# Requirement Plan

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# 1 LTE OTA DM VZ_REQ_LTEOTADM 65

## 1.1 INTRODUCTION VZ_REQ_LTEOTADM_2395

Verizon Wireless has launched LTE network service in the 3GPP Band 13 frequency band (700 MHz C Block). This document includes an Over-The-Air (OTA) device management solution for devices on this network. 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_LTEOTADM_2396

These requirements apply to all 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*.

This document covers APN management, a part of SDM technology. Specifically, this document doesnt include any Firmware Updating mechanism. Please see Section on "APN Management".

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

### 1.1.2 3GPP Specifications VZ_REQ_LTEOTADM_7654

Refer to the 3GPP Specifications section of the Verizon Wireless LTE 3GPP Band 13 Network Access Requirements.

### 1.1.3 GLOSSARY/DEFINITIONS/ACRONYMS VZ_REQ_LTEOTADM_2398

This section defines acronyms and terms used throughout the document.

| Acronym/ Term | Definition |
|---|---|
| ADD | Automatic Device Detection |

| | |
|---|---|
| APN | Access Point Name |
| ConnMO | Connectivity Management Object |
| DDF | Device Description Framework |
| DTD | Document Type Definition |
| FWA | Fixed Wireless Access |
| HMAC | Hash-based Mutual Authentication Code |
| IMEI | International Mobile Equipment Identity, a 14 digit value plus 1 digit checksum value computed as per the 3GPP requirements. |
| IMEI SV | The International Mobile Equipment Identity and Software Version Number, a 14 digit value plus 2 digits software version number. |
| OMA | Open Mobile Alliance |
| OMA-DM | Open Mobile Alliance Device Management |
| OTA | Over-the-Air |
| OTADM | Over the Air Device Management |
| PST | Product Support Tool |
| SDM | Subscriber Device Management- in this document, SDM refers to APN Management and Device "profiling" |
| UI | User Interface |
| UE | User Equipment |
| WAP | Wireless Application Protocol |
| VZW | Verizon Wireless |
| | |

## 1.1.4 REQUIREMENTS LANGUAGE VZ_REQ_LTEOTADM_2399

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

### 1.1.5 ~~DEPLOYMENT PLANS~~ VZ_REQ_LTEOTADM_2400

## 1.2 ~~HARDWARE SPECIFICATIONS~~ VZ_REQ_LTEOTADM_2401

### 1.2.1 ~~MECHANICAL~~ VZ_REQ_LTEOTADM_2402

### 1.2.2 ~~ELECTRICAL~~ VZ_REQ_LTEOTADM_2403

## 1.3 USER EXPERIENCE AND INTERACTIONS VZ_REQ_LTEOTADM_2404

Devices shall implement a mechanism so the end-user can alter or set the Class 3 APN name (only the name, and no other APN parameter) manually. In this case, the end-user can manually change that APN name on the device. The APN Management Requirements of this document shall apply in this manual PDN change case.

Please refer to Verizon Wireless Devcie Requirements for LTE 3GPP Band 13 network Access for more details on APN parameters alteration rules.

### 1.3.1 ~~User Experience (Device)~~ ~~VZ_REQ_LTEOTADM_7655~~

#### 1.3.1.1 ~~INTERRUPTIONS DURING APN MANAGEMENT ACTIVITY~~ ~~VZ_REQ_LTEOTADM_2405~~

##### *1.3.1.1.1* ~~LTE Network (Bearer) Available~~ ~~VZ_REQ_LTEOTADM_7656~~

##### *1.3.1.1.2* ~~Client-Server Connection Failure During The SDM Session~~ ~~VZ_REQ_LTEOTADM_7657~~

##### *1.3.1.1.3* ~~DM Fatal Error~~ ~~VZ_REQ_LTEOTADM_22978~~

#### *1.3.1.1.4 ~~Accessory Interaction (Applicable on to Handset form Factor Devices)~~ ~~VZ_REQ_LTEOTADM_7658~~*

### 1.3.1.2 ~~Subscriber Device Management~~ ~~VZ_REQ_LTEOTADM_7659~~

### 1.3.1.3 ~~Network Initiated SDM Sessions~~ ~~VZ_REQ_LTEOTADM_7660~~

## 1.3.2 ~~USER INTERFACE (DEVICE)~~ ~~VZ_REQ_LTEOTADM_2406~~

### 1.3.2.1 ~~Network Initiated SDM Session~~ ~~VZ_REQ_LTEOTADM_7661~~

### 1.3.2.2 ~~User Initiated SDM Session - Manual PDN Name Change~~ ~~VZ_REQ_LTEOTADM_7662~~

#### *1.3.2.2.1 ~~Instructions~~* ~~VZ_REQ_LTEOTADM_7663~~

## 1.4 OTA-DM SPECIFICATIONS VZ_REQ_LTEOTADM_2407

### 1.4.1 COMMON REQUIREMENTS FOR OTADM - STANDARDS COMPLIANCE VZ_REQ_LTEOTADM_2408

This informational section will have references to Industry Standards and Requirements as well as VZW-defined Requirements available to Open Access/ODI manufacturers. The device shall comply with the following Industry Requirements, as well as any VZW Requirements stated herein. If a conflict exists between this document and an Industry Standard, this document takes precedence. However, please contact VZW if there are additional questions.

The requirements stated in this section *will have information needed for implementation*. However, in each of the requirements stated throughout this document, the specific references will not be repeated. All references needed are in this section of this document.

In order for devices to have compatibility with Verizon Wireless LTE 3GPP Band 13 network for Device Management and support SDM, the following OMA DM requirements must be met.

Refer to "LTE 3GPP Band 13 Network Access" and "LTE SMS" requirements for details.

#### 1.4.1.1COMPLIANCE WITH VZW REQUIREMENTS VZ_REQ_LTEOTADM_22979

1. LTE 3GPP Band 13 Network Access
2. LTE SMS Requirements

#### *1.4.1.1.1* OTHER INDUSTRY STANDARDS VZ_REQ_LTEOTADM_22980

1. WAP Push OTA Specification (for notification using SMS*)
2. HTTP V1.1
3. WAP-230-WSP Specification (Package 0 SMS* header detail)
4. WAP-259-WDP Specification (Package 0 SMS* header detail)

5. The device shall support the 3GPP2 SMS format as defined in 3GPP2 C.S0015-A v1.0 *"Short Message Service (SMS) for Wideband Spread Spectrum Systems"*. The support for the 3GPP format, as defined in TS 23.040 "Technical realization of the Short Message Service (SMS)" shall be supported.
6. APN domain names shall employ domain formats as specified in RFC 3986

#### *1.4.1.1.2* OMA Standards Compliance VZ_REQ_LTEOTADM_7664

LTEOTADM116 The device shallsupport the OMA-DM standard and the sections as outlined in the followingdocuments:

| Document | Reference Section |
|---|---|
| OMA Device Management Bootstrap, Version 1.2. URL:http://www.openmobilealliance.org | 5.1.2.1 Customized Bootstrap<br>5.1.2.2 Server-Initiated Bootstrap |
| OMA DM Device Description Framework DTD, Version 1.2.URL:http://www.openmobilealliance.org | N/A |
| OMA Device Management Notification Initiated Session, Version 1.2.URL:http://www.openmobilealliance.org | 5 Server Alerted Management Session<br>6 Structure of General Notification Initiated Session Alert<br>7.1 Package #0 delivered using WAP Push |
| OMA Device Management Protocol, Version 1.2. URL:http://www.openmobilealliance.org | 6.2 Multiple Messages In Package Requirements<br>8.1.2 Session Abort Requirement<br>8.2 Package 0: Management Initiation Alert from server to client<br>8.3 Package 1: Initialization from client to server<br>8.4 Package 2: Initialization from server to client<br>8.5 Package 3: Client response sent to server<br>8.6 Package 4: Further server management operations<br>8.7 Generic Alert<br>9 Authentication (9.1, 9.2) |
| OMA Device Management Requirements Document, Version 1.2. URL:http://www.openmobilealliance.org | 6.1.1 Security<br>6.4 Usability<br>6.3.1 System Elements Device |

| | |
|---|---|
| OMA Device Management Representation Protocol, Version 1.2. URL:http://www.openmobilealliance.org | 5.1 MIME Usage<br>6 Mark-Up Language Description |
| OMA Device Management Security, Version 1.2. URL:http://www.openmobilealliance.org | 5.1 Credentials<br>5.3 Authentication<br>5.4 Integrity<br>5.5 Confidentiality<br>5.6 Notification Initiated Session |
| OMA Device Management Standardized Objects, Version 1.2.URL:http://www.openmobilealliance.org | 5 Standardized Objects |
| OMA Device Management Tree and Description, Version 1.2. | 5 The Management Tree<br>6 Nodes<br>7 Properties of nodes<br>8 Device Management Tree Exchange<br>9 Device Description Framework* |
| OMA Device Management Tree and Description Serialization, Version 1.2.URL:http://www.openmobilealliance.org | 5 TND Serialization Definition<br>6 TNDS Syntax |
| | |
| WAP-230-WSP Specification | 8.2.4 Push and Confirmed Push Facilities |
| WAP-259-WDP Specification | 6.5 Mapping WDP to CDMA SMS |

### 1.4.1.2OTADM CLIENT VZ_REQ_LTEOTADM_22981

The device shall support an OTADM client that supports OMA-DM protocols defined in this document. The client shall correctly interpret OMA-DM commands, execute commands sent by the server administrator and send back relevant responses to the issuing management server as defined in the OMA DM standards referenced above.

#### *1.4.1.2.1* OTADM CLIENT PROVISIONING VZ_REQ_LTEOTADM_22982

#### 1.4.1.2.1.1 Factory Bootstrapping VZ_REQ_LTEOTADM_7699

Devices shall implement Customized (Factory) Bootstrapping in accordance with "OMA Device Management Bootstrap, Vs 1.2" requirements

Additionally, all devices shall be Factorybootstrapped with DM parameters prior to coming on the LTE network. The FactoryBootstrap parameters shall be pre-populated with the settings. See requirements traceability.

" Devices using VZW OTADM solution shall not support OTA Bootstrap (Network Initiated Bootstrap).
" Devices using VZW OTADM solution shall not support OMA-CP (OMA Client Provisioning).

#### 1.4.1.2.1.2 PDN Provisioning for OTADM Device Management Traffic VZ_REQ_LTEOTADM_7701

Devices shall use the Admin PDN dedicated to DM related traffic. The VZW IMS PDN shall be used for SMS push.

For APNs factory provisioning requirements, refer to the latest version of VZW Device Requirements - LTE 3GPP Band13 Network Access.

#### *1.4.1.2.2* OTA-DM (Emergency Mode) VZ_REQ_LTEOTADM_5965111

#### *1.4.1.2.3* OTADM Client Change Alerts VZ_REQ_LTEOTADM_4105999311947508

#### 1.4.1.2.3.1 OTADM Client Change Disabled Alert VZ_REQ_LTEOTADM_4105999311947509

#### 1.4.1.2.3.2 OTADM Client Change Enabled Alert VZ_REQ_LTEOTADM_4105999311947510

### 1.4.1.3 OTADM TRANSPORT SECURITY REQUIREMENTS VZ_REQ_LTEOTADM_22983

Due to recent security vulnerability with SSL transport layer protocols, the device must only support TLS transport layer protocol (version 1.2 & higher). It is recommended that device vendors provide the ability to install additional root certificates over the air if a need arise.

- Device vendors must support SHA-256 SSL server certificates.
- Device vendor must use below URL for their new devices and SUs which supports SHA-256 SSL server certificates.

| | |
|---|---|
| ./DMAcc/AppAddr/Addr | https://4g2.vzwdm.com |
| ./DMAcc/AppAddr/AddrType | URI |
| ./DMAcc/AppAddr/Port | 443 |

#### *1.4.1.3.1* Confidentiality (Data Encryption) VZ_REQ_LTEOTADM_7703

All Device Management interaction between the device and the OTADM Server shall be performed using HTTPS transport protocol to ensure proper protection of OMA DM messages.

##### 1.4.1.3.1.1 Root Certificate requirements VZ_REQ_LTEOTADM_36249

The device vendor shall pre-install the following root certificates required to support the SSL server certificate and its certificate chain installed on the OTADM server.

- DigiCert Global Root CA (Serial #: 08:3B:E0:56:90:42:46:B1:A1:75:6A:C9:59:91:C7:4A)
- DigiCert Global Root G2 (Serial #: 03:3A:F1:E6:A7:11:A9:A0:BB:28:64:B1:1D:09:FA:E5)
- DigiCert Trusted Root G4 (Serial #: 05:9B:1B:57:9E:8E:21:32:E2:39:07:BD:A7:77:75:5C)

The device vendor shall also support required signature algorithm, key size and cypher suites of the SSL server certificate.

The device vendor shall also verify that a server certificate currently installed on the OTADM server is chained to the root certificates pre-installed on the device.
The device vendor may use the openssl tool or the following links to check the SSL server certificate and its certificate chain on the OTADM server:

https://www.digicert.com/help/

The Root Certificates can be downloaded from the following links:

- DigiCert root certs: https://www.digicert.com/digicert-root-certificates.htm

It is recommended that the device pre-installs prevalent root certificates to support other certificate authorities such as DigiCert, Comodo, GoDaddy, and Entrust.

OEM is responsible for ensuring the root certificates do not expire during the life cycle of the device. If certificates are set to expire, OEM should work back with Verizon marketing leads for support on updating the certificates to align with the server. Additionally, before the device is considered to be End of Life, OEM must submit an update package to bring the device up to the latest certificate requirements revision.

Along with the root certificates the device shall support all of the following Cipher Suites:

- TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256 (0xC02F)
- TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384 (0xC030)

#### *1.4.1.3.2* AUTHENTICATION VZ_REQ_LTEOTADM_22984

##### 1.4.1.3.2.1 Package 0 Authentication (Notification Initiation Session Message) VZ_REQ_LTEOTADM_7705

The device shall support Package 0 authentication for bootstrap messages, including 'stale nonce' retry. For details, please refer to "OMA Device Management Security", Version 1.2

Devices shall confirm the source of the DM Notification message by validation of the digest sent as part of the message payload.

##### 1.4.1.3.2.2 Mutual Authentication VZ_REQ_LTEOTADM_7707

Devices shall support mutual authentication at the DM layer.Digest authentication shall be used for all Device Management-related authentication sessions,Digest authentication shall be implemented for all messages (i.e. Notification Messages) between the OTADM Server and Device, Authentication and its challenge shall follow the specifications as defined in "OMA Device Management Security, Version 1.2, "OMA Device Management Protocol V1.2, and "OMA Device Management Initiation Session V1.2".

#### 1.4.1.3.2.3 Failed Authentication Attempt Handling VZ_REQ_LTEOTADM_7665

For details, please refer to "OMA Device Management Security Protocol V1.2, and"OMA Device Management Notification Initiation Session V1.2" documents.

#### 1.4.1.3.2.4 Authentication Key VZ_REQ_LTEOTADM_7666

Instructions on how to generate Server and Client password will be provided by VZW when vendor submits a request to gain access to VZW OTADM IOT self-test environment (IOT Handshake tool).

Reference: OMA Device Management Security V1.2: Section 5.3.3 Authentication/Password and Nonce Usage

#### *1.4.1.3.3* Integrity VZ_REQ_LTEOTADM_7667

The device shall utilize HMAC for integrity protection of Device Management messages, as specified in"OMA Device Management Security V1.2", and"OMA Device Management Protocol V1.2" : Section 9 Authentication, OMA Device Management Security V1.2: Section 5.4 Integrity.

#### *1.4.1.3.4* OTA Device Management Tree Support VZ_REQ_LTEOTADM_7668

The OMA DM Tree shall conform to the OMA-DM standard. URI and node names in a Device Management tree shall be treated as case sensitive as per OMA DM Tree and Description specs (OMA-TS-DM_TND-V1_2_1-20080617-A).

#### 1.4.1.3.4.1 Commands VZ_REQ_LTEOTADM_7669

LTEOTADM129Nodes in the DM Tree shall support the followingstandard commands as definedbelow:

- Exec
- Get
- Replace

For details on the commands,please refer to OMA Device Management Protocol V1.

#### 1.4.1.3.4.2 Correlator ID VZ_REQ_LTEOTADM_38690

The device may support Correlator ID in asynchronous response to an asynchronous Exec command from the DM server. In the asynchronous response, the device shall include the same Correlator ID that it has received in an Exec command. The device shall omit Correlator ID in all other instances. The Correlator ID is an optional field and device must not fail if the field is not present from the server.

For details on the commands, please refer to OMA Device Management Protocol V1.x.

### *1.4.1.3.5* ACCESS CONTROL LIST (ACL) VZ_REQ_LTEOTADM_22985

For details on ACL support, please refer to OMA Device Management Tree and Description V1.2

### *1.4.1.3.6* Verizon Wireless Defined Base DM Tree VZ_REQ_LTEOTADM_7670

LTEOTADM131The device shall support the following basenode and sub-tree nodes for DM operations.

* DDF provided by the DeviceOEMs contains all information needed for the OMA-DM nodes.

| ***OMA-DM Node*** | ***Description*** |
|---|---|
| . | Base Node |
| ./DMAcc | Root Node for all DM Account items |
| ./DevInfo | Root Node for all Device Information items |
| ./DevDetail | Root Node for all Device Detail items |
| ./ManagedObjects | Root Node for all Managed Object items |

#### 1.4.1.3.6.1 Factory Data Reset Persistence VZ_REQ_LTEOTADM_4105999311949611

#### 1.4.1.3.6.2 Reset to Original Values VZ_REQ_LTEOTADM_4105999311949612

### *1.4.1.3.7* DMAcc Subtree VZ_REQ_LTEOTADM_7671

The device shall support the following DMAcc nodes for DM operations.

| ***DMAcc Subtree*** | | | |
|---|---|---|---|
| ***DMAcc Subtree*** | ***Value*** | **Value Type** | **Commands** |
| ./DMAcc/AppID | W7 | Char | Get |
| ./DMAcc/ServerID | com.vzwdmserver | Char | Get |
| ./DMAcc/Name | VZW DM Server | Char | Get |
| ./DMAcc/AppAddr | Node | Char | Get |
| ./DMAcc/AppAddr/Addr | https://4g2.vzwdm.com*** | Char | Get, Replace |
| ./DMAcc/AppAddr/AddrType | URI | Char | Get, Replace |
| ./DMAcc/AppAddr/Port | 443 | Char | Get, Replace |
| ./DMAcc/AAuthPref | syncml:auth-md5 | Char | Get |
| ./DMAcc/AppAuth | Node | | Get |

| | | | |
|---|---|---|---|
| ./DMAcc/AppAuth/Client | Node | | Get |
| ./DMAcc/AppAuth/Client/AAuthLevel | CLCRED | Char | Get |
| ./DMAcc/AppAuth/Client/AAuthType | Digest | Char | Get |
| ./DMAcc/AppAuth/Client/AAuthName | IMEI (see note) | Char | Get |
| ./DMAcc/AppAuth/Client/AAuthSecret | <VZW Defined>* | Char | No Get |
| ./DMAcc/AppAuth/Client/AAuthData | See note below** | Char | No Get |
| ./DMAcc/AppAuth/Server | Node | | Get |
| ./DMAcc/AppAuth/Server/AAuthLevel | SRVCRED | Char | Get |
| ./DMAcc/AppAuth/Server/AAuthType | Digest | Char | Get |
| ./DMAcc/AppAuth/Server/AAuthName | com.vzwdmserver | Char | Get |
| ./DMAcc/AppAuth/Server/AAuthSecret | See note below** | Char | No Get |
| ./DMAcc/AppAuth/Server/AAuthData | See note below** | Char | No Get |

* See requirements traceability to set value as defined
** The initial values for these nodes are defined in the Authentication Key requirements section of the VZOTADM (VZ_REQ_MMOTADM_36870) and OD_OTADM (VZ_REQ_ODOTADM_40121) document. If further information is required, contact Verizon Wireless or Motive IOT team.
***All new devices and all SUs must support this new URL with SHA-2 cert support.
Reference: OMA Device Management Standardized Objects V1.2

Note: AAuthName shall be in the format of characters without any prefix or postfix, for example, "123456789012345", and not "IMEI:123456789012345".

### *1.4.1.3.8* DevInfo Subtree VZ_REQ_LTEOTADM_7672

The DevInfo subtree shall be as defined in theOMA Device Management Standardized Objects V1.2.The Device shall implement the following node values:

| *DevInfo Nodes* | *Value* | *Value Type* | *Command* |
|---|---|---|---|
| ./DevInfo/DevId | IMEI (see Note) | Char | Get |
| ./DevInfo/DmV | 1.2 | Char | Get |
| ./DevInfo/Lang | English | Char | Get |
| ./DevInfo/Man | <Manufacturer Name> | Char | Get |
| ./DevInfo/Mod | <Model Number> (see Note) | Char | Get |
| ./DevInfo/Ext | Node | | Get |

Note: DevId format shall be "IMEI:x", with x being the value of the IMEI (without quotes).
Mod shall be the Model Number of the device instead of the commercial name of the device

### *1.4.1.3.9* DevDetail Subtree VZ_REQ_LTEOTADM_7673

LTEOTADM134The DevDetail subtree shall be as defined in theOMA Device Management Standardized Objects V1.2.The Device shall implement the following node values of the DevDetail subtree:

| ***DevDetail Nodes*** | ***Value*** | ***Value type*** | ***Command*** |
|---|---|---|---|
| ./DevDetail/URI | Node | Char | Get |
| ./DevDetail/URI/MaxDepth | 12 | Char | Get |
| ./DevDetail/URI/MaxSegLen | 32 | Char | Get |
| ./DevDetail/URI/MaxTotLen | 127 | Char | Get |
| ./DevDetail/DevTyp | <value><br><br>Smartphone<br>Tablet<br>Basic Phone<br>Home<br>Mobile Hotspot<br>Connected Device<br>Wearable | Char | Get |
| ./DevDetail/FwV | <value> (See Note) | Char | Get |
| ./DevDetail/HwV | <value> | Char | Get |
| ./DevDetail/LrgObj | True, False | Char | Get |
| ./DevDetail/OEM | <value> | Char | Get |

| | | | |
|---|---|---|---|
| ./DevDetail/SwV | <value> | Char | Get |
| | | | |

Note: APN Management and ADD flowrequires that ./DevDetail/FwV be an implemented and populated leaf node.

#### *1.4.1.3.10* NAI VZ_REQ_LTEOTADM_5965085

Devices the support 3G CDMA technologies shall use the current data NAI <MDN>@vzw3g.com

### 1.4.1.4DM CONNECTIVITY REQUIREMENTS VZ_REQ_LTEOTADM_22986

#### *1.4.1.4.1* NETWORK INITIATED DM SESSIONS VZ_REQ_LTEOTADM_22988

#### 1.4.1.4.1.1 DM Notification via SMS message (Trigger) VZ_REQ_LTEOTADM_7708

OTADM compliant devices shall receive and process Device Management notifications delivered to the device via an SMS message.

NOTE: SMS messages are configured and sent by the OTADM Server over the IMS PDN. Network-Initiated functionality is triggered by these SMS.

#### 1.4.1.4.1.2 3GPP and 3GPP2 SMS Format Support
VZ_REQ_LTEOTADM_4105999311951449

All 4G and 5Gÿ 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.

#### 1.4.1.4.1.3 ~~LTE Service Required~~ ~~VZ_REQ_LTEOTADM_7674~~

#### 1.4.1.4.1.4 Network Initiated (NI) Retry VZ_REQ_LTEOTADM_7675

If the device is in adequate LTE coverage area, but the network-initiated DM session fails to connect to the server for any reason, the device shall fail the session and not retry.

### *1.4.1.4.2* USER INITIATED DM SESSIONS VZ_REQ_LTEOTADM_22989

#### 1.4.1.4.2.1 ~~Manual PDN Change~~ ~~VZ_REQ_LTEOTADM_7676~~

#### 1.4.1.4.2.2 ~~LTE Service Required~~ ~~VZ_REQ_LTEOTADM_7677~~

#### 1.4.1.4.2.3 ~~XML ELEMENTS~~ ~~VZ_REQ_LTEOTADM_22990~~

#### 1.4.1.4.2.4 ~~VZ_REQ_LTEOTADM_7678~~

#### 1.4.1.4.2.5 Elements and Formatting VZ_REQ_LTEOTADM_7679

Data Elements shall only contain the formatted characters of that element.

For example, if the Format of a Data Element is int (integer), and the Data element represents a timer in seconds, then the data element shall only include integer characters, e.g. 0-9., and not include the unit (sec) within its field. Thus, for a timer value of 25 seconds, the required data element would be <data> 25 </data> and not <data> 25 sec </data>.

### *1.4.1.4.3* SUPPORT FOR IPV6 CONNECTIVITY VZ_REQ_LTEOTADM_31775

#### 1.4.1.4.3.1 IPv6 Connection VZ_REQ_LTEOTADM_31776

- The DM Client on the device shall support IPv6 connectivity with the OMADM server over Class 2 APN's PDN Connection.
    - This functionality is in addition to the IPv4 support that exists today on each client.
- If an IPv6 address is returned by the DNS server for an AAAA (quad-A) query, then the device will prefer IPv6 mode connectivity versus IPv4 mode connectivity with the DM Server over the Class 2 APN's PDN Connection.
    - If an IPv6 address is not returned by the DNS server, then the device shall use IPv4 address received from the "A" DNS query result to connect to the DM server (over the Class 2 APN's PDN Connection).
- As such, IPv6 connection shall be supported for all aspects of OMADM communication (over an IP network) as described in this requirements document.

#### 1.4.1.4.3.2 Connection Setup Failure VZ_REQ_LTEOTADM_31777

- If the device is not in adequate LTE coverage where a Class 2 PDN connection cannot be established, then the requirements outlined in this document (See requirements traceability) shall be followed.
- If the device is in adequate LTE coverage with Class 2 PDN connection established and if the DM Client is unable to connect to the DM server over an IPv6 connection through the Class 2 APN's PDN connection for any reason; then the device shall not disconnect the PDN connection. Instead the device shall fall back to the available IPv4 connection and attempt to connect to the DM server at most once.
    - If the communication still cannot be established, then the device shall follow Retry requirements outlined in this document (See requirements traceability)

#### 1.4.1.4.3.3 ~~Connection Failure During a DM Session~~ ~~VZ_REQ_LTEOTADM_31778~~

#### *1.4.1.4.4* HTTP Header functional requirement VZ_REQ_LTEOTADM_4105999311951432

The HTTP Header used in a DM transaction with the DM Server shall include the additional attribute: "X-Session-Type". The attribute value shall be the session type. For device initiated session it should be "device". For Network initiated session, it should be "network". For User initiated session, it should be "user" for a user initiated Vital SU session it should be "sui". The format of the attribute value shall be "X-Session-Type: x", with x being the session type.

**(Example:**

X-Session-Type: device

X-Session-Type: network

X-Session-Type: user

X-Session-Type: sui)

### 1.4.1.5 OMA-DM TREE AND STANDARD COMMANDS VZ_REQ_LTEOTADM_22992

### *1.4.1.5.1* APN MANAGEMENT VZ_REQ_LTEOTADM_22993

By APN management, VZW means a mechanism for changing the current APNs defined in this document. There are three cases where changing the APN occurs in this document. One case is when the device has its APN changed manually, e.g. Class 3 APN is changed by the end-user. The second case is where the APN change is directed by the OTADM Server during Network provisioning or insertion of a new SIM card. The third case is when the OTADM Server directs the device to modify an APN for additional end-user services.

APN management can occur in two distinct ways: through an SDM session initiated specifically to change a targeted APN value, or through a Mobile Automatic Device Detection (ADD) session.

APN management is enabled through the ConnMo tree (read and writing of the APN parameter values) and its manipulation.

#### 1.4.1.5.1.1 MOBILE AUTOMATIC DEVICE DETECTION (ADD): BACKGROUND AND DESCRIPTION VZ_REQ_LTEOTADM_22994

Mobile Automatic Device Detection is an APN Management server process which happens when a new UICC card is associated with a device from out-of-box condition, or existing UICC card (activated on another Device) and then inserted into current mobile device. Both situations, the out of the box or the current device, having the SIM newly inserted and powered on, triggers a UICC card activation, results the SIMOTA server to send ADD (Automatic Device Detection) message to the SDM server; the SDM server, upon receiving the ADD message, will associate the device IMEI to the current activated MDN, and send a Package 0 (SMS) to initiate the following tasks:

1. Read LTE APN parameters, including APN Id, name, and IP, for all 4 APN classes, from the device, and replace these parameters with network required values, Read functionality is performed via OMA specification as a "Get" command. Write functionality is performed via OMA specification as "Replace" command. After the "Replace" command is sent to the device, the Server will send an Execute command to the device, as per OMA specifications, which triggers the device to enable the APN changes.
2. Upon successful read and replacement of APN values, there is a check performed by the OTADM server to determine if there is a firmware-update package available for the device.
    a. If the device supports a Proprietary Firmware, the ADD process will still determine if the device requires a firmware update by checking the "FwV" field in the Device Detail tree. In the Proprietary Firmware support case, the VZW OTADM Server will not initiate a firmware update.

b. All devices, whether utilizing VZW-FOTA or Proprietary FOTA, shall populate the FwV leaf node.

#### 1.4.1.5.1.2 ADD Flow Requirements VZ_REQ_LTEOTADM_7683

VZW does not specify the number, type, or sequence of APNs that may be read or written during an ADD session, as per OMA Specifications. The device shall be prepared to respond to any request made by the server for reading and writing the APN parameters during that ADD session.

#### 1.4.1.5.1.3 ~~APN SERVICE AVAILABILITY~~ VZ_REQ_LTEOTADM_22995

#### 1.4.1.5.1.4 INFORMATIONAL BACKGROUND VZ_REQ_LTEOTADM_22996

APN Service Availability refers to the ability of the device to connect to a newly modified APN without noticeable delay.

To illustrate, suppose the current Class 3 APN name is www.changeme.com and the user manually changes the Class 3 Internet APN to www.vzw.com. The user expects to be able to initiate a session with the network through invoking the browser and have the device attach to the www.vzw.com without noticeable delay (of service/connectivity to the Internet) or requiring the device to reboot. The browser launch and connection to the APN, e.g. www.vzw.com, is expected to be less than 10 seconds in good RF conditions. However, quantification of this requirement is nearly impossible. Thus, in the time it takes for a user to attempt to connect to the changed APN, the device should have the new APN enabled. In other words, when the device is next requested to utilize the new APN, the APN must be enabled.

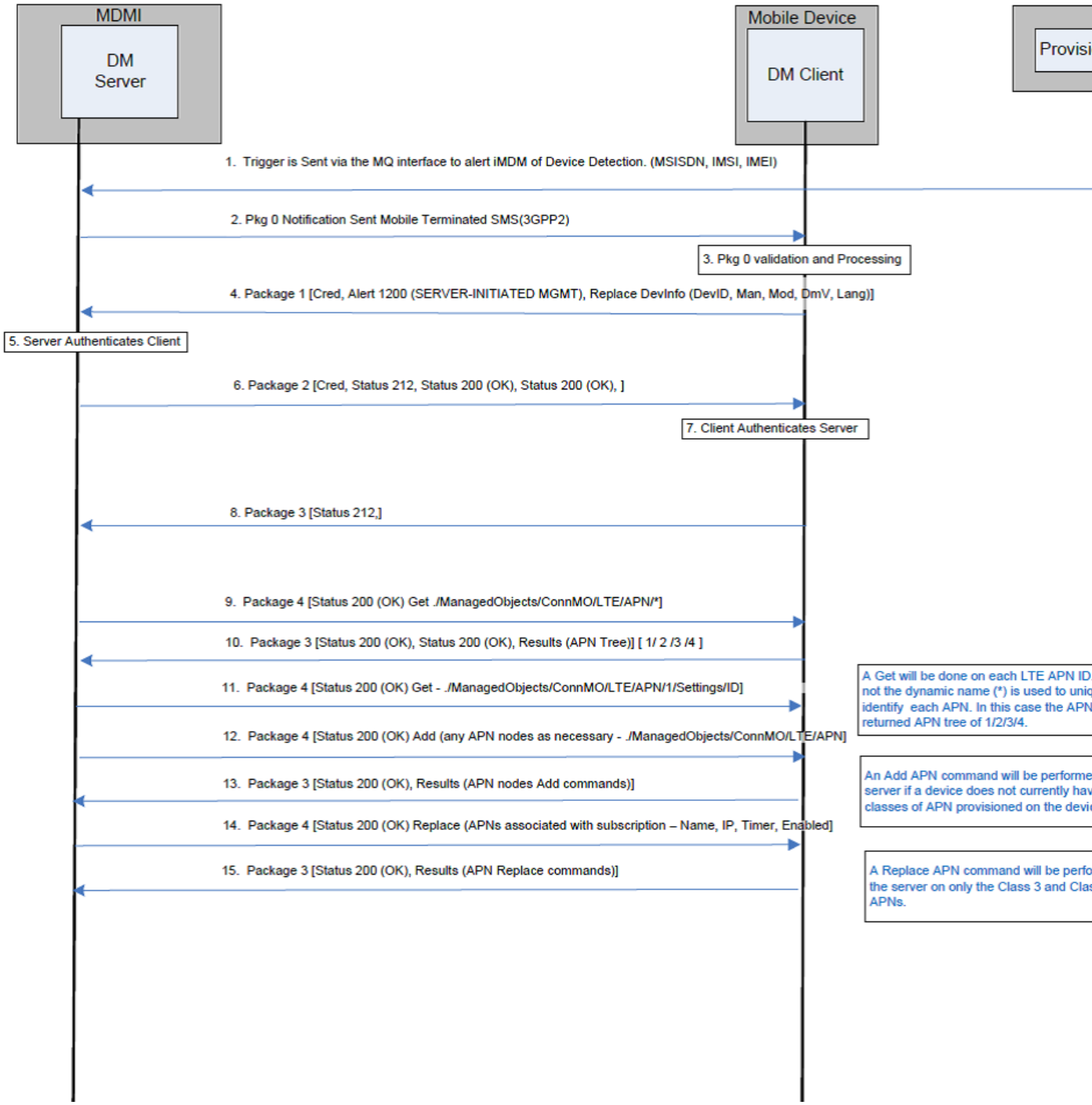
This concept defines "APN service availability"

#### 1.4.1.5.1.5 ~~Service Availability for APN Parameter Changes~~ VZ_REQ_LTEOTADM_7688

### 1.4.1.5.1.6 ADD FLOW DIAGRAM VZ_REQ_LTEOTADM_22998

The following diagram shows the ADD flow that is utilized by VZW. This is for information only.

# LTE ODI Activation Call flow



### 1.4.1.5.1.7 APN Management after SIM change VZ_REQ_LTEOTADM_8312636

### *1.4.1.5.2* Connectivity Management VZ_REQ_LTEOTADM_7684

The device shall support the following Connectivity Subtree and operations:

| ***Connectivity Node*** | ***Description*** | ***Value*** | ***Value Type*** | ***Commands*** |
|---|---|---|---|---|
| ./ManagedObjects/ConnMO/LTE | Internal Node | node | | Get |
| ./ManagedObjects/ConnMO/LTE/APN/1 | Internal Node | node | | Get |
| ./ManagedObjects/ConnMO/LTE/APN/1/Setting | Internal Node | node | | Get |
| ./ManagedObjects/ConnMO/LTE/APN/1/Setting/Id | APN Id | 1 | int | Get |
| ./ManagedObjects/ConnMO/LTE/APN/1/Setting/Name | APN Name | IMS | char | Get, Replace |
| ./ManagedObjects/ConnMO/LTE/APN/1/Setting/IP | IP Version. Defined by Standards but not used by Verizon Wireless | IPv4 or Ipv6 or Ipv4 and Ipv6 | char | Get, Replace |
| ./ManagedObjects/ConnMO/LTE/APN/1/Setting/Enabled | Return APN /1/s status of Enabled (True), or Disabled (False) | True | Bool | Get |
| ./ManagedObjects/ConnMO/LTE/APN/1/Setting/Operations | Internal Node | Null | | Get |
| ./ManagedObjects/ConnMO/LTE/APN/2/Setting/Id | APN Id | 2 | int | Get, |
| ./ManagedObjects/ConnMO/LTE/APN/2/Setting/Name | APN Name | VZWADMIN | char | Get, Replace |
| ./ManagedObjects/ConnMO/LTE/APN/2/Setting/IP | IP Version. Defined by Standards but not used by | Ipv4 or Ipv6 or Ipv4 and Ipv6 | char | Get, Replace |

| | | | | |
|---|---|---|---|---|
| | Verizon Wireless | | | |
| ./ManagedObjects/ConnMO/LTE/APN/2/Setting/Enabled | Return APN /2/s status of Enabled (True), or Disabled (False) | True | Bool | Get |
| ./ManagedObjects/ConnMO/LTE/APN/2/Setting/Operations | Internal Node | Null | | Get |
| ./ManagedObjects/ConnMO/LTE/APN/3/Setting/Id | APN Id | 3 | int | Get, |
| ./ManagedObjects/ConnMO/LTE/APN/3/Setting/Name | APN Name | VZWINTERNET | char | Get, Replace |
| ./ManagedObjects/ConnMO/LTE/APN/3/Setting/IP | IP Version. Defined by Standards but not used by Verizon Wireless | Ipv4 or Ipv6 or Ipv4 and Ipv6 | char | Get, Replace |
| ./ManagedObjects/ConnMO/LTE/APN/3/Setting/Enabled | Return APN /3/s status of Enabled (True), or Disabled (False) | True, False | Bool | Get |
| ./ManagedObjects/ConnMO/LTE/APN/3/Setting/Operations | Internal Node | Null | | Get |
| ./ManagedObjects/ConnMO/LTE/APN/3/Setting/Operations/Enable | Enable APN | Null | | Exec |
| ./ManagedObjects/ConnMO/LTE/APN/3/Setting/Operations/Disable | Disable APN | Null | | Exec |
| ./ManagedObjects/ConnMO/LTE/APN/4/Setting/Id | APN Id | 4 | int | Get, |
| ./ManagedObjects/ConnMO/LTE/APN/4/Setting/Name | APN Name | VZWAPP | char | Get, Replace |
| ./ManagedObjects/ConnMO/LTE/APN/4/Setting/IP | IP Version. Defined by Standards but not used by Verizon Wireless | Ipv4 or Ipv6 or Ipv4 and Ipv6 | char | Get, Replace |
| ./ManagedObjects/ConnMO/LTE/APN/4/Setting/En | Return | True, | Boo | Get |

| | | | | |
|---|---|---|---|---|
| abled | APN /4/s status of Enabled (True), or Disabled (False) | False | l | |
| ./ManagedObjects/ConnMO/LTE/APN/4/Setting/Operations | Internal Node | Null | | Get |
| ./ManagedObjects/ConnMO/LTE/APN/4/Setting/Operations/Enable | Enable APN | Null | | Exec |
| ./ManagedObjects/ConnMO/LTE/APN/4/Setting/Operations/Disable | Disable APN | Null | | Exec |
| ./ManagedObjects/ConnMO/IMS | Interior Node | Node | | Get |
| ./ManagedObjects/ConnMO/IMS/Setting | Interior Node | Node | | Get |
| ./ManagedObjects/ConnMO/IMS/Setting/Domain | Home Domain Name for the device to populate the request URI for REGISTRATION | vzims.com | char | Get |
| ./ManagedObjects/ConnMO/IMS/Setting/smsformat | Device Outgoing SMS based on either 3GPP or 3GPP2 standards | 3GPP or 3GPP2 | char | Get, Replace |
| ./ManagedObjects/ConnMO/IMS/Setting/sms_over_IP_network_indication | Turns IMS ON/OFF on the device | True | bool | Get, Replace |

#### 1.4.1.5.2.1 ConnMO Replace Command - Values not case sensitive

VZ_REQ_LTEOTADM_7685

All writeable node values shall not be case sensitive, ie, device shall be able to write/replace the node values either in lower cases or upper cases.

### *1.4.1.5.3* Functionality For Device Connectivity Management

VZ_REQ_LTEOTADM_7686

Note: All Timer values in the above table have units associated, e.g. seconds or minutes; and the values shall be integer type; It is imperative that the server and the device interpret the value in the same units. If the units are specified in the above table as, e.g. seconds, then the device shall interpret any value received by the network as the same units (e.g. seconds). Similarly, if the device is going to populate a value in the tree, it shall assume the value the network will receive is the units in the above table.

Device shall allow the remote capture of connectivity settings and attributes based on OMA DM commands sent from the VZW DM server system.

The following node commands shall result in the listed functionality:

#### 1.4.1.5.3.1 APN Name Format VZ_REQ_LTEOTADM_7702

Devices shall support the APN domain names which shall employ the domain formats as specified in RFC 3986

#### 1.4.1.5.3.2 APN ID VZ_REQ_LTEOTADM_7687

APN Id get command on this node returns the Network Identifier of the associated Access Point Name (APN), for IMS APN, Id = 1; for Admin APN, Id = 2; for Internet APN, Id = 3; for VZW Applications APN, Id =4; replace command changes the value;

#### 1.4.1.5.3.3 APN Name VZ_REQ_LTEOTADM_7689

APN Name get command on this node returns the associated APN name, for IMS, the APN name = IMS; for Admin, the APN name = VZWADMIN; for Internet, the APN name = VZWINTERNET; for VZW Application, the APN name = VZWAPP; replace command, where stated in the CONNMO tree, changes the value;

#### 1.4.1.5.3.4 IP VZ_REQ_LTEOTADM_7690

IP get command on this node returns the associated APNs IP Type, which is one of: IPv4, IPv6, or IPv4 and IPv6; replace command changes the value.

#### 1.4.1.5.3.5 Enabled VZ_REQ_LTEOTADM_7691

Enabled get command on this node returns the APN enabled (True) or disabled (False) status for all APNs;

#### 1.4.1.5.3.6 IMS Domain VZ_REQ_LTEOTADM_7692

IMS Domain get command on this node returns the home domain name for the device to populate the request URI for registration; replace command changes the value;

#### 1.4.1.5.3.7 ~~SIP T1 Timer~~ VZ_REQ_LTEOTADM_7693

#### 1.4.1.5.3.8 ~~SIP TF Timer~~ VZ_REQ_LTEOTADM_7694

#### 1.4.1.5.3.9 ~~SIP T2 Timer~~ VZ_REQ_LTEOTADM_7695

#### 1.4.1.5.3.10 ~~SMS Format~~ VZ_REQ_LTEOTADM_7696

#### 1.4.1.5.3.11 Enable VZ_REQ_LTEOTADM_7697

Enable exec command on this node turns an APN on, applicable only to APN Id = 3 and 4. Enable is applicable to neither APN ID = 1 nor APN ID =2 is due to the required device behavior specified in LTE_3GPP_Band13_Network Access requirements.

#### 1.4.1.5.3.12 Disable VZ_REQ_LTEOTADM_7698

Disable exec command on this node shall turn the specified APN off, applicable to all APNs except APN1 and APN2.

#### 1.4.1.5.3.13 ~~Disable Testing~~ VZ_REQ_LTEOTADM_7715

### 1.4.1.5.3.14 IP Indication for SMS VZ_REQ_LTEOTADM_23000

The SMS IP indication is intended to control if the Mobile Originated (MO) SMS is performed over IMS.

The value of "True" means the device shall perform Mobile Originated (MO) SMS on the VZW IMS Network. A value of "False" means the device shall not perform Mobile Originated (MO) SMS on the IMS Network.

The default value shall be "True"

Note: See "LTE SMS Device Requirements" for more information on SMS IP Indication.

### 1.4.1.5.3.15 ~~Factory Rest & Default APN values: Class 2 Disable~~ ~~VZ_REQ_LTEOTADM_7709~~

### 1.4.1.5.3.16 ~~Functionality for Data Retry Connectivity Management Objects~~ ~~VZ_REQ_LTEOTADM_26496~~

### 1.4.1.5.3.17 ~~MAX_CONN_T~~ ~~VZ_REQ_LTEOTADM_26500~~

#### 1.4.1.5.3.18 ~~MAX_CONN~~ VZ_REQ_LTEOTADM_26502

#### 1.4.1.5.3.19 ~~WAIT_TIME~~ VZ_REQ_LTEOTADM_26505

#### 1.4.1.5.3.20 Factory Reset & Default APN values: Class 3 VZ_REQ_LTEOTADM_38539

Factory reset shall not change Class 3 settings to the default values.

### 1.4.1.6 ~~Configuration Update~~ VZ_REQ_LTEOTADM_7332288

## 1.4.2 ~~SDM REQUIREMENTS~~ VZ_REQ_LTEOTADM_2409

## 1.4.3 Firmware Over The Air (FOTA) VZ_REQ_LTEOTADM_37788

## 1.4.4 SUPPORT FOR INDUSTRY STANDARDS AND VERIZON WIRELESS REQUIREMENTS VZ_REQ_LTEOTADM_22991

### 1.4.4.1~~OMA Defined Managed Objects~~ VZ_REQ_LTEOTADM_7680

#### *1.4.4.1.1* Update Result Reporting VZ_REQ_LTEOTADM_7681

All devices shall send a final DM notification message to the server following the update in accordance with OMA DM standards and the following requirements.

#### *1.4.4.1.2* Update - Fatal Error VZ_REQ_LTEOTADM_7682

If the update process experiences a fatal error (i.e. checksum of final image invalid), the device shall reset.

## 1.5 DEVINFO SUBTREE EXTENSION VZ_REQ_MMOTADM_3103

### 1.5.1 ICCID Extended Node Support VZ_REQ_MMOTADM_8081

- In addition to the Dev Info nodethat is supported from the LTE OTADM and Reqs-OTADM Requirements documents, thedevice shall support ICCID extension node as described below

| *DevInfo Nodes* | *Description* | *Value* | *Value Type* | *Commands* |
|---|---|---|---|---|
| **1.5.1.1.1.1 ./DevInfo/Ext/ICCID** | UICCs ICCID Value | NULL or <ICCID> (See description below) | Char | Get |

- ICCID Extension node is a Read Only node with Type Char.TheDevice shall not allow a Replace command from DM server on the ICCID Extensionnode.The Device shall be able to perform Read/Write operations on the ICCIDExtension Node.
- This node shall be of Length 20 and shall only allow thefollowing values:

1. NULL If UICC is not present in the Device or theDevice is unable to reach the UICC due to some fault in the OS
2. This node shall only populate ICCID value retrieved from theUICC present in the device and only allow the following characters (0, 1, 2, 3,4, 5, 6, 7, 8, or 9). Example: 89148123456789012 34

### 1.5.2 Device Functionality VZ_REQ_MMOTADM_8083

- The Device shall attempt to read the value of ICCID everytime the Device is powered on
    1. If a UICC is present and an ICCID value is retrieved, then the device shall check the existing value in the ICCID Extension Node. If the value is different than what is retrieved, then theretrieved value should be written in place of the pre-existing value
    2. If a UICC is not present, then the device shall write a NULLin place of the ICCID Value.

- The Device shall make use of the available OS APIs to be able to listen for UICC Changes/Removalwhile device is powered on. If a UICC change/removal is detected, thenthe device shall use the following logic:
    1. If UICC change is detected, then the Device shall retrieve the new ICCID valuefrom the UICC and overwrite the existing value in the ICCID Extension node withthe new Value
    2. If a UICC removal is detected, then the Device shall overwrite the existing value with NULL

- The device shall report the ICCID Extension Node value during a Device Management Package 1 session along with all the other DevInfo node values. The device shall follow the rules specified above for value of ICCID Extension Node (NULL or actual ICCID value of a UICC in the Device).
- The Device shall not send any value other than what is described in this sub section for the ICCID extension node
- The Device shall not allow a Replace command from DM server on the ICCID Extension node.

## 1.6 ~~INFORMATION AND USE CASES~~ VZ_REQ_LTEOTADM_2410

### 1.6.1 ~~APN CLASS USAGE - INFORMATIONAL~~ ~~VZ_REQ_LTEOTADM_2411~~

#### 1.6.1.1 ~~CLASS 1 (APN 1)~~ ~~VZ_REQ_LTEOTADM_23001~~

#### 1.6.1.2 ~~CLASS 2 (APN 2)~~ ~~VZ_REQ_LTEOTADM_23002~~

#### 1.6.1.3 ~~CLASS 3 (APN 3)~~ ~~VZ_REQ_LTEOTADM_23003~~

#### 1.6.1.4 ~~CLASS 4 (APN 4)~~ ~~VZ_REQ_LTEOTADM_23004~~

## 1.7 REFERENCES VZ_REQ_LTEOTADM_2412

<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 www.verizonwireless-opendevelopment.com.

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2. IP Based Over-the-Air Device Management (IOTA-DM) for cdma2000 Systems, PN-3-0187, To be published as TIA-1059, January 14, 2005
3. The TLS Protocol Version 1.0, RFC 2246, January 1999
www.ietf.org/rfc/rfc2068.txt
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5. A. Frier, P. Karlton, and P. Kocher, "The SSL 3.0 Protocol", Netscape Communications Corp., Nov 18, 1996.
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http://www.openmobilealliance.org/technical/release_program/docs/copyrightclick.aspx?pck=DM&file=V1_2-20050628-C/OMA-TS-DM-Bootstrap-V1_2-20050615-C.pdf
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9. OMA Device Management Requirements Document, Version 1.2 dated June 7, 2005. http://www.openmobilealliance.org/technical/release_program/docs/copyrightclick.aspx?pck=DM&file=V1_2-20050607-C/OMA-RD-DM-V1_2-20050607-C.pdf
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15. Verizon Wireless LTE 3GPP Band 13 Network Access Device Requirements
16. Verizon Wireless LTE SMS Device Requirements
17. Verizon Wireless LTE Data Retry Device Requirements
18. Verizon Wireless Compliance Test Plan LTE OTADM
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http://www.openmobilealliance.org/tech/affiliates/LicenseAgreement.asp?DocName=/wap/wap-259-wdp-20010614-a.pdf
22. Device Connectivity Management Object (DCMO) Specification
http://member.openmobilealliance.org/ftp/Public_documents/DM/DCMO/Permanent_documents/OMA-TS-DCMO-V1_0-20090902-D.ZIP

23. 3GPP TS 23.003: Technical Specifications Group Core Network and Terminals: Numbering, addressing and identification V9.0.0
24. The Internet Assigned Number Authority (IANA)Header Field Parameter Registry for the Session Initiation Protocol (SIP), RFC 3986, http://www.ietf.org/rfc/rfc3968.txt

# Coverage

3GPP Specifications VZ_REQ_LTEOTADM_7654

| Test Case Name | Test Plan Id | Created By | Created Date |
|---|---|---|---|
| VZW STATIC IP APN ADD AND REMOVE FEATURE WHEN DEVICE IS POWERED OFF | CLASS3APN | Admin User | 01-02-2015 00:00:00 |

GLOSSARY/DEFINITIONS/ACRONYMS VZ_REQ_LTEOTADM_2398

| Test Case Name | Test Plan Id | Created By | Created Date |
|---|---|---|---|
| VZW STATIC IP APN ADD AND REMOVE FEATURE WHEN DEVICE IS POWERED OFF | CLASS3APN | Admin User | 01-02-2015 00:00:00 |

OMA Standards Compliance VZ_REQ_LTEOTADM_7664

| Test Case Name | Test Plan Id | Created By | Created Date |
|---|---|---|---|
| VZW STATIC IP APN ADD AND REMOVE | CLASS3APN | Admin | 01-02-2015 |

| | | | |
|---|---|---|---|
| FEATURE WHEN DEVICE IS POWERED OFF | | User | 00:00:00 |

Factory Bootstrapping VZ_REQ_LTEOTADM_7699

| Test Case Name | Test Plan Id | Created By | Created Date |
|---|---|---|---|
| AUTHENTICATION SECURITY KEY MATCH | LTEFIELDOA | Admin User | 01-08-2015 00:00:00 |
| VZW STATIC IP APN ADD AND REMOVE FEATURE WHEN DEVICE IS POWERED OFF | CLASS3APN | Admin User | 01-02-2015 00:00:00 |

PDN Provisioning for OTADM Device Management Traffic VZ_REQ_LTEOTADM_7701

| Test Case Name | Test Plan Id | Created By | Created Date |
|---|---|---|---|
| AUTHENTICATION SECURITY KEY MATCH | LTEFIELDOA | Admin User | 01-08-2015 00:00:00 |
| VERIFICATION OF VZW PRIVATE NETWORK IP APN DYNAMIC (SFO 73578) EHRPD ENVIRONMENT | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VERIFICATION OF VZW STATIC IP APN FOR STATIC IP- UNRESTRICTED (SFO 76443) FOR NEW DEVICE | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VERIFICATION OF VZWINTERNET SERVICE FOR PRIVATE, DYNAMIC (NATD) IP | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VZW STATIC IP APN ADD AND REMOVE FEATURE WHEN DEVICE IS POWERED OFF | CLASS3APN | Admin User | 01-02-2015 00:00:00 |

| | | | |
|---|---|---|---|
| | | | |

Confidentiality (Data Encryption) VZ_REQ_LTEOTADM_7703

| Test Case Name | Test Plan Id | Created By | Created Date |
|---|---|---|---|
| AUTHENTICATION SECURITY KEY MATCH | LTEFIELDOA | Admin User | 01-08-2015 00:00:00 |
| TLS Protocol for DM sessions | LTEFIELDOA | Admin User | 02-05-2015 00:00:00 |
| VZW STATIC IP APN ADD AND REMOVE FEATURE WHEN DEVICE IS POWERED OFF | CLASS3APN | Admin User | 01-02-2015 00:00:00 |

Root Certificate requirements VZ_REQ_LTEOTADM_36249

| Test Case Name | Test Plan Id | Created By | Created Date |
|---|---|---|---|
| TLS Protocol for DM sessions | LTEFIELDOA | Admin User | 02-05-2015 00:00:00 |
| VZW STATIC IP APN ADD AND REMOVE FEATURE WHEN DEVICE IS POWERED OFF | CLASS3APN | Admin User | 01-02-2015 00:00:00 |

Package 0 Authentication (Notification Initiation Session Message) VZ_REQ_LTEOTADM_7705

| Test Case Name | Test Plan Id | Created By | Created Date |
|---|---|---|---|
| AUTHENTICATION SECURITY KEY MATCH | LTEFIELDOA | Admin User | 01-08-2015 00:00:00 |

| | | | |
|---|---|---|---|
| NONCE ReSync Test - Server Credentials Change | VZOTADM | Admin User | 11-08-2013 00:00:00 |
| TLS Protocol for DM sessions | LTEFIELDOA | Admin User | 02-05-2015 00:00:00 |
| VZW STATIC IP APN ADD AND REMOVE FEATURE WHEN DEVICE IS POWERED OFF | CLASS3APN | Admin User | 01-02-2015 00:00:00 |

Mutual Authentication VZ_REQ_LTEOTADM_7707

| Test Case Name | Test Plan Id | Created By | Created Date |
|---|---|---|---|
| AUTHENTICATION SECURITY KEY MATCH | LTEFIELDOA | Admin User | 01-08-2015 00:00:00 |
| NONCE ReSync Test - Factory Reset | VZOTADM | Admin User | 11-08-2013 00:00:00 |
| NONCE ReSync Test - Server Credentials Change | VZOTADM | Admin User | 11-08-2013 00:00:00 |
| Package 2 Authentication | VZOTADM | Admin User | 11-08-2013 00:00:00 |
| TLS Protocol for DM sessions | LTEFIELDOA | Admin User | 02-05-2015 00:00:00 |
| VZW STATIC IP APN ADD AND REMOVE FEATURE WHEN DEVICE IS POWERED OFF | CLASS3APN | Admin User | 01-02-2015 00:00:00 |

Failed Authentication Attempt Handling VZ_REQ_LTEOTADM_7665

| Test Case Name | Test Plan Id | Created By | Created Date |
|---|---|---|---|
| AUTHENTICATION SECURITY KEY MATCH | LTEFIELDOA | Admin User | 01-08-2015 00:00:00 |

| | | | |
|---|---|---|---|
| Package 2 Authentication | VZOTADM | Admin User | 11-08-2013 00:00:00 |
| TLS Protocol for DM sessions | LTEFIELDOA | Admin User | 02-05-2015 00:00:00 |
| VZW STATIC IP APN ADD AND REMOVE FEATURE WHEN DEVICE IS POWERED OFF | CLASS3APN | Admin User | 01-02-2015 00:00:00 |

Authentication Key VZ_REQ_LTEOTADM_7666

| Test Case Name | Test Plan Id | Created By | Created Date |
|---|---|---|---|
| AUTHENTICATION SECURITY KEY MATCH | LTEFIELDOA | Admin User | 01-08-2015 00:00:00 |
| NONCE ReSync Test - Factory Reset | VZOTADM | Admin User | 11-08-2013 00:00:00 |
| NONCE ReSync Test - Server Credentials Change | VZOTADM | Admin User | 11-08-2013 00:00:00 |
| Package 2 Authentication | VZOTADM | Admin User | 11-08-2013 00:00:00 |
| TLS Protocol for DM sessions | LTEFIELDOA | Admin User | 02-05-2015 00:00:00 |
| VZW STATIC IP APN ADD AND REMOVE FEATURE WHEN DEVICE IS POWERED OFF | CLASS3APN | Admin User | 01-02-2015 00:00:00 |

Integrity VZ_REQ_LTEOTADM_7667

| Test Case Name | Test Plan Id | Created By | Created Date |
|---|---|---|---|
| Invalid Package Integrity | VZOTADM | Admin User | 11-08-2013 00:00:00 |

| | | | |
|---|---|---|---|
| NONCE ReSync Test - Server Credentials Change | VZOTADM | Admin User | 11-08-2013 00:00:00 |
| TLS Protocol for DM sessions | LTEFIELDOA | Admin User | 02-05-2015 00:00:00 |
| VZW STATIC IP APN ADD AND REMOVE FEATURE WHEN DEVICE IS POWERED OFF | CLASS3APN | Admin User | 01-02-2015 00:00:00 |

OTA Device Management Tree Support VZ_REQ_LTEOTADM_7668

| Test Case Name | Test Plan Id | Created By | Created Date |
|---|---|---|---|
| TLS Protocol for DM sessions | LTEFIELDOA | Admin User | 02-05-2015 00:00:00 |
| VZW STATIC IP APN ADD AND REMOVE FEATURE WHEN DEVICE IS POWERED OFF | CLASS3APN | Admin User | 01-02-2015 00:00:00 |

Commands VZ_REQ_LTEOTADM_7669

| Test Case Name | Test Plan Id | Created By | Created Date |
|---|---|---|---|
| TLS Protocol for DM sessions | LTEFIELDOA | Admin User | 02-05-2015 00:00:00 |
| VZW STATIC IP APN ADD AND REMOVE FEATURE WHEN DEVICE IS POWERED OFF | CLASS3APN | Admin User | 01-02-2015 00:00:00 |

Verizon Wireless Defined Base DM Tree VZ_REQ_LTEOTADM_7670

| Test Case Name | Test Plan Id | Created By | Created Date |
|---|---|---|---|
| TLS Protocol for DM sessions | LTEFIELDOA | Admin User | 02-05-2015 00:00:00 |
| VZW STATIC IP APN ADD AND REMOVE FEATURE WHEN DEVICE IS POWERED OFF | CLASS3APN | Admin User | 01-02-2015 00:00:00 |

DMAcc Subtree VZ_REQ_LTEOTADM_7671

| Test Case Name | Test Plan Id | Created By | Created Date |
|---|---|---|---|
| TLS Protocol for DM sessions | LTEFIELDOA | Admin User | 02-05-2015 00:00:00 |
| VZW STATIC IP APN ADD AND REMOVE FEATURE WHEN DEVICE IS POWERED OFF | CLASS3APN | Admin User | 01-02-2015 00:00:00 |

DevInfo Subtree VZ_REQ_LTEOTADM_7672

| Test Case Name | Test Plan Id | Created By | Created Date |
|---|---|---|---|
| TLS Protocol for DM sessions | LTEFIELDOA | Admin User | 02-05-2015 00:00:00 |
| VZW STATIC IP APN ADD AND REMOVE FEATURE WHEN DEVICE IS POWERED OFF | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| Verify the DevInfo nodes | LTEFIELDOA | Vipul Patel | 02-20-2018 17:48:51 |

DevDetail Subtree VZ_REQ_LTEOTADM_7673

| Test Case Name | Test Plan Id | Created By | Created Date |
|---|---|---|---|
| TLS Protocol for DM sessions | LTEFIELDOA | Admin User | 02-05-2015 00:00:00 |
| VZW STATIC IP APN ADD AND REMOVE FEATURE WHEN DEVICE IS POWERED OFF | CLASS3APN | Admin User | 01-02-2015 00:00:00 |

DM Notification via SMS message (Trigger) VZ_REQ_LTEOTADM_7708

| Test Case Name | Test Plan Id | Created By | Created Date |
|---|---|---|---|
| AUTHENTICATION SECURITY KEY MATCH | LTEFIELDOA | Admin User | 01-08-2015 00:00:00 |
| AUTHENTICATION SECURITY KEY MIS-MATCH | LTEFIELDOA | Admin User | 01-08-2015 00:00:00 |
| VZW STATIC IP APN ADD AND REMOVE FEATURE WHEN DEVICE IS POWERED OFF | CLASS3APN | Admin User | 01-02-2015 00:00:00 |

Network Initiated (NI) Retry VZ_REQ_LTEOTADM_7675

| Test Case Name | Test Plan Id | Created By | Created Date |
|---|---|---|---|
| AUTHENTICATION SECURITY KEY MATCH | LTEFIELDOA | Admin User | 01-08-2015 00:00:00 |

| | | | |
|---|---|---|---|
| AUTHENTICATION SECURITY KEY MIS-MATCH | LTEFIELDOA | Admin User | 01-08-2015 00:00:00 |
| VZW STATIC IP APN ADD AND REMOVE FEATURE WHEN DEVICE IS POWERED OFF | CLASS3APN | Admin User | 01-02-2015 00:00:00 |

<Data> Elements and Formatting VZ_REQ_LTEOTADM_7679

| Test Case Name | Test Plan Id | Created By | Created Date |
|---|---|---|---|
| VZW STATIC IP APN ADD AND REMOVE FEATURE WHEN DEVICE IS POWERED OFF | CLASS3APN | Admin User | 01-02-2015 00:00:00 |

IPv6 Connection VZ_REQ_LTEOTADM_31776

| Test Case Name | Test Plan Id | Created By | Created Date |
|---|---|---|---|
| IPv6 connectivity test to FOTA Download Server | TELEOTADM | Admin User | 07-29-2014 00:00:00 |
| OTADM-013-IPv6 Successful Connectivity Testing | LTEFIELDOA | Admin User | 01-08-2015 00:00:00 |
| OTADM-014-IPv4 Successful Connectivity Testing | LTEFIELDOA | Admin User | 01-08-2015 00:00:00 |
| VZW STATIC IP APN ADD AND REMOVE FEATURE WHEN DEVICE IS POWERED OFF | CLASS3APN | Admin User | 01-02-2015 00:00:00 |

Connection Setup Failure VZ_REQ_LTEOTADM_31777

| Test Case Name | Test Plan Id | Created By | Created Date |
|---|---|---|---|
| OTADM-013-IPv6 Successful Connectivity Testing | LTEFIELDOA | Admin User | 01-08-2015 00:00:00 |
| OTADM-014-IPv4 Successful Connectivity Testing | LTEFIELDOA | Admin User | 01-08-2015 00:00:00 |
| VZW STATIC IP APN ADD AND REMOVE FEATURE WHEN DEVICE IS POWERED OFF | CLASS3APN | Admin User | 01-02-2015 00:00:00 |

ADD Flow Requirements VZ_REQ_LTEOTADM_7683

| Test Case Name | Test Plan Id | Created By | Created Date |
|---|---|---|---|
| 01.0401.0401.04VOID OTADM-012-Set Value for APN Data Retry Parameters | LTEFIELDOA | Admin User | 01-08-2015 00:00:00 |
| APN MANAGEMENT TRIGGERED BY MOBILE AUTOMATIC DEVICE DETECTION (ADD) | LTEFIELDOA | Admin User | 01-08-2015 00:00:00 |
| APN Management by OTADM server | LTEFIELDOA | Admin User | 01-08-2015 00:00:00 |
| SIM SWAP - CHANGING SIMS WITHIN ONE DEVICE | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VERIFICATION OF VZW PRIVATE NETWORK IP APN DYNAMIC (SFO 73578) APN | CLASS3APN | Admin User | 01-02-2015 |

| | | | |
|---|---|---|---|
| MANUAL UPDATE VALIDATION | | | 00:00:00 |
| VERIFICATION OF VZW PRIVATE NETWORK IP APN DYNAMIC (SFO 73578) EHRPD ENVIRONMENT | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VERIFICATION OF VZW PRIVATE NETWORK IP APN STATIC (SFO 73584) IN 4G ENVIRONMENT | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VERIFICATION OF VZW PRIVATE NETWORK IP APN STATIC (SFO 73584) IN EHRPD ENVIRONMENT | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VERIFICATION OF VZW STATIC IP APN FOR STATIC IP- UNRESTRICTED (SFO 76443) FOR EXISTING DEVICE WITH MOBILE BROADBAND | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VERIFICATION OF VZWINTERNET SERVICE FOR PRIVATE, DYNAMIC (NATD) IP | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VERIFY LTE CONNMO DM TREES | LTEFIELDOA | Admin User | 01-08-2015 00:00:00 |
| VZW STATIC IP APN ADD AND REMOVE FEATURE WHEN DEVICE IS INSERTED INTO LAPTOP AND POWERED BUT NOT CONNECTED | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VZW STATIC IP APN ADD AND REMOVE FEATURE WHEN DEVICE IS POWERED OFF | CLASS3APN | Admin User | 01-02-2015 00:00:00 |

Connectivity Management VZ_REQ_LTEOTADM_7684

| Test Case Name | Test Plan Id | Created | Created |
|---|---|---|---|

| | | By | Date |
|---|---|---|---|
| APN MANAGEMENT TRIGGERED BY MOBILE AUTOMATIC DEVICE DETECTION (ADD) | LTEFIELDOA | Admin User | 01-08-2015 00:00:00 |
| APN NAMES CASE INSENSITIVE TEST | LTEFIELDOA | Admin User | 01-08-2015 00:00:00 |
| Basic Parameters | VZOTADM | Admin User | 11-08-2013 00:00:00 |
| CONNMO TREE ADMIN APN VERIFICATION AND OPERATION | LTEFIELDOA | Admin User | 01-08-2015 00:00:00 |
| CONNMO TREE APP APN VERIFICATION AND OPERATION | LTEFIELDOA | Admin User | 01-08-2015 00:00:00 |
| CONNMO TREE IMS APN VERIFICATION AND OPERATION | LTEFIELDOA | Admin User | 01-08-2015 00:00:00 |
| CONNMO TREE INTERNET APN VERIFICATION AND OPERATION | LTEFIELDOA | Admin User | 01-08-2015 00:00:00 |
| CONNMO TREE SMS OVER IMS VERIFICATION AND OPERATION | LTEFIELDOA | Admin User | 01-08-2015 00:00:00 |
| OTADM-013-IPv6 Successful Connectivity Testing | LTEFIELDOA | Admin User | 01-08-2015 00:00:00 |
| OTADM-014-IPv4 Successful Connectivity Testing | LTEFIELDOA | Admin User | 01-08-2015 00:00:00 |
| VERIFICATION OF VZWINTERNET SERVICE FOR PRIVATE, DYNAMIC (NATD) IP | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VERIFY LTE CONNMO DM TREES | LTEFIELDOA | Admin User | 01-08-2015 00:00:00 |
| VOID Get Value for APN Data Retry Parameters | LTEFIELDOA | Admin User | 01-08-2015 00:00:00 |
| VZW STATIC IP APN ADD AND REMOVE FEATURE WHEN DEVICE IS INSERTED INTO LAPTOP AND POWERED BUT NOT CONNECTED | CLASS3APN | Admin User | 01-02-2015 00:00:00 |

| | | | |
|---|---|---|---|
| VZW STATIC IP APN ADD AND REMOVE FEATURE WHEN DEVICE IS POWERED OFF | CLASS3APN | Admin User | 01-02-2015 00:00:00 |

ConnMO Replace Command - Values not case sensitive VZ_REQ_LTEOTADM_7685

| Test Case Name | Test Plan Id | Created By | Created Date |
|---|---|---|---|
| APN NAMES CASE INSENSITIVE TEST | LTEFIELDOA | Admin User | 01-08-2015 00:00:00 |
| VZW STATIC IP APN ADD AND REMOVE FEATURE WHEN DEVICE IS POWERED OFF | CLASS3APN | Admin User | 01-02-2015 00:00:00 |

Functionality For Device Connectivity Management VZ_REQ_LTEOTADM_7686

| Test Case Name | Test Plan Id | Created By | Created Date |
|---|---|---|---|
| APN Data Retry Parameters Value Persistence Through SU | TELEOTADM | Admin User | 07-29-2014 00:00:00 |
| IMS APN Operations at eHRPD Mode (Regression Test) | TELEOTADM | Admin User | 07-29-2014 00:00:00 |
| VZW STATIC IP APN ADD AND REMOVE FEATURE WHEN DEVICE IS POWERED OFF | CLASS3APN | Admin User | 01-02-2015 00:00:00 |

APN Name Format VZ_REQ_LTEOTADM_7702

| Test Case Name | Test Plan Id | Created By | Created Date |
|---|---|---|---|
| 01.0401.0401.04VOID OTADM-012-Set Value for APN Data Retry Parameters | LTEFIELDOA | Admin User | 01-08-2015 00:00:00 |

| | | | |
|---|---|---|---|
| APN Data Retry Parameters Value Persistence Through SU | TELEOTADM | Admin User | 07-29-2014 00:00:00 |
| APN MANAGEMENT TRIGGERED BY MOBILE AUTOMATIC DEVICE DETECTION (ADD) | LTEFIELDOA | Admin User | 01-08-2015 00:00:00 |
| Basic Parameters | VZOTADM | Admin User | 11-08-2013 00:00:00 |
| VERIFICATION OF VZWINTERNET SERVICE FOR PRIVATE, DYNAMIC (NATD) IP | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VERIFY LTE CONNMO DM TREES | LTEFIELDOA | Admin User | 01-08-2015 00:00:00 |
| VZW STATIC IP APN ADD AND REMOVE FEATURE WHEN DEVICE IS POWERED OFF | CLASS3APN | Admin User | 01-02-2015 00:00:00 |

APN ID VZ_REQ_LTEOTADM_7687

| Test Case Name | Test Plan Id | Created By | Created Date |
|---|---|---|---|
| 01.0401.0401.04VOID OTADM-012-Set Value for APN Data Retry Parameters | LTEFIELDOA | Admin User | 01-08-2015 00:00:00 |
| APN Data Retry Parameters Value Persistence Through SU | TELEOTADM | Admin User | 07-29-2014 00:00:00 |
| APN MANAGEMENT TRIGGERED BY MOBILE AUTOMATIC DEVICE DETECTION (ADD) | LTEFIELDOA | Admin User | 01-08-2015 00:00:00 |
| Basic Parameters | VZOTADM | Admin User | 11-08-2013 00:00:00 |
| SIM SWAP - CHANGING SIMS WITHIN ONE DEVICE | CLASS3APN | Admin User | 01-02-2015 |

| | | | |
|---|---|---|---|
| | | | 00:00:00 |
| SIM SWAP BETWEEN DEVICES CHANGING APN ASSIGNMENT (NORMAL TO STATIC IP) ON DEVICES | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VERIFICATION OF VZW PRIVATE NETWORK IP APN DYNAMIC (SFO 73578) APN MANUAL UPDATE VALIDATION | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VERIFICATION OF VZW PRIVATE NETWORK IP APN DYNAMIC (SFO 73578) EHRPD ENVIRONMENT | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VERIFICATION OF VZW PRIVATE NETWORK IP APN STATIC (SFO 73584) IN 4G ENVIRONMENT | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VERIFICATION OF VZW PRIVATE NETWORK IP APN STATIC (SFO 73584) IN EHRPD ENVIRONMENT | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VERIFICATION OF VZW STATIC IP APN FOR STATIC IP- UNRESTRICTED (SFO 76443) FOR EXISTING DEVICE WITH MOBILE BROADBAND | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VERIFICATION OF VZW STATIC IP APN FOR STATIC IP- UNRESTRICTED (SFO 76443) FOR NEW DEVICE | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VERIFICATION OF VZWINTERNET SERVICE FOR PRIVATE, DYNAMIC (NATD) IP | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VERIFY LTE CONNMO DM TREES | LTEFIELDOA | Admin User | 01-08-2015 00:00:00 |
| VZW STATIC IP APN ADD AND REMOVE FEATURE WHEN DEVICE IS INSERTED INTO LAPTOP AND POWERED BUT NOT CONNECTED | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VZW STATIC IP APN ADD AND REMOVE FEATURE WHEN DEVICE IS POWERED OFF | CLASS3APN | Admin User | 01-02-2015 |

| | | | |
|---|---|---|---|
| | | | 00:00:00 |

APN Name VZ_REQ_LTEOTADM_7689

| Test Case Name | Test Plan Id | Created By | Created Date |
|---|---|---|---|
| 01.0401.0401.04VOID OTADM-012-Set Value for APN Data Retry Parameters | LTEFIELDOA | Admin User | 01-08-2015 00:00:00 |
| APN Data Retry Parameters Value Persistence Through SU | TELEOTADM | Admin User | 07-29-2014 00:00:00 |
| APN MANAGEMENT TRIGGERED BY MOBILE AUTOMATIC DEVICE DETECTION (ADD) | LTEFIELDOA | Admin User | 01-08-2015 00:00:00 |
| Basic Parameters | VZOTADM | Admin User | 11-08-2013 00:00:00 |
| SIM SWAP - CHANGING SIMS WITHIN ONE DEVICE | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| SIM SWAP BETWEEN DEVICES CHANGING APN ASSIGNMENT (NORMAL TO STATIC IP) ON DEVICES | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VERIFICATION OF VZW PRIVATE NETWORK IP APN DYNAMIC (SFO 73578) APN MANUAL UPDATE VALIDATION | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VERIFICATION OF VZW PRIVATE NETWORK IP APN STATIC (SFO 73584) IN 4G ENVIRONMENT | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VERIFICATION OF VZW PRIVATE NETWORK IP APN STATIC (SFO 73584) IN EHRPD ENVIRONMENT | CLASS3APN | Admin User | 01-02-2015 00:00:00 |

| | | | |
|---|---|---|---|
| VERIFICATION OF VZW STATIC IP APN FOR STATIC IP- UNRESTRICTED (SFO 76443) FOR EXISTING DEVICE WITH MOBILE BROADBAND | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VERIFICATION OF VZW STATIC IP APN FOR STATIC IP- UNRESTRICTED (SFO 76443) FOR NEW DEVICE | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VERIFICATION OF VZWINTERNET SERVICE FOR PRIVATE, DYNAMIC (NATD) IP | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VERIFY LTE CONNMO DM TREES | LTEFIELDOA | Admin User | 01-08-2015 00:00:00 |
| VZW STATIC IP APN ADD AND REMOVE FEATURE WHEN DEVICE IS INSERTED INTO LAPTOP AND POWERED BUT NOT CONNECTED | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VZW STATIC IP APN ADD AND REMOVE FEATURE WHEN DEVICE IS POWERED OFF | CLASS3APN | Admin User | 01-02-2015 00:00:00 |

IP VZ_REQ_LTEOTADM_7690

| Test Case Name | Test Plan Id | Created By | Created Date |
|---|---|---|---|
| 01.0401.0401.04VOID OTADM-012-Set Value for APN Data Retry Parameters | LTEFIELDOA | Admin User | 01-08-2015 00:00:00 |
| APN MANAGEMENT TRIGGERED BY MOBILE AUTOMATIC DEVICE DETECTION (ADD) | LTEFIELDOA | Admin User | 01-08-2015 00:00:00 |
| Basic Parameters | VZOTADM | Admin User | 11-08-2013 00:00:00 |

| | | | |
|---|---|---|---|
| SIM SWAP - CHANGING SIMS WITHIN ONE DEVICE | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| SIM SWAP BETWEEN DEVICES CHANGING APN ASSIGNMENT (NORMAL TO STATIC IP) ON DEVICES | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VERIFICATION OF VZW PRIVATE NETWORK IP APN DYNAMIC (SFO 73578) APN MANUAL UPDATE VALIDATION | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VERIFICATION OF VZW PRIVATE NETWORK IP APN DYNAMIC (SFO 73578) EHRPD ENVIRONMENT | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VERIFICATION OF VZW PRIVATE NETWORK IP APN STATIC (SFO 73584) IN 4G ENVIRONMENT | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VERIFICATION OF VZW PRIVATE NETWORK IP APN STATIC (SFO 73584) IN EHRPD ENVIRONMENT | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VERIFICATION OF VZW STATIC IP APN FOR STATIC IP- UNRESTRICTED (SFO 76443) FOR EXISTING DEVICE WITH MOBILE BROADBAND | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VERIFICATION OF VZW STATIC IP APN FOR STATIC IP- UNRESTRICTED (SFO 76443) FOR NEW DEVICE | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VERIFICATION OF VZWINTERNET SERVICE FOR PRIVATE, DYNAMIC (NATD) IP | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VERIFY LTE CONNMO DM TREES | LTEFIELDOA | Admin User | 01-08-2015 00:00:00 |
| VZW STATIC IP APN ADD AND REMOVE FEATURE WHEN DEVICE IS INSERTED INTO LAPTOP AND POWERED BUT NOT CONNECTED | CLASS3APN | Admin User | 01-02-2015 00:00:00 |

| | | | |
|---|---|---|---|
| VZW STATIC IP APN ADD AND REMOVE FEATURE WHEN DEVICE IS POWERED OFF | CLASS3APN | Admin User | 01-02-2015 00:00:00 |

Enabled VZ_REQ_LTEOTADM_7691

| Test Case Name | Test Plan Id | Created By | Created Date |
|---|---|---|---|
| 01.0401.0401.04VOID OTADM-012-Set Value for APN Data Retry Parameters | LTEFIELDOA | Admin User | 01-08-2015 00:00:00 |
| APN MANAGEMENT TRIGGERED BY MOBILE AUTOMATIC DEVICE DETECTION (ADD) | LTEFIELDOA | Admin User | 01-08-2015 00:00:00 |
| Basic Parameters | VZOTADM | Admin User | 11-08-2013 00:00:00 |
| SIM SWAP - CHANGING SIMS WITHIN ONE DEVICE | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| SIM SWAP BETWEEN DEVICES CHANGING APN ASSIGNMENT (NORMAL TO STATIC IP) ON DEVICES | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VERIFICATION OF VZW PRIVATE NETWORK IP APN DYNAMIC (SFO 73578) APN MANUAL UPDATE VALIDATION | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VERIFICATION OF VZW PRIVATE NETWORK IP APN DYNAMIC (SFO 73578) EHRPD ENVIRONMENT | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VERIFICATION OF VZW PRIVATE NETWORK IP APN STATIC (SFO 73584) IN 4G ENVIRONMENT | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VERIFICATION OF VZW PRIVATE NETWORK IP APN STATIC (SFO 73584) IN EHRPD | CLASS3APN | Admin User | 01-02-2015 |

| | | | |
|---|---|---|---|
| ENVIRONMENT | | | 00:00:00 |
| VERIFICATION OF VZW STATIC IP APN FOR STATIC IP- UNRESTRICTED (SFO 76443) FOR EXISTING DEVICE WITH MOBILE BROADBAND | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VERIFICATION OF VZW STATIC IP APN FOR STATIC IP- UNRESTRICTED (SFO 76443) FOR NEW DEVICE | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VERIFICATION OF VZWINTERNET SERVICE FOR PRIVATE, DYNAMIC (NATD) IP | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VERIFY LTE CONNMO DM TREES | LTEFIELDOA | Admin User | 01-08-2015 00:00:00 |
| VZW STATIC IP APN ADD AND REMOVE FEATURE WHEN DEVICE IS INSERTED INTO LAPTOP AND POWERED BUT NOT CONNECTED | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VZW STATIC IP APN ADD AND REMOVE FEATURE WHEN DEVICE IS POWERED OFF | CLASS3APN | Admin User | 01-02-2015 00:00:00 |

IMS Domain VZ_REQ_LTEOTADM_7692

| Test Case Name | Test Plan Id | Created By | Created Date |
|---|---|---|---|
| VZW STATIC IP APN ADD AND REMOVE FEATURE WHEN DEVICE IS POWERED OFF | CLASS3APN | Admin User | 01-02-2015 00:00:00 |

Enable VZ_REQ_LTEOTADM_7697

| Test Case Name | Test Plan Id | Created By | Created Date |
|---|---|---|---|

| | | | |
|---|---|---|---|
| SIM SWAP - CHANGING SIMS WITHIN ONE DEVICE | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| SIM SWAP BETWEEN DEVICES CHANGING APN ASSIGNMENT (NORMAL TO STATIC IP) ON DEVICES | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VERIFICATION OF VZW PRIVATE NETWORK IP APN DYNAMIC (SFO 73578) APN MANUAL UPDATE VALIDATION | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VERIFICATION OF VZW PRIVATE NETWORK IP APN DYNAMIC (SFO 73578) EHRPD ENVIRONMENT | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VERIFICATION OF VZW PRIVATE NETWORK IP APN STATIC (SFO 73584) IN 4G ENVIRONMENT | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VERIFICATION OF VZW PRIVATE NETWORK IP APN STATIC (SFO 73584) IN EHRPD ENVIRONMENT | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VERIFICATION OF VZW STATIC IP APN FOR STATIC IP- UNRESTRICTED (SFO 76443) FOR EXISTING DEVICE WITH MOBILE BROADBAND | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VERIFICATION OF VZW STATIC IP APN FOR STATIC IP- UNRESTRICTED (SFO 76443) FOR NEW DEVICE | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VERIFICATION OF VZWINTERNET SERVICE FOR PRIVATE, DYNAMIC (NATD) IP | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VZW STATIC IP APN ADD AND REMOVE FEATURE WHEN DEVICE IS INSERTED INTO LAPTOP AND POWERED BUT NOT CONNECTED | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VZW STATIC IP APN ADD AND REMOVE FEATURE WHEN DEVICE IS POWERED OFF | CLASS3APN | Admin User | 01-02-2015 00:00:00 |

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Disable VZ_REQ_LTEOTADM_7698

| Test Case Name | Test Plan Id | Created By | Created Date |
|---|---|---|---|
| SIM SWAP - CHANGING SIMS WITHIN ONE DEVICE | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| SIM SWAP BETWEEN DEVICES CHANGING APN ASSIGNMENT (NORMAL TO STATIC IP) ON DEVICES | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VERIFICATION OF VZW PRIVATE NETWORK IP APN DYNAMIC (SFO 73578) APN MANUAL UPDATE VALIDATION | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VERIFICATION OF VZW PRIVATE NETWORK IP APN DYNAMIC (SFO 73578) EHRPD ENVIRONMENT | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VERIFICATION OF VZW PRIVATE NETWORK IP APN STATIC (SFO 73584) IN 4G ENVIRONMENT | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VERIFICATION OF VZW PRIVATE NETWORK IP APN STATIC (SFO 73584) IN EHRPD ENVIRONMENT | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VERIFICATION OF VZW STATIC IP APN FOR STATIC IP- UNRESTRICTED (SFO 76443) FOR EXISTING DEVICE WITH MOBILE BROADBAND | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VERIFICATION OF VZW STATIC IP APN FOR STATIC IP- UNRESTRICTED (SFO 76443) FOR NEW DEVICE | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VERIFICATION OF VZWINTERNET SERVICE FOR PRIVATE, DYNAMIC (NATD) IP | CLASS3APN | Admin User | 01-02-2015 00:00:00 |
| VZW STATIC IP APN ADD AND REMOVE FEATURE WHEN DEVICE IS INSERTED INTO LAPTOP AND POWERED BUT NOT CONNECTED | CLASS3APN | Admin User | 01-02-2015 00:00:00 |

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|---|---|---|---|
| VZW STATIC IP APN ADD AND REMOVE FEATURE WHEN DEVICE IS POWERED OFF | CLASS3APN | Admin User | 01-02-2015 00:00:00 |

IP Indication for SMS VZ_REQ_LTEOTADM_23000

| Test Case Name | Test Plan Id | Created By | Created Date |
|---|---|---|---|
| VZW STATIC IP APN ADD AND REMOVE FEATURE WHEN DEVICE IS POWERED OFF | CLASS3APN | Admin User | 01-02-2015 00:00:00 |

Update Result Reporting VZ_REQ_LTEOTADM_7681

| Test Case Name | Test Plan Id | Created By | Created Date |
|---|---|---|---|
| VZW STATIC IP APN ADD AND REMOVE FEATURE WHEN DEVICE IS POWERED OFF | CLASS3APN | Admin User | 01-02-2015 00:00:00 |

Update - Fatal Error VZ_REQ_LTEOTADM_7682

| Test Case Name | Test Plan Id | Created By | Created Date |
|---|---|---|---|
| AUTHENTICATION SECURITY KEY MATCH | LTEFIELDOA | Admin User | 01-08-2015 00:00:00 |
| AUTHENTICATION SECURITY KEY MIS-MATCH | LTEFIELDOA | Admin User | 01-08-2015 00:00:00 |
| VZW STATIC IP APN ADD AND REMOVE FEATURE WHEN DEVICE IS POWERED OFF | CLASS3APN | Admin User | 01-02-2015 00:00:00 |

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ICCID Extended Node Support VZ_REQ_MMOTADM_8081

| Test Case Name | Test Plan Id | Created By | Created Date |
|---|---|---|---|
| DEVINFO EXTENSION NODE TEST | LTEFIELDOA | Admin User | 01-08-2015 00:00:00 |
| Multimode DM Tree Nodes | VZOTADM | Admin User | 11-08-2013 00:00:00 |
| VZW STATIC IP APN ADD AND REMOVE FEATURE WHEN DEVICE IS POWERED OFF | CLASS3APN | Admin User | 01-02-2015 00:00:00 |

Device Functionality VZ_REQ_MMOTADM_8083

| Test Case Name | Test Plan Id | Created By | Created Date |
|---|---|---|---|
| Multimode DM Tree Nodes | VZOTADM | Admin User | 11-08-2013 00:00:00 |
| VZW STATIC IP APN ADD AND REMOVE FEATURE WHEN DEVICE IS POWERED OFF | CLASS3APN | Admin User | 01-02-2015 00:00:00 |