Response to Written Questions Submitted by Hon.
John Thune
Written Questions for the Record to
The Honorable Meredith Baker

Question 1. The administration has proposed spectrum leasing as a means of making more spectrum available, if only for a limited time.

- What are your thoughts on that proposal?
- Are you concerned that leasing could supplant traditional spectrum licensing?
- How long would lease terms need to be in order for carriers to recoup their investment in the infrastructure and other costs associated with providing service in a particular spectrum band?
- Would it be advisable to have a pilot program to test spectrum leasing before proceeding with any other leasing activities?

Response. We commend your leadership in MOBILE NOW and the Committee's efforts to ensure the wireless industry has access to the cleared licensed spectrum we will need to compete globally. It is critical that the federal government continue to make additional *cleared* spectrum available to mobile broadband providers so that the United States can win the race to deploy 5G networks and services.

Licensing of exclusive use spectrum provides carriers with the certainty they need to develop and execute on their business plans, which in turn generates billions of dollars in investment. Other countries are releasing hundreds of megahertz of new cleared spectrum to promote 5G because they recognize that spectrum is key to winning the 5G race and unlocking the corresponding economic and societal benefits.

Although licensing of exclusive use spectrum remains the gold standard of spectrum policy, CTIA does support consideration of alternative approaches in the limited circumstances where cleared spectrum is not possible. To that end, we would support exploration of federal spectrum leasing opportunities.

We agree that a pilot program would be an appropriate and necessary preliminary step, and it would be advisable to limit such a pilot to a single band where there is a single agency with spectrum allocations to avoid the complexity of inter-agency coordination and balancing different objectives and requirements. We would also need to ensure the agency has the resources and requisite expertise to participate in a more commercial market-style transaction.

As you note, the lease terms would be critically important. Wireless carriers would need long-term certainty to justify the significant expenses of building out new spectrum bands across the country and incorporating those bands in its device portfolio. Today, the FCC typically sets a 10-year term on wireless carrier license, as well as a renewal expectancy. Replicating that approach in the context of spectrum leases would be appropriate to incentivize wireless investment.

We would be happy to engage with the Committee, the Administration, and the FCC to consider the challenges that would need to be addressed prior to pursuing a new federal spectrum leasing strategy.

Response to Written Questions Submitted by Hon.
Jerry Moran
Written Questions for the Record to
The Honorable Meredith Baker

Question 1. It is clear that rapid deployment of a nationwide 5G wireless network means more than just improved technical broadband capacity and speeds that this technology provides. According to studies, the deployment of this technology is expected to contribute $275 billion in new investment, $500 billion in economic growth, and up to 3 million new jobs to the U.S economy. These projected benefits highlight why the U.S. needs to keep pace and surpass our foreign competitors like China and South Korea. What exactly does "winning the race" to 5G mean for our nation's economy and telecommunications capabilities, especially for our rural communities like those in Kansas?

Response. We know what U.S. 4G leadership meant to our country. By deploying first, we saw $100 billion added to our economy and an 84% increase in wireless-related jobs, according to Recon Analytics. Moreover, 4G was the platform that unlocked the apps and sharing economy that allowed companies like Uber to start up and flourish.

The nation that leads in 5G will capture millions of new jobs and billions in economic growth, as you note in your question. Every industry, including farming, healthcare, energy, transportation, law enforcement, e-commerce, logistics, and education will be positively impacted by winning the race to 5G. In Kansas, the wireless industry contributes over $7 billion to the state's economy and drives over 63,000 wireless-related jobs resulting in $2.9 billion in pay and benefits, according to Accenture. That will grow significantly with 5G.

In order to win the race to 5G, we must get spectrum and infrastructure policies right to enable the industry to deploy those networks to more communities, including rural communities, faster. Congress can help by incentivizing industry investment and providing new support to commercial providers to bring wireless to areas that are challenging to serve.

That's why CTIA strongly supports the AIRWAVES Act "rural dividend," which would allocate 10% of auction proceeds to wireless deployment in unserved and underserved areas. In addition, as you are well aware, state and local rules for wireless infrastructure have not kept pace with innovative new technologies and network architecture. By streamlining these rules, policymakers can drive down the cost of deployment, helping speed deployment and enable more deployments in more areas. CTIA stands ready to work with you to push forward common-sense policies to expedite and expand the deployment of 5G wireless networks to Americans everywhere.

Question 2. While I have supported legislation like the RAPID Act and the MOBILE NOW Act to streamline overly-cumbersome regulations, what else can Congress be doing to increase U.S. competitiveness in 5G deployment?

Response. Thank you for your leadership in introducing the RAPID Act. Modernizing siting rules that were put in place to govern 200-foot macro towers is critical to speed 5G deployment.

In addition to modernizing the federal review process as contemplated in your RAPID Act, Congress and the FCC also need to prioritize the efficient deployment of wireless infrastructure and set nationwide guidelines for how localities treat siting requests.

CTIA commends the FCC for taking steps to stop states and localities from imposing siting moratoria, and Congress and the FCC should continue to modernize the approval process for 5G networks and equipment, including enactment of the STREAMLINE Small Cell Deployment Act and the SPEED Act.

Spectrum is also critical to 5G deployment. Congress should pass the AIRWAVES Act, a bipartisan bill that provides a clear, robust pipeline of spectrum necessary to deploy 5G, and would help with rural deployment as well (as noted above). The AIRWAVES Act will enhance existing wireless service and unleash next-generation broadband in communities across America by creating a schedule of future spectrum auctions, and reallocating underused spectrum for future mobile broadband use.

Question 3. Of the spectrum sharing regimes under consideration, the prioritization and coordination of operations within the band are facilitated through the use of Spectrum Access Systems. Will you please describe to this committee how these automated systems optimize efficient use of available spectrum for all while protecting the higher-tier users from interference from others?

Response. In 2015, the FCC approved a three-tiered, experimental sharing framework to make up to 150 megahertz in the 3.5 GHz band available for wireless use. Initially proposed over five years ago, this sharing regime represents an important technical and policy experiment, and CTIA has been committed to exploring this new approach to spectrum management.

In this three-tiered sharing framework, existing government users like the U.S. Navy would occupy Tier 1, license holders (to be determined by auction) would occupy Tier 2, and those seeking opportunistic use—similar to unlicensed bands—would occupy Tier 3.

These tiers will operate through Spectrum Access System (SAS) databases, which will contain information about use of the 3.5 GHz spectrum, including by incumbent operators. The SAS Administrator will authorize use of the airwaves, playing a role in protecting higher-tier users from interference. More specifically, SAS Administrators will coordinate frequency assignments based on channel requests from users by using sensing technology to detect if higher-tier users, like Navy radar systems, are present.

The 3.5 GHz regime is an experiment and we commit to working with the Administration, Congress and other stakeholders to evaluate how this novel sharing mechanism works as well as if, and where, it would be appropriate to use again for other spectrum bands where clearing spectrum is particularly challenging. Key to ensuring a successful experiment are rules changes the FCC is considering right now to ensure that Tier 2 auction winners have the certainty and rights they will need to invest in the band.

Question 4. The MOBILE NOW Act directed NTIA to study the mid-band spectrum of 3100-3550 megahertz to assess the feasibility for allowing commercial wireless services in that spectrum. In February, NTIA identified 100 megahertz of spectrum currently used by DOD (for military radar systems) that could potentially be repurposed for commercial use. Could you please describe the utility that this spectrum could provide mobile wireless broadband providers in improving their services for customers?

Response. MOBILE NOW helped jump-start our nation's focus on mid- and high-band spectrum, which is critical to the deployment of 5G services. As you indicate, NTIA has undertaken a study of the 3450-3550 MHz band, which is currently allocated to the Defense Department. This band, adjacent to spectrum at 3.5 GHz and 3.7 GHz that is being considered for 5G services, could be combined with those airwaves to offer a wide swath of mid-band spectrum that offers economies of scale and beneficial technical characteristics for next-generation wireless broadband.

CTIA strongly supports NTIA's efforts so that the U.S. can keep pace with countries around the world that are taking steps to allocate mid-band spectrum for mobile broadband. Overall, the U.S. ranks 6th globally in terms of mid-band spectrum availability, and expedited review of the 3450-3550 MHz band could enhance our nation's competitive position and provide access to much-needed 5G spectrum.

Historically, it can take 10 years or more from the time a spectrum band is identified as a candidate for commercial reallocation to the time commercial deployments begin in the band. Accordingly, we have encouraged NTIA to complete its study expeditiously, so that all stakeholders – including NTIA, DoD, the FCC, and industry – can move on to the next steps necessary to realize the benefits of commercial reallocation of this band while ensuring critical national security objectives remain protected.

Response to Written Questions Submitted by Hon.
Dan Sullivan
Written Questions for the Record to
The Honorable Meredith Baker

Question 1. We're here today because of the excitement and anticipation of the rollout of 5G networks. In these conversations, I always make the joke that in my state, we are still trying to get to 2G in far too many communities. Jokes aside, it's a very important conversation to have, and just because many places in the United States have a lot of progress to make before they can realistically look forward to the consumer experience that 5G would bring, doesn't mean we shouldn't enthusiastically support its deployment. As we draft policy in the Senate to encourage 5G, what advice can you provide regarding how to ensure rural does not get left behind? Also, what benefits could rural see from the deployment of 5G?

Response. Alaska presents unique challenges for broadband deployment – including sparse populations over expansive areas that contain extremely difficult topography and conditions. I agree we need to both expand coverage to those areas unserved today while we also move forward to compete globally for 5G service.

I'm proud of our industry's efforts to reach more and more Americans. According to government data, we connect over 99% of Americans, but we have more work to do in Alaska and other rural areas around the country. The good news is Congress has proposals before it that would address both challenges.

First, the U.S. needs a long-term spectrum plan to provide the certainty companies need to invest in 5G services. A growing bipartisan consensus has emerged in Congress in support of the AIRWAVES Act--legislation that provides a five-year schedule for future spectrum auctions as well as a rural dividend to fund deployment in unserved and underserved areas (as discussed below).

Second, we need the FCC and Congress to update its nationwide guidelines for how localities treat siting requests. State and local rules for wireless infrastructure have not kept pace with innovative new technologies and network architecture. Chairman Thune and Senator Schatz's STREAMLINE Small Cell Deployment Act is the right approach. By modernizing these rules, policymakers can drive down the cost of deployment, helping enable more deployments in more areas.

5G will be faster, have more capacity, be more responsive, and will connect more rural Americans to friends and family, to healthcare and transportation services, as well as job opportunities and educational resources. In addition, every industry, including farming, healthcare, energy, transportation, law enforcement, e-commerce, logistics, and education will be positively impacted by the deployment of 5G infrastructure and products. As wireless unlocks new services in other industries, we can help bring these benefits to more of rural America. For example, wireless connectivity helps enable remote access and telemedicine, reducing unnecessary costs and ensuring that time and distance are not barriers to early interventions and preventative care for Alaskans and all rural Americans.

Question 2. I am very interested in the AIRWAVES Act's direction to the FCC to allocate 10% of the auction proceeds to create a fund supporting wireless infrastructure in unserved or underserved areas. Can you share any details about how the funds would be disseminated, and in the absence of clarity in the bill currently, share your recommendations on how that rural funding mechanism should be allocated and dispersed?

Response. CTIA supports the AIRWAVES Act, and believes the rural dividend is one of the most innovative solutions to expand rural broadband. The AIRWAVES Act will help bridge the digital divide and connect more rural communities across our country by providing more financial support for areas that are challenging to serve. If the dividend was in place for the last two auctions – the incentive auction and the AWS-3 auction – over $6 billion would be newly available for wireless deployment in these areas. That's more than the entire FCC Mobility Fund will make available over the next ten years.

The rural dividend provisions in the AIRWAVES Act currently contemplate that the FCC would determine how to allocate the funds and what constitutes "underserved" and "unserved" areas. Such funds could not be combined with monies from other funding mechanisms, including the FCC's programs administered pursuant to Section 254 of the Communications Act. CTIA would welcome further clarity from Congress regarding how the funds distributed pursuant to the AIRWAVES Act would be allocated and dispersed and believes that available funds should go first to areas where there is limited service today, such as rural and remote Alaska.