

15 June 2012

Lawrence E. Strickling
Assistant Secretary of Commerce for
Communications and Information,
U.S. Department of Commerce
HCHB Room 4812
1401 Constitution Avenue, NW
Washington, DC 20230

**Re: Development of the State and Local Implementation Grant Program for
the Nationwide Public Safety Broadband Network**

Dear Mr. Assistant Secretary Strickling:

Raytheon welcomes the opportunity to respond to the National Telecommunications and Information Administration ("NTIA"), U.S. Department of Commerce, Request for Information ("RFI"). The RFI seeks comment on implementation of the State and Local grant program for the building of the nationwide public safety broadband network ("PSBN"), as called for in the Middle Class Tax Relief and Job Creation Act of 2012 ("Act").¹ We believe that the RFI is a significant first step towards implementing the PSBN under the Act and welcome the opportunity respond herein.

*To achieve maximum benefits to all public safety personnel, the PSBN must be established using **open standards** and an **open architecture** approach that **ensures compatibility** across the nation as well as **promoting competition** now and into the future.*

We agree that the Act is essential to meet the long-standing priority of creating a single national PSBN that will allow first responders to communicate via an interoperable long term evolution ("LTE") broadband network across multiple State, local and tribal agencies and jurisdictions. The Act established the First Responder Network Authority ("FirstNet") that is an independent authority within NTIA.² FirstNet is authorized "to take all actions necessary to ensure the design, construction, and operation of the PSBN, based on a single national network architecture."³ **Raytheon believes that to achieve**

¹ Middle Class Tax Relief and Job Creation Act of 2012, Public Law 112-96, 126 Stat. 156 (2012)(Act).

² *Id.* At § 6206(b)(1); see also Department of Commerce, NTIA, Docket No. 120509050-1050-01, RIN 0660-XC001, *Development of the State and Local Implementation Grant Program for the Nationwide Public Safety Broadband Network*, Fed.Reg. Vol. 77, N0. 95 (May 16, 2012)(explaining that "FirstNet is responsible for, at a minimum, ensuring nationwide standards for use and access of the network; issuing open, transparent, and competitive requests for proposals (RFPs) to build, operate and maintain the network; leveraging, to the maximum extent economically desirable, existing commercial wireless infrastructure to speed deployment of the network; and overseeing contracts with non-federal entities to build, operate, and maintain the network").

³ *Id.*

maximum benefits to all public safety personnel, the PSBN must be established using open standards and an open architecture approach that ensures compatibility across the nation as well as promoting competition now and into the future.

Raytheon is the leader in Public Safety Interoperability for communications systems. Raytheon is also a systems integrator and reseller of Long Term Evolution (“LTE”) systems, supplying systems engineering/design, program management, testing, documentation, training, warranty/maintenance services, network infrastructure and User Equipment. Our depth of expertise enables us to provide over arching system architecture capabilities, LTE end-to-end systems engineering, operational subject matter expertise, and the ability to be a trusted advisor in the building of the PSBN because of our experience in Adams County, Colorado with the ADCOM network. Raytheon is the prime contractor and systems integrator in Adams County in partnership with IP Wireless. The public safety broadband network in Adams County was awarded via the Department of Commerce, NTIA Broadband Technologies Opportunity Program (“BTOP”) grant. Thus, we are an interested party in this proceeding.

I. The Consultation Process

Raytheon agrees with the consultation requirements under the Act and encourages FirstNet to cast the widest net across all network users within a region, State, tribal and local jurisdiction when acquiring the necessary data to build the nationwide PSBN. Hence, FirstNet must ensure that the State coordinator who is appointed to oversee the plan will collect the required data from all potential users of the PSBN under the Act. The State coordinator must reach-out to the cities, counties, and tribal users to understand and document their varied and distinct needs in order to ensure a comprehensive plan leveraging all potential assets within the footprint of the PSBN. Moreover, NTIA must ensure a uniformed and consistent approach by States in compiling data for the FirstNet consultation process.

In order for FirstNet to receive the necessary information to build the PSBN, States must identify and engage personnel who have been working with State and Local assets on a wide scale, *e.g.* State Interoperability Executive Council/Committee (“SEIC”), as they will likely have access to data and reports of existing network infrastructure. In addition, States may want to form a standing committee to gather data and respond to questions from FirstNet. This could be a sub-committee to a standing statewide committee already in a position to help with this undertaking. It is also essential that the committee be empowered by the State to have the authority to directly interact with FirstNet on all issues in a timely manner.

The State committees should focus on earlier deployments of RF systems, and leverage the planning and investments that were necessary in building-out past systems. For example, they can determine how existing data formats can be retooled from previous SCIP planning in order to leverage investments made in the past. In addition, the committees should determine and document key issues that they face with their RF networks today, as many of these issues may be similar for 700 MHz narrowband and

broadband. The State should also leverage backhaul, towers, and any other public safety infrastructure where possible when compiling network asset data under the grant.

Raytheon would seek to have States compile the following information in the consultation process. In order of priority, we would like to see broadband, backhaul ownership, availability, placement, reliability, hardness, security and capacity. We would also suggest that States provide the locations, capability, and capacity of 911, PSAP, Dispatch, Troop, NOC, EMS, Regional and Statewide Operations and Communications Centers. In addition, all parts of public safety must be consulted and involved to ensure that the core needs of dispatchers, police, fire, EMS and emergency management are met. It is also essential that a complete accounting of tower ownership and leases be made available, along with placement, reliability, hardness, security and capacity requirements. Moreover, it would be beneficial to know of existing interoperability MOUs and SOPs. It would also be beneficial to have the public safety voice traffic history in order to gauge traffic flow and density. It would also be beneficial to document current data requirements and the potential future expectations of data use.

This activity should be covered by the State and local Implementation grant program, as many States and local municipalities have had their budgets reduced dramatically and grant programs have been severely cut. Without use of the State and local Implementation grant, compilation of assets in most areas will come from outdated reports that may not have been updated because of the lack of funding. A grant would allow experienced personnel the time to pull together, consolidate, and organize the concise data needed to allow for an accurate picture of the State's overall assets without costly errors and revisions. Raytheon, however, understands that certain States are unable to coordinate such a large undertaking and will need to rely on larger cities and counties for the required data. In addition, in many cases States are going to need help preparing the planning grants and grant funding should be made available for contractor support at the State level to help compile the required data.

Raytheon agrees with the Act that a State should certify its application for grant funding and designate an entity within the State to coordinate the implementation of the grant funding. We believe that the governmental body best suited to coordinate the implementation of the grant would be the interoperability/SIEC committees. These committees reflect a cross-section of the State, often including the regional and tribal sectors, and have worked together for several years. They have created MOUs and SOPs, and have a history of responding to emergency events, which would be valuable information for the building of the PSBN. State radio system committees have valuable experience, however, they often mainly serve metropolitan areas that have only a single system that do not have significant interaction with legacy systems and lack this much needed history and experience.

We suggest that the single officer role within a State should be the Statewide Interoperability Coordinator ("SWIC"). Many of the SWICs are already engaged with the NTIA and the Federal Communications Commission ("FCC") on broadband issues, and have attended meetings nationwide. They have considerable exposure to the

statewide governance models, and are able to represent the wider interests of the State because they are not limited to representing one or two agencies. While the Governor in each State has the ultimate responsibility, few Governors' Offices have the technical capability and experience that is necessary to support this complex undertaking.

Further, we believe that there needs to be a balance between inclusiveness, fairness, and efficiency when deciding who should serve on the governmental body. Clearly the more people on the committee, the more information can be gathered, as long as the charter and accountability is clear. It is important for the State to leverage as many public assets as possible. We suggest that CIO, SWIC, CFO, AG, Police Chiefs, Fire Chiefs, Sheriffs, EMS Chiefs and other entities within the State should be represented. In the interest of fairness, we also believe that private partners should be able to contribute, which would require a standard submittal vehicle, *e.g.* RFI, as the State must articulate its needs and desires up front. Finally, we suggest that the response to FirstNet should come from the Governor's office, so that the required due diligence is completed for ultimate accountability.

Many States use Department of Homeland Security or FEMA regional committees or COGs to develop MOUs, SOPs and interoperability agreements to involve local entities in the planning process. The aforementioned regional groups hold committee meetings on their own that allow for planning at the local level. The regional committee's chairperson is often a voting member of the statewide committee or SIEC. We suggest that the State funnel the grant funding down to the local level and they should respond back to the State. The State should also provide the templates that will be used by the State to respond to FirstNet for continuity and assurance that the information collection is standardized across the nation. In addition, the regional committees can also provide suggested private partners as well to assist in this process.

It is our understanding that tribal governments within the State should already be involved at the State or regional level. In some States, tribal governments are already joining the statewide radio system, as they streamline the process of communicating with tribes in emergency situations. Tribal agencies are subject to the same opportunities and responsibilities when participating and operating in the statewide radio system and receive the same amount of funding.

Moreover, Raytheon is aware of many instances where the States are already integrating Federal users over voice networks. Likewise, they can do the same for broadband with additional allowances for Federal government requirements that should be provided to the States for compliance. The integration of Federal users on the PSBN on a day-to-day operational basis is essential and will provide the needed continuity when there are large disasters within the State and FEMA and the National Guard must respond.

Finally, the time period that NTIA should consider for States to perform activities under the grant program should be broken down into several categories. We suggest that

statewide documents that should already be available and need only updating can be done in four weeks and documents that are available at the Regional and Local level and need only updating could be completed in eight weeks. Any new requirements, however, that the State must provide could potentially be done in 12 weeks and Regional and Local requirements may take up to 16 weeks.

II. Existing Public Safety Governance and Planning Authorities

FirstNet must partner with the State, tribal, and local agencies by coordinating through the State points of contact in the development of the plans going forward. Anything else would be rife with pitfalls and cause unnecessary delays and potential inefficiencies in any deployment of the PSBN. The exact division of responsibility should be agreed to prior to releasing of any RFP. FirstNet should act as the governing oversight for those items that need national oversight *e.g.* selected core services, national network management, national security operations center, national application certification, interoperability standards, competition advocacy, and future vision synchronization. FirstNet should also then partner with the States/local jurisdictions to issue RFPs for infrastructure in order to ensure the appropriate leveraging of their infrastructure.

Each State must name a coordination point for FirstNet, preferably the SIEC. This would be followed by a detailed inventory of current/planned assets and resources that could be integrated into the PSBN (some States and/or regional/local authorities are already underway in this inventory process). Then in partnership with FirstNet, the State agencies would develop and issue appropriate RFPs to begin the phased building of the infrastructure. There should be an overall integration and turn on program plan to ensure successful integration into the overall PSBN as each portion of the State network is completed.

We believe that States should serve as clearinghouses or one-stop shops for entities that seek to build or operate portions of PSBN in order to obtain access to resources such as towers and backhaul. We believe that States are more effective with their own resources and each State's unique environment and situation dictates that the State must lead their own efforts, while including counties and cities every step of the way. This will also ease the permitting process burdens that could cause extensive delays in any construction projects. Moreover, it is in the best interest of the PSBN and FirstNet that some portion of the costs of setting up a clearinghouse at the State and regional/local level should be eligible from the grant program.

III. Leveraging Existing Infrastructure

Raytheon believes that each State and/or local jurisdiction has existing infrastructure assets and resources that can be leveraged for use and integration with the nationwide PSBN. The best judge, however, of how to leverage these assets are the State and/or local jurisdictions, as the agencies within the State are in the best position to understand the current disposition of those assets and how those assets will meet the

overall requirements of the nationwide PSBN. The types of assets and resources that could be made available include (but are not limited to):

- Real estate use (land and/or existing buildings) for installation of new towers or structures,
- Co-use of existing public safety dedicated tower space,
- Use of existing back-haul (fiber and/or microwave with sufficient spare capacity), and
- Shared facility space for application hosting and/or core services.

The use of existing commercial infrastructure may not be the best choice if those commercial assets/resources do not meet the requirements for public safety use. Compared to government owned facilities and assets, the high cost of commercial infrastructure may also be an impediment. Compromising on the requirements for public safety is not an option when the safety and security of the public are at stake. An alternative may be to provide access to the public safety dedicated assets/resources, when feasible to city, county, and utilities through leasing agreements. This option may provide a revenue stream to offset future operation/maintenance costs of the PSBN.

Each State and/or local jurisdiction, in the end, needs to prepare an inventory of its current assets/resources that can be leveraged and integrated with the nationwide PSBN, as part of the upfront activities to building the network. These State/local inventories can be utilized in the overall architecture and implementation planning for the PSBN.

We contend that each States' situation is unique in both the business/financing and communications environment and subsequently must consider their unique position in order to determine how to best include utilities or other interested third parties in their planning activities. Potentially, a State may utilize third parties assets when appropriate:

- Use of utilities (or other third parties) assets/resource to locate towers for RANs,
- For financial offsets to allow local utilities (or other third parties) use of the local portion of the PSBN on a low priority basis for automatic meter reading and other non-time critical types of data transmissions, and
- Considerations of a public/private partnership with utilities or vendors that combine the benefits of both aforementioned options when critical public safety operations are not hindered.

Raytheon suggests that in order to allow maximum flexibility and creativity in establishing appropriate business arrangements, NTIA should provide an overall federal framework that allows and encourages all types of partnerships including public/private partnerships. By allowing these partnerships, States and local jurisdictions will have the maximum flexibility to decide what type of arrangement works best for their unique situation. The type of arrangement may vary across a State whereby in the urban areas one type of partnership is used while in the rural areas a different type of partnership is

developed. We believe that no one type of public/private partnership fits all situations and any national framework should not arbitrarily dictate the solution.

IV. State and Local Implementation Grant Activities

NTIA should apply lessons learned from the PSIC⁴ and BTOP⁵ grant programs. The PSIC program directed NTIA in consultation with the Department of Homeland Security to establish and administer a public safety grant program to assist in the advancement of public safety interoperable communications. This one time grant program awarded roughly one billion dollars to fund interoperable communications projects in the 56 States and Territories.

Likewise, the Federal Government's stimulus package, the American Reinvestment and Recovery Act of 2009, directed NTIA to implement the 4.7 billion dollar one-time competitive matching grant program that expanded broadband services to unserved and underserved areas of the country, improve broadband access for public safety agencies, stimulate the economy and create jobs via BTOP. The NTIA awarded the grants in waves through two rounds of funding. The BTOP grant program covered 80% of each deployment with a jurisdictional 20% match, although there was a waiver process that could enable individual grants to obtain funding that covered up to 100% of the cost.

In March 2009, the Office of the Inspector General for the Department of Commerce ("Inspector General") put out a PSIC lessons learned report for the benefit of the BTOP grant administration.⁶ The Inspector General's office found three lessons learned from PSIC grant program. Lesson 1 was to ensure adequate time constraints for funding and building the projects, Lesson 2 NTIA needs to establish a review process that ensures proposals are evaluated in a timely manner and in advance of grant award so projects are not delayed, and Lesson 3 promptly complete an environmental assessment. NTIA should consider the lessons learned from the PSIC grant program for the overall funding and building-out of the PSBN. Moreover, lessons learned from the Statewide Communication Interoperability Plan and approved Investment Justifications prior to the release of funds would be beneficial, so that proper planning via State and Local Implementation grant program at the outset will ensure timely project completion with realistic time constraints.

As was done with the PSIC grant program, the Inspector General issued a report noting that in the future NTIA needs better execution of project monitoring for BTOP

⁴ *Public Safety Interoperable Communications Grants*, Pub. Law No. 109-171, 47 U.S.C. 309 (Jan. 3, 2006).

⁵ *American Recovery and Reinvestment Act of 2009*, Pub. Law No. 111-5 (Feb.17, 2009).

⁶ *NTIA Should Apply Lessons Learned from Public Safety Interoperable Communications Program to Ensure Sound Management and Timely Execution of \$4.7 Billion Broadband Technology Opportunity Program*, Department of Commerce Office of the Inspector General, Flash Report (March 2009)(<http://www.oig.doc.gov/recovery/Pages/default.aspx>).

projects.⁷ The agency, however, has established a foundation to oversee BTOP projects. The Inspector General recommended that NTIA: “strengthen the federal program officers’ monitoring efforts, verify source documentation into its current monitoring efforts, strengthen its monitoring tools’ internal control capabilities, prepare recipient match documentation guidance for FPO use during site visits, work with recipients at risk of not meeting award progress and completion requirements and develop an action plan and alternative strategies for those awards that will not satisfy award terms, incorporate continuous trend analysis activities into its award monitoring process, and identify oversight strategies for different funding levels.”⁸ Overall, these recommendations should be incorporated by NTIA where applicable in the process for building-out the national PSBN.

Moreover, NTIA through the administration of the PSIC and BTOP programs now has a solid foundation to administer large grant programs. In addition, the lessons it has learned in the process of administering billions of dollars of nationwide grants will benefit FirstNet and ultimately the build-out of the national PSBN.

Raytheon believes that regions or States should take advantage of the U.S. Department of Homeland Security’s Office of Emergency Communications (“OEC”) tools via the Technical Assistance Program. OEC through the administration of the PSIC Statewide Communication and Interoperability Plans has collected valuable information from the States that should be the basis for the information collection that is needed for the State and Local Implementation grant program. At the end of the day, States will need an LTE architectural plan that factors in network assets currently owned and those that are required purchases before FirstNet funding is allocated.

V. Other

Raytheon seeks consideration by NTIA to use the BTOP funded public safety broadband network in Adams County, Colorado (“ADCOM”) as a test-bed network to help States through the Implementation grant process and ultimately the FirstNet deployment of the nationwide PSBN. As you are aware, ADCOM is one of the 21 original 700 MHz public safety Waiver holders that sought early deployment of broadband networks from the FCC. In addition, ADCOM is one of the seven public safety BTOP awardees made by NTIA under the Recovery Act. The seven States and jurisdictions received a total of \$380 million under the BTOP grant program, of which ADCOM received roughly \$12 million dollars.

On May 11, 2012, NTIA notified the seven States or jurisdictions that they “were partially suspending their grants to allow us to work with each of them to determine the

⁷ *NTIA Has an Established Foundation to Oversee BTOP Awards, But Better Execution of Monitoring is Needed*, Department of Commerce Office of the Inspector General, Final Rep. No. OIG-12-013-A, (Nov. 17, 2011)(<http://www.oig.doc.gov/recovery/Pages/default.aspx>).

⁸ *Id.*

best path forward in light of the recent federal legislation.”⁹ This suspended the seven jurisdictions ability to early deploy including ADCOM. We, however, believe that ADCOM and the other six BTOP funded jurisdictions should be allowed to move forward and deploy their networks.

In the case of the ADCOM network it is 81% paid for and is substantially complete with all program material already purchased. Raytheon has installed, configured, and tested an initial capability consisting of an EPC, eNodeB, and air interface proving that the network has complete end-to-end connectivity.

We believe that moving forward with the ADCOM network will provide a test-bed for the deployment of the national PSBN allowing for technical, administrative and governance lessons learned that will hasten the deployment of the overall network and allow for cost efficiencies in the end. Moreover, given ADCOM’s proximity to the National Institute of Standards and Technology (“NIST”) Public Safety Communications Research (“PSCR”) program in Boulder, Colorado, it would allow ADCOM to collaborate with the PSCR and test a functioning multiple site LTE public safety network in real time if PSCR would like this collaboration. The benefits of this collaboration to FirstNet would be extremely valuable and provide lessons learned for the deployment of the nationwide PSBN. Finally, the ADCOM network will be technically consistent with the national network because in order to operate their network they must have submitted an interoperability showing that has been approved by the FCC.

Raytheon believes that this is a unique opportunity to acquire lessons learned for the nationwide PSBN for the aforementioned reasons and gladly extends the invitation to NTIA via the NIST PSCR to use ADCOM as a test-bed for the nationwide PSBN.

VI. Conclusion

For all the reasons set forth herein, we believe that FirstNet should move quickly upon formation to contract for program management support to help develop, implement and administer the acquisition strategy for PSBN. This program support contractor would also support State level certification and grant administration. We believe the next step would be to quickly contract a large systems integrator that can manage the complexity of a nationwide system rollout. This systems integrator should be prepared to provide the necessary thought leadership, LTE end-to-end network architecture, system integration, national network management, network operations center management, security operations center management, system wide security support, and supply chain management expertise that is needed in order to facilitate the building of the PSBN in a

⁹ See Keynote Remarks of Lawrence E. Strickling, Assistant Secretary of Commerce for Communications and Information, APCO Public Safety Broadband Summit, Washington, DC (May14,2012) (<http://www.ntia.doc.gov/speechtestimony/2012/keynote-remarks-assistant-secretary-strickling-apco-public-safety-broadband-sum>).

cost efficient and correct manner. State level implementations would then roll out on a priority and readiness basis with active leadership and involvement on the part of the appropriate State level stakeholders. Early deployments also present a unique opportunity to acquire lessons learned and test-bed networks that FirstNet can utilize in planning and building the nationwide PSBN.

Respectfully submitted,



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Regards, // Signed //

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