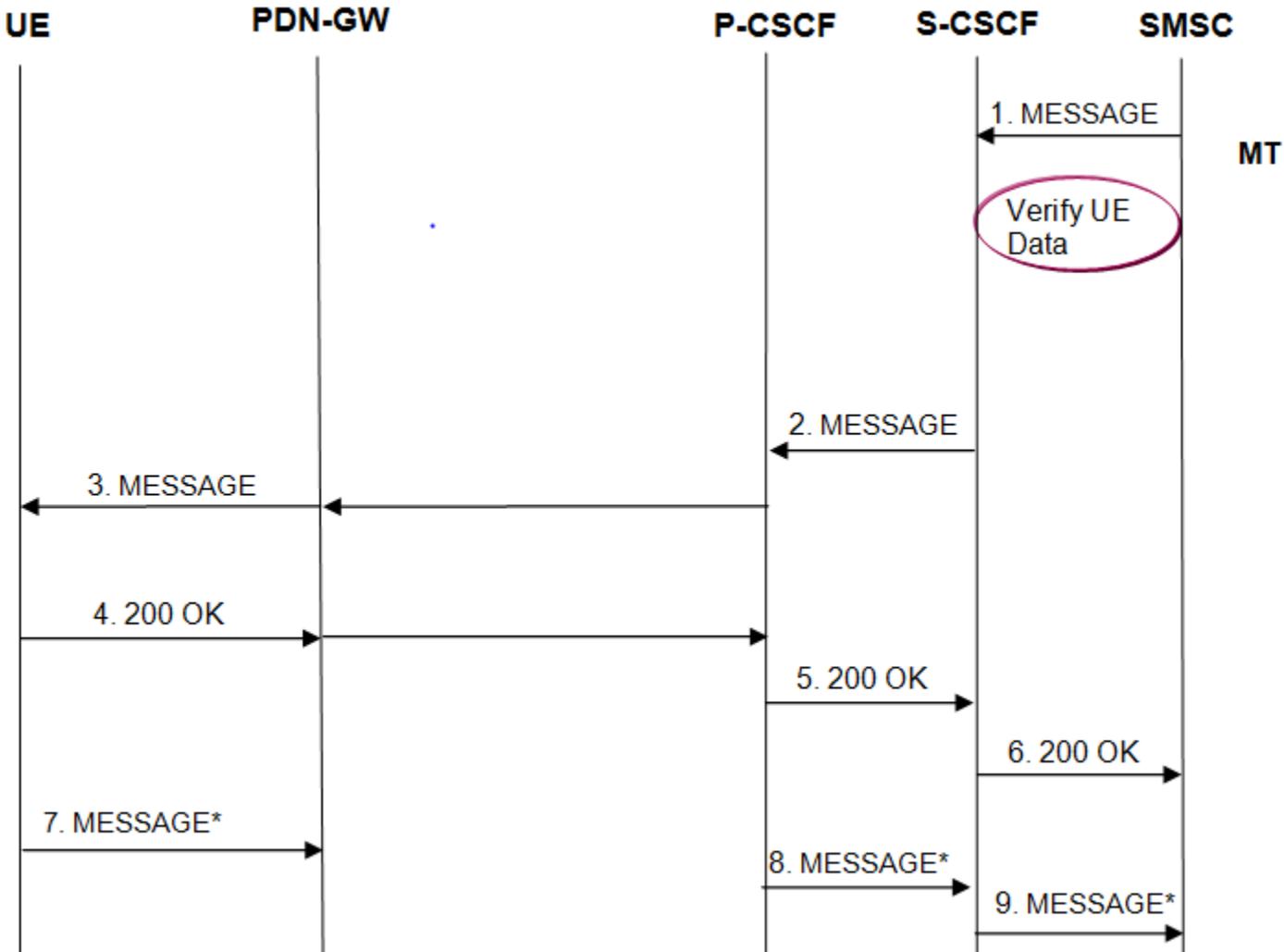


Figure 2: Mobile Terminated 3GPP2 SMS Call Flow

1.5.1.2.9.6 MESSAGE request in step 1 of Mobile Terminated 3GPP2 SMS Call Flow in Figure 2 contains vnd.3gpp2.sms payload. T VZ\_REQ\_LTESMS\_29566

MESSAGE request in step 1 of Mobile Terminated 3GPP2 SMS Call Flow in Figure 2 contains vnd.3gpp2.sms payload. The payload shall contain SMS Deliver message, including the SMS Transport layer and SMS Teleservice layer information and encoded in binary (refer to 3gpp2 C.50015).

Device shall send MESSAGE request in step 7 of Mobile Terminated 3GPP2 SMS Call Flow in Figure 2 containing an encapsulated "SMS Acknowledge" message only if the Transport Layer "Bearer Reply Option" parameter was included in SMS "Deliver" message contained in MESSAGE request in step 1.

#### 1.5.1.2.9.7 MOBILE ORIGINATED 3GPP SMS (MO-SMS) VZ\_REQ\_LTESMS\_30332

#### 1.5.1.2.9.8 Mobile Originated 3GPP SMS Call Flow VZ\_REQ\_LTESMS\_29567

The device shall support the Mobile Originated call flow for 3GPP format SMS over IMS. A typical call flow is shown in Figure 3. Note that in step 6, the network will either send a 200 OK response (shown in the drawing) or a 202 Accepted response as an acknowledgement.

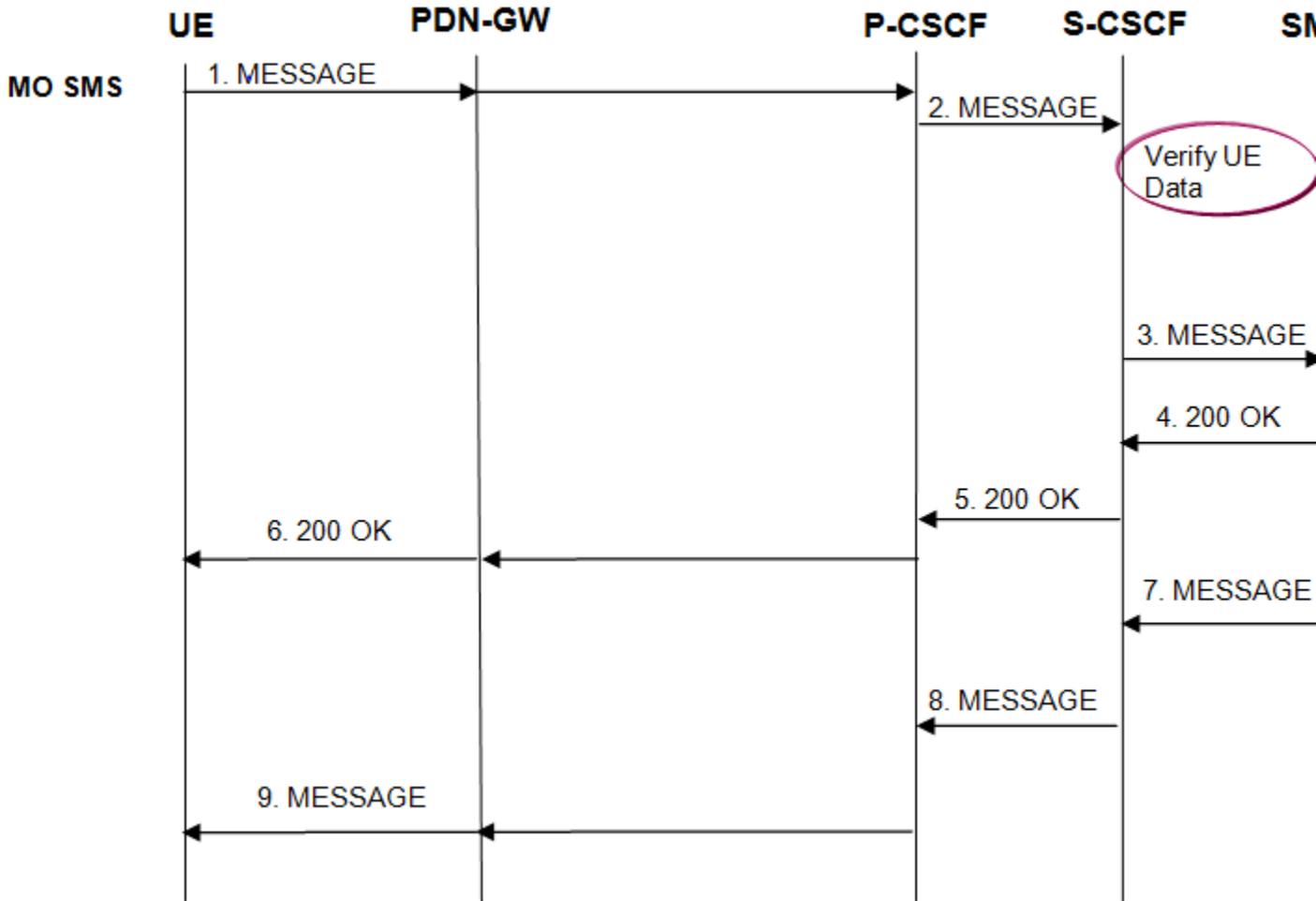


Figure 3: Mobile Originated 3GPP SMS Call Flow

1.5.1.2.9.9 MESSAGE request in step 1 of Mobile Originated 3GPP SMS Call Flow in Figure 3 shall contain vnd.3gpp.sms payload [VZ\\_REQ\\_LTESMS\\_29568](#)

MESSAGE request in step 1 of Mobile Originated 3GPP SMS Call Flow in Figure 3 shall contain vnd.3gpp.sms payload that includes the short message and routing information to forward the message. The payload shall contain the RP-DATA message with RP-User-Data information element that includes a TPDU of type SMS-SUBMIT (refer to 3GPPTS24.011).

MESSAGE request in step 7 of Mobile Originated 3GPP SMS Call Flow in Figure 3 shall contain vnd.3gpp.sms payload that includes the short message submission report from SMSC. The payload shall contain the RP-ACK message with RP-User-Data information element that includes a TPDU of type SMS-SUBMIT-REPORT (refer to 3GPP TS 24.011).

#### 1.5.1.2.9.10 MOBILE TERMINATED 3GPP SMS (MT-SMS) VZ\_REQ\_LTESMS\_30333

#### 1.5.1.2.9.11 Mobile Terminated 3GPP SMS Call Flow VZ\_REQ\_LTESMS\_29569

The device shall support the Mobile Terminated call flow for 3GPP format SMS over IMS. A typical call flow is shown in Figure 2

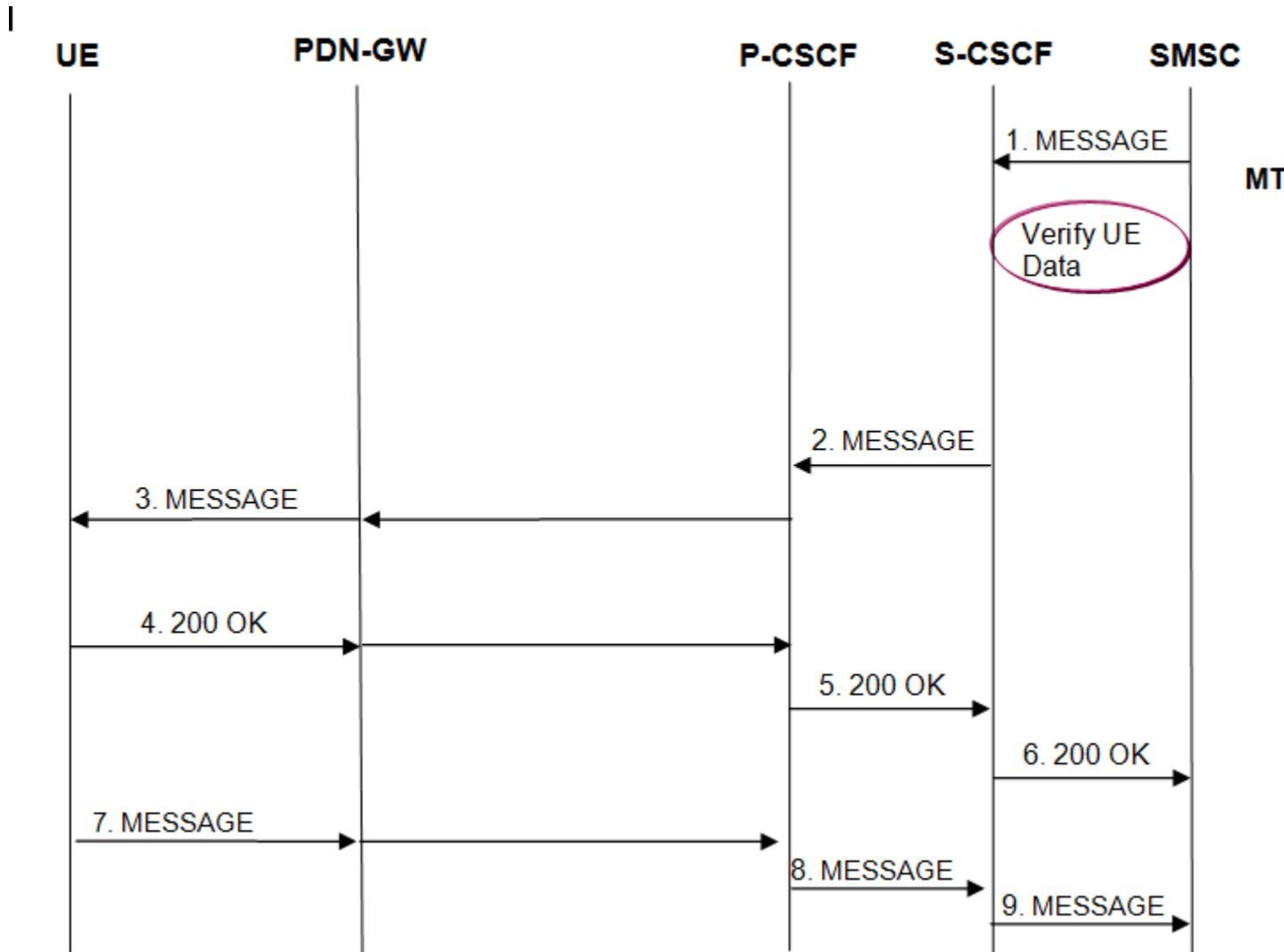


Figure 4: Mobile Terminated 3GPP SMS Call Flow

**1.5.1.2.9.12 MESSAGE request in step 1 of Mobile Terminated 3GPP SMS Call Flow in Figure 4 shall contain vnd.3gpp.sms payload** VZ\_REQ\_LTESMS\_29570

MESSAGE request in step 1 of Mobile Terminated 3GPP SMS Call Flow in Figure 4 shall contain vnd.3gpp.sms payload that includes the short message and routing information to forward the message. The payload shall contain the RP-DATA message with RP-User-Data information element that includes a TPDU of type SMS-DELIVER (refer to 3GPPTS24.011).

MESSAGE request in step 7 of Mobile Terminated 3GPP SMS Call Flow in Figure 4 shall contain vnd.3gpp.sms payload that include the SMS-DELIVER-REPORT and routing information to forward the delivery report sent by UE. The payload shall contain an RP-ACK message with RP-User-Data

information element that includes a TPDU of type SMS-DELIVER-REPORT (refer to 3GPP TS 24.011).

#### 1.5.1.2.9.13 Call Flows VZ\_REQ\_LTESMS\_29562

Call flows are provided in this section for Mobile Originated SMS transaction and a Mobile Terminated SMS transaction.

#### 1.5.1.2.10 APPLICATION DIRECTED SMS VZ\_REQ\_LTESMS\_30314

##### 1.5.1.2.10.1 When a MT SMS message arrives via the SMS over IMS method, the device shall remove the SIP headers and decode th VZ\_REQ\_LTESMS\_29571

When a MT SMS message arrives via the SMS over IMS method, the device shall remove the SIP headers and decode the binary content that is in the payload of the SIP MESSAGE. The device shall then check to see if this SMS is an application directed SMS. If yes, then the application directed SMS shall be passed to the intended application.

##### 1.5.1.2.10.2 If the device receives a MO SMS from the UICC, the device shall accept the 3GPP formatted SMS message from the U VZ\_REQ\_LTESMS\_29572

If the device receives a MO SMS from the UICC, the device shall accept the 3GPP formatted SMS message from the UICC, and the device shall construct the SIP MESSAGE per the 3GPP Message Format for MO SMS Messages section of this document regardless of the current setting of the smsformat parameter.

**1.5.1.2.11** The SMS over IMS application shall be used to provide Short Message Service (SMS) to the device when it is opera **VZ\_REQ\_LTESMS\_29528**

The SMS over IMS application shall be used to provide Short Message Service (SMS) to the device when it is operating in LTE mode.

The requirements in this section assume the device has performed IMS registration.

**1.6 PROVISIONING** **VZ\_REQ\_LTESMS\_30216**

**1.6.1 PROVISIONING** **VZ\_REQ\_LTESMS\_30241**

VOID

**NOTE:** *Please refer to the provisioning section of the Verizon Wireless LTE 3GPP Band 13 Network Access Requirements for provisioning requirements for IMS and SMS related parameters.*

**1.6.2 OTA** **VZ\_REQ\_LTESMS\_30243**

For the OTADM requirements see the document *Verizon Wireless LTE OTADM Requirements*, Ref. [13].

**1.7 REFERENCES** **VZ\_REQ\_LTESMS\_30217**

**Industry Standards References**

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

1. 3GPP TS 36.101: *Evolved Universal Terrestrial Radio Access (E-UTRA); User Equipment (UE) radio transmission and reception*, Release 9
2. 3GPP TS 24.229: *Internet Protocol (IP) multimedia call control protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP); Stage 3*, Release 9
3. 3GPP TS 23.228: *IP Multimedia Subsystem (IMS); Stage 2*, Release 9
4. 3GPP2 X.S0048-0 v1.0, "Short Message Service over IMS"
5. 3GPP2 C.S0015-A v1.0 "Short Message Service (SMS) for Wideband Spread Spectrum Systems"
6. 3GPP TS 23.204: *Support of Short Message Service (SMS) over generic 3GPP Internet Protocol (IP) access; Stage 2*, Release 9
7. 3GPP TS 24.167: *3GPP IMS Management Object (MO); Stage 3*, Release 9.
8. 3GPP TS 31.103: *Characteristics of the IP Multimedia Services Identity Module (ISIM) application*, Release 9
9. 3GPP TS 24.301: *Non-Access-Stratum (NAS) protocol for Evolved Packet System (EPS); Stage 3*, Release 9
10. 3GPP TS 33.203: *3G security; Access security for IP-based services*, Release 9
11. 3GPP TS 23.040: *Technical realization of the Short Message Service (SMS)*, Release 9.

#### **Verizon Specific Documentation References**

12. Verizon Wireless LTE 3GPP Band 13 Network Access Device Requirements
13. Verizon Wireless LTE OTADM Requirements
14. Verizon Wireless LTE Data Retry Requirements

## TestPlanCoverageForRequirement

All devices shall support administrative SMS messages for the OTADM application and the SIM OTA application (Ann VZ\_REQ\_LTESMS\_29573

Test Case Name	Test Plan Id	Created By	Created Date
MT SIM OTA Wake Up SMS After IMS Registration Using the IMSI-based SIP URI	LTESMS	Admin User	01-07-2014 00:00:00

Support for ISIM and USIM VZ\_REQ\_LTESMS\_29527

Test Case Name	Test Plan Id	Created By	Created Date
MT SMS Messages storage Function - 3GPP SMS	LTESMS	Admin User	01-07-2014 00:00:00

SMS over IMS - overview VZ\_REQ\_LTESMS\_29575

Test Case Name	Test Plan Id	Created By	Created Date
2.42 VOID DEVICE IMSI BASED IMS REGISTRATION-SMS OPERATION	LTESMS	Admin User	01-07-2014 00:00:00
DEVICE IMS INTERACTION- IPSEC CONFIDENTIALITY PROTECTION	LTESMS	Admin User	01-07-2014 00:00:00
DEVICE IMS REGISTRATION CONTROL PARAMETER- MODIFIED	LTESMS	Admin User	01-07-2014 00:00:00
DEVICE IMS REGISTRATION CONTROL PARAMETERS- DEFAULT	LTESMS	Admin User	01-07-2014 00:00:00

MO 3GPP SMS SIP ERRORS	LTESMS	Admin User	01-07-2014 00:00:00
MT 3GPP CONCATENATED SHORT MESSAGE (MORE THAN 1 SEGMENT OF TEXT)	LTESMS	Admin User	01-07-2014 00:00:00
MT SMS Messages storage Function - 3GPP SMS	LTESMS	Admin User	01-07-2014 00:00:00
References	LTESMS	Admin User	01-10-2014 00:00:00
Test Results Template	LTESMS	Admin User	01-10-2014 00:00:00
[Retired]MO 3GPP2 SMS - SIP errors	LTESMS	Admin User	01-07-2014 00:00:00
[Retired]MT 3GPP2 CONCATENATED SHORT MESSAGE (MORE THAN 1 SEGMENT OF TEXT)	LTESMS	Admin User	01-07-2014 00:00:00

The device shall support the use of SMS over IMS in sending Mobile Originated SMS messages and in receiving Mobi VZ\_REQ\_LTESMS\_29529

Test Case Name	Test Plan Id	Created By	Created Date
[Retired]MO 3GPP SMS MESSAGE DELIVERY ACKNOWLEDGEMENTS	LTESMS	Admin User	01-07-2014 00:00:00

The device shall be capable of receiving SMS messages in both 3GPP and 3GPP2 SMS formats. The device shall inspe VZ\_REQ\_LTESMS\_29538

Test Case Name	Test Plan Id	Created By	Created Date

MO 3GPP SMS MESSAGE SIZE MORE THAN 1 SEGMENT OF TEXT	LTESMS	Admin User	01-07-2014 00:00:00
MT 3GPP SMS MESSAGE- VERIFY SIP CALL FLOW	LTESMS	Admin User	01-07-2014 00:00:00

When the parameter smsformat is set to the value 3gpp, or when constructing the Delivery Report for the receive VZ\_REQ\_LTESMS\_29543

Test Case Name	Test Plan Id	Created By	Created Date
2.17VOID - Replaced by TC 2.75 - MO 3GPP SMS VERIFY SIP MESSAGE HEADERS	LTESMS	Admin User	01-07-2014 00:00:00
2.19VOID - Replaced by TC 2.75 - MO 3GPP SMS MESSAGE- VERIFY SIP CALL FLOW	LTESMS	Admin User	01-07-2014 00:00:00

The device shall support the following character sets for both MO and MT SMS messages:7-bit ASCII (ANSI X3.4) VZ\_REQ\_LTESMS\_29545

Test Case Name	Test Plan Id	Created By	Created Date
MO 3GPP SMS ENCODED USING GSM 7- BIT	LTESMS	Admin User	01-07-2014 00:00:00
MO 3GPP SMS Encoded Using UCS-2(ISOIEC 10646-1)	LTESMS	Admin User	01-07-2014 00:00:00
MT 3GPP SMS ENCODED USING GSM 7- BIT	LTESMS	Admin User	01-07-2014 00:00:00
MT 3GPP SMS Encoded Using UCS-2(ISOIEC 10646-1)	LTESMS	Admin User	01-07-2014 00:00:00

[Retired]MO 3GPP SMS ENCODED USING 7 BIT ASCII	LTESMS	Admin User	01-07-2014 00:00:00
[Retired]MO 3GPP2 SMS ENCODED USING GSM 7- BIT	LTESMS	Admin User	01-07-2014 00:00:00
[Retired]MO 3GPP2 SMS Encoded Using UCS-2(ISOIEC 10646-1)	LTESMS	Admin User	01-07-2014 00:00:00
[Retired]MT 3GPP SMS ENCODED USING 7 BIT ASCII	LTESMS	Admin User	01-07-2014 00:00:00
[Retired]MT 3GPP SMS Encoded Latin (ISO 8859-1)	LTESMS	Admin User	01-07-2014 00:00:00
[Retired]MT 3GPP SMS Encoded Using IA5 (ITU-T T.50)	LTESMS	Admin User	01-07-2014 00:00:00
[Retired]MT 3GPP2 SMS ENCODED USING GSM 7- BIT	LTESMS	Admin User	01-07-2014 00:00:00
[Retired]MT 3GPP2 SMS Encoded Using UCS-2(ISOIEC 10646-1)	LTESMS	Admin User	01-07-2014 00:00:00

If the MO SMS is in 3gpp format, device shall in the second attempt use the same TP-Message-Reference (TP-MR) as VZ\_REQ\_LTESMS\_29551

Test Case Name	Test Plan Id	Created By	Created Date
MO 3GPP SMS RETRY BEHAVIOR-DEFAULT SIP T1, TIMER F AND T2 TIMERS	LTESMS	Admin User	01-07-2014 00:00:00
MO 3GPP SMS RETRY BEHAVIOR-DEFAULT SMS STORAGE SETTING	LTESMS	Admin User	01-07-2014 00:00:00
MO 3GPP SMS RETRY BEHAVIOR-MODIFIED	LTESMS	Admin	01-07-2014

SIP T <sub>1</sub> , TIMER F AND T <sub>2</sub> TIMERS		User	00:00:00
MO 3GPP SMS RETRY BEHAVIOR-MODIFIED SMS STORAGE SETTING	LTESMS	Admin User	01-07-2014 00:00:00

If the MO SMS is in 3gpp2 format, device shall in the second attempt use the same MESSAGE\_ID as in the initial a VZ\_REQ\_LTESMS\_29552

Test Case Name	Test Plan Id	Created By	Created Date
[Retired]MO 3GPP2 SMS RETRY BEHAVIOR	LTESMS	Admin User	01-07-2014 00:00:00
[Retired]MO 3GPP2 SMS RETRY BEHAVIOR-MODIFIED SIP T <sub>1</sub> , TIMER F AND T <sub>2</sub> TIMERS	LTESMS	Admin User	01-07-2014 00:00:00

The user interface and the user notifications for this SMS feature are handled by the device user interface or t VZ\_REQ\_LTESMS\_29561

Test Case Name	Test Plan Id	Created By	Created Date
MO 3GPP SMS - MESSAGE STATUS REPORT	LTESMS	Admin User	01-07-2014 00:00:00