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Mr. Evan Viau
Legislative Clerk
Committee on Energy and Commerce
2125 Rayburn House Office Building
Washington, DC 20515

Re: Subcommittee on Communications and Technology, Committee on Energy and Commerce; November 1, 2017 Hearing: "Oversight of FirstNet: State Perspectives"

Dear Mr. Viau:

Attached please find the responses to the questions for the record directed at AT&T Senio Vice President, Chris Sambar in the above-referenced hearing.

Please call me with any questions.

Sincerely,

David J. Chorzempa

Enclosure: a/s

Before the Subcommittee on Communications and Technology of the United States House of Representatives, Committee on Energy and Commerce

Hearing: "Oversight of FirstNet: State Perspectives."
Questions for the Record Submitted by the Honorable Susan W. Brooks for AT&T's Chris Sambar

The Honorable Susan W. Brooks

1. Now that Indiana has opted-in, what can we expect from AT&T over the coming months?

    a. I expect that you all will be pushing for adoption; however, I'm more interested in the physical deployment of the RAN. Can you expand please?

Response: We have already begun the buildout process, including site acquisition and design work on the additional RAN sites in the state plans. The FirstNet network core will be up in March 2018. Having said that, first responders in "opt in" states are already able to utilize enhanced features of the FirstNet network. For example, first responders in "opt in" states can have priority, meaning that in times of emergencies and network congestion, our network will give first responders' communications precedence. And as early as this month, first responder communications for primary users will also have "preemption," meaning that their communications will preempt all communications, other than 911 calls, in times of emergencies.

We have worked closely with the State of Indiana and the FirstNet authority to identify areas of the state that will receive coverage enhancements. Where appropriate, AT&T is also committed to working with the state to use state assets to support the FirstNet buildout.

    b. I hear that gaining access to priority and preemption on the network will be as simple as swapping out a SIM card in a device, is it really that simple? How do first responders actually get access to priority and preemption?

Response: As noted, priority and as early as this month, preemption will be made available in all opt-in states. Thus, at present, first responders with AT&T service and an AT&T device can immediately take advantage of priority and, expected shortly, preemption on AT&T's network without having to swap out a SIM. However, once the FirstNet network core is up (in March 2018), first responders will simply need to swap out their SIM card in their AT&T device in order for the phone to "point to" the FirstNet network core.

    c. What sort of outreach is FirstNet and AT&T doing with public safety officials so they fully understand what FirstNet is, how it will benefit them, what exactly they are gaining access to, and how they can gain access?

Response: FirstNet has been reaching out to public safety experts in the states for the last three years, not only to explain the benefits of FirstNet, but also to receive their feedback on what they wanted in this network. That is why FirstNet is a solution designed by public safety for public safety. Since FirstNet announced (on March 30th) that it had selected AT&T, we have been working closely with states and territories to provide them all the information they need to make an informed decision to opt in to FirstNet. In early June, we held a two-day meeting with states

officials in Dallas to discuss the network AT&T is building, the services we will deliver, as well as the delivery of the state plans. And before and after this meeting, FirstNet and AT&T have had countless meetings with state public safety experts to answer any questions they may have. We are committed to continuing this outreach and collaboration to ensure that states have all the information available to them to fully understand FirstNet's benefits and how they can utilize the network.

In Indiana, the AT&T FirstNet team has actively engaged first responders across the state. Prior to the state's decision to "opt in," the AT&T FirstNet team met with numerous first responders throughout the state and sponsored several public-safety focused events that gave us the opportunity to describe the benefits of FirstNet. In May, the AT&T FirstNet team held a statewide conference in French Lick that was attended by more than three hundred first responders from across the state.

Since Indiana opted in, the AT&T FirstNet team has worked with state agencies to provide details of the state plan and describe the process of migrating to FirstNet. This outreach includes the Indianapolis State Police and the City of Indianapolis Police and Fire.

On November 30th, AT&T presented at the State of Indiana "FirstNet Launch" at the Indianapolis Marriott East. Sixteen AT&T FirstNet teammates participated in the event, offering details of the FirstNet solutions AT&T will offer.

Before the Subcommittee on Communications and Technology of the United States House of Representatives, Committee on Energy and Commerce

Hearing: "Oversight of FirstNet: State Perspectives."
Questions for the Record Submitted by the Honorable Anna G. Eshoo for AT&T's Chris Sambar

The Honorable Anna G. Eshoo

1. Some questions have been raised in my home state of California about AT&T's existing coverage throughout the state, and the interoperability of the Public Safety Broadband Network with other cellular networks that may have a more expansive network of coverage than AT&T.

    a. How are you dealing with coverage areas where AT&T is not a dominate carrier in an area?

Response: With all we bring to the table, we estimate that we will cover over 99% of the U.S. population and its geography. This includes the combination of our commercial LTE network, agreements with rural telecommunications networks, deployables, and additional satellite technology. We are actively working with states, including California, to identify areas where they believe added coverage is necessary. We will continue to discuss with each state how we will address their unique coverage needs, using this combination of assets.

    b. What is your specific plan for year to year improvement including the number of sites to be built annually and the number of those sites that will be built to serve rural and tribal areas?

Response: Each state or territory has received this information along with its state plan and may access it, on a confidential basis, via the state portal. The detailed FirstNet buildout and coverage information provided to the states is confidential, for both security and competitive reasons. For network security purposes, it is important that AT&T's network and the FirstNet build plans are kept confidential and not publicly available to those seeking to harm the network, which will be relied upon by our first responders in times of emergency. We would be happy to discuss this question with your office in a private setting.

2. FirstNet has made statements that only the AT&T/FirstNet core can provide a nationwide interoperable base and that other carriers providing public safety services would not be allowed to connect.

    a. How will AT&T ensure interoperability with the Public Safety Network among jurisdictions that utilize other cellular networks?

Response: To be clear, we will provide the same level of interconnection with other networks for the exchange of our customers' traffic, as we do today. Thus, FirstNet users will be able to communicate with public safety personnel served by other cellular networks, and vice versa. However, our mission and focus is to deliver a network with a highly secure nationwide core. That network will fulfill Congress' mandate to establish a single, nationwide public safety interoperable broadband network.

Introduction of multiple networks controlled by a multitude of carriers creates additional security risks, additional points of failure, and can degrade the services offered over that network. Introduction of multiple carriers with multiple cores would create the same problems that led Congress to create the FirstNet network in the first place.

b. How will AT&T guarantee interoperability with other carriers if they are not allowed such connection?

Response: Please see the response to Question 1.a.

c. Will applications between different networks be able to interoperate seamlessly?

Response: Yes. Our applications ecosystem will support application developers that design applications for first responders that can operate on both FirstNet and non-FirstNet devices.

3. It is my understanding that California requested AT&T to provide more precise and granular information on gaps in AT&T's coverage in California and AT&T refused.

a. Can you explain why? Will FirstNet share this information with California?

Response: We are in constant communications with California officials to provide the information they are requesting. We are unaware of any pending requests from California to which we have not responded. We stand ready to work with California and other states to ensure they have all the information they need to make an informed decision to "opt-in" to the FirstNet network.

Before the Subcommittee on Communications and Technology of the United States House of Representatives, Committee on Energy and Commerce

Hearing: "Oversight of FirstNet: State Perspectives."
Questions for the Record Submitted by the Honorable Peter Welch for AT&T's Chris Sambar

Honorable Peter Welch

1. Are you willing to identify all personnel hired by AT&T since January 1, 2016, who had prior played any role whatsoever in any state's consideration of FirstNet state plans or alternatives?

Response: AT&T continues to bolster its public safety expertise, relying on individuals with relevant experience, subject to conflict of interest safeguards. AT&T is committed to ensuring that those on the FirstNet team do not have any relevant conflicts of interest. AT&T will comply with all applicable federal or state statutes or rules, as well as any obligations in the FirstNet contract, concerning employment of former state employees. There are safeguards in place to address organizational conflicts of interest and we intend to abide by them. That said, AT&T has not hired any individuals while they were still employed by a state.

2. If yes is the response to the above question, who are these individuals?

Response: Please see the response to Question 1.

3. All mobile networks worldwide inter-operate with multiple cores, even between countries, including AT&T which interoperates with hundreds of core networks worldwide and locally in the US. As the 3GPP security standards as well as current IT best practices, combined with Federal security standards such as FIPS 140-2 end-to-end encryption, and 2-factor authentication, all ensure a highly secure interoperability standards, why would a state deployed Evolved Packet Core (EPC) network, that meets all the required security standards increase the risk of security for the NPSBN?

Response: Congress mandated that FirstNet deploy a public safety network "based on a single, national network architecture," 47 U.S.C. § 1422(b), because the introduction of multiple networks controlled by a multitude of carriers creates additional security risks, additional points of failure, and possible degradation of services offered over that network. Allowing opt-out states to deploy their own core networks would create the same problems that led Congress to create the FirstNet network in the first place.

4. Does this unpacked argument not demonstrate that any state RAN cores, Verizon, Sprint or US Cellular can all be safely interconnected with AT&T's FirstNet core?

Response: Please see the response to Question 3.

5. According to the proposals included in the state plans, AT&T will share significant parts of the NPSBN with their commercial network, including the Radio Access Network, Operational Support Systems, Business Support Systems, Network Management Services, EPC hardware, core transport network, IP Multimedia sub-systems, network service

platforms, and physical network locations. Many of these systems which are part of the NPSBN core network. How do you explain the contradictions between these facts and your testimony before Congress in July and November hearings?

Response: AT&T does not believe there is a contradiction. Rather, it was Congress' vision that FirstNet would (1) rely upon existing infrastructure, including network assets owned and operated by mobility carriers and used to support customer traffic today, where it made economic and engineering sense, and (2) use a public/private partnership strategy to help accelerate the deployment of the FirstNet network dedicated to public safety.

6. How is security and NPSBN isolation maintained in light of AT&T's use of all these shared network components?

Response: AT&T is 100% committed to public safety and to delivering a network engineered to the needs of first responders and compliant with the requirements in its agreement with FirstNet that were based on guidance and efforts from many organizations, including NPSTC (National Public Safety Telecommunications Council), APCO (Association of Public-Safety Communications Officials), and PSAC (Public Safety Advisory Committee) to name a few.

Managing a reliable, highly-secure network is not new to AT&T. AT&T has 8 world-class Global Security Operations Centers, where our security experts analyze the traffic on our network 24/7/365 to understand and identify the latest emerging threats. We will have one such center dedicated to FirstNet. With more than 150 petabytes of data crossing our network every day, our experts have unique insight into the threat landscape that helps them detect new threats before they become a problem.

AT&T's robust cybersecurity program has been benchmarked against the NIST security framework. We have deployed a multi-layered approach to help secure devices and applications, so security is embedded in our network. Finally, our use of software-defined networks (SDN) also allows us to "virtualize" our security functions, letting us automatically update security instead of relying on manual updates. SDN also allows us to expand the network during a denial-of-service attack to keep things up and running.

7. What does AT&T mean by Public Safety Grade core network?

Response: AT&T is 100% committed to public safety and to delivering a network engineered to the needs of public safety and compliant with the requirements in its agreement with FirstNet that were based on guidance and efforts from many organizations, including NPSTC (National Public Safety Telecommunications Council), APCO (Association of Public-Safety Communications Officials), and PSAC (Public Safety Advisory Committee). Consistent with FirstNet's vision, AT&T will design and engineer the NPSBN and infrastructure with the appropriate public safety grade attributes to meet its 99.99% AT&T mobility network end-to-end service level objective. In addition, the resiliency of AT&T's network will be buttressed by a fleet of 72 FirstNet satellite Cells-on-Light-Trucks that can be deployed to provide network coverage if elements of the network are not available. Finally, AT&T's network is already supported by AT&T's vast Network Disaster Recovery fleet of vehicles, generators, and other deployables that can be used to ensure service continuity.

8. What does AT&T mean by Public Safety Grade towers?

Response: Please see the responses to Questions 7 and 10.

9. What does AT&T mean by Public Safety Grade backhaul?

Response: Please see the responses to Questions 7 and 10.

10. What is AT&T's description of a fully hardened public safety grade tower – including back-up power, back-up generators, wind-loading, shelter descriptions, backhaul redundancy, etc.?

Response: AT&T recognizes the importance of the physical security and resiliency of the sites and infrastructure comprising the NPSBN solution. AT&T will harden the network for reliability and survivability as an essential effort to the NPSBN's success. Our approach uses a site hardening requirement regimen to provide a high degree of operational security. AT&T currently builds sites to uniformly high standards nationwide. AT&T's RAN infrastructure measures include: established densification in urban and suburban areas to create site overlap, permanent batteries at all sites, permanent generators at critical sites, physical access control to all sites, and special hardening and location of critical sites, where reasonable and appropriate, recognizing local hazards such as hurricanes, tornadoes, earthquakes, flooding and wildland fires so that the network is engineered to increase survival in the face of such hazards.

11. What percentage of AT&T's own existing towers meet public safety grade standard today?

Response: AT&T's towers and sites are in full compliance with applicable laws as well as with the terms of the agreement between AT&T and FirstNet. Any AT&T cell site towers and structures that will be built to support FirstNet will also be compliant with applicable laws and contract terms.

12. What percentage of AT&T's leased towers meet public safety grade standard today?

Response: Please see the response to Question 11.

13. What percentage of AT&T's own existing towers meet public safety grade standard in year three?

Response: Please see the response to Question 11.

14. What percentage of AT&T's owned towers across the country will be equipped with Band Class 14 deployed in year three?

Response: Each state or territory has received this information along with its state plan and may access it, on a confidential basis, via the state portal. The detailed FirstNet buildout and coverage information provided to the states is confidential, for both security and competitive reasons. For network security purposes, it is important that AT&T's network and the FirstNet build plans are kept confidential and not publicly available to those seeking to harm the network, which will be relied upon by our first responders in times of emergency. We would be happy to further discuss this question with your office in a private setting.

Having said that, we expect to deploy a significant percentage of Band Class 14 over the next five years and the vast majority over the 25-year length of the contract with FirstNet. Moreover, if AT&T is tasked to build all 56 RANS in the states and territories, with all we bring to the table, we estimate that we will cover over 99% of the U.S. population and its geography.

15. What percentage of AT&T's leased towers across the country will be equipped with Band Class 14 deployed in year three?

Response: Please see the response to Question 14.

16. What percentage of AT&T's owned towers in each state will be equipped with Band Class 14 be deployed in year five?

Response: Please see the response to Question 14.

17. What percentage of AT&T's leased towers in each state will be equipped with Band Class 14 be deployed in year five?

Response: Please see the response to Question 14.

18. Will AT&T commit to deliver Public safety wireless broadband service across their national network footprint?

Response: Yes. AT&T has already made this commitment. First responders will have access to this service, including priority and, for primary users, preemption, on all of AT&T's spectrum bands as well as on Band Class 14 as it is deployed. In fact, AT&T is already providing service on AT&T's existing national network to first responders in states that have opted in.

19. Is it true that public safety subscribers will have wireless radio access using Band Class 14 to all of AT&T's commercial tower sites?

Response: AT&T expects to deploy a significant percentage of Band Class 14 over the next five years and the vast majority over the 25-year length of our contract with FirstNet. Moreover, if AT&T is tasked to build all 56 RANS in the states and territories, with all we bring to the table, we estimate that we will cover over 99% of both the U.S. population and its geography. First

responders will have access to priority and, for primary users, preemption on all sites, whether or not they are utilizing Band Class 14.

20. Will public safety users on the AT&T First Responder network generally need to rely on commercial (non-LTE band-14) spectrum for their day-to-day use of the first responder broadband network?

Response: No, because we expect to deploy Band Class 14 on the vast majority of our sites. Whether a first responder will generally use Band Class 14 or AT&T's other spectrum bands depends on whether AT&T has deployed the Band Class 14 network in the public safety user's location. However, because all FirstNet subscribers will have priority and preemption across all spectrum bands, and because all FirstNet subscribers also will use the FirstNet core for full features and functionalities, a first responder will receive the same high-quality service whether utilizing Band Class 14 or one of AT&T's other spectrum bands.

21. How does AT&T define Public Safety Grade?

Response: AT&T is 100% committed to public safety and to delivering a network engineered to meet first responders' needs and compliant with the requirements in its agreement with FirstNet that were based on guidance and efforts from many organizations, including NPSTC (National Public Safety Telecommunications Council), APCO (Association of Public-Safety Communications Officials), and PSAC (Public Safety Advisory Committee).

22. To what extent does it incorporate the NPSTC definition of Public Safety Grade?

Response: Please see the response to Question 21.

23. What percentage of AT&T sites will be compliant with the NPSTC public safety grade definition within 3 years after network development begins?

Response: AT&T is 100% committed to public safety and to delivering a network engineered to meet first responders' needs and be compliant with the requirements in its agreement with FirstNet that were based on guidance and efforts from many organizations, including NPSTC (National Public Safety Telecommunications Council), APCO (Association of Public-Safety Communications Officials), and PSAC (Public Safety Advisory Committee). All sites will be compliant with the FirstNet contract specifications to allow AT&T to deliver a highly-secure NPSBN that is reliable, resilient, and redundant. Consistent with FirstNet's vision, AT&T will design and engineer the NPSBN and infrastructure with the appropriate public safety grade attributes to meet its 99.99% AT&T mobility network end-to-end service availability objective.

24. What is the percentage compliant within 5 years?

Response: Please see the response to Question 23.

25. What is the percentage compliant within Vermont in 3 years?

Response: Please see the response to Question 23.

26. What is the percentage compliant within Vermont in 5 years?

Response: Please see the response to Question 23.

27. Will this Public Safety Grade specification be applied across the entire public safety broadband network, even to coverage sites that only supply commercial spectrum?

Response: AT&T recognizes the importance of the physical security and resiliency of the sites and infrastructure of the AT&T network that supports first responders and other customers. AT&T has and will continue to harden all of its network for reliability and survivability where reasonable and appropriate. Our approach uses a site hardening requirement regimen to provide a high degree of operational security. AT&T currently builds sites to uniformly high standards nationwide. AT&T's RAN infrastructure measures include: established densification in urban and suburban areas to create site overlap, permanent batteries at all sites, permanent generators at critical sites, physical access control to all sites, and special hardening and location of critical sites, where reasonable and appropriate, recognizing local hazards such as hurricanes, tornadoes, earthquakes, flooding and wildland fires so that the network is engineered to increase survival in the face of such hazards.

28. To what extent can State public safety organizations have control over network maintenance schedules in order to prevent the loss of LTE service during critical communication hours, such as weekend nights?

Response: AT&T fully expects to be able to meet FirstNet's 99.99% AT&T mobility network end-to-end service availability objective. AT&T understands that at the heart of protecting a network is the ability to know and control what is on the network. We offer a suite of tools, processes, and experienced people that perform network and configuration management allowing us to maintain availability of service. AT&T performs network and configuration management of our existing world-class network delivering 99.99% available uptime for our mobility IP core network. The NPSBN will receive an integrated security operations center and network operations center approach for security management, reducing service impact time.