



MEMORANDUM

To: Members, Energy and Commerce Committee
From: Majority Staff
Re: Communications and Technology Subcommittee Hearing

I. INTRODUCTION

On Friday, March 10, 2023, at 9:00 a.m., the Subcommittee on Communications and Technology will hold a hearing in 2123 Rayburn House Office Building titled “Defending America’s Wireless Leadership.” The following witnesses are expected to testify:

II. WITNESSES

- Brad Gillen, Executive Vice President, CTIA—The Wireless Association
- James Assey, Executive Vice President, NCTA—The Internet and Television Association
- Clete Johnson, Senior Fellow, Center for Strategic and International Studies
- Monisha Ghosh, Professor, Department of Electrical Engineering at the University of Notre Dame

III. BACKGROUND

Electromagnetic spectrum (“spectrum”) is a range of frequencies, each with unique propagation characteristics. Some frequencies are more valuable for carrying traffic over long distances, while other frequencies are better for carrying traffic quickly over short distances. Using a combination of spectrum frequencies appropriately allows for the wireless communication landscape we rely on today. The National Telecommunications and Information Administration (NTIA) is responsible for managing spectrum allocations for federal agency use,¹ and the Federal Communications Commission (FCC) is responsible for managing the spectrum use for non-federal users, which includes commercial, public-safety, educational, tribal, and other users.² Federal agencies, private businesses, and other spectrum users invest in technologies and infrastructure to utilize these frequencies to accomplish their missions.

As technology advances, new uses of spectrum may develop that require additional spectrum allocations. However, the ability to make more spectrum available for commercial uses is becoming increasingly difficult. Each spectrum band has a unique mixture of incumbent users

¹ 47 U.S.C. 901 et seq.

² 47 U.S.C. 301 et seq.

that may require relocation or sharing in order to add a new user. Depending on the spectrum band, these incumbents could be federal or non-federal users. Technical disagreements often can be solved by engineers at the FCC or NTIA, but the elevation of spectrum policy disputes show how much more important these spectrum decisions have become as the United States works to advance its wireless leadership.

1. Licensed, Shared, and Unlicensed Spectrum

Licensed spectrum authorizes a licensee—generally on primary, co-primary, or secondary use—to use a spectrum band with protection from harmful interference. The FCC grants licenses that are in the “public interest, convenience, and necessity,” and often imposes public interest obligations on the use of a spectrum license to ensure licenses are put to use for Americans’ benefit and not reserved for speculative value.³ This means that while a licensee is protected from interference, they must invest heavily in the band and meet targets set by the Commission. Thus, when Congress or the Commission consider relocating an incumbent, they must take into account the sunk costs of that investment and the costs those licensees will incur to be able to offer service in whatever band into which they are relocated.

In some cases, policymakers have identified opportunities to accommodate new commercial use of spectrum through sharing mechanisms rather than relocating incumbent users.⁴ These sharing mechanisms are designed around the specific uses in a given band, and in many cases take considerable time and effort to operationalize. There are opportunities and challenges with sharing—while sharing may be more feasible than clearing in certain instances, it may only permit use of spectrum with limited power or limit its availability only during certain timeframes. In some cases, sharing may be the only economical way to make spectrum available for commercial use without incurring exponential costs and it remains a useful tool for expanding commercial access to spectrum.

Unlicensed spectrum, on the other hand, has no licensee. Unlicensed users cannot reasonably expect to be protected from harmful interference and must protect licensed users in whatever band they have operations.⁵ However, the FCC still sets technical parameters for these bands, which enables commercial use to facilitate competition and innovation while protecting incumbents in neighboring bands.⁶ Access to unlicensed spectrum has enabled heavy investment

³ 47 U.S.C. 309(j).

⁴ See, “*In the Matter of Amendment of the Commission’s Rules with Regard to Commercial Operations in the 3550-3650 MHz Band*”, Order on Reconsideration and Second Report and Order, Federal Communications Commission. (GN Docket No. 12-354) (May 2, 2016). Available at: <https://www.fcc.gov/document/35-ghz-order-recon-and-2nd-ro>.

⁵ 47 C.F.R. 15.

⁶ *Id.*

by the private sector in technology, and has resulted in the development of Wi-Fi, Bluetooth, and wearable technologies that utilize Bluetooth.⁷

2. Managing Federal and non-Federal Spectrum

While NTIA manages federal spectrum assignments, each agency plays a critical role in managing the systems that utilize their spectrum assignments (radios, radars, etc.). NTIA is statutorily responsible for representing the views of federal agencies before the FCC.⁸ Coordination by NTIA of federal views ensures that as spectrum policy decisions are made, federal missions are not negatively impacted, and decisions can be made with a holistic view of the spectrum users that may be impacted. On August 2, 2022, the NTIA and the FCC signed a memorandum of understanding to formalize the existing coordination mechanisms between the agencies.⁹

3. Spectrum Auction Authority

Spectrum auctions are one of the most heavily utilized mechanisms for making spectrum available for commercial use. Auctions also bring in revenue for the Federal government, which historically have been used to fund Congressional priorities and reduce the deficit. Congress first established auction authority for the FCC in the Omnibus Budget Reconciliation Act of 1993,¹⁰ and it has been extended several times since then—most recently in the Consolidated Appropriations Act of 2023.¹¹ This key authority for the FCC to auction spectrum expires on March 9, 2023. On February 27, 2023, the House of Representatives passed H.R. 1108, which would extend auction authority until May 19, 2023, if enacted.

Over the past three decades, Congress has extended auction authority on a limited basis to preserve and strengthen its oversight role over spectrum policy. Prior to 2022, Congress last extended auction authority in the Middle-Class Tax Relief and Job Creation Act in 2012.¹² This law extended auction authority for 10 years, until September 30, 2022, meaning that the FCC had blanket authority to auction any frequencies with no additional authority needed from Congress. In the 117th Congress, the House passed H.R. 7624, the Spectrum Innovation Act, which would have extended auction authority for 18 months, directed proceeds from future auctions to fund Committee priorities, and established an Incumbent Informing Capability to facilitate greater commercial access to Federal spectrum. During hearings on the legislation, members of the

⁷ See, Jim Fellingner, *CTA Research: Unlicensed Spectrum Generates \$98.8 Billion Per Year*, Consumer Technology Association (CES) (Feb. 1, 2022). Available at: <https://www.cta.tech/Resources/Newsroom/Media-Releases/2022/January/Unlicensed-Spectrum-Generates-95-Billion-Per-Year>.

⁸ 47 U.S.C. 902(b)(2)(K), 904.

⁹ See, Memorandum of Understanding Between the Federal Communication Commission and the National Telecommunication and Information Administration (Aug. 2, 2022). Available at: https://ntia.gov/sites/default/files/publications/ntia-fcc-spectrum_mou-8.2022.pdf.

¹⁰ The Omnibus Budget Reconciliation Act of 1993, P.L. 103-66, §6002, 107 Stat. 312, 387-392.

¹¹ The Consolidated Appropriations Act, 2023, P.L. 117-328, Division O, Title IX, Sec. 901.

¹² The Middle Class Tax Relief and Job Creation Act of 2012, P.L. 112-96, Title VI, Sec. 6405.

Energy and Commerce Committee discussed the benefits of an 18-month extension as providing time for Congress to further identify a pipeline of frequencies.¹³

4. International Harmonization of Spectrum Policy

The International Telecommunications Union (ITU)—a division of the United Nations—manages a global table of spectrum allocations. This table represents treaty-level agreements where countries agree to define uses for certain spectrum frequencies in different regions across the world.¹⁴ Harmonizing spectrum use around the world provides economies of scale to manufacturers of network equipment and consumer devices. The ITU holds its World Radio Conference (WRC) every four years. The last WRC was held in 2019, and the next WRC takes place from November 20 to December 15, 2023.¹⁵ Considerable planning goes into these conferences, with the U.S. delegation—led by NTIA with the Department of State/FCC—working to find consensus within North and South America (the America’s region) at the Conference Preparatory Meeting of the Inter-American Telecommunication Commission (CITEL).¹⁶

In preparation for the 2019 WRC, several domestic spectrum disagreements became public, leading Congress and stakeholders to look at possible reforms to the existing spectrum management process in the United States. The U.S. has historically been successful at shaping spectrum policy decisions at the ITU by having a unified position within the United States and then encouraging the Americas region to adopt its position.¹⁷ Without a unified U.S. position, that may become more difficult. Succeeding in shaping ITU spectrum decisions with the U.S. position can provide immense technological and economic benefits for the U.S. and U.S. companies.

IV. KEY QUESTIONS

- What role does licensed and unlicensed spectrum play in our economy?
- How do the FCC and NTIA coordinate spectrum management activities?
- What effect would ceding leadership on spectrum policy have on our economic and national security?

¹³ See, hearing entitled, *5G and Beyond: Exploring the Next Wireless Frontier*, Subcommittee on Communications and Technology, 117th Cong. (March 16, 2022). Available at: <https://energycommerce.house.gov/events/5g-and-beyond-exploring-the-next-wireless-frontier>

¹⁴ See, Radio Regulations, International Telecommunications Union (ITU). Available at: <https://www.itu.int/pub/R-REG-RR>.

¹⁵ See, ITU World Radiocommunication Conference 2023, ITU. Available at: <https://www.itu.int/wrc-23/>.

¹⁶ See, Inter-American Telecommunication Commission (CITEL), Organization of American States. Available at: <https://www.oas.org/ext/en/main/oas/our-structure/agencies-and-entities/citel/About/Details/category/citel/about-citel>.

¹⁷ See, Clete Johnson, *The Strategic Imperative of U.S. Leadership in Next-Generation Networks*, Center for Strategic & International Studies (Jan. 20, 2023). Available at: <https://www.csis.org/analysis/strategic-imperative-us-leadership-next-generation-networks>.

V. STAFF CONTACTS

If you have any questions regarding this hearing, please contact Kate O'Connor or Evan Viau of the Committee Staff at (202) 225-2927.