Leading the Wireless Future: Securing American Network Technology

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Chairman Doyle, Republican Leader Latta, and Members of the Subcommittee, thank you for the opportunity to testify about how the United States can lead the world in future wireless services through a coordinated focus on communications infrastructure, spectrum, and equipment policies.

I am testifying on behalf of Competitive Carriers Association ("CCA"), the nation's leading association for competitive wireless providers. CCA represents carrier members ranging from small, rural providers serving fewer than 5,000 customers to regional and nationwide providers serving millions of customers, as well as vendors and suppliers that provide products and services throughout the wireless communications ecosystem.

Wireless services have become important and inextricable parts of our lives, with functionality that has experienced previously unimaginable growth from the humble roots of the first mobile phone call, placed 48 years ago this month. Americans now have an average of 1.3 mobile devices per person and use those devices not only to place calls and send texts, but to work, learn, monitor health, connect to public safety, and access literally millions of applications. Importantly, through American leadership, the jobs and growth powered by the wireless industry and application economy have taken place here in the United States. America's continued leadership as the wireless industry advances to fifth generation 5G networks will be crucial to support continued innovation and economic growth.

Even with all the changes in the wireless industry, and the evolution in how consumers use wireless services, the fundamental pillars needed to provide service remain. All wireless networks require physical infrastructure, access to network equipment and devices, and access to the spectrum that carries the wireless signal. To lead the wireless future, Congress must support infrastructure policies that advance mobile connectivity, ensure that equipment and devices are available and secure, and coordinate spectrum policies to provide sufficient access to meet exponential growth in wireless demand.

Any Generational Investment in Digital Infrastructure Must Include Mobility

At a foundational level, the United States cannot lead the wireless future without ubiquitous advanced wireless services for all Americans. As policymakers consider generational investments in our nation's infrastructure, I applaud the bipartisan support for promoting digital infrastructure through broadband networks. Multiple proposals would further expand the optical fiber footprint—an admirable goal that will advance connectivity, including providing the backhaul network critical to expanded wireless coverage and speeds. But a generational investment in digital infrastructure that focuses on fixed broadband alone will be incomplete and will leave consumers in rural areas behind. Simply put, consumers depend on mobile connectivity and there are exciting and important innovations and services that rely on wireless connectivity and cannot be supported through fixed broadband technology at any speed. Mobility will continue to be a catalyst driving economic growth in rural America, and any infrastructure efforts that do not ensure ubiquitous mobile broadband could create a new digital divide of technological denial for consumers as the latest innovations that rely on mobile broadband will not function in rural America without connectivity.

Mobile broadband services alone can maintain connectivity while in motion, and only wireless technologies can provide ubiquitous connectivity. Mobility of course includes phone calls and texts placed from mobile devices wherever we live, work, and travel. But mobile broadband also is the only technology capable of connecting many other technologies we rely on. Precision agriculture, connected cars, mobile payments, health monitoring, augmented reality, drones, and the latest 911 and public safety services all leverage mobile connectivity. As advanced wireless services continue to develop, some of the greatest potential for 5G technologies exist beyond enhanced Mobile Broadband, as broad deployment of Ultra Reliable Low Latency Communications and massive Machine Type Communications are driving innovation, economic growth, and efficiencies in how we work and in society. Even as the industry buzzes with exciting new technologies and services, taking the lesson from previous

generations of wireless services, combined with American ingenuity, we may not yet know the greatest benefits that new mobile services will bring to life. Further, mobile can provide all these advantages in addition to providing immediate connectivity in areas lacking service until other technologies are deployed.

Because all consumers should be able to access these innovations whether they live in urban or rural areas, the digital divide cannot be closed through fixed connections alone. Existing and future technologies and services will be denied to Americans living in rural or urban areas absent sufficient mobile connectivity, and rural America risks being left behind during post-COVID economic recovery. Policies that support digital infrastructure can and should simultaneously boost expansion of both fixed and mobile broadband.

Congress Can Enact Policies to Lead the Wireless Future

Congress also can support expanded digital infrastructure through policies that go beyond direct funding for deployment. The wireless industry has been and is hard at work to deploy several bands of spectrum that recently became available to commercial use, while also working to upgrade existing operations to the latest technologies. As a result, there is likely to be a significant influx of permit applications, and efficient, manageable, and predictable permitting processes will be necessary to process the increased volume of applications and workload. In recently enacted legislation, Congress provided states and localities approximately $350 billion for various purposes, including to support broadband, and Congress can encourage states and localities to use some of that funding to evaluate and streamline permitting processes for deploying fiber, macrotowers, and small cells. These efforts could include incentives and grants for state, local, and tribal governments that adopt streamlined processes to facilitate upgrades and deployments through their zoning and permitting functions.

Digital infrastructure will support job creation and growth as an ever-growing number of industries connect through expanded broadband availability, but to get there we also need greater numbers of workers to complete the deployment, maintenance, and upgrades throughout the communications industry. The combination of the rip and replace process for covered equipment, ongoing expansion and upgrades of networks to expand coverage, support new spectrum bands and implement 5G, tower crews and other personnel will be in high demand. CCA supports efforts to help expand the communications workforce to meet the demands of our connected lives, including opportunities to foster workforce skills development and trade certification through the creation of apprenticeships, and through public-private partnership programs of study in higher education focused on broadband and network engineering. Indeed, this subcommittee has led the way on addressing this issue with current and previous bipartisan legislation such as the Communications Jobs Training Act, the Telecommunications Skilled Workforce Act, and the TOWER Infrastructure Deployment Act. CCA commends the committee on their thoughtful, bipartisan approach to this critical issue.

Network Equipment, Services, and Devices Must Be Available and Secure

CCA commends this Committee for its demonstrated focus on network security. Through your steadfast, bipartisan leadership, the Secure and Trusted Communications Networks Act is now law. It has been funded through the Consolidated Appropriations Act, 2021, to provide carriers with the resources they need to replace equipment and services deemed to pose a threat to national security while maintaining connectivity to those that depend on their services. CCA strongly encourages the federal government to continue to provide clear, unambiguous directions regarding the risks for communications networks so that government and industry can allocate resources to protect national security while maintaining seamless connectivity for your constituents.

While the Federal Communications Commission ("FCC") has worked diligently to implement the reimbursement program, including modifications made through the Consolidated Appropriations Act, 2021, carriers that participate in the program may struggle to lock-in plans to move forward due to uncertainty regarding the final application process, structure and timing of reimbursements, and other decisions that will be made by the FCC in the coming months. CCA appreciates continued Congressional involvement and oversight of the program, and offers certain recommendations to efficiently advance the program, including:

- Providing further clarification, transparency, and details regarding suggested replacement equipment and services;
- Clarifying reimbursement timelines, including when eligible expenses will be submitted, accepted, and funding disbursed, so that limited financial resources are not frozen while the process moves forward;
- Clarifying that fiber backhaul will be eligible for reimbursement to replace previous microwave services, particularly where replacement microwave services would be unreasonable due to spectrum and/or technology reasons; and
- Ensuring that sufficient time will be provided, including issuing extensions and waivers as appropriate, for carriers to evaluate all technology and service options, including open and virtualized network components.

CCA greatly appreciates the FCC's collaborative approach and time spent working with impacted carriers to implement this important program, and stands ready to work with Congress, the FCC, and all stakeholders to efficiently complete the replacement and removal of covered equipment. Any delay will leave impacted carriers frozen and could impact other important network upgrades.

While completion of the removal and replacement of covered network elements is a critical priority, a broader look at the equipment market can help ensure sustainable alternatives to equipment and services deemed to pose a national security threat. In announcing today's hearing, Chairman Pallone and Chairman Doyle noted that "the United States needs to prioritize the production of secure and modern wireless equipment." CCA agrees, and there are tremendous opportunities to support wireless technology that is secure by design and advances American economic interests.

One way to advance these goals is through research and development, and CCA urges Congress to fully fund the programs created through this committee's bipartisan leadership in the Utilizing Strategic Allied Telecommunications Act, or USA Telecommunications Act, enacted into law last year. As that legislation recognizes, advanced wireless services provide increased potential to transfer network services from physical equipment to software through new technologies like Open Radio Access Network ("ORAN") equipment and other virtualized solutions. ORAN presents exciting new opportunities, with the potential to disaggregate functionality to increase competition and reduce costs. This technology could also increase diversity in the equipment supplier space, including companies like those represented by my colleagues on the panel today, leading to the potential for additional options for carriers. Research and development to expand and explore ORAN is important, but also should not be the sole focus at the expense of other innovations and advances in network infrastructure.

While ORAN services continue to develop, carriers will also continue to rely on existing trusted vendors, and policymakers must ensure that the United States telecommunications industry does not lose access to these trusted suppliers, including those with American manufacturing facilities, research centers, test beds, and employees. It is encouraging to see participation in ORAN discussions and efforts from traditional vendors as well as new entrants, and ongoing testing will be necessary, especially relating to network security and how open and virtualized technologies interoperate with existing

networks carrying wireless traffic today. Further, standards should also be open and set by industry groups with input from a range of carriers and other industry stakeholders.

The prospect of introducing new vendors into the ecosystem has tremendous potential benefits, but policymakers should not mandate which technologies are used in wireless networks. Carriers need flexibility, particularly in the rural and hard to reach areas where CCA members serve. If new technologies like ORAN live up to their promise, they will succeed in the marketplace and will be deployed based on industry demand and timelines.

Finally, all carriers must have access to secure and available handsets and other devices to fully utilize the latest wireless networks. As networks continue to evolve, this includes ensuring that consumers have access to devices that support voice over LTE (VoLTE) services and other capabilities needed to meet regulatory requirements for public safety, access, and other issues.

Spectrum Policies Must Be Harmonized and Coordinated Across Federal Agencies and With the Commercial Sector

The final key to leading the wireless future will be access to additional spectrum to accommodate the growth of networks that will be required to handle ever-increasing voice, data and video traffic to our homes and businesses. As the pandemic has driven us to virtual school, work, health care, and social events – trends that will continue after the pandemic – those spectrum needs will only accelerate, driven further by exciting new wireless uses and innovations.

An important source of spectrum for commercial networks will be spectrum that is reallocated from federal users. Advances in technology can allow the government to make more efficient use of spectrum or allow government systems to be relocated to other bands. As a timely example, the 3.45-3.55 GHz band, which the FCC plans to auction later this year pursuant to Congressional directive, will involve sharing between incumbent federal users and new commercial operations. But in order for that

auction to be successful, industry needs more information about exactly where and how the spectrum will be available. While industry was initially led to believe that unencumbered spectrum would cover 93% of the U.S. population, recent information provided by the National Telecommunications and Information Administration ("NTIA") significantly alters the scope of ongoing federal operations. In particular, data that NTIA provided shows that critical population centers – including much of the east coast and high-density areas on the west coast – will require coordination with continued operations by the Department of Defense ("DoD"). Without additional information about DoD's actual needs – based on geography and time – for that spectrum, commercial providers may be unwilling to participate in the auction for this spectrum. They need that information now.

The scope of continued DoD presence in the band is surprising, based on DoD's estimate that it requires approximately $13 billion to make the spectrum available for commercial use. That same $13 billion (plus 10%) is the amount that the auction must raise to be successful. If the $13 billion is used to clear the band for commercial use – as it should be – the spectrum value will be much different than if the $13 billion will still leave the band heavily encumbered. If the DoD does not intend to use the $13 billion to clear the band, or something reasonably close to that, bidders must know that soon so that they can plan their bidding strategies accordingly. Smaller carriers in particular cannot afford to participate in spectrum auctions without a meaningful opportunity to win that spectrum and put it into operation.

This lack of reliable information from the DoD is part of a broader issue, that members of Congress have already recognized, about the need for a unified and timely approach to federal spectrum management. In several recent instances, spectrum use decisions have been coordinated between the FCC and NTIA pursuant to well established interagency procedures and based on that coordination the FCC has auctioned the spectrum -- only to have agencies attempt to revisit the results of the coordination efforts after the fact. The most recent example of this relates to the FCC's decision to make

critical mid-band spectrum at 3.7-3.98 GHz ("C-band") available for commercial use – a spectrum auction that generated over $80 billion dollars. But even now – after the spectrum has been auctioned – efforts continue to question whether there will be harmful interference to aviation operations, despite a guard band of over 200 megahertz. The claims of potential interference are without merit, are based on studies that have demonstrated to be flawed and ignore the fact that 5G services are being deployed in the C-band in other countries with no evidence of interference. Bidders rely on FCC-adopted rules when participating in an auction. There must be a federal spectrum management process that provides a reliable outcome prior to an auction.

This outcome has now occurred several times – for example, with the National Oceanic and Atmospheric Administration trying to upend the auction of 24 GHz spectrum, the DoD questioning the FCC's decision to permit use of spectrum in the "L-band" for terrestrial use, and the Department of Transportation objecting to the use of the 5.9 GHz band for commercial use. This haphazard approach to spectrum policy should not happen and must not continue. As Chairman Pallone pointed out in his January letter, the NTIA/FCC coordination process is broken. Congresswoman Matsui recognized the same thing in her letter to the President this year. It must be fixed to ensure that these disputes are addressed well before spectrum is designated for commercial use. While there is a Memorandum of Understanding in place between the two entities, it must be updated to achieve this purpose so that the U.S. wireless future is secure. CCA supports efforts to accomplish this goal, like the Spectrum Coordination Act introduced by Congressman Bilirakis last week. Ultimately, Congress must take steps to restore trust in the NTIA as the voice and authority for spectrum management and use across the federal government, both among the various departments and agencies and as it interfaces with the FCC and industry.

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When viewed in isolation, efforts to advance digital infrastructure throughout the nation, promote secure and innovative wireless network equipment, and ensure effective spectrum coordination and management across the government invoke disparate policy issues. However, all three elements are critically important for the United States to lead the wireless future.

Today's hearing comes at a critical time, with ongoing discussions regarding infrastructure and the wireless industry working to make the next generation of wireless services, and the corresponding economic, social, and safety benefits, available to all Americans. CCA looks forward to continuing to collaborate with Congress, the Administration, the FCC, NTIA, and other federal agencies to advance this critical goal. Thank you for your leadership on these issues. I welcome any questions you may have.