Process Document for the NIST List of Certified Devices

October 23, 2018
Version 1.70

By:

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1 Introduction and Definitions

1.1 Executive Summary

The Middle Class Tax Relief and Job Creation Act of 2012 (Act) [6] defined responsibilities for the National Institute of Standards and Technology (NIST) [7] in regards to the Nationwide Public Safety Broadband Network (NPSBN) and the First Responder Network Authority (FN) [2]. AT&T was awarded the contract by FN to partner with FN and to build the NPSBN. One requirement of the Act is that the Director of NIST shall ensure the development of a list of certified devices that meet appropriate protocols and standards for access to, use of, or compatibility with the NPSBN that FN and AT&T build and maintain. This requirement is carried out by the Public Safety Communications Research Division (PSCR) [9] of the NIST Communications Technology Laboratory. This document describes the process for creating and maintaining the list.

1.2 Intended Audience

The content of this document will evolve and change over time as the relationship between PSCR and FirstNet/AT&T evolves. As the FirstNet device approval program changes, so will this document. The intended audience for this process document is divided into four distinct groups:

1. This process document is for the internal purposes of PSCR to create and maintain the NIST List of Certified Devices;
2. This process document is intended as an informative reference for NIST management and the director of NIST to better understand industry practices and to know how the NIST List of Certified Devices is created and maintained;
3. This process document is intended as an informative reference for FirstNet and AT&T to know how the NIST List of Certified Devices is created and maintained, how it relates to their internal processes, and how the points of contact are defined;
4. This process document is intended as an informative reference for public consumption to know how the NIST List of Certified Devices is created and maintained.

1.3 Overview: The Steps to Add a Device to the NIST List of Certified Devices

For the purposes of this process, an approved device is defined as a device that has successfully completed these steps:

1) FCC Equipment Authorization
    a. A device must obtain FCC Equipment Authorization. In order to obtain FCC Equipment Authorization, a device must first be tested in an FCC-recognized ISO/IEC 17025 accredited laboratory that has a scope covering the applicable FCC requirements and test methods. Then, the device must be certified by an FCC-recognized Telecommunications Certification Body (TCB).
2) PTCRB Certification Testing
    a. A device must obtain PTCRB [10] certification. PTCRB testing is conducted by ISO/IEC 17025 accredited laboratories. Upon successful completion of the specific test suites, a device will obtain PTCRB certification status.
3) AT&T Carrier Acceptance Testing for Public Safety Devices
    a. A device must be approved by AT&T to be sold for use on the NPSBN. AT&T is responsible for defining all of the testing requirements, inclusive of public safety, to complete their carrier acceptance process. Carrier acceptance testing is internal to AT&T. Once a device is

approved via AT&T's proprietary carrier acceptance testing, AT&T will notify FirstNet of the status.

b. FirstNet Device Approval: Per FirstNet's Device Approval Program[1], a test report for each device will be generated. The report, which is an output of the FirstNet Device Approval process, leads to a recommendation that determines if a device should or should not be considered for addition to the NIST List of Certified Devices and the FirstNet device portfolio. In addition, this report will be used to support audits (by GAO [4], DOC OIG [1], etc.) and/or FirstNet CCO. Once a device has completed the agreed to auditing, verification and/or test case execution, the device's test status will be forwarded to the PSCR point-of-contact (POC).

Step 3a and 3b above will occur in parallel. Step 3b is a subset of Step 3a and this will complete prior to Step 3a, the super-set.

4) Posting a Device to the NIST List of Certified Devices
    a. Upon completion of the above steps, the device will be added to the List by the PSCR POC.

At the time of the device's date of entry to the List, the device will be available for purchase through the FirstNet AT&T portal and other such means.

In summary, if a device has successfully completed the steps defined above, the device will be defined as certified (approved) for use on the NPSBN and will be included on the NIST List of Certified Devices. This methodology will help ensure that the NIST List of Certified Devices is synchronized with the devices that are being sold as part of the FN device portfolio on the FirstNet/AT&T portal. The remainder of this document provides detailed information regarding how a device is added to the list.

[1] Refer to the document titled "FirstNet Device Approval Program" for more information.

1.4 Point of Contact

FirstNet and PSCR will need to identify a point of contact (POC) for each organization, respectively. For FirstNet, the POC will receive updates to the status of the NIST List of Certified Devices. The FirstNet POC will also make requests for changes to the NIST List of Certified Devices, such as the removal of a device from the Active List sheet. For PSCR, the POC will update FirstNet of changes to the NIST List of Certified Devices. The PSCR POC will also receive change requests from the FirstNet POC. This will help mitigate request conflicts and confusion. The POC and their deputies will be listed in a separate record that will be kept in Huddle [3]. A special email address may be created for communications related to this process.

1.5 Description of Huddle

Huddle is an online, cloud-based, file sharing and document storage product. It provides secure access as well as version control of documents. PSCR will use Huddle to store the NIST List of Certified Device, this process document, and records associated with devices.

1.6 Glossary

3GPP = 3rd Generation Partnership Project; An international standards body that is made up of seven telecommunications standard development organizations (ARIB, ATIS, CCSA, ETSI, TSDSI, TTA, TTC). The project creates cellular telecommunication standards, and is responsible for the creation of 4G LTE.
ACRG = The advanced Communications Research Group within PSCR.
DOC OIG = Office of Inspector General - Department of Commerce [1]
FCC = Federal Communications Commission; A federal agency of the USA government that regulates interstate communications by radio, television, wire, satellite, and cable.
FN = FirstNet; The First Responder Network Authority was established by Congress to establish and maintain a nationwide public safety broadband network. [2]
GAO = U.S. Government Accountability Office [4]
IOC = Initial Operational Capability. When AT&T was awarded to be a partner with FirstNet and to build out the NPSBN based on their response to FirstNet's request for proposal, certain timelines for network capability were defined. IOC-1 is the first timeline that AT&T must meet as part of the award. IOC-1 has minimal public safety features and begins in the third quarter of 2017. IOC-2 is the second timeline and contains more public safety features and begins after IOC-1. The current target deadline for IOC-2 is March 30, 2018 but will begin in the fourth quarter of 2017.
LTE = Long Term Evolution; The 4th Generation of wireless communication for mobile devices.
MNO = Mobile network operator. A wireless communications service provider that builds and maintains its own network to provide services for customers.
MVNO = mobile virtual network operator. A wireless communications service provider that buys time & access on another carrier's network instead of building its own network.
NIST = National Institute of Standards and Technology; A measurement standards laboratory in the US Department of Commerce.
NTIA = National Telecommunications and Information Administration; An agency in the US Department of Commerce that is responsible for advising the President on policy matters regarding telecommunications and information. [8]
NPSBN = Nationwide Public Safety Broadband Network; A wireless broadband network, defined in the Middle Class Tax Relief and Job Creation Act of 2012.
OEM = Other Equipment Manufacturer

POC = Point of Contact; A designated representative of an organization.
PSCR = Public Safety Communications Research; A US Department of Commerce research program formed as a joint effort between NIST and NTIA to advance public safety communications interoperability.
PTCRB = PCS Type Certification Review Board; A certification forum that provides the framework for device certification for wireless telecommunications technologies, such as LTE.
SIM = subscriber identification module. An integrated circuit that stores subscriber and authentication information, and general information for basic usage of the device by the user.
TCB = an FCC-recognized Telecommunications Certification Body

2 The Scope Within the Middle Class Tax Relief and Job Creation Act of 2012

2.1 Where is NIST in the legislation

The Middle Class Tax Relief and Job Creation Act of 2012, section 6206, part c, part 6 states:

> The director of NIST, in consultation with the First Responder Network Authority and the Commission, shall ensure the development of a list of certified devices and components meeting appropriate protocols and standards for public safety entities and commercial vendors to adhere to, if such entities or vendors seek to have access to, use of, or compatibility with the nationwide public safety broadband network.

2.2 Interpretation of the legislation

The consensus interpretation of Section 6206, part c, part 6 is that NIST must ensure that a list of certified devices for use on the NPSBN exists. This requirement is carried out by the PSCR of the NIST Communications Technology Laboratory. In order for PSCR to provide due diligence for the responsibility of keeping such a list, PSCR must have records to provide as evidence that an objective decision was made based upon pre-defined criteria. Therefore, PSCR must have the ability to make the determination to add devices to the list or to deny devices from making the list. Appendix section 9.2 for more details about the Middle Class Tax Relief and Job Creation Act of 2012.

2.3 Scope of Devices for the List

1) PSCR will require documentation listed in Section 1.3 to confirm the certification status for a device as evidence of the decision to include the device on the list. Any device that is placed on the List must complete AT&T Carrier Acceptance Testing for Public Safety Devices and obtain FirstNet Device Approval.
2) PSCR will only require evidence of completion of the FirstNet and AT&T device approval process and will not impose additional requirements outside of the device approval process. FirstNet and AT&T are responsible for the creation and maintenance of the FirstNet and AT&T device approval process.
3) For FCC Equipment Authorization and PTCRB testing, PSCR will only accept results from an ISO/IEC 17025 accredited (or similar) laboratory.
4) PSCR will only include end-user devices on the list that are approved to be sold to public safety for use on the NPSBN.
5) Only end-user devices that can access the 3GPP-based LTE NPSBN will be included on the NIST List of Certified Devices. More specifically, 3GPP-based LTE devices that are destined for the FN device portfolio will be included on the NIST List of Certified Devices.
6) In IOC-1, the NPSBN will be operating as mobile virtual network operator (MVNO) and FN subscriber identification module (SIM) cards will not be available. Therefore, no devices destined for the FN device portfolio in IOC-1 will be placed on the NIST List of Certified Devices.
7) Starting with IOC-2, the NPSBN will be operational and FN SIM cards will be available. Therefore, those devices deployed during IOC-1 that are available in subsequent IOCs must be added to the NIST List of Certified Devices. Starting in IOC-2, new devices that are added to the FirstNet portfolio must be added to the NIST List of Certified Devices.
8) As an important note, a transmitter with a modular grant can be installed in different end-use products (referred to as a host, host product, or host device) by the grantee or other equipment manufacturer (OEM), and each host is not required to obtain a separate certification for that

specific transmitter module. In other words, a modular grant for a device eliminates the need for a host product to obtain its own separate certification for the specific transmitter component. This is per FCC OET document 996369 D01 Module Certification Guide v01 which provides a guide for equipment authorization applications for 47 CFR Section 15.212 Modular transmitters.

3 General Industry Phases for Approving a Device for Sale

This section serves as a reference and describes the general phases or stages that most devices must go through in order to be accepted by a mobile network operator (MNO). This section is intended to provide background information for those that are unfamiliar with the general industry process. There are various testing stages that are divided into three phases for the purposes of this document. The definition of phases is not an industry standard and the definition is only used for clarification purposes in this document. The first phase is to gain regulatory approval. Then the device moves to various industry certifications for the second phase. The MNO defines which industry certifications are needed for its certification process. Once a device has regulatory approval and the required industry certifications, the device will go through the MNO-specific testing phase. There may be overlap in the timing of each phase.

1. Regulatory Testing (Phase 1)
    a. This testing is required testing mandated by governments, both federal and local. The most important for this process document is FCC Equipment Authorization .

2. Industry Certifications (Phase 2)
    a. This testing is from the various industry forums. These certifications are not required to legally sell the product in the USA, but are often required by MNOs. The most important certification for this process document is PTCRB certification.

3. MNO Testing (Phase 3)
    a. This is testing that is specific to each MNO and differs from the standard industry testing described in section 2 above. It could impose stricter limits than what is described in section 2 above, add additional testing to the test suites from phase 2, or require entirely different test plans that are created by the MNO. This can be divided into pre-lab entry requirements and post-lab entry requirements. Typically, pre-lab entry is outsourced to a third party lab and post-lab entry is tested by the MNO itself. Examples of testing in Phase 3 are:
        i. MNO-specific test plans performed in third party labs
        ii. MNO modifications to industry test plans. Examples may be:
            - tighter limits
            - additional samples needed for testing
            - optional tests that are usually not performed
        iii. MNO in-house testing

4 Appearance of the NIST List of Certified Devices

This section describes which items the NIST List of Certified Devices will contain. The NIST List of Certified Devices will be a spreadsheet that contains three sheets or tabs. The first sheet will be the cover page. The second sheet, called the Active List sheet, will show the active list of certified devices. The third sheet, called the Expired List sheet, will show the list of expired or terminated devices (devices that were once on the Active List sheet but have since been removed). The list will be stored in a secured location in Huddle.

4.1 Cover Page

The cover page of the NIST List of Certified Devices must contain (but is not limited to) the following information:

1. The title of the document
2. The date the NIST List of Certified Devices was last modified
3. The version number
    a. Official versions need to be in whole numbers. For example, the 2nd official version of the list would be 2.00.
    b. Interim versions need to be decimal to the nearest hundredths. For example, the first interim version after the second official version would be 2.01.

4.2 Active List Sheet

The NIST List of Certified Devices shall include the following information for the Active List sheet:

1. Entry line number
2. Device Manufacturer
3. Device Model[2]
4. FCC ID
5. Date of entry. The date of entry is the date the PSCR POC receives all required documentation along with the request for the device to be added to the Active List Sheet.
6. A comment column. Comments should include information regarding initial entry if the device has returned to the Active List sheet after being on the Expired List sheet. Otherwise, general comments pertaining to the device.

4.3 Expired List Sheet

The NIST List of Certified Devices shall include the following information for the Expired List sheet:

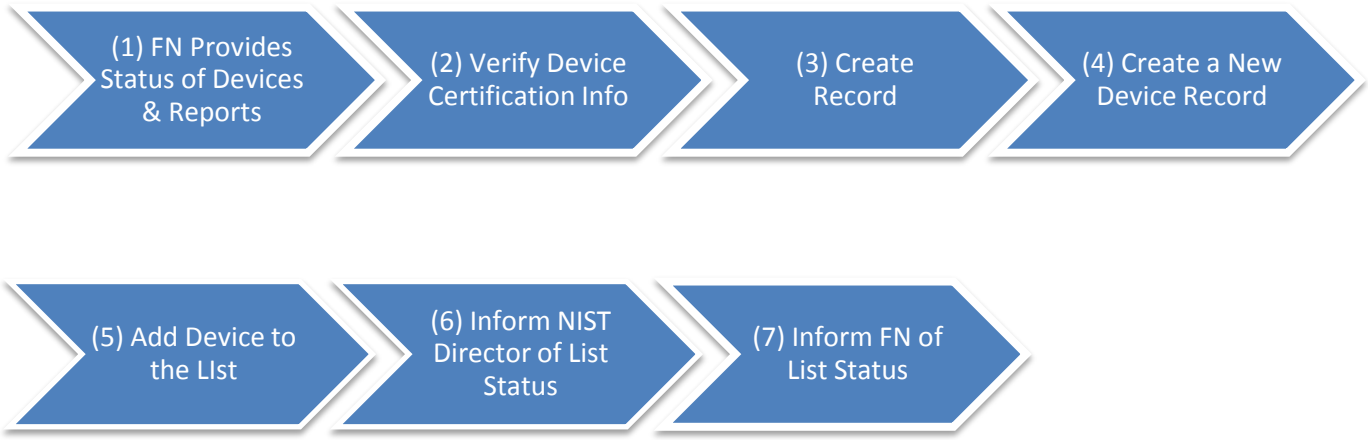
1. Entry line number
2. Device Manufacturer
3. Device Model
4. FCC ID
5. Date of termination. The termination date is the date the device was requested to be removed from the Active List sheet and added to the Expired List sheet.
6. Date of initial entry on the Active List sheet
7. Reason for termination. Comments should include information on why the device was removed from the Active List sheet.
8. Comments. General comments pertaining to the device.

[2]Example: S7 Active, and Samsung S7 Edge would all be unique list entries.

5 Process for Adding a Device to the List

This section describes the process for NIST to either add a device to the list of certified devices or to deny the device from the list.

5.1 Flow Chart for the process



5.2 Detailed Process Description for Adding a Device to the List

(1) FirstNet Provides Status of Devices & Reports:

FirstNet will maintain a spreadsheet titled "Device Summary Spreadsheet" that contains the public safety devices and their current status. Each device in the spreadsheet will include the status of the following, but not limited to: FCC ID, PTCRB certification, AT&T carrier acceptance testing, FirstNet's Device Approval, and NIST List of Certified Devices recommendation. When items have been marked as completed, a new version of the spreadsheet will be created. On a regular basis, the FirstNet POC will provide this spreadsheet to the PSCR POC. This will inform PSCR that a new device is ready to be added to the NIST List of Certified Devices.

(2) Verify Device Certification Info:

FirstNet will obtain a report from AT&T about the AT&T Carrier Acceptance Testing status of the device. If FirstNet recommends that a device be added to the NIST List of Certified Devices, FirstNet will then provide a copy of this report, or a FirstNet-generated report based upon the information in this report, to the PSCR POC. This may happen at the same time as step 1 above. The PSCR POC will verify the information in the report is correct.

(3) Create Record:

The PSCR POC will create a record of the status verification. This record shall be a Word document stating the following:
"I, [name of the PSCR POC], have verified the status requirements for the: [Manufacturer] [Model] [FCC IDD]
on this date:
[Date]."

(4) Create a New Device Record:

The PSCR POC will log into Huddle and create a new device instance. The PSCR POC shall store the record and associated documents from steps 1 through 3 above in Huddle where only approved PSCR personnel can gain access. PSCR will provide a folder in Huddle for the NIST List of Certified Devices records. The folder structure will be as follows:

NIST List of Certified Devices Records [FOLDER]
-> Device Manufacturer [FOLDER]
-> Model Number – FCC ID [FOLDER]
-> Associated record(s) [DOCUMENTS & RECORDS]

(5) Add Device to the List:

The PSCR POC will add the device to the Active List sheet of the NIST List of Certified Devices according to Step 1 of Section 8.2 of this document.

(6) Inform NIST director of List Status:

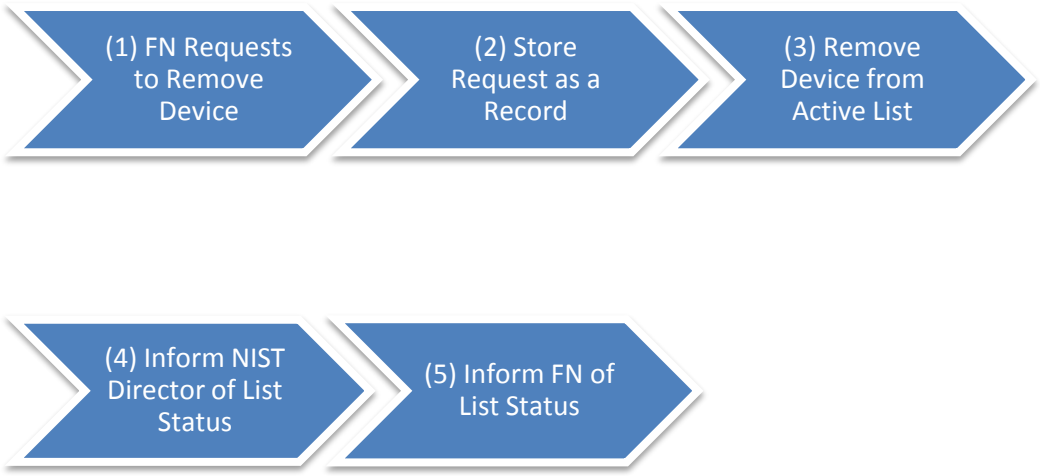
If not already done, the PSCR POC will inform the director of NIST via email where the list is stored.

(7) Inform FirstNet of List Status:

The PSCR POC will inform the FirstNet POC via email that a device was added to the Active List sheet of the NIST List of Certified Devices and where the list is stored.

6 Process for Removing a Device from the List

6.1 Flow Chart for the process



6.2 Detailed Process Description for Removing a Device from the List

(1) FN Requests to Remove Device:

If FirstNet wishes that a device be removed from the Active List sheet of the NIST List of Certified Devices, then the request must be made to PSCR via email. The email must come from the defined FirstNet POC and be sent to the defined PSCR POC. Any reason can be given for the request, such as the device is no longer sold & supported or the device is a rogue device. A rogue device is described as a device that poses a significant risk to the performance or security (or both) of a network. FirstNet is responsible for making the determination that a device needs to be removed from the Active List sheet. PSCR shall not remove a device from the Active List sheet without an email request from FirstNet.

(2) Store Request as a Record:

Upon receiving a request from the FirstNet POC to remove a device from the Active List sheet, the PSCR POC will keep a record of the correspondence in the same folder in Huddle as the status verification is stored for the specific device. PSCR will provide a folder in Huddle for the NIST List of Certified Devices records. The folder structure will be as follows:

NIST List of Certified Devices Records [FOLDER]
-> Device Manufacturer [FOLDER]
-> Model Number – FCC ID [FOLDER]
-> Associated records [DOCUMENTS & RECORDS]

(3) Remove Device from Active List:

The PSCR POC will remove the device from the Active List sheet of the NIST List of Certified Devices to the Expired List sheet as described in Step 2 of Section 8.2 of this document.

(4) Inform NIST director of List Status:

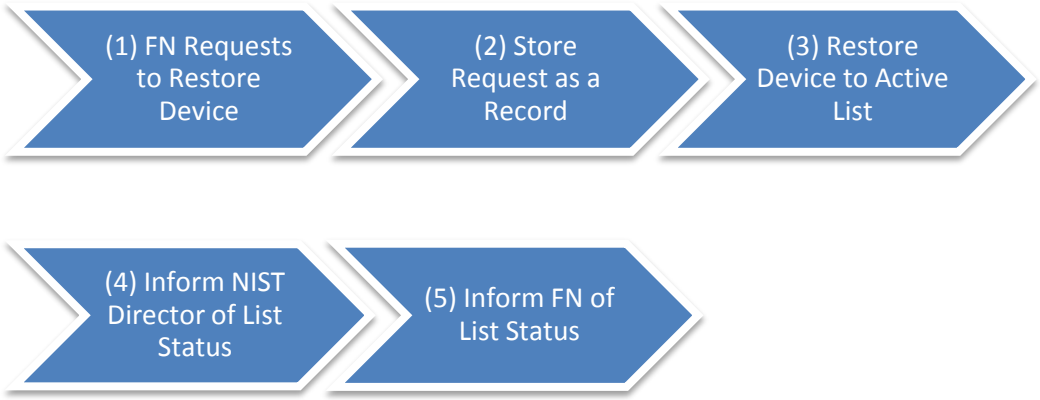
If not already done, the PSCR POC will inform the director of NIST via email where the list is stored.

(5) Inform FirstNet of List Status:

The PSCR POC will inform the FirstNet POC via email that a device was removed from the Active List sheet of the NIST List of Certified Devices and added to the Expired List sheet, and where the list is stored.

7 Process for Returning a Device to the List

7.1 Flow Chart for the process



7.2 Detailed Process Description for Restoring a Device to the List

(1) FN Requests to Restore Device:

If FirstNet wishes that a device be restored to the Active List sheet of the NIST List of Certified Devices from the Expired List sheet, then the request must be made by the FirstNet POC to the PSCR POC via email. The email must come from the defined FirstNet POC and be sent to the defined PSCR POC. The test results and certification status used in the initial addition to the Active List sheet, along with the email request from FirstNet to restore the device to the Active List sheet, will be used as justification to restore the device to the Active List sheet.

(2) Store Request as a Record:

Upon receiving a request from the FirstNet POC to restore a device to the Active List sheet, the PSCR POC will keep a record of the correspondence in the same folder in Huddle as the status verification is stored for the specific device. PSCR will provide a folder in Huddle for the NIST List of Certified Devices records. The folder structure will be as follows:

NIST List of Certified Devices Records [FOLDER]
-> Device Manufacturer [FOLDER]
-> Model Number – FCC ID [FOLDER]
-> Associated records [DOCUMENTS & RECORDS]

(3) Restore Device to Active List

The PSCR POC will restore the device to the Active List sheet of the NIST List of Certified Devices from the Expired List sheet as described in Step 3 of Section 8.2 of this document.

(4) Inform NIST director of List Status:

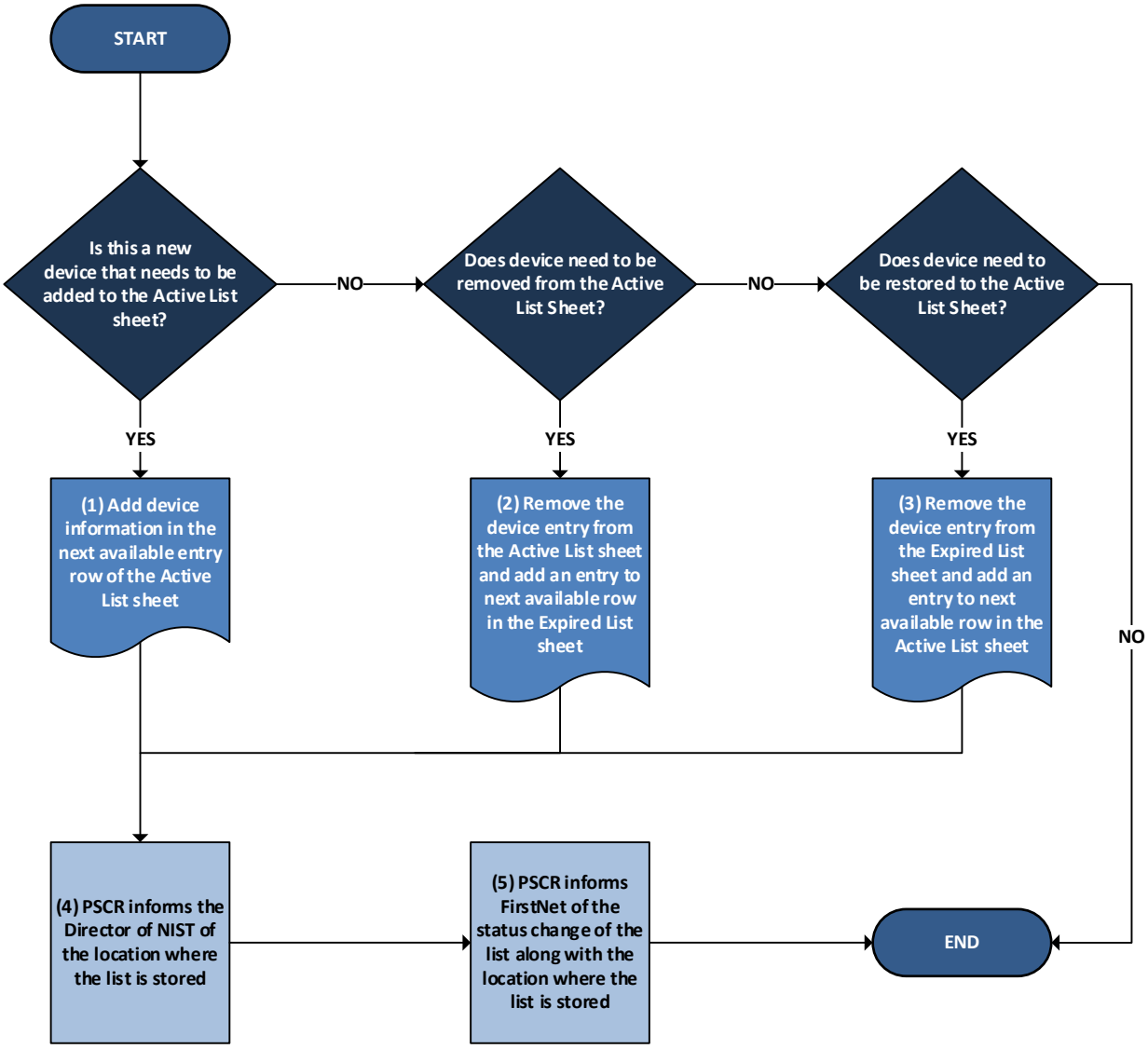
If not already done, the PSCR POC will inform the director of NIST via email where the list is stored.

(5) Inform FirstNet of List Status:

The PSCR POC will inform the FirstNet POC via email that a device was added to the Active List sheet of the NIST List of Certified Devices and where the list is stored.

8 Process for Maintenance of the List

8.1 Flow Chart for the process



8.2 Detailed Process Description for Maintenance of the List

(1) Add device information in the next available entry row of the Active List sheet:

A device needs to be added to the Active List sheet of the NIST List of Certified Devices.

a. The next available entry row will be used for the device (entry line number).
b. Fill in the information for the columns "Device Manufacturer", "Device Model", and "FCC ID".
c. Fill in the date of entry in the Date of entry column. The Date of entry is the date when all of the required documents were made available to the PSCR POC.
d. Comments should be added in the comments column to explain why the device was added to the Active List sheet or returned to the Active List from the Expired List. Comments are optional.
e. The Cover sheet will be updated with a new version and the NIST List of Certified Devices will be saved in the chosen secured location in Huddle. PSCR will provide a folder in Huddle for the NIST List of Certified Devices records. The folder structure will be as follows:

NIST List of Certified Devices [FOLDER]
-> NIST List of Certified Devices [DOCUMENT]
-> NIST List of Certified Devices Process Document [DOCUMENT]

(2) Remove the device entry from the Active List sheet and add an entry to next available row in the Expired List sheet:

A device needs to be removed (deleted) from the Active List sheet and added to the Expired List sheet.

a. Delete the entry for the device from the Active List sheet and add it to the next available row in the Expired List sheet (entry line number).
b. The columns for "Device Manufacturer", "Device Model", and "FCC ID" will remain the same.
c. A termination date will then be added in the Date of Termination column of the Expired List sheet. The termination date will be the date that FirstNet requested the status change.
d. The original date of entry on the Active List sheet will remain for reference purposes.
e. A comment should be added in the comment column describing why the device was removed from the Active List sheet. Comments are optional.
f. The Cover sheet will be updated with a new version and the NIST List of Certified Devices will be saved in the chosen secured location in Huddle. PSCR will provide a folder in Huddle for the NIST List of Certified Devices records. The folder structure will be as follows:

NIST List of Certified Devices [FOLDER]
-> NIST List of Certified Devices [DOCUMENT]
-> NIST List of Certified Devices Process Document [DOCUMENT]

(3) Remove the device entry from the Expired List sheet and add an entry to next available row in the Active List sheet:

A device needs to be reinstated (restored) to the Active List sheet and removed (deleted) from the Expired List sheet.

a. Delete the entry for the device from the Expired List sheet and add it to the next available row of the Active List sheet.
b. The columns for "Device Manufacturer", "Device Model", and "FCC ID" will remain the same.
c. The entry date for the reinstatement row will be the date that FirstNet requested the status change.
d. The original termination date shall be included in the comment column. An explanation on why the device was originally terminated shall also be included in the same comment. The original entry date on the Active List sheet should also be included in the comments.
e. The Cover sheet will be updated with a new version and the NIST List of Certified Devices will be saved in the chosen secured location in Huddle. PSCR will provide a folder in Huddle for the NIST List of Certified Devices records. The folder structure will be as follows:

NIST List of Certified Devices [FOLDER]
-> NIST List of Certified Devices [DOCUMENT]
-> NIST List of Certified Devices Process Document [DOCUMENT]

(4) <u>PSCR informs the Director of NIST of the location where the list is stored:</u>

The Director of NIST needs to know the location of the NIST List of Certified Devices.

a. If not done already, the director of NIST needs to be notified via email of the location of the NIST List of Certified Devices.
b. The email correspondence in step a above will be stored as a record in Huddle.

(5) <u>PSCR informs FirstNet of the status change of the list along with the location where the list is stored:</u>

FirstNet needs to be notified of any changes to the NIST List of Certified Devices.

c. The PSCR POC will inform the FirstNet POC via email that there was a change to the NIST List of Certified Devices (a device was added to the list, removed from the Active List sheet, or restored to the Active List sheet) and where the list is stored.
d. The email correspondence in step a above will be stored as a record in Huddle.

9 Appendix

9.1 References

[1] DOC OIG: https://www.oig.doc.gov/

[2] FirstNet: http://www.firstnet.gov/

[3] Huddle: https://www.huddle.com/

[4] GAO: https://www.gao.gov/

[5] ISO/IEC 17025: https://www.iso.org/standard/39883.html

[6] Middle Class Tax Relief and Job Creation Act of 2012: https://www.congress.gov/bill/112th-congress/house-bill/3630

[7] NIST: https://www.nist.gov/

[8] NTIA: https://www.ntia.doc.gov

[9] PSCR: https://www.nist.gov/communications-technology-laboratory-ctl/pscr

[10] PTCRB: https://www.ptcrb.com/

9.2 Middle Class Tax Relief and Job Creation Act of 2012 Relevant Sections

Section 6001, part 10
(10) COMMERCIAL STANDARDS.—The term ''commercial standards'' means the technical standards followed by the commercial mobile service and commercial mobile data service industries for network, device, and Internet Protocol connectivity. Such term includes standards developed by the Third Generation Partnership Project (3GPP), the Institute of Electrical and Electronics Engineers (IEEE), the Alliance for Telecommunications Industry Solutions (ATIS), the Internet Engineering Task Force (IETF), and the International Telecommunication Union (ITU).

Section 6206, part b.2.B.i
(b) DUTY AND RESPONSIBILITY TO DEPLOY AND OPERATE A NATIONWIDE PUBLIC SAFETY BROADBAND NETWORK.—
(2) REQUIREMENTS.—In carrying out the duties and responsibilities of this subsection, including issuing requests for proposals, the First Responder Network Authority shall—
(B) promote competition in the equipment market, including devices for public safety communications, by requiring that equipment for use on the network be—
(i) built to open, non-proprietary, commercially available standards;

Section 6206, part c.6
(c) OTHER SPECIFIC DUTIES AND RESPONSIBILITIES.—

(6) NETWORK INFRASTRUCTURE AND DEVICE CRITERIA.— The Director of NIST, in consultation with the First Responder Network Authority and the Commission, shall ensure the development of a list of certified devices and components meeting appropriate protocols and standards for public safety entities and commercial vendors to adhere to, if such entities or vendors seek to have access to, use of, or compatibility with the nationwide public safety broadband network.

Section 6303, part a
(a) NIST DIRECTED RESEARCH AND DEVELOPMENT PROGRAM.—
From amounts made available from the Public Safety Trust Fund, the Director of NIST, in consultation with the Commission, the Secretary of Homeland Security, and the National Institute of Justice of the Department of Justice, as appropriate, shall conduct research and assist with the development of standards, technologies, and applications to advance wireless public safety communications.

Section 6303, part b
(b) REQUIRED ACTIVITIES.—In carrying out the requirement under subsection (a), the Director of NIST, in consultation with the First Responder Network Authority and the public safety advisory committee established under section 6205(a), shall—
(1) document public safety wireless communications technical requirements;
(2) accelerate the development of the capability for communications between currently deployed public safety narrowband systems and the nationwide public safety broadband network;
(3) establish a research plan, and direct research, that addresses the wireless communications needs of public safety entities beyond what can be provided by the current generation of broadband technology;
(4) accelerate the development of mission critical voice, including device-to- device ''talkaround'' capability over broadband networks, public safety prioritization, authentication capabilities, and standard application programing interfaces for the nationwide public safety broadband network, if necessary and practical;
(5) accelerate the development of communications technology and equipment that can facilitate the eventual migration of public safety narrowband communications to the nationwide public safety broadband network; and
(6) convene working groups of relevant government and commercial parties to achieve the requirements in paragraphs (1) through (5).

9.3 Change History

Date	Change	Description
April 4, 2017	Initial Draft	Initial Draft
April 19, 2017	Version 0.20	Updates to Appendix and POC naming rules; other minor corrections
April 26, 2017	Version 0.30	Updated Section 5 – waiver handling
May 11, 2017	Version 0.40	JM – High level notes and comments and guidance.
June 2, 2017	Version 0.50	Process flow updates and prose explaining the process steps
June 2, 2017	Version 0.60	Corrected minor typos, accepted all changes, and deleted all comments.
June 30, 2017	Version 0.70	Revisions based on outcome of ATT device focused meetings

July 10, 2017	Version 0.80	Revised Section 5 to be more specific of the record that is stored and the items in the record.
July 11, 2017	Version 0.81	Accepted all comments and changes
July 12, 2017	Version 0.90	Corrected grammar and typos. Made clarifications on concepts based on internal reviews.
July 17, 2017	Version 1.00	Accepted changes and resolved comments.
September 20, 2017	Version 1.01	Changes to how the Director of NIST is notified about the list. Changes to how PSCR receives AT&T Carrier Acceptance Testing status.
September 21, 2017	Version 1.10	Accepted changes and resolved comments.
September 27, 2017	Version 1.11	Included comments from Chris Walton and Gerardo Saqueton as part of the BERB review
September 28, 2017	Version 1.20	Accepted changes and resolved comments.
September 28, 2017	Version 1.21	Including comments from Dereck Orr
September 29, 2017	Version 1.30	Accepted changes and resolved comments.
October 3, 2017	Version 1.31	Removed item in section 2.3 per FN request
October 6, 2017	Version 1.32	Update of document based on AT&T and FN NPSBNCOR inputs.
October 11, 2017	Version 1.40	Accepted changes and resolved comments.
March 8, 2018	Version 1.41	Small changes to language of PSCR's role in the process; small editorial changes
March 8, 2018	Version 1.50	Accepted changes and resolved comments.
May 4, 2018	Version 1.51	Clarified FCC Equipment Authorization process and terminology
May 7, 2018	Version 1.60	Accepted changes and resolved comments.
October 22, 2018	Version 1.61	Updated Scope to clarify modules
October 23, 2018	Version 1.70	Accepted changes and resolved comments.