

Open Development Device Certification Process

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Revision History

Re	Revision History	Date
1.0	Initial ODIS Testing Document	March 2008
2.0	Modifications to add process details, LBS/aGPS and ENAP	June 2009
3.0	Modifications after technical review	
4.0	Modifications after legal review	June 2009
5.0	Adding requirements lock down process	June 2009
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	Section 3.5 – Mentioned new instructions on OD Portal uploads exist on the site.	
17.0	Section 3.3.3 - updated the flow and requirement for MMSC Server Test. Replaced CPE with NDET	
18.0	Section 3.5 – updated the Device Introduction process	
19.0	Section 3.5 – Updated the Device CSV process	
20.0	Section 3.5 – Updated the wait window with cut off time Section 3.6 – Added sample Device requirements	
21.0	Section 3.7 – Updated the Certification Expiration	
22.0	Section 3.3.1 – Concession Accounts All sections – Changed LBS to LBS/aGPS	
23.0	Section 3.5 Updated IMEI/ICCID pair instructions	January 2013
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25.0	Section 3.1 – Updated export control link Section 3.2 – Added LTE M2M SIM to DLD agenda Section 3.4 – Removed recommendation for EDI Section 3.8 – Updated test lab information	July 2014
26.0	Section 3.1 – Added Software Update support for 4G devices	November 2014
27.0	Section 3.1 – OTA ID info Section 3.3.2 – Clarification on test results Section 3.2 – Simplified DLD call agenda Section 3.8 – SGS address change and added Wireless Research Center	August 2015
28	Removed reference section, updated lab contact	October 2016
29	Updated acronyms Added overall flow Added new Required Agreement section Added additional testing sub-sections Updated links Updated Lab contacts Clarified other sections throughout the doc	May 2017
30	Removed ECCN link Updated Required Agreements section Clarified FOTA updates Updated EDI upload section, added EID Updated Lab contacts	March 2018

31	<p>Section 7. Updated Technical contact for Tech Mahindra</p> <p>Section 7. Updated Test lab name from P3 to Umlaut</p> <p>Section 7. Updated Contact for Nokia</p>	Feb 2020
32	<p>Section 3.4.1 Updated conditions for Early Network Access Program devices and Safe For Network devices</p> <p>Section 7. Updated 7Layers into Bureau Veritas</p> <p>Section 7. Added Aircom Labs</p> <p>Section 7. Merged Nokia IOT lab and Motive lab</p> <p>Section 7. Updated information for Approved Verizon 3rd party labs</p>	July 2020
33	<p>Section 7. Added Carve Systems, Spirent, Altredis Partners, and Palindrome as approved 3rd party test labs.</p> <p>Section 3.4.1 Updated conditions for ENAP devices</p> <p>Section 4.2.2 Added Dual Device ID Upload instructions.</p> <p>Updated Section 3.1 to include statement on Verizon FOTA support and IoT device security compliance and testing.</p>	October 2020
34	<p>Section 3.4.1 Updated conditions for ENAP devices using approved embedded modem</p> <p>Added section 3.4.3 Auto-Certification Platform Testing Process Flow</p> <p>Updated Section 3.4.4 for Verizon Services (Verizon Diagnostics, Verizon Baseband FOTA, Verizon Application FOTA)</p> <p>Updated Bureau Veritas lab information</p>	January 2021



1 Objective

The purpose of this document is to define and describe the Open Development Device Certification process, Device testing and conformance requirements* that Devices must meet before they are certified for use on the Verizon Wireless Network. “Device(s)” means the product, equipment, parts, and components tested for OD Compliance.

This document describes the methods and procedures used to certify voice Devices, voice/data Devices, and data only Devices. This includes, but is not limited to, PDAs/Handhelds, data cards, M2M/IoT Devices, embedded PCs, and more.

*Available from web ODP under [‘Requirement & Test Plan Documentation’](#) tab (login required).

2 Glossary and Definition of Terms

aGPS	Assisted GPS
AM	Account Manager
B2B	Business to Business
BIS	Bureau of Industry and Security
CDMA	Code Division Multiple Access
CCATS	Commodity Classification Automated Tracking System
CDG	CDMA Development Group
CA	Certification agreement
CE	<i>Conformité Européenne</i> , "European conformity"
COI	Certificate of Insurance
CSV	Comma-Separated Values
DLD	Device Lock Down
DMD	Device Management Database
DTO	Device Test Owner
EDI	Electronic Data Interchange
EID	eUICC ID (Embedded Universal Integrated Circuit Card) ID
ENAP	Early Network Access Program
ESN	Electronic Serial Number
ECCN	Export Control Classification Number
ICCID	Integrated Circuit Card Identifier
IMEI	International Mobile Equipment Identifier
FIT	Field Interoperability Testing
FOTA	Firmware Over The Air
GCF	Global Certification Forum
IOT	Interoperability Testing
IoT	Internet of Things
ITL	Independent Test Laboratory
LBS	Location Based Services
M2M	Machine to Machine
MEID	Mobile Equipment Identifier
MDN	Mobile Directory Number
MMS	Multi Media Messaging services

MMSC	Multimedia Messaging Service Center
NDET Lab	Network Device Evaluation Test Laboratory
NDRA	National Direct Revenue Assurance
NRB	Network Repair Bureau
NSRA	National SurePay Revenue Assurance
NWRA	National Wholesale Revenue Assurance
OEM	Original Equipment Manufacturer
OD	Open Development
ODP	Open Development Portal
ODPT	Open Development Product Team (Including Business Development, Certification Owners and Account management.)
ODS	Open Development Specification
OTA	Over The Air
PDI	Product Development and Integration
PM	Product Manager
RA	Revenue Assurance
RF	Radio Frequency
RN	Release Notes
SFN	Safe For Network
SUPL	Secure User Plane Location
TECC	Test Entrance Criteria Checklist (Test Campaign)
VSP	Vertical Solutions Provider
WS	Wholesale
VZW	Verizon Wireless

3 Device Compliance Process

3.1 Entrance Criteria and Certification Process

All Devices must be type approved and certified by the United States Federal Communications Commission (FCC) and classified by the Department of Commerce's Bureau of Industry and Security (BIS) before Open Development (OD) Conformance testing can commence.

OEMs or OD Device Developers (collectively, "DEVELOPER,") requesting Verizon Wireless' (VZW) certification for LTE capable Devices must receive GCF certification before OD Conformance testing can commence.

All LTE capable Devices must support radio layer Firmware Over The Air (FOTA) updates. All devices using an approved module that supports Verizon FOTA capabilities must be tested to ensure that the Verizon FOTA capability of the module is still functional.

All chipsets and modules brought for approval or devices that are brought to Verizon for certification must provide appropriate security compliance documentation and/or security compliance test results. The security requirements will be determined during the DLD stage of device submission.

In order for DEVELOPER to access the OD web portal or OD documents, DEVELOPER must execute a Non-Disclosure Agreement (NDA).

Each DEVELOPER will receive a unique VZW-ID after completing NDA. The VZW-ID will be used in conjunction with the submitted Device to form the Device tracking ID. VZW and OD authorized Independent Test Laboratory (ITL) will identify individual Devices prior to Certification using only this Device tracking ID.

3.1.1 Device Entrance Criteria

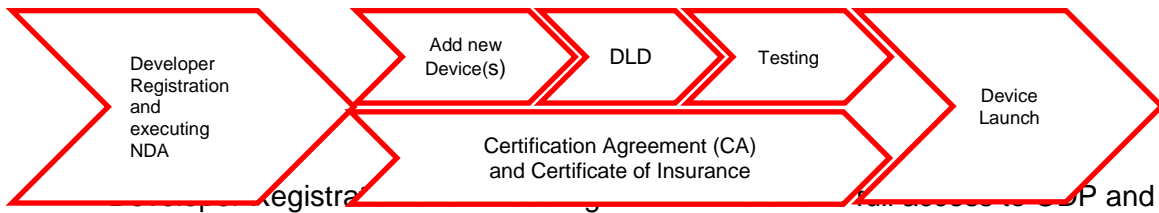
The OD Device Tracking ID

- VZW-ID will be assigned for each DEVELOPER submitting a Device for Conformance
 - Example VZW01000001
- FCC-ID Required Prior to Open Development Conformance
 - FCC Grantee ID (First 3 Characters)
 - FCC Product Code (Remaining up to 14 Characters)
 - <https://www.fcc.gov/oet/ea/granteecode#block-menu-block-4>
 - Example "A1C0123456789012"
- BIS ECCN and CCATS Required Prior to Open Development Conformance
 - Example " 5A992, G0823456"

3.1.2 Overall Certification Process Flow:

Obtaining Device certification and launching a Certified Device on the VZW network involves fulfilling technical and the contractual requirements of the CA. The CA is a

contract issued by Verizon and jointly signed by the DEVELOPER; review can occur in parallel to device registration and testing.



- Add new Device(s) – This involves a five step process on the ODP
 - New Device Info
 - Marketing Info
 - Forecast
 - Release Notes
 - Attaching all Pre-submission Documents
- DLD - Review and lockdown documents
- Testing - Send device(s) to authorized lab for testing
- FOTA – DEVELOPER to provide FOTA update documentation on a test device.
- Completing Contractual Agreements – Fulfilling CA and COI documents are required prior to device certification.
- Device ID Upload and Launch – Loading Device IDs into Verizon Device Management Database (DMD) system.

3.2 Certification Process

- After the DEVELOPER executes a NDA, accounts will be created to access the ODP at <https://opendevelopment.verizonwireless.com/>
- DEVELOPER downloads and reviews the OD certification documentation.
- DEVELOPER adds information regarding the new Device and submits all required information on the ODP and notifies their supporting VZW representative. The registered device name/model number should reflect the marketing name/model number as it appears in any FCC filing or approval.
- A DLD review will be held between DEVELOPER and VZW team. The review will cover the following:
 - Submission Overview
 - Device Certification Agreements
 - Documentation Review
 - Review Test Campaign
 - Review Testing & Schedule
 - Review of Developer’s Sample Devices - Besides ITL, DEVELOPER is required to send 2 samples to VZW ODPT.
 - Complete required compliance testing in Verizon authorized ITL
- Pending the successful completion of the DLD requirements, VZW will upload the Test Campaign (TECC) to the ODP and notify the DEVELOPER and selected ITL with Approve To Start test (ATS).

- A host device is certified using an approved module or chipset. A module or chipset is approved through the ODP. For module and chipset approval, refer to Module Guidelines from Requirement & Test Plan Documentation section of the ODP.

3.3 Required Agreements/Documents

All Open Development Agreements must be executed prior to Device Approval.

- **NDA** – Execution required prior to full access to ODP.
- **CA** – Must be executed before device can be fully certified. This will allow use of Verizon mark with a written request per Verizon Branded Guidelines.
- **COI** – Issued by the DEVELOPER and must be provided to Verizon as proof of valid insurance.

(NOTE: As of January 2018, Verizon Wireless and companies with a current Certification Agreement executed prior to then shall no longer execute an addenda for each newly certified device. Certification of devices will be memorialized in the OD Notice of Certification that contains any device specific requirements and will include the Certification Period for the device).

3.4 OD Compliance Testing

The following figure shows a high level view of the OD - required testing process known as OD Compliance Testing:



Any Device (including a test Device) must have a FCC ID before activation on the Verizon Network.

3.4.1 Early Testing Process Flow

DEVELOPER may request early testing if development is required prior to certification. The ODPT will review the request and approve it if there is a need for live network testing during development.

Early Network Access Program (ENAP)

- **If the DEVELOPER is using a VZW certified module, up to 20 activations can be allowed for developmental purposes.** Without a VZW certified module, up to 2 activations can be allowed for developmental purposes. Upon uploading of test Device IMEIs to the ODP, VZW will load the test Device(s) MEID/ESN/IMEI in DMD. The DEVELOPER should then work with their VZW sales representative to subscribe and activate lines to connect the test Device(s) with VZW network. The test MDNs must be disconnected no later than 60 day after testing is completed. In order to obtain approval for more than 20 test device IMEI activations, the OEM must have

agreed to the terms of the Certification Agreement, and provided the Certification Manager for the device with a detailed business justification detailing: the need for additional test devices; a list of persons/entities who will be using the additional devices; where the additional devices will be used; for what length of time the additional devices be needed; and the current target date for completing device certification. The Verizon Open Development certification team will consider the requests for the additional test devices over the 20 device limit and will approve or deny the request, based on the business justification, at its discretion. If the business case is approved, the device OEM will be allowed to update the additional test device IMEIs for approval by their assigned device certification manager.

- **If the DEVELOPER is using a VZW approved embedded modem, up to 20 activations can be allowed for developmental purposes.** Upon the uploading of test Device IMEIs to the ODP, VZW will load the test Device(s) MEID/ESN/IMEI in DMD. The DEVELOPER should then work with their VZW sales representative to subscribe and activate lines to connect the test Device(s) with VZW network. The test MDNs must be disconnected no later than 60 day after testing is completed. In order to obtain approval for more than 20 test device IMEI activations, the OEM must have agreed to the terms of the Certification Agreement, and provided the Certification Manager for the device with a detailed business justification detailing: the need for additional test devices; a list of persons/entities who will be using the additional devices; where the additional devices will be used; for what length of time the additional devices be needed; and the current target date for completing device certification. The Verizon Open Development certification team will consider the requests for the additional test devices over the 20 device limit and will approve or deny the request, based on the business justification, at its discretion. If the business case is approved, the device OEM will be allowed to update the additional test device IMEIs for approval by their assigned device certification manager.
- DEVELOPER shall not activate or use test devices on the Verizon Wireless network other than for internal testing purposes prior to device certification while such devices are in ENAP testing. ENAP test devices are to be used by the DEVELOPER for development and testing of devices in preparation for certification test activities only. Such test devices should not be activated and used on the Verizon Wireless network in connection with end customer activities.

Safe For Network (SFN) Testing

- **If the DEVELOPER completes SFN testing successfully, up to 500 activations per project can be allowed for further development purposes.** DEVELOPERS must submit the Device information for the ODPT's review and the SFN testing must be conducted at a VZW Authorized ITL.
 - DEVELOPERS submit Device information on the ODP and send a test Device request with supportive reasons and test ESNs/MEIDs/IMEIs.
 - RN, TECC, and Device Solution One Pager are required for SFN.
 - ODPT and NDET team review and approve the request.

Upon successful completion of SFN, DEVELOPER can request up to 500 activations of test Devices. All the SFN activated devices must be kept under the device OEM's own mobile account or ECPD (Enterprise Customer Profile Database) ID account and remain in the possession and control of the device OEM. The device OEM must

also update the device SW to the final certification version once full certification is complete.

- If the DEVELOPER plans to sell the test devices as commercial products after approval, the DEVELOPER must manage these test devices as commercial products and upload them again (e.g., Note: **Test Devices to be sold as production Devices shall be re-uploaded by DEVELOPER as certified Devices via ODP or EDI**).

3.4.2 OD Standard Lab Testing Process Flow

- DEVELOPER should work with ODPT to obtain a TECC.
- DEVELOPER works directly with IOT labs on schedule, payment and complete IOT testing prior to or in parallel with lab conformance testing.
- DEVELOPER chooses and contacts a Verizon authorized ITL from the VZW approved list (see Section 7).
- DEVELOPER submits required Devices and product documentation to the ITL.
- It is responsibility of the DEVELOPER to provide FOTA update documentation (either their own/proprietary solution, from Module vendor, or from Verizon/Motive solution). This can be submitted while the device is in testing, but required with final results.
- The ITL executes VZW approved test campaign based on the TECC.
- The ITL provides test results to ODPT.
- ODPT reviews the test results, along with FOTA solution documentation and either passes, conditionally passes or fails the device.
- After the Device successfully passes testing, ODPT will certify the Device and issue an official notification.

3.4.3 Auto-Certification Platform Testing Process Flow

The Auto-Certification Platform (ACP) is a simple, cost-effective platform that enables OEM self-testing for supported GCF and Verizon test plans for devices, chipsets and modules.

Before the ACP can be shipped to an OEM the following conditions must be met:

- Confirm device readiness by completing Device lockdown (DLD) with Certification manager
- Certificate of Insurance (COI) completed
- Review the ACP Prerequisites document (including Host PC requirements) shared by Certification manager during DLD and confirming that OEM is able to meet them
- Submit account registration at <https://vzwdt.com/acportal/>

The ACP can only be shipped to business addresses in the United States, and only to persons directly employed by the OEM. The ACP cannot be sent internationally by the receiving company to locations outside the United States without prior approval of Verizon. Export Regulations mandate that it can only be shipped by OEM to approved

countries. Please check with your certification manager on international shipping destinations.

For any issues with ACP setup and testing, there is a ticketing system setup to contact ACP support and details are provided in the Prerequisites document.

3.4.4 Additional Testing for Verizon Services (If features are supported by the device)

OD Standard Lab testing completion is a prerequisite to additional testing. Details for additional testing are available in the Requirement and Test Plan Documentation section of the ODP.

3.4.4.1 LBS/aGPS/SUPL Application Testing Process Flow

After OD Standard Lab Test completion, DEVELOPER may start the LBS/aGPS/SUPL process. Refer to “LBS/aGPS Certification Submission Package” for more information.

3.4.4.2 MMS Device Testing Process Flow

The MMS process must be completed before Device certification for Devices that are MMS capable and require the use of the Verizon MMSC server. Refer to the [‘VZW OD MMSC Server Test Process’](#) for more information.

3.4.4.3 Private Network Testing

Applicable to Devices using the Verizon Private Network. Refer to Private Network section on ODP.

3.4.4.4 Device Management Services

Refer to Verizon OMADM 1.2 Reference Client Package or Verizon light weight M2M (LWM2M) OTADM Reference Client Package on ODP.

3.4.4.5 Verizon Diagnostics

All modules and chip-on-board devices OEMs have to run LWM2M Diagnostics testing. Refer to Reqs-LWM2M document and the ACP support team to utilize ACP box for Verizon LWM2M Diagnostics testing.

3.4.4.6 Verizon Base-band FOTA

Verizon Firmware Over The Air (FOTA) is a Mobile Software Management (MSM) technology in which the module’s (or chipset’s) base-band firmware can be wirelessly upgraded by Verizon. Verizon base-band FOTA uses OMADM or OMA LWM2M industry standards. More information can be found in the “OD FOTA Compliance Instructions and Testing Guidelines” document under ‘Device Management Services’ on the OD Partner Portal.

3.4.4.7 Verizon Application FOTA

Verizon Firmware Over The Air (FOTA) is a Mobile Software Management (MSM) technology in which the application (AP) firmware of a host device can be wirelessly upgraded by Verizon. Verizon Firmware Over The Air (FOTA) uses OMADM or OMA LWM2M industry standards.

3.4.5 Inactivity

If the testing status remains inactive for more than 2 months, the certification status will be changed to FAIL. The Device will be subject to re-evaluation or re-submission for certification and may require complying to most recent VZW Requirements.

4 Post Certification Device ID Upload Procedure

After the Device is approved and before the Device goes to market, the Device must be entered into the VZW DMD to allow future activation of a certified Device. This Process is known as the Device identification upload (ESN/MEID for 3G Devices or-IMEI for 4G Devices).

The DEVELOPER can upload the production Device identifications using one of the following approaches:

1. EDI
2. ODP

If one of the above two upload methods is not followed, the VZW' system will prevent activation of the Devices.

4.1 EDI

Electronic Data Interchange (EDI)

- Refer to the “Electronic Data Interchange (EDI) Document” section on the ODP for more information

4.2 OD ODP

4.2.1 Single Device ID Upload

- DEVELOPER captures all of the Device identifications (ESNs/MEIDs/IMEIs) in a CSV file or text file as followed:
 - The ESNs/MEIDs/IMEIs will start on the first line of the first column. For Devices with IMEI & ICCID pairings the IMEIs will be placed in column A and ICCIDs will be placed in column B
 - The name of the file should not contain any special characters (e.g. spaces, dashes, quotation marks, etc.) and must contain the make, model, and total number count of ESNs/MEIDs/IMEIs or IMEI/ICCIDs loaded).
 - Example of the CSV or .txt file:
File Name: CompanyXYZ_ProductABC_5.csv

	A
1	A00000028BC821
2	A00000028BC822
3	A00000028BC823
4	A00000028BC824
5	A00000028BC825

ESN/MEID/IMEI:

	A	B
1	A1234567890123	1234567890123450
2	B1234567890123	1234567890123451
3	C12345678901234	1234567890123452

- IMEI/ICCID pair:
- IMEI/EID pair (txt or csv):

```

TEST_IMEI_EID_PAIR_UPLOAD.txt - Notepad
File Edit Format View Help
359271090000005 8903302331133000000000227XXXXXX
35927109000000XX 8903302331133000000000227XXXXXX
35927109000000XX 8903302331133000000000227XXXXXX
35927109000000XX 8903302331133000000000227XXXXXX
35927109000000XX 8903302331133000000000227XXXXXX
35927109000000XX 8903302331133000000000227XXXXXX
35927109000000XX 8903302331133000000000227XXXXXX
    
```

	A	B	C
1	3.59271E+14	8.9033E+31	
2	3.59271E+14	8.9033E+31	
3	3.59271E+14	8.9033E+31	
4	3.59271E+14	8.9033E+31	
5	3.59271E+14	8.9033E+31	
6	3.59271E+14	8.9033E+31	

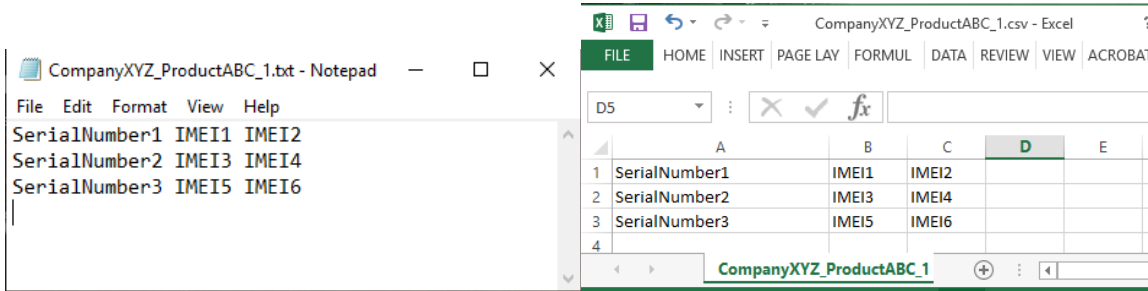
- DEVELOPER logs into ODP, clicks on the “Upload ESN/MEID” link/tab next to the approved Device.
- On the upload screen, select the format of the serial numbers that will be uploaded. The format must be one of the following:
 - IMEI (15) numeric or alpha
 - MEID (14) alpha numeric only
 - ESN HEX (8) alpha numeric only
 - IMEI/ICCID Pair- IMEI(15) numeric or alpha & ICCID (20) alpha only
 - IMEI/EID Pair – IMEI(15) numeric or alpha & 32 alphanumeric hexadecimal

- Once the DEVELOPER uploads the CSV or txt file, an email is automatically sent to the DEVELOPER providing notice that an ESN/MEID/IMEI file has been uploaded and automatically approved.
- The Device identification (ESNs/MEIDs/IMEIs or IMEI/ICCID pairs) provided in the CSV approved file will take up to 15 minutes to load into the VZW DMD system and will be ready for activation then.
- **Test Devices to be sold as production Devices shall be re-uploaded by DEVELOPER as certified Devices via ODP or EDI.**

4.2.2 Dual Device ID Upload

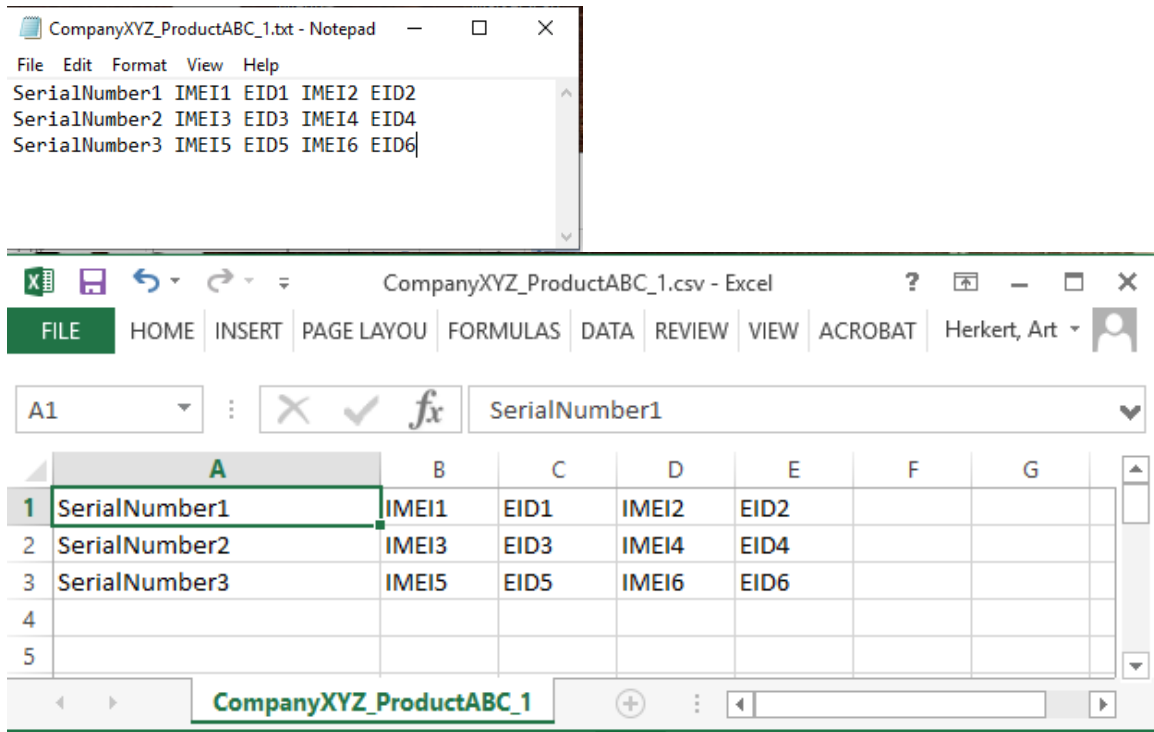
4.2.2.1 2 Physical SIMs mapped to a Single Device SKU

- DEVELOPER captures all of the Device identifications (Serial Number, Device IMEI1, Device IMEI2) in a CSV file or text file as follows:
 - The Serial Numbers will start on the first line of the first column. Device IMEI1 will be stored in the second column, and Device IMEI2 will be stored in the 3rd column.



4.2.2.2 2 Electronic SIMS

- DEVELOPER captures all of the Device identifications (Serial Number, Device IMEI1, EID1, Device IMEI2, EID2) in a CSV file or text file as follows:
 - The Serial Numbers will start on the first line of the first column. Device IMEI1 will be stored in the 2nd column, EID1 will be stored in the 3rd column, Device IMEI2 will be stored in the 4th column, and EID2 will be stored in the 5th column.



4.2.2.3 1 Physical SIM and 1 Electronic SIM

- DEVELOPER captures all of the Device identifications in a CSV file or text file.
- The order of the device elements will be dependent on how the device OEM has selected the SIM types in the ODP.

Hardware, Software, SIM Info

OS, Network IP, Messaging

Hardware and Additional Features

Certification & Forecast

Test Lab, User Guide & Support Doc

SIM

Does this device support Dual SIMs?

Yes
 No

SIM1

SIM Installation Method*

Please select

USIM ISIM Support

Yes
 No

CSIM Support

Yes
 No

eUICC Support

Yes
 No

eUICC Type [Learn More](#)

Please select

SIM Adaptor Form Factor* ([Get Compatible SIM SKUs Info](#))

Standard Nano SIM (4FF)

SIM2

SIM Installation Method*

Please select

USIM ISIM Support

Yes
 No

CSIM Support

Yes
 No

eUICC Support

Yes
 No

eUICC Type* [Learn More](#)

E - electronic SIM default to Verizon for IoT/M2M

SIM Adaptor Form Factor*

Please select

When eUICC Support is No, the eUICC type is not required, and a EID does not need to be uploaded with the device IMEI.

When eUICC Support is Yes, the eUICC type is required, and a EID needs to be uploaded with the device

- If the SIM is selected with eUICC support as No, only the device IMEI1 or device IMEI/ICCID pair will required. If the SIM is selected with eUICC support as Yes, the Device IMEI and associated EDI will need to be provided.
- The following table shows the possible combinations of SIM types and required information.

<u>SIM Selection in ODP</u>	<u>Required Identifiers in uploaded CSV or text file</u>
Physical SIM, Electronic SIM	Device Serial Number, IMEI1, EMEI2, EID2
Physical SIM/UCCID pair, Electronic SIM	Device Serial Number, IMEI1, UCCID1, IMEI2, EID2
Electronic SIM, Physical SIM	Device Serial Number, IMEI1, EID1, IMEI2



5 OD Certification Agreement Violation Process Flow

Upon knowledge of any Rogue Devices (unapproved Device or approved Device harming the network), Applications or Violations to the CA with VZW the following will take place:

- ODPT notifies DEVELOPER of Device compliance issue (rogue Devices or applications detected, CA violations)
- Developer will ship 2 sample Devices within 48 hours upon receiving the formal request from Verizon for network evaluation.
- VZW retains the right to restrict or deactivate the OD Device if VZW has determined the Device to be harmful to the Network and its end users and de-certify it if necessary.

If a Device fails to comply with the OD Specification, Verizon may de-certify the Device or take any necessary steps to protect the Network and its end-users, including, but not limited to, (a) no provisioning of additional units of the Device on the Network, (b) removal of the Device from the OD website that lists current certified devices, (c) notification to Device end-users of Network issues related to the failure to comply with the OD Specification that impact the Device end-users' service on the Network.

6 Device Evolution, Maintenance & Regression Testing Process Flow

6.1 Device Evolution:

At any time, in case of any updates to the certified software or hardware, DEVELOPER must notify ODPT and provide all submission documentation to the ODPT

- DEVELOPER provides all submission documents with the Device changes in detailed descriptions
- ODPT/NDET determines the level of testing required based on the updated Device.
- DEVELOPER initiates Device Maintenance Release Testing Flow

6.2 Device Maintenance & Regression Testing Process

- DEVELOPER submits updated submission documents to the ODPT/NDET Lab for evaluation, and coordinates with the OD Authorized ITL to execute regression testing (in coordination with VZW NDET Lab).
- After the regression test criteria are completed for the Device, the OD authorized ITL forwards the results to the VZW (ODPT & NDET Lab) to verify that the Device is compliant.
- After the Device successfully passes testing, the ODPT will certify the Device Maintenance Release and issue official notification.

Test Lab Contact information

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<u>APPROVED TESTING LOCATION 3</u>		
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