



Administrator Alan Davidson
National Telecommunications & Information Administration
U.S. Department of Commerce
1401 Constitution Ave., N.W.
Washington, D.C. 20230

Dear Administrator Davidson,

As NTIA works to develop a National Spectrum Strategy, the undersigned 15 public interest organizations and industry leaders urge NTIA to expand access to spectrum for commercial use through a balanced variety of approaches that will promote competition and innovation.

While our organizations represent a wide variety of perspectives, we all recognize the value of models supporting shared use, either through unlicensed use or licensed use that is dynamically shared on a priority basis. While exclusive-licensing plays a role in a balanced spectrum policy, an over-reliance on it serves the deployment decisions and business models of a small group of large, nationwide carriers. The innovation our country needs to make the most of spectrum moving forward will also require shared licensing and unlicensed spectrum. Unlicensed spectrum offers low barriers to entry for innovators, enables easy access for consumers and supports the Wi-Fi connections over which most internet data travels. Shared-licensed spectrum supports competitive wireless networks and other innovative and diverse uses, while also allowing multiple types of users to coexist.

As NTIA seeks to identify 1500 MHz of spectrum for more intensive use in increasingly crowded spectrum bands, these approaches will play an important role in the Nation's wireless and competitive future. We urge NTIA to take a balanced approach to the spectrum pipeline and overall National Spectrum Strategy by promoting unlicensed and shared-licensed use. To that end, we wish to briefly highlight the value of those approaches for consumers and the National economy:

The Value of Unlicensed Spectrum

Thirty years ago, the FCC took so-called "junk bands" and allowed innovators to experiment in the spectrum without individual licenses. The FCC's vision ultimately led to the development of Wi-Fi, which grew from a curiosity to a necessity for accessing the internet at home, in the office, in libraries and other community anchors, and countless other locations.

Consider just a few examples of how unlicensed access has improved our lives:

- Robust Wi-Fi has made it possible for high-speed wireline broadband networks to reach more and more devices in our homes and workplaces. Whether we are working from

home or on the go, streaming video on smart televisions or tablets or connecting with family and friends, it is almost certain that our wireless devices are using Wi-Fi.

- Wi-Fi and other unlicensed technologies like Bluetooth allow “Internet of Things” devices to communicate with users and each other. Home speaker assistants, baby monitors, car keys and even coffee machines and other appliances are now “smart” – and all rely on unlicensed spectrum.
- Wi-Fi is open to anyone and everyone with a connected device, without a subscription. If there is a Wi-Fi network available, the internet is accessible. Wi-Fi is thus critical for bridging the digital divide and the homework gap—public Wi-Fi networks are available at many schools, libraries, malls, cafes and even on school buses.
- Wi-Fi is also critical to the success of licensed mobile networks. Cellular operators offload enormous amounts of traffic to Wi-Fi and other unlicensed networks, improving the performance and capacity of their own services. 5G services and other wireless service to the home rely on Wi-Fi to connect the home’s many devices to those networks.

Wi-Fi is a true American success story: It was developed in the United States, and U.S. companies continue to lead the charge for new and better Wi-Fi applications and access. Wi-Fi is also an important contributor to the national economy. In fact, it is estimated that Wi-Fi boosted the U.S. economy by \$995 billion in 2021, and the economic value of the recently allocated unlicensed spectrum in the 5.9 GHz and 6 GHz bands alone is expected to reach at least to \$183.44 billion between 2020 and 2025. As such, the National Spectrum Strategy should foster an area where the U.S. has a competitive and economic advantage.

Without question, the variety and intensity of wireless services and applications using unlicensed spectrum will continue to grow, and consequently, the spectrum available to support such services needs to grow alongside it. Broadband networks are getting faster, and consumer devices are consuming more data and demand lower latency. New applications on the horizon, like AR and VR, will need multiple wide channels to deliver on their promise. And more spectrum available for unlicensed use will continue America’s leadership in promoting laboratories of innovation where anyone can experiment and create the next new application that benefits us all. NTIA should ensure that the spectrum pipeline opens up new frequencies for unlicensed use to sustain technologies like Wi-Fi into the future.

Competition and Coexistence through Shared-Licensed Spectrum

Exciting new technologies now allow for multiple services to share the same spectrum, making more intensive use possible while enabling coexistence between Federal and non-Federal users, as well as among non-Federal users. In an ever-more crowded spectrum environment, shared spectrum will be vital for introducing new commercial uses alongside important government systems and longstanding commercial incumbent operations.

Shared spectrum usually involves the introduction of new licensed services (and lightly licensed or unlicensed uses) alongside existing government or commercial operations and can be

achieved through a variety of mechanisms. Databases and sophisticated sensing technologies enable multiple users and varying technologies to access spectrum dynamically. Technical rules that create guardrails enabling unlike technologies to operate in the same band, such as indoor-use restrictions, also enable sharing. Licensing decisions and technical rules can also promote spectrum sharing, with smaller areas and lower powers allowing more efficient sharing than would be possible with high power levels covering large license areas.

In addition to facilitating coexistence, shared licenses also promote competition. Smaller licenses are more accessible for companies outside the large cellular carriers. Greater competition in this space ultimately leads to better consumer prices and services, as well as new, innovative technologies that will benefit us all.

We have already seen success in a short time in the Citizens Broadband Radio Service (CBRS) band, the 150 MHz band of spectrum between 3.55 - 3.7 GHz. The CBRS band employs a 3-tier spectrum sharing regime, in which government users have the highest priority, priority access licensees from auction are next in line, and general authorized access can use frequencies not in use by those other users, with much lower barriers to entry than in exclusive licensed spectrum. We are already seeing important and highly varied deployments in the CBRS band, resulting in increased broadband access and connectivity in education, health care, agriculture, manufacturing, public safety and the military:

- Memorial Health System Clinic in Springfield, Illinois, uses the CBRS band to connect outdoor hotspots to indoor networks, enabling nurses to test and triage patients outside the hospital. Hospitals also use the CBRS band for asset tracking, critical communications and patient monitoring.
- John Deere uses CBRS licenses in Iowa and Illinois for private company networks in manufacturing facilities, replacing outdated ethernet networks with completely wireless technologies that better track data and outputs.

Balance is Key

We applaud NTIA's goal to identify spectrum for more intensive commercial use – our economic growth depends on spectrum. We urge NTIA to adopt a National Spectrum Strategy that supports innovation and competition through unlicensed and shared-licensed models.

Respectfully,

WifiForward

Comcast

Amazon

NCTA – The Internet & Television Association

Charter

Open Technology Institute

Wi-Fi Alliance

Public Knowledge

SHLB Coalition

CoSN - The Consortium for School Networking

Gigabit Libraries Network

American Libraries Association

Dynamic Spectrum Alliance

Engine

Cox Communications