LOS ANGELES REGIONAL INTEROPERABLE COMMUNICATIONS SYSTEM AUTHORITY

JOHN RADELEFF   SENT CORRESPONDENCE BY:
INTERIM EXECUTIVE DIRECTOR   E-MAIL

August 22, 2016

ADDENDUM D
REQUEST FOR STATEMENT OF QUALIFICATIONS
LOS ANGELES REGIONAL INTEROPERABLE COMMUNICATIONS SYSTEM – PUBLIC SAFETY BROADBAND NETWORK (PSBN) DEVICES
RSFQ NO. LA-RICS 010

This Addendum D forms a part of the Request for Statement of Qualifications (RFSQ) for the Los Angeles Regional Interoperable Communications System (LA-RICS) – Public Safety Broadband Network (PSBN) Devices (RFSQ No. LA-RICS 010), issued May 14, 2015.

REVISIONS

Please note that added verbiage is shown in **bold** and deleted language is ~~struck out~~.

1.   RFSQ, Section 1.1, shall be deleted in its entirety and replaced with the following language:

       1.0   Purpose

              The Los Angeles Regional Interoperable Communications Systems (LA-RICS) Authority (hereinafter "Authority") is issuing this Request for Statement of Qualifications (RFSQ) to seek qualified Vendors to enter into a Master Agreement with the Authority to procure Long Term Evolution (LTE) User Equipment (UE) for the Authority and its user agencies to meet its telecommunication needs for its' Public Safety Broadband System (PSBN) currently under construction.

              Based on data surveyed from the Authority's user agencies, the Authority estimates that user agencies will initially need up to approximately 12,000

devices, and this may grow up to 35,000 over three (3) years. Such devices must be interoperable with the Authority's PSBN for the intended use of user agencies public safety first and secondary responders.

The PSBN Device Categories are as follows:

- Category 1 – In-Vehicle Routers
- Category 2 – USB Modems
- Category 3 – Smartphones
- Category 4 – Tablets
- Category 5 – Outdoor Units
- Category 6 – Portable Hotspots
- Category 7 – mPCIe LTE Modems
- Category 8 – Universal Integrated Circuit Cards (UICC)
- **Category 9 – Routers**
- **Category 10 – LTE LMR Radios**

~~The PSBN project schedule is very aggressive with a final PSBN System Acceptance deadline of August 15, 2015. In order for the build out of the PSBN to meet the developmental milestones of the Project Schedule and ensure that the Authority's user agencies' needs are met, Vendors will be required to adhere to an aggressive schedule as follows:~~

~~✔ Provide devices for interoperability testing (IOT) as early as May/June 2015.~~

~~✔ Provide devices in quantities for installation as early as June 2015 (vehicle based products – note, due to the time it takes to arrange installation in operational public safety vehicles, installed devices are needed earlier) and quantities for distribution (non-vehicle based) by as early as June 2015.~~

~~Please also note that the Authority may seek to procure devices funded by the Authority's Broadband Technology Opportunity Program (BTOP) grant. For those devices purchased with BTOP grant funds, they will need to be deployed by August 15, 2015. However, the Authority and its user agencies may require purchases after this BTOP deadline.~~

The Authority will administer the Master Agreements and initiate Request for Bids similar in form to Appendix C (Sample Request for Bid) for all Device Categories set forth in Appendix B (PSBN Device Categories) for

the Authority's Member agencies, subscribers and affiliates, as well as other user agencies of the PSBN, and Federal and State agencies associated with or participating in the PSBN and are interested in procuring PSBN devices (hereinafter "Permitted Purchasers").

2. RFSQ, Section 1.7, shall be deleted in its entirety and replaced with the following language:

1.7 PSBN Device Categories Minimum Qualifications

Interested and qualified Vendors that have devices that meet the Minimum Qualifications and certification/testing requirements for specific PSBN Device Categories set forth in Appendix B (PSBN Device Categories) and as further outlined below, are invited to submit an SOQ.

Appendix B (PSBN Device Categories) defines in great detail the specific Minimum Qualifications and certification/testing requirements each Vendor's device will be required to meet, to qualify for each of the PSBN Device Categories that it is interested in applying for.

APPENDIX B PSBN DEVICE CATEGORIES (REFER TO APPENDIX B)					
Category No.	Category Title	Device Category Minimum Qualifications	Description	Device Form Factor	Use
1	In-Vehicle Routers	Refer to Category 1 of Appendix B	Router with multiple modems, including at least Band Class 14 and additional options such as Ethernet, USB and Wi-Fi connectivity.	▪ Typical: 5.5 x 6.0 x 1.9 inches. Or other sizes to meet specific vehicle installation needs such as a motorcycle ▪ Mountable ▪ Heat baffles for cooling ▪ External connectors for antenna(s) ▪ External ports for Ethernet connectivity ▪ External USB ports	▪ Installed in a vehicle it provides the data session connectivity for the vehicle's devices. ▪ Primary use is for internal first responder systems and applications to access the Band Class 14 LTE system or secondary LTE carrier to connect internal vehicle equipment via Ethernet, USB or Wi-Fi and enhance coverage through the use of an external antenna(s). ▪ Primary Vehicles to use this variant will be Police cars, Police SUVs, Police Motorcycles, Fire Trucks, other fire vehicles, Paramedic vehicles, patrol and fire boats, and possibly helicopters.
2	USB Modems	Refer to Category 2 of Appendix B	USB modem that provides LTE radio connectivity for devices that support USB modems.	USB, 3.7 X 1.3 X 0.5 inches or other sizes as defined by the manufacturer.	USB connection into laptops (MDTs), tablets, and in-vehicle routers to provide LTE connectivity.
3	Smartphones	Refer to Category 3	LTE Smartphone that operates on	▪ Typical: 5.55 x 2.97 x 0.53 inches	▪ Handheld smartphone for data and non-mission critical

APPENDIX B PSBN DEVICE CATEGORIES (REFER TO APPENDIX B)					
Category No.	Category Title	Device Category Minimum Qualifications	Description	Device Form Factor	Use
		of Appendix B	Band 14 as well as at least one other carriers networks.	▪ Minimum 4.7 inch touch screen. ▪ Ports for Audio headphones ▪ Micro-USB ▪ Controls for volume, power, etc. ▪ Hardened Case and screen ▪ Speakerphone capability	voice services. ▪ Hardened for rugged use
4	Tablets	Refer to Category 4 of Appendix B	Rugged tablet computer	Typical: 9.0 x 6.5 x 1.3 inches or other suitable dimension as specified by the manufacturer ▪ USB ports ▪ Power ports ▪ Battery ▪ Hardened Case ▪ Touch screen ▪ Ability to add external keyboard	▪ May be fixed in a vehicle, or carried by a First Responder. ▪ Multiple screen sizes to meet implementation applications.
5	Outdoor Units	Refer to Category 5 of Appendix B	Fixed outdoor LTE CPE (ODU). Ethernet cable is used to connect users to the ODU.	▪ Outdoor device typically small profile. ▪ e.g. 4.7 x 8.5 x 2.6 inches.	▪ Fixed to an exterior wall of a building providing in building LTE connectivity. ▪ Optimal placement and high-gain antennae provides superior performance.
6	Portable Hotspots	Refer to Category 6 of Appendix B	Portable Hotspot with single or multiple LTE modems with Wi-Fi and micro-USB connectivity.	▪ Typical: 4.05 x 2.88 x 0.34 inches. 4.26 ounces. ▪ Multiple USB port access ▪ AC/DC Power adapter ▪ Battery ▪ UICC slot	Allows the sharing of a device's LTE data connection with other devices on the same network
7	mPCIe LTE Modems	Refer to Category 7 of Appendix B	LTE modem that provides the LTE radio connectivity for devices.	mPCIe (Full mini F1) 2.0 x 1.18 x 0.2 inches	Embedded in laptops (MDTs), tablets, and routers (esp. mounted in vehicles) to provide LTE connectivity. Special note: The modem requires a Universal Integrated Circuit Card (UICC).
8	Universal Integrated Circuit Cards (UICC)	Refer to Category 8 of Appendix B	Refer to Category 8 of Appendix B	Refer to Category 8 of Appendix B	Refer to Category 8 of Appendix B
9	**Routers**	**Refer to Category 9 of Appendix B**	**Router with multiple modems, including at least Band Class 14, and additional options such as Ethernet, USB and Wi-Fi connectivity.**	▪ **Typical: 5.5 x 6.0 x 1.9 inches. Or other sizes to meet specific use cases** ▪ **Mountable** ▪ **External ports for Ethernet connectivity**	**Provide wired or wireless data session connectivity.** • **Primary use is for internal first responder systems and applications to access the B14 LTE system or secondary LTE carrier Example of usage: Connect surveillance cameras, connect public safety offices to Band 14, and connect sensor networks or other machine to machine (M2M) configurations.**
10	**LTE LMR**	**Refer to**	**LTE LMR Radio**	▪ **Typical: 5.55 x 2.97**	**Handheld LTE LMR Radio**

APPENDIX B PSBN DEVICE CATEGORIES (REFER TO APPENDIX B)					
Category No.	Category Title	Device Category Minimum Qualifications	Description	Device Form Factor	Use
	Radios	Category 10 of Appendix B	that operates on Band Class 14 as well as at least one other carriers networks.	x 0.53 inches ▪ Minimum 4.7 inch touch screen. ▪ Ports for Audio headphones ▪ Controls for volume, power, etc. ▪ Hardened Case and screen ▪ Speakerphone capability	with Band14 capability for data and non-mission critical voice services. ▪ Hardened for rugged use

3.   RFSQ, Section 2.5.5.2, shall be deleted in its entirety and replaced with the following language:

2.5.5.2   PSBN Device Categories Compliance Matrix

SOQ Form 3 (PSBN Device Categories Compliance Matrix) of Appendix A (Required Forms) is comprised of a separate compliance matrix for each PSBN Device Category as follows:

▪ Category 1 – In-Vehicle Routers
▪ Category 2 – USB Modems
▪ Category 3 – Smartphones
▪ Category 4 – Tablets
▪ Category 5 – Outdoor Units
▪ Category 6 – Portable Hotspots
▪ Category 7 – mPCIe LTE Modems
▪ Category 8 – Universal Integrated Circuit Cards (UICC)
▪ **Category 9 – Routers**
▪ **Category 10 – LTE LMR Radios**

Vendors shall complete in its entirety and submit the appropriate SOQ Form 3 (PSBN Device Categories Compliance Matrix) of Appendix A (Required Forms) for each device and each PSBN Device Category for which the Vendor intends to qualify for. For example, if a Vendor intends to qualify a device for Category 1 (In-Vehicle Routers) and an additional device for Category 6 (Portable Hotspots), then the Vendor must complete the respective PSBN Device Matrix for Category 1 (In-Vehicle

Routers) and Category 6 (Portable Hotspots) only. The Vendor does not need to submit a PSBN Device Matrix for the remaining Categories.

Vendors shall use SOQ Form 3 (PSBN Device Categories Compliance Matrix) to demonstrate that each device it intends to qualify for meet the requisite Minimum Qualifications and the requisite certification/testing for each PSBN Device Category that the Vendor intends to qualify for pursuant to Appendix B (PSBN Device Categories) and Section 1.7 (PSBN Device Categories Minimum Qualifications) of this RFSQ. Vendors may submit additional PSBN Device Compliance Matrices at some future date should a new device(s) meet the requirements become available.

The Authority, in its sole discretion, will determine whether the information provided by the Vendor in SOQ Form 3 (PSBN Device Compliance Matrix), for the specific device(s) the Vendor is seeking to qualify for, demonstrates that the Vendor's device(s) qualifies under that specific PSBN Device Category as set forth in Appendix B (PSBN Device Categories).

Vendors whose devices meet the Minimum Qualifications for a particular PSBN Device Category(ies) and meet the requisite Certifications/Test Results at the time of SOQ submission for the PSBN Device Category(ies) that the Vendor is seeking to qualify for as set forth in Appendix B (PSBN Device Categories) will qualify for a Master Agreement.

However, in the event that a Vendor's device meets the Minimum Qualifications for a particular PSBN Device Category(ies), but does not have the requisite Certifications/Test Results pursuant to Appendix B (PSBN Device Categories) at the time of SOQ submission, the Vendor will qualify for a Master Agreement provided Vendor agrees to each of the following requirements:

1. Vendor shall secure the requisite Certifications/Test Results for each device the Vendor is qualified for, pursuant to Appendix B (PSBN Device Categories), by no later than June 30, 2017.

2. Vendor shall guarantee that the Warranty Period for any PSBN Devices purchased under the Request for Bid process will be extended by the time period it takes Vendor to complete all the

Minimum Qualifications regarding Certifications/Test Results pursuant to Appendix B (PSBN Device Categories), and such Certifications/Test Results are received and approved by the Authority.

3.   Vendor shall be responsible at its sole cost, with providing the Authority with compliant PSBN Devices that pass certification, and will be responsible for making any changes needed to devices already deployed to meet certification, which may include but is not limited to, field modification of any deployed devices, or a complete replacement of a device if needed.

4.   Vendor shall be responsible for any harm the PSBN Devices cause to the PSBN System, and Vendor shall be responsible for all costs associated with restoring the PSBN System to a fully operational condition.

5.   Vendor agrees that any and all costs associated with device Certifications/Test Results shall be borne solely of the Vendor.

6.   Failure of Vendor to secure said Certification/Test Results by no later than June 30, 2017, to bring its device(s) into compliance with the Minimum Qualifications pursuant to Appendix B (PSBN Device Categories), may result in Vendor's Master Agreement being terminated in accordance with Paragraph 47.0 (Termination for Default) of Appendix D (Sample Master Agreement). Additionally, Vendor may be required to refund the Authority and/or Permitted Purchaser, as set forth in the Work Order, in full for the Total Maximum Amount of PSBN Devices purchased under a Work Order, within sixty (60) business days of notification from the Authority that Vendor's Master Agreement is being Terminated for Default in accordance with Paragraph 47.0 (Termination for Default) of Appendix D (Sample Master Agreement).

Failure to complete the SOQ Form 3 (PSBN Device Categories Compliance Matrix) for the specific category(ies) which the Vendor is seeking to qualify for may result in the SOQ being disqualified without further consideration in the Authority's sole discretion. If an SOQ is disqualified, and a Vendor remains interested in becoming a

Qualified Contractor, Vendor shall resubmit the SOQ package in its entirety in accordance with this RFSQ.

4.   Appendix A (Required Forms), SOQ Form 2 (PSBN Device Categories Checklist), is deleted in its entirety and replaced with Enclosure 1 (Appendix A, SOQ Form 2, PSBN Device Categories Checklist) to reflect the inclusion of additional PSBN Device Categories enclosed with this Addendum D.

5.   Appendix A (Required Forms), SOQ Form 3.9 (PSBN Device Categories Compliance Matrix – Category 9 [Routers]), is added in its entirety to the RFSQ with Enclosure 2 (Appendix A, SOQ Form 3.9, PSBN Device Categories Compliance Matrix – Category 9 [Routers]) to reflect the inclusion of an additional PSBN Device Category enclosed with this Addendum D.

6.   Appendix A (Required Forms), SOQ Form 3.10 (PSBN Device Categories Compliance Matrix – Category 10 [LTE LMR Radios]), is added in its entirety to the RFSQ with Enclosure 3 (Appendix A, SOQ Form 3.10, PSBN Device Categories Compliance Matrix – Category 10 [LTE LMR Radios]) to reflect the inclusion of an additional PSBN Device Category enclosed with this Addendum D.

7.   Appendix B (PSBN Device Categories) is deleted in its entirety and replaced with Enclosure 4 (PSBN Device Categories) to reflect the inclusion of additional PSBN Device Categories enclosed with this Addendum D.

8.   Appendix B (PSBN Device Categories, Category 9 [Routers]) is added in its entirety to the RFSQ with Enclosure 5 (Appendix B, PSBN Device Categories, Category 9 [Routers]) to reflect the inclusion of an additional PSBN Device Category enclosed with this Addendum D.

9.   Appendix B (PSBN Device Categories, Category 10 [LTE LMR Radios]) is added in its entirety to the RFSQ with Enclosure 6 (Appendix B, PSBN Device Categories, Category 10 [LTE LMR Radios]) to reflect the inclusion of an additional PSBN Device Category enclosed with this Addendum D.

Since the Authority will accept Statements of Qualifications (SOQs) on an ongoing basis throughout the duration of the Master Agreement to qualify Vendors, it is in a Vendor's and/or Qualified Contractor's best interest to check www.la-rics.org and http://camisvr.co.la.ca.us/lacobids/ for any updates to this RFSQ. In addition, all changes to the RFSQ from this Addendum D will be reflected on www.la-rics.org and http://camisvr.co.la.ca.us/lacobids/. Except as expressly modified by this Addendum D,
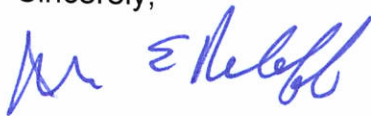
all other terms and conditions of this RFSQ shall remain unchanged.

If you have any questions, please contact Ms. Melissa Saradpon at (323) 881-8289 or at Melissa.Saradpon@la-rics.org.

Sincerely,

JOHN RADELEFF
INTERIM EXECUTIVE DIRECTOR

Enclosures

MS:mbc
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PSBN DEVICE CATEGORIES CHECKLIST

Vendor shall complete this form and include it within the SOQ in accordance with Section 2.5.5.1 (PSBN Device Categories Checklist). **Vendor must check <u>each</u> PSBN Device Category Vendor seeks to qualify for.**

VENDOR NAME: _____

☐   **CATEGORY 1:**   In-Vehicle Routers

☐   **CATEGORY 2:**   USB Modems

☐   **CATEGORY 3:**   Smartphones

☐   **CATEGORY 4:**   Tablets

☐   **CATEGORY 5:**   Outdoor Units

☐   **CATEGORY 6:**   Portable Hotspots

☐   **CATEGORY 7:**   mPCIe LTE Modems

☐   **CATEGORY 8:**   Universal Integrated Circuit Cards (UICC)

☐   **CATEGORY 9:**   Routers

☐   **CATEGORY 10:** LTE LMR Radios

PSBN DEVICE CATEGORIES COMPLIANCE MATRIX

CATEGORY 9 – ROUTERS

Description	Device Form Factor	Use
Router with multiple modems, including at least Band Class 14, and additional options such as Ethernet, USB and Wi-Fi connectivity.	• Typical: 5.5 x 6.0 x 1.9 inches. Or other sizes to meet specific use cases • Mountable • External ports for Ethernet connectivity	Provide wired or wireless data session connectivity. • Primary use is for internal first responder systems and applications to access the B14 LTE system or secondary LTE carrier Example of usage: Connect surveillance cameras, connect public safety offices to Band 14, and connect sensor networks or other machine to machine (M2M) configurations.

VENDOR NAME:

DEVICE NAME:

DEVICE MODEL:

DEVICE VERSION:

Reference No.	Router Requirements	Device Mandatory Minimum Qualifications (X = Yes)	Vendor's Device Compliant? (Vendor shall mark column with X)		Vendor Comments
			YES	**NO**	
LTE RF Elements				
1.1	Device must support Band Class 14 (BC14_UE).	X			
1.2	Device is a Power Class 3 UE.	X			
1.3	BC14_UE is a 3GPP Category 3 or 4 device.				
1.4	BC14_UE has external antenna ports to allow for vehicle rooftop mounting of antenna for all functions – MIMO LTE, Wi-Fi and GPS.				
1.5a	Device simultaneously supports B14 and one commercial wireless carrier operations.				
1.5b	Device can simultaneously support two commercial carriers. Identify each carrier supported.				
1.6	Device can simultaneously support B14 and two or more commercial wireless carrier operations (desired). Identify each carrier supported.				
1.7	Device is supplied with Antenna Kit, cables, and other associated parts to complete installation of the device in a vehicle: motorcycle, car, SUV or truck as specified by agency.	X			
UE Characteristics				
1.8	LTE modem(s) can be installed in the device is the field without voiding its warranty				
1.9	UICC(s) can be installed in the device in the field without voiding its warranty	X			
1.10	There is a unique UICC for each mobile service provider (LTE band) supported in the device.				
1.11	Device supports interworking with the USIM/USAT applications in the UICC per 3GPP 31.101, 31.102 and 31.111.	X			

Reference No.	Router Requirements	Device Mandatory Minimum Qualifications (X = Yes)	Vendor's Device Compliant? (Vendor shall mark column with X)		Vendor Comments
			YES	NO	
1.12	Device is fully compliant with all FCC Technical Advisory Board minimum requirements. Ref: http://apps.fcc.gov/ecfs/document/view?id=7021919873	X			
1.13	Device meets operational conditions of ambient temperature of 0 to 130 degrees Fahrenheit under MIL SPEC 810G. Test data or certification must be on record with the LA-RICS Authority.	X			
1.14	Device meets operational ambient conditions of temperature of -22 to 140 degrees Fahrenheit or better. MIL SPEC 810G. Test certification must be on record with the LA-RICS Authority.				
1.15	Device operational ambient temperature of -22 to 170 degrees Fahrenheit or better is desired. Test certification must be on record with the LA-RICS Authority.				
1.16	Device must pass shock resistant to 90 cm drop on any of six sides under MIL SPEC 810. Test data or certification must be on record with the LA-RICS Authority.				
1.17	Device has at least one Ethernet RJ-45 port (10/100/1000).	X			
1.18	Device has two or more Ethernet RJ-45 ports (10/100/1000).				
1.19	Device has one or more USB 2.0 ports.				
1.20	Device has one or more USB 3.0 ports.				
1.21	Device supports an OBD- II interface.				
1.22	Device supports HDOBD interface.				
1.23	Device must meet IEC 60529 or equivalent for intrusion protection (IP) of IP54 or better without the use of a third party enclosure. IEC test data or certification must be on record with the LA-RICS Authority.				
1.24	Device must meet IEC 60529 or equivalent for IP66 or better without the use of a third-party enclosure. IEC test data or certification must be on record with the LA-RICS Authority				

Reference No.	Router Requirements	Device Mandatory Minimum Qualifications (X = Yes)	Vendor's Device Compliant? (Vendor shall mark column with X)		Vendor Comments
			YES	**NO**	
1.25	Installation kit, mounting hardware and instructions required to maintain UL and other applicable safety certification(s).				
1.26	Power accessories: All necessary parts including, but not limited to connectors and harnesses to power the vendor's router via a nominal 10 - 30 VDC power source (e.g. vehicle battery).	X			
1.27	Antenna provided for LTE operations across all supported bands with 3G fallback, 15 ft (or similar) antenna cabling with connectors.				
1.28	GPS antenna available (specify connector)				
1.29	Wi-Fi antenna available (specify connector)				
1.30	7-foot Ethernet cable available as an option or procured separately				
1.31	Connector accessory: A locking mechanism for connectors to solidly fasten USB to device.				
1.32	Warranty and any offerings for extended warranties for the device must be on record with the LA-RICS Authority.	X			
1.33	Provide installation documentation.				
Motorcycle Specific UE Requirements					
1.34	Device is certified vibration resistant for motorcycle transportation model using MIL STD-810G, or equivalent. Test certification must be on record with the LA-RICS Authority.				
1.35	Device has a small profile suitable for mounting on a motorcycle.				
1.36	Device accessories necessary for mounting on a motorcycle including power cabling, antenna, and miscellaneous hardware.				
Wi-Fi and Bluetooth					
1.37	Device supports Wi-Fi station (STA) protocol IEEE 802.11b/g/n in the 2.4GHz band.				

Reference No.	Router Requirements	Device Mandatory Minimum Qualifications (X = Yes)	Vendor's Device Compliant? (Vendor shall mark column with X)		Vendor Comments
			YES	**NO**	
1.38	Device supports Wi-Fi station (STA) protocol IEEE 802.11b/g/n with operations in both 2.4 and 5.8 GHz bands.				
1.39	UE supports Wi-Fi offload and may or may not support session persistence.				
1.40	EIRP of device exceeds 17 dBm with supported MIMO configuration				
1.41	EIRP of device exceeds 24 dBm with supported MIMO configuration				
1.42	The device supports Wi-Fi Access Point (STA) protocol IEEE 802.11a in the 4.9 GHz band.				
1.43	Device supports Wi-Fi station (AP) protocol IEEE 802.11b/g/n with operations in dual bands, 2.4 and 5.8 GHz.				
1.44	EIRP of device exceeds 17 dBm with supported MIMO configuration				
1.45	EIRP of device exceeds 24 dBm with supported MIMO configuration				
1.46	The device supports Wi-Fi Access Point (AP) protocol IEEE 802.11a in the 4.9 GHz band.				
1.47	The device may support Wi-Fi Station (STA) protocol IEEE 802.11a in the 4.9 GHz band.				
1.48	The device supports WPA2-Enterprise				
1.49	If the device has WPS capability, it must support disabling that feature.	X			
1.50	The device supports at least one SSID.				
1.51	The device supports multiple SSIDs.				
1.52	The device is capable of non-broadcast or hidden SSIDs.				
1.53	The device supports Bluetooth 4.0 or higher.				

Reference No.	Router Requirements	Device Mandatory Minimum Qualifications (X = Yes)	Vendor's Device Compliant? (Vendor shall mark column with X)		Vendor Comments
			YES	NO	
1.54	The device supports the IEEE 802.11s mesh networking amendment to the IEEE 802.11 specification.				
GPS					
1.55	The device supports autonomous (standalone) 3-channel, or higher GPS solution.				
1.56	The device supports autonomous (standalone) 3-channel, or higher GPS solution and at least one other satellite system (e.g. GLONASS).				
1.57	The device supports autonomous 12-channel, or higher GPS and GPS augmentation (WAAS).				
1.58	The device support autonomous GPS (USA GPS) and at least one other satellite system (e.g., Galileo, European GPS) and GPS augmentation.				
1.59	The GPS position is refreshed at a rate of 5 Hz or faster.				
1.60	The GPS position is refreshed rate of 1 Hz or faster.				
Device Management					
1.61	The device policies are settable via OMA-DM 1.2v (or higher) compliant managers.				
1.62	The device provisioning and management is available via vendor's proprietary Web-based management platform.				
Applications					
1.63	Device is compatible and tested with NetMotion's Locality software.				
1.64	An LTE performance application is supported by the device supplier				

Reference No.	Router Requirements	Device Mandatory Minimum Qualifications (X = Yes)	Vendor's Device Compliant? (Vendor shall mark column with X)		Vendor Comments
			YES	**NO**	
1.65	Vendor supported Automatic Vehicular Location (AVL) device client. Management may be via OMA-DM 1.2v or Web based.				
UE Security					
1.66	The UE supports Advanced Authentication (AA) as defined by CJIS security policies. Ref: http://www.fbi.gov/about-us/cjis/RequirementsDocument.pdf				
1.67	The device is FIPS 140-2 security class level 1certified by an accredited Cryptographic Module Testing laboratory. Test certification must be on record with the LA-RICS Authority.				
1.68	The device must meet FIPS 140-2 security class level 2 certified by an accredited Cryptographic Module Testing laboratory. Test certification must be on record with the LA-RICS Authority.				
Certification (Note 1,2)					
1.69	Device must be FCC Part 90 certified. Test certification must be on record with the LA-RICS Authority.	X			
1.70	Device must be FCC Part 15 certified. Test certification must be on record with the LA-RICS Authority.	X			
1.71	Device is PTCRB certified for Band 14 operations. Test certification must be on record with the LA-RICS Authority.	X			
1.72	Device is certified for operation on the alternate carriers to be used in the operation of the device. Test certification must be on record with the LA-RICS Authority.	X			

Reference No.	Router Requirements	Device Mandatory Minimum Qualifications (X = Yes)	Vendor's Device Compliant? (Vendor shall mark column with X)		Vendor Comments
			YES	**NO**	
1.73	Device must be IOT certified with Ericsson RAN. The IOT test plan will be consistent with published CTIA Certification Test Plans. The expectation is that the tests should be executed by a CTIA Authorized Test Lab. Specific test suites to be provided by LARICS. Normative Reference: http://www.ctia.org/policy-initiatives/wireless-device-certification/certification-test-plans	X			
1.74	Device must be interoperable with the Motorola/Mformation device management system. Test cases will be consistent with Interoperability test cases in the OMA document: "Enabler Test Specification for Device Management", Jan 2008 Normative reference: http://technical.openmobilealliance.org/Technical/Release_Program/docs/ETS/OMA-ETS-DM-V1_2-20110128-C.pdf	X			
1.75	Device must be *conformance* tested on the LA-RICS network by the vendor under the observation and approval of LA-RICS personnel or its agents. The base conformance test plan will follow CTIA's, "Certification Program Test Plan", see link below. The detailed step-by-step IOT plan will be developed by the vendor, then reviewed and approved by LA-RICS. Normative Reference: http://www.ctia.org/docs/default-source/default-document-library/ctia-test-plan-for-lte-interoperability.pdf?sfvrsn=0	X			

Reference No.	Router Requirements	Device Mandatory Minimum Qualifications (X = Yes)	Vendor's Device Compliant? (Vendor shall mark column with X)		Vendor Comments
			YES	**NO**	
1.76	Device must be *acceptance* tested by LA-RICS. Test plan may be based upon all processes from device ordering through drive tests on the LA-RICS network. The purpose of the tests is to operationalize the device and ensure a good quality user experience.	X			

Note:

1.) As part of LA-RICS acceptance testing (post-PTCRB certification) should test with included antenna(s) supplied with device as applicable.
2.) If a certified mPCI modem is utilized within the device, then the modem certification will carry over to the next higher assembly.

PSBN DEVICE CATEGORIES COMPLIANCE MATRIX

CATEGORY 10 – LTE LMR RADIOS

Description	Device Form Factor	Use
LTE LMR Radio that operates on Band Class 14 as well as at least one other carriers networks.	• Typical: 5.55 x 2.97 x 0.53 inches • Minimum 4.7 inch touch screen. • Ports for Audio headphones • Controls for volume, power, etc. • Hardened Case and screen • Speakerphone capability	Handheld LTE LMR Radio with Band14 capability for data and non-mission critical voice services. • Hardened for rugged use

VENDOR NAME: _____

DEVICE NAME: _____

DEVICE MODEL: _____

DEVICE VERSION: _____

Reference No.	LTE LMR Radio Requirements	Device Mandatory Minimum Qualifications (X = Yes)	Vendor's Device Compliant? (Vendor shall mark column with X)		Vendor Comments
			YES	**NO**	
LTE RF Elements				
3.0	Device must support Band Class 14 (BC14_UE).	X			
3.1	Device is a Power Class 3 UE.	X			
3.2	BC14_UE is a 3GPP Category 3 or 4 device.				
3.3	BC14_UE has external antenna ports to allow for vehicle rooftop mounting of antenna for all functions – MIMO LTE, Wi-Fi and GPS				
3.4	Device supports B14 and one commercial wireless carrier operations as an alternate when B14 is not available	X			
3.5a	Device can support B14 and two or more commercial wireless carrier operations as alternates when B14 is not available (desired). Identify each carrier supported.				
3.5b	Device can simultaneously support two commercial wireless carriers. Identify each carrier supported.				
3.6	Device accessories: Device is supplied with docking station, Antenna Kit, cables, and other associated parts to complete installation of the device in a vehicle: motorcycle, car, SUV or truck as specified by agency.				
UE Characteristics				
3.7	UICC(s) can be installed in the device in the field without voiding its warranty	X			
3.8	There is a unique UICC for each mobile service provider (LTE band) supported in the device.				
3.9	The device should be able to support virtual SIMs (multiple profiles) on a single UICC slot.				
3.10	Device supports interworking with the USIM/USAT applications in the UICC per 3GPP 31.101, 31.102 and 31.111.	X			
3.11	Device is fully compliant with all applicable FCC Technical Advisory Board minimum requirements. Ref: http://apps.fcc.gov/ecfs/document/view?id=7021919873	X			

Reference No.	LTE LMR Radio Requirements	Device Mandatory Minimum Qualifications (X = Yes)	Vendor's Device Compliant? (Vendor shall mark column with X)		Vendor Comments
			YES	NO	
3.12	Device meets operational conditions of ambient temperature of 0 to 130 degrees Fahrenheit. MIL SPEC 810G. Test certification must be on record with the LA-RICS Authority.	X			
3.13	Device meets operational ambient conditions of temperature of -22 to 140 degrees Fahrenheit or better. MIL SPEC 810G. Test certification must be on record with the LA-RICS Authority.				
3.14	Device must pass MIL SPEC 810 G test for shock resistant to 90 cm drop on any of six sides. Test certification must be on record with the LA-RICS Authority.	X			
3.15	Device must be certified vibration resistant for light truck transportation model using MIL STD-810G, or equivalent. Test certification must be on record with the LA-RICS Authority.				
3.16	Device has one or more Micro-USB, USB 2.0, or USB 3.0 connector.				
3.17	Device must be certified IEC 60529 for intrusion protection (IP) of IP54 or better without the use of a third party enclosure. IEC test certification must be on record with the LA-RICS Authority.				
3.18	Device must be certified IEC 60529 for IP66 or better without the use of a third-party enclosure. IEC test certification must be on record with the LA-RICS Authority.				
3.19	Power accessories: All necessary parts for powering device including AC/DC power adapter brick and cord for 100-240 VAC, 50-60Hz power source. Specify your minimum and maximum battery life during idle and working conditions and recharging time.	X			
3.20	Power accessories: additional replaceable battery and battery charger.				

Reference No.	LTE LMR Radio Requirements	Device Mandatory Minimum Qualifications (X = Yes)	Vendor's Device Compliant? (Vendor shall mark column with X)		Vendor Comments
			YES	**NO**	
3.21	Identify and recommend accessories that work with and support of the unit such as 1.) Micro USB cable 2.) Wired head phones 3.) Bluetooth head phones 4.) Vehicle charger 5.) Vehicle cradle 6.) External cases 7.) Screen covers 8.) Holster LTE LMR Radio holder 9.) External port extender cradle to enable connection to external antenna 10.) External antenna 11.) Installation kit				
3.22	Warranty and any offerings for extended warranties for the device must be on record with the LA-RICS Authority.				
3.23	Identify the processor and memory configuration (and options) used in the device. LA-RICS would prefer to internal memory storage at least 32GB that is expandable up to 128GB.				
3.24	Identify the current OS (operating system) used with the LTE LMR Radio device. LA-RICS recommends that the LTE LMR Radio device support the current OS and be software upgradable to the next OS.				
	Wi-Fi and Bluetooth				
3.25	Device supports Wi-Fi station (STA) protocol IEEE 802.11b/g/n in the 2.4GHz band.				
3.26	Device supports Wi-Fi station (STA) protocol IEEE 802.11b/g/n with operations in both 2.4 and 5.8 GHz bands.				
3.27	Device supports Wi-Fi offload and may or may not support session persistence.				
3.28	EIRP of device exceeds 17 dBm with supported MIMO configuration				
3.29	EIRP of device exceeds 24 dBm with supported MIMO configuration				

Reference No.	LTE LMR Radio Requirements	Device Mandatory Minimum Qualifications (X = Yes)	Vendor's Device Compliant? (Vendor shall mark column with X)		Vendor Comments
			YES	NO	
3.30	The device supports Wi-Fi Access Point (STA) protocol IEEE 802.11a in the 4.9 GHz band.				
3.31	Device supports Wi-Fi station (AP) protocol IEEE 802.11b/g/n with operations in dual bands, 2.4 and 5.8 GHz.				
3.32	EIRP of device exceeds 17 dBm with supported MIMO configuration				
3.33	EIRP of device exceeds 24 dBm with supported MIMO configuration				
3.34	The device supports Wi-Fi Access Point (AP) protocol IEEE 802.11a in the 4.9 GHz band.				
3.35	The device may support Wi-Fi Station (STA) protocol IEEE 802.11a in the 4.9 GHz band.				
3.36	The device supports WPA2-Enterprise				
3.37	If the device has WPS capability, it must support disabling that feature.	X			
3.38	The device supports at least one SSID				
3.39	The device supports multiple SSIDs				
3.40	The device is capable of non-broadcast or hidden SSIDs.				
3.41	The device supports Bluetooth 4.0 or higher.				
GPS					
3.42	The device supports autonomous (standalone) 3-channel, or higher GPS solution.				
3.43	The device supports autonomous (standalone) 3-channel, or higher GPS solution and at least one other satellite system (e.g. GLONASS).	X			
3.44	The device supports autonomous 12-channel, or higher GPS and GPS augmentation (WAAS).				
3.45	The device support autonomous GPS (USA GPS) and at least one other satellite system (e.g., Galileo, European GPS) and GPS augmentation				
3.46	The GPS position is refreshed at a rate of 5 Hz or faster. High sampling rate required for high-speed vehicles.				

Reference No.	LTE LMR Radio Requirements	Device Mandatory Minimum Qualifications (X = Yes)	Vendor's Device Compliant? (Vendor shall mark column with X)		Vendor Comments
			YES	NO	
3.47	The GPS position is refreshed rate of 1 Hz or faster.				
Device Management					
3.48	The device policies are settable via OMA-DM 1.2v (or higher) compliant managers.				
3.49	Device supports LA-RICS certified extensions to the OMA DM Management Information Bases (MIBs).				
3.50	The device provisioning may be settable via vendor's proprietary Web-based management.				
Applications					
3.51	Device is compatible and tested with NetMotion's Locality software.				
3.52	An LTE performance application is supported by the device supplier				
3.53	Vendor supported push-to-talk (PTT) device client is managed by OMA-DM 1.2v compliant server.				
3.54	Vendor supported Automatic Vehicular Location (AVL) device client. Management may be via OMA-DM 1.2v, or Web based.				
3.55	Vendor supported weather client.				
3.56	Vendor supported Internet Browser.				
3.57	Circuit switched voice or VoLTE.				
3.58	Vendor supported VoIP application (SIP based).				
3.59	Vendor supported Messaging (SMS and MMS).				
3.60	Vendor supported CMAS client.				
3.61	Vendor supported email client.				
UE Security					
3.62	The device utilizes a trusted boot.				
3.63	The device utilizes a hardware root of trust and trusted boot.				
3.64	The device utilizes a hardware root of trust and trusted boot, and attestation.				

Reference No.	LTE LMR Radio Requirements	Device Mandatory Minimum Qualifications (X = Yes)	Vendor's Device Compliant? (Vendor shall mark column with X)		Vendor Comments
			YES	**NO**	
3.65	The UE supports Advanced Authentication (AA) as defined by CJIS security policies. Ref: http://www.fbi.gov/about-us/cjis/RequirementsDocument.pdf				
3.66	The device is FIPS 140-2 security class level 1certified by an accredited Cryptographic Module Testing laboratory. Test certification must be on record with the LA-RICS Authority.				
3.67	The device must meet FIPS 140-2 security class level 2 certified by an accredited Cryptographic Module Testing laboratory. Test certification must be on record with the LA-RICS Authority.				
UI Interface				
3.68	Device includes an integral speaker(s) that is louder than customary in consumer devices. Describe the Decibels of your handset	X			
3.69	Device uses noise cancellation technology.	X			
3.70	User interface (UI) display is designed for outdoor use with brighter screen than found on consumer devices.	X			
3.71	Device touchscreen operates successfully with gloves on.				
Certification				
3.72	Device must be FCC Part 90 certified. Test certification must be on record with the LA-RICS Authority.	X			
3.73	Device must be FCC Part 15 certified. Test certification must be on record with the LA-RICS Authority.	X			
3.74	Device is PTCRB certified for Band 14 operations. Test certification must be on record with the LA-RICS Authority.	X			
3.75	Device is certified for operation on the alternate carriers to be used in the operation of the device. Test certification must be on record with the LA-RICS Authority.				

Reference No.	LTE LMR Radio Requirements	Device Mandatory Minimum Qualifications (X = Yes)	Vendor's Device Compliant? (Vendor shall mark column with X)		Vendor Comments
			YES	**NO**	
3.76	Device must be IOT certified with Ericsson RAN. The IOT test plan will be consistent with published CTIA Certification Test Plans. The expectation is that the tests should be executed by a CTIA Authorized Test Lab. Specific test suites to be provided by LARICS. Normative Reference: http://www.ctia.org/policy-initiatives/wireless-device-certification/certification-test-plans	X			
3.77	Device must be interoperable with the device management system. Test cases will be consistent with Interoperability test cases in the OMA document: "Enabler Test Specification for Device Management", Jan 2008 Normative reference: http://technical.openmobilealliance.org/Technical/Release_Program/docs/ETS/OMA-ETS-DM-V1_2-20110128-C.pdf	X			
3.78	Device must be *conformance* tested on the LA-RICS network by the vendor under the observation and approval of LA-RICS personnel or its agents. The base conformance test plan will follow CTIA's, "Certification Program Test Plan", see link below. The detailed step-by-step IOT plan will be developed by the vendor, then reviewed and approved by LA-RICS. Normative Reference: http://www.ctia.org/docs/default-source/default-document-library/ctia-test-plan-for-lte-interoperability.pdf?sfvrsn=0	X			
3.79	Device must be *acceptance* tested by LA-RICS. Test plan may be based upon all processes from device ordering through drive tests on the LA-RICS network. The purpose of the tests is to operationalize the device and ensure a good quality user experience.	X			

PSBN DEVICE CATEGORIES

CONTRACTOR NAME:

MASTER AGREEMENT NO.

As of _____, 2016, Contractor is qualified in the following PSBN Device Category(ies) as identified by marked box(es):

☐   CATEGORY 1:   In-Vehicle Routers

☐   CATEGORY 2:   USB Modems

☐   CATEGORY 3:   Smartphones

☐   CATEGORY 4:   Tablets

☐   CATEGORY 5:   Outdoor Units

☐   CATEGORY 6:   Portable Hotspots

☐   CATEGORY 7:   mPCIe LTE Modems

☐   CATEGORY 8:   Universal Integrated Circuit Cards (UICC)

☐   CATEGORY 9:   Routers

☐   CATEGORY 10:   LTE LMR Radios

PSBN DEVICE CATEGORIES

CATEGORY 9 – ROUTERS

Description	Device Form Factor	Use
Router with multiple modems, including at least Band Class 14, and additional options such as Ethernet, USB and Wi-Fi connectivity.	• Typical: 5.5 x 6.0 x 1.9 inches. Or other sizes to meet specific use cases • Mountable • External ports for Ethernet connectivity	Provide wired or wireless data session connectivity. Primary use is for internal first responder systems and applications to access the B14 LTE system or secondary LTE carrier Example of usage: Connect surveillance cameras, connect public safety offices to Band 14, and connect sensor networks or other machine to machine (M2M) configurations.

Reference No.	Router Requirements	Device Mandatory Minimum Qualifications (X = Yes)
	LTE RF Elements	
1.1	Device must support Band Class 14 (BC14_UE).	X
1.2	Device is a Power Class 3 UE.	X
1.3	BC14_UE is a 3GPP Category 3 or 4 device.	
1.4	BC14_UE has external antenna ports to allow for vehicle rooftop mounting of antenna for all functions – MIMO LTE, Wi-Fi and GPS.	
1.5a	Device simultaneously supports B14 and one commercial wireless carrier operations.	
1.5b	Device can simultaneously support two commercial carriers. Identify each carrier supported.	
1.6	Device can simultaneously support B14 and two or more commercial wireless carrier operations (desired). Identify each carrier supported.	
1.7	Device is supplied with Antenna Kit, cables, and other associated parts to complete installation of the device in a vehicle: motorcycle, car, SUV or truck as specified by agency.	X

Reference No.	Router Requirements	Device Mandatory Minimum Qualifications (X = Yes)
UE Characteristics		
1.8	LTE modem(s) can be installed in the device is the field without voiding its warranty	
1.9	UICC(s) can be installed in the device in the field without voiding its warranty	X
1.10	There is a unique UICC for each mobile service provider (LTE band) supported in the device.	
1.11	Device supports interworking with the USIM/USAT applications in the UICC per 3GPP 31.101, 31.102 and 31.111.	X
1.12	Device is fully compliant with all FCC Technical Advisory Board minimum requirements. Ref: http://apps.fcc.gov/ecfs/document/view?id=7021919873	X
1.13	Device meets operational conditions of ambient temperature of 0 to 130 degrees Fahrenheit under MIL SPEC 810G. Test data or certification must be on record with the LA-RICS Authority.	X
1.14	Device meets operational ambient conditions of temperature of -22 to 140 degrees Fahrenheit or better. MIL SPEC 810G. Test certification must be on record with the LA-RICS Authority.	
1.15	Device operational ambient temperature of -22 to 170 degrees Fahrenheit or better is desired. Test certification must be on record with the LA-RICS Authority.	
1.16	Device must pass shock resistant to 90 cm drop on any of six sides under MIL SPEC 810. Test data or certification must be on record with the LA-RICS Authority.	
1.17	Device has at least one Ethernet RJ-45 port (10/100/1000).	X
1.18	Device has two or more Ethernet RJ-45 ports (10/100/1000).	
1.19	Device has one or more USB 2.0 ports.	
1.20	Device has one or more USB 3.0 ports.	
1.21	Device supports an OBD- II interface.	
1.22	Device supports HDOBD interface.	
1.23	Device must meet IEC 60529 or equivalent for intrusion protection (IP) of IP54 or better without the use of a third party enclosure. IEC test data or certification must be on record with the LA-RICS Authority.	
1.24	Device must meet IEC 60529 or equivalent for IP66 or better without the use of a third-party enclosure. IEC test data or certification must be on record with the LA-RICS Authority	
1.25	Installation kit, mounting hardware and instructions required to maintain UL and other applicable safety certification(s).	
1.26	Power accessories: All necessary parts including, but not limited to connectors and harnesses to power the vendor's router via a nominal 10 - 30 VDC power source (e.g. vehicle battery).	X
1.27	Antenna provided for LTE operations across all supported bands with 3G fallback, 15 ft (or similar) antenna cabling with connectors.	
1.28	GPS antenna available (specify connector)	

Reference No.	Router Requirements	Device Mandatory Minimum Qualifications (X = Yes)
1.29	Wi-Fi antenna available (specify connector)	
1.30	7-foot Ethernet cable available as an option or procured separately	
1.31	Connector accessory: A locking mechanism for connectors to solidly fasten USB to device.	
1.32	Warranty and any offerings for extended warranties for the device must be on record with the LA-RICS Authority.	X
1.33	Provide installation documentation.	
Motorcycle Specific UE Requirements		
1.34	Device is certified vibration resistant for motorcycle transportation model using MIL STD-810G, or equivalent. Test certification must be on record with the LA-RICS Authority.	
1.35	Device has a small profile suitable for mounting on a motorcycle.	
1.36	Device accessories necessary for mounting on a motorcycle including power cabling, antenna, and miscellaneous hardware.	
Wi-Fi and Bluetooth		
1.37	Device supports Wi-Fi station (STA) protocol IEEE 802.11b/g/n in the 2.4GHz band.	
1.38	Device supports Wi-Fi station (STA) protocol IEEE 802.11b/g/n with operations in both 2.4 and 5.8 GHz bands.	
1.39	UE supports Wi-Fi offload and may or may not support session persistence.	
1.40	EIRP of device exceeds 17 dBm with supported MIMO configuration	
1.41	EIRP of device exceeds 24 dBm with supported MIMO configuration	
1.42	The device supports Wi-Fi Access Point (STA) protocol IEEE 802.11a in the 4.9 GHz band.	
1.43	Device supports Wi-Fi station (AP) protocol IEEE 802.11b/g/n with operations in dual bands, 2.4 and 5.8 GHz.	
1.44	EIRP of device exceeds 17 dBm with supported MIMO configuration	
1.45	EIRP of device exceeds 24 dBm with supported MIMO configuration	
1.46	The device supports Wi-Fi Access Point (AP) protocol IEEE 802.11a in the 4.9 GHz band.	
1.47	The device may support Wi-Fi Station (STA) protocol IEEE 802.11a in the 4.9 GHz band.	
1.48	The device supports WPA2-Enterprise	
1.49	If the device has WPS capability, it must support disabling that feature.	X
1.50	The device supports at least one SSID.	
1.51	The device supports multiple SSIDs.	
1.52	The device is capable of non-broadcast or hidden SSIDs.	
1.53	The device supports Bluetooth 4.0 or higher.	
1.54	The device supports the IEEE 802.11s mesh networking amendment to the IEEE 802.11 specification.	
GPS		

Reference No.	Router Requirements	Device Mandatory Minimum Qualifications (X = Yes)
1.55	The device supports autonomous (standalone) 3-channel, or higher GPS solution.	
1.56	The device supports autonomous (standalone) 3-channel, or higher GPS solution and at least one other satellite system (e.g. GLONASS).	
1.57	The device supports autonomous 12-channel, or higher GPS and GPS augmentation (WAAS).	
1.58	The device support autonomous GPS (USA GPS) and at least one other satellite system (e.g., Galileo, European GPS) and GPS augmentation.	
1.59	The GPS position is refreshed at a rate of 5 Hz or faster.	
1.60	The GPS position is refreshed rate of 1 Hz or faster.	
Device Management		
1.61	The device policies are settable via OMA-DM 1.2v (or higher) compliant managers.	
1.62	The device provisioning and management is available via vendor's proprietary Web-based management platform.	
Applications		
1.63	Device is compatible and tested with NetMotion's Locality software.	
1.64	An LTE performance application is supported by the device supplier	
1.65	Vendor supported Automatic Vehicular Location (AVL) device client. Management may be via OMA-DM 1.2v or Web based.	
UE Security		
1.66	The UE supports Advanced Authentication (AA) as defined by CJIS security policies. Ref: http://www.fbi.gov/about-us/cjis/RequirementsDocument.pdf	
1.67	The device is FIPS 140-2 security class level 1certified by an accredited Cryptographic Module Testing laboratory. Test certification must be on record with the LA-RICS Authority.	
1.68	The device must meet FIPS 140-2 security class level 2 certified by an accredited Cryptographic Module Testing laboratory. Test certification must be on record with the LA-RICS Authority.	
Certification [Note 1,2]		
1.69	Device must be FCC Part 90 certified. Test certification must be on record with the LA-RICS Authority.	X
1.70	Device must be FCC Part 15 certified. Test certification must be on record with the LA-RICS Authority.	X
1.71	Device is PTCRB certified for Band 14 operations. Test certification must be on record with the LA-RICS Authority.	X
1.72	Device is certified for operation on the alternate carriers to be used in the operation of the device. Test certification must be on record with the LA-RICS Authority.	X

Reference No.	Router Requirements	Device Mandatory Minimum Qualifications (X = Yes)
1.73	Device must be IOT certified with Ericsson RAN. The IOT test plan will be consistent with published CTIA Certification Test Plans. The expectation is that the tests should be executed by a CTIA Authorized Test Lab. Specific test suites to be provided by LARICS. Normative Reference: http://www.ctia.org/policy-initiatives/wireless-device-certification/certification-test-plans	X
1.74	Device must be interoperable with the Motorola/Mformation device management system. Test cases will be consistent with Interoperability test cases in the OMA document: "Enabler Test Specification for Device Management", Jan 2008 Normative reference: http://technical.openmobilealliance.org/Technical/Release_Program/docs/ETS/OMA-ETS-DM-V1_2-20110128-C.pdf	X
1.75	Device must be *conformance* tested on the LA-RICS network by the vendor under the observation and approval of LA-RICS personnel or its agents. The base conformance test plan will follow CTIA's, "Certification Program Test Plan", see link below. The detailed step-by-step IOT plan will be developed by the vendor, then reviewed and approved by LA-RICS. Normative Reference: http://www.ctia.org/docs/default-source/default-document-library/ctia-test-plan-for-lte-interoperability.pdf?sfvrsn=0	X
1.76	Device must be *acceptance* tested by LA-RICS. Test plan may be based upon all processes from device ordering through drive tests on the LA-RICS network. The purpose of the tests is to operationalize the device and ensure a good quality user experience.	X

Note:

1.) As part of LA-RICS acceptance testing (post-PTCRB certification) should test with included antenna(s) supplied with device as applicable.
2.) If a certified mPCI modem is utilized within the device, then the modem certification will carry over to the next higher assembly.

PSBN DEVICE CATEGORIES

CATEGORY 10 – LTE LMR RADIOS

Description	Device Form Factor	Use
LTE LMR Radio that operates on Band Class 14 as well as at least one other carriers networks.	• Typical: 5.55 x 2.97 x 0.53 inches • Minimum 4.7 inch touch screen. • Ports for Audio headphones • Controls for volume, power, etc. • Hardened Case and screen • Speakerphone capability	Handheld LTE LMR Radio with Band14 capability for data and non-mission critical voice services. • Hardened for rugged use

Reference No.	LTE LMR Requirements	Device Mandatory Minimum Qualifications (X = Yes)
	LTE RF Elements	
3.0	Device must support Band Class 14 (BC14_UE).	X
3.1	Device is a Power Class 3 UE.	X
3.2	BC14_UE is a 3GPP Category 3 or 4 device.	
3.3	BC14_UE has external antenna ports to allow for vehicle rooftop mounting of antenna for all functions – MIMO LTE, Wi-Fi and GPS	
3.4	Device supports B14 and one commercial wireless carrier operations as an alternate when B14 is not available	X
3.5a	Device can support B14 and two or more commercial wireless carrier operations as alternates when B14 is not available (desired). Identify each carrier supported.	
3.5b	Device can simultaneously support two commercial wireless carriers. Identify each carrier supported.	
3.6	Device accessories: Device is supplied with docking station, Antenna Kit, cables, and other associated parts to complete installation of the device in a vehicle: motorcycle, car, SUV or truck as specified by agency.	
	UE Characteristics	
3.7	UICC(s) can be installed in the device in the field without voiding its warranty	X
3.8	There is a unique UICC for each mobile service provider (LTE band) supported in the device.	
3.9	The device should be able to support virtual SIMs (multiple profiles) on a single UICC slot.	

Reference No.	LTE LMR Requirements	Device Mandatory Minimum Qualifications (X = Yes)
3.10	Device supports interworking with the USIM/USAT applications in the UICC per 3GPP 31.101, 31.102 and 31.111.	X
3.11	Device is fully compliant with all applicable FCC Technical Advisory Board minimum requirements. Ref: http://apps.fcc.gov/ecfs/document/view?id=7021919873	X
3.12	Device meets operational conditions of ambient temperature of 0 to 130 degrees Fahrenheit. MIL SPEC 810G. Test certification must be on record with the LA-RICS Authority.	X
3.13	Device meets operational ambient conditions of temperature of -22 to 140 degrees Fahrenheit or better. MIL SPEC 810G. Test certification must be on record with the LA-RICS Authority.	
3.14	Device must pass MIL SPEC 810 G test for shock resistant to 90 cm drop on any of six sides. Test certification must be on record with the LA-RICS Authority.	X
3.15	Device must be certified vibration resistant for light truck transportation model using MIL STD-810G, or equivalent. Test certification must be on record with the LA-RICS Authority.	
3.16	Device has one or more Micro-USB, USB 2.0, or USB 3.0 connector.	
3.17	Device must be certified IEC 60529 for intrusion protection (IP) of IP54 or better without the use of a third party enclosure. IEC test certification must be on record with the LA-RICS Authority.	
3.18	Device must be certified IEC 60529 for IP66 or better without the use of a third-party enclosure. IEC test certification must be on record with the LA-RICS Authority.	
3.19	Power accessories: All necessary parts for powering device including AC/DC power adapter brick and cord for 100-240 VAC, 50-60Hz power source. Specify your minimum and maximum battery life during idle and working conditions and recharging time.	X
3.20	Power accessories: additional replaceable battery and battery charger.	

3.21	Identify and recommend accessories that work with and support of the unit such as
	   1.) Micro USB cable
	   2.) Wired head phones
	   3.) Bluetooth head phones
	   4.) Vehicle charger
	   5.) Vehicle cradle
	   6.) External cases
	   7.) Screen covers
	   8.) Holster LTE LMR Radio holder
	   9.) External port extender cradle to enable connection to external antenna
	   10.)External antenna
	   11.)Installation kit	

Reference No.	LTE LMR Requirements	Device Mandatory Minimum Qualifications (X = Yes)
3.22	Warranty and any offerings for extended warranties for the device must be on record with the LA-RICS Authority.	
3.23	Identify the processor and memory configuration (and options) used in the device. LA-RICS would prefer to internal memory storage at least 32GB that is expandable up to 128GB.	
3.24	Identify the current OS (operating system) used with the LTE LMR Radio device. LA-RICS recommends that the LTE LMR Radio device support the current OS and be software upgradable to the next OS.	
Wi-Fi and Bluetooth		
3.25	Device supports Wi-Fi station (STA) protocol IEEE 802.11b/g/n in the 2.4GHz band.	
3.26	Device supports Wi-Fi station (STA) protocol IEEE 802.11b/g/n with operations in both 2.4 and 5.8 GHz bands.	
3.27	Device supports Wi-Fi offload and may or may not support session persistence.	
3.28	EIRP of device exceeds 17 dBm with supported MIMO configuration	
3.29	EIRP of device exceeds 24 dBm with supported MIMO configuration	
3.30	The device supports Wi-Fi Access Point (STA) protocol IEEE 802.11a in the 4.9 GHz band.	
3.31	Device supports Wi-Fi station (AP) protocol IEEE 802.11b/g/n with operations in dual bands, 2.4 and 5.8 GHz.	
3.32	EIRP of device exceeds 17 dBm with supported MIMO configuration	
3.33	EIRP of device exceeds 24 dBm with supported MIMO configuration	
3.34	The device supports Wi-Fi Access Point (AP) protocol IEEE 802.11a in the 4.9 GHz band.	
3.35	The device may support Wi-Fi Station (STA) protocol IEEE 802.11a in the 4.9 GHz band.	
3.36	The device supports WPA2-Enterprise	
3.37	If the device has WPS capability, it must support disabling that feature.	X
3.38	The device supports at least one SSID	
3.39	The device supports multiple SSIDs	
3.40	The device is capable of non-broadcast or hidden SSIDs.	
3.41	The device supports Bluetooth 4.0 or higher.	
GPS		
3.42	The device supports autonomous (standalone) 3-channel, or higher GPS solution.	
3.43	The device supports autonomous (standalone) 3-channel, or higher GPS solution and at least one other satellite system (e.g. GLONASS).	X
3.44	The device supports autonomous 12-channel, or higher GPS and GPS augmentation (WAAS).	
3.45	The device support autonomous GPS (USA GPS) and at least one other satellite system (e.g., Galileo, European GPS) and GPS augmentation	

Reference No.	LTE LMR Requirements	Device Mandatory Minimum Qualifications (X = Yes)
3.46	The GPS position is refreshed at a rate of 5 Hz or faster. High sampling rate required for high-speed vehicles.	
3.47	The GPS position is refreshed rate of 1 Hz or faster.	
Device Management		
3.48	The device policies are settable via OMA-DM 1.2v (or higher) compliant managers.	
3.49	Device supports LA-RICS certified extensions to the OMA DM Management Information Bases (MIBs).	
3.50	The device provisioning may be settable via vendor's proprietary Web-based management.	
Applications		
3.51	Device is compatible and tested with NetMotion's Locality software.	
3.52	An LTE performance application is supported by the device supplier	
3.53	Vendor supported push-to-talk (PTT) device client is managed by OMA-DM 1.2v compliant server.	
3.54	Vendor supported Automatic Vehicular Location (AVL) device client. Management may be via OMA-DM 1.2v, or Web based.	
3.55	Vendor supported weather client.	
3.56	Vendor supported Internet Browser.	
3.57	Circuit switched voice or VoLTE.	
3.58	Vendor supported VoIP application (SIP based).	
3.59	Vendor supported Messaging (SMS and MMS).	
3.60	Vendor supported CMAS client.	
3.61	Vendor supported email client.	
UE Security		
3.62	The device utilizes a trusted boot.	
3.63	The device utilizes a hardware root of trust and trusted boot.	
3.64	The device utilizes a hardware root of trust and trusted boot, and attestation	
3.65	The UE supports Advanced Authentication (AA) as defined by CJIS security policies. Ref: http://www.fbi.gov/about-us/cjis/RequirementsDocument.pdf	
3.66	The device is FIPS 140-2 security class level 1certified by an accredited Cryptographic Module Testing laboratory. Test certification must be on record with the LA-RICS Authority.	
3.67	The device must meet FIPS 140-2 security class level 2 certified by an accredited Cryptographic Module Testing laboratory. Test certification must be on record with the LA-RICS Authority.	
UI Interface		
3.68	Device includes an integral speaker(s) that is louder than customary in consumer devices. Describe the Decibels of your handset	X
3.69	Device uses noise cancellation technology.	X

Reference No.	LTE LMR Requirements	Device Mandatory Minimum Qualifications (X = Yes)
3.70	User interface (UI) display is designed for outdoor use with brighter screen than found on consumer devices.	X
3.71	Device touchscreen operates successfully with gloves on.	
Certification		
3.72	Device must be FCC Part 90 certified. Test certification must be on record with the LA-RICS Authority.	X
3.73	Device must be FCC Part 15 certified. Test certification must be on record with the LA-RICS Authority.	X
3.74	Device is PTCRB certified for Band 14 operations. Test certification must be on record with the LA-RICS Authority.	X
3.75	Device is certified for operation on the alternate carriers to be used in the operation of the device. Test certification must be on record with the LA-RICS Authority.	
3.76	Device must be IOT certified with Ericsson RAN. The IOT test plan will be consistent with published CTIA Certification Test Plans. The expectation is that the tests should be executed by a CTIA Authorized Test Lab. Specific test suites to be provided by LARICS. Normative Reference: http://www.ctia.org/policy-initiatives/wireless-device-certification/certification-test-plans	X
3.77	Device must be interoperable with the device management system. Test cases will be consistent with Interoperability test cases in the OMA document: "Enabler Test Specification for Device Management", Jan 2008 Normative reference: http://technical.openmobilealliance.org/Technical/Release_Program/docs/ETS/OMA-ETS-DM-V1_2-20110128-C.pdf	X
3.78	Device must be *conformance* tested on the LA-RICS network by the vendor under the observation and approval of LA-RICS personnel or its agents. The base conformance test plan will follow CTIA's, "Certification Program Test Plan", see link below. The detailed step-by-step IOT plan will be developed by the vendor, then reviewed and approved by LA-RICS. Normative Reference: http://www.ctia.org/docs/default-source/default-document-library/ctia-test-plan-for-lte-interoperability.pdf?sfvrsn=0	X
3.79	Device must be *acceptance* tested by LA-RICS. Test plan may be based upon all processes from device ordering through drive tests on the LA-RICS network. The purpose of the tests is to operationalize the device and ensure a good quality user experience.	X