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Via Electronic Filing

National Telecommunications and Information Administration
1401 Constitution Ave. NW
Washington, D.C. 20230

RE: Development of a National Spectrum Strategy Request for Comment (NTIA-2023-0003)

To whom it may concern:

Thank you for providing the R Street Institute (R Street) the opportunity to comment on this Request for Comment. On March 16, 2023, the National Telecommunications and Information Administration initiated a Request for Comments to build a record on the “development and implementation of a National Spectrum Strategy for the United States.”¹ R Street is supportive of the agency’s efforts to identify and build a robust record to address critical questions of a national spectrum strategy. R Street respectfully submits the following articles for consideration as part of the record:

- Jonathan Cannon, “Battle of the Bands: Moving Forward on Spectrum” (Dec. 12, 2022) <https://www.rstreet.org/commentary/battle-of-the-bands-moving-forward-on-spectrum>
- Jonathan Cannon, “Coalition Urges Congress to Reauthorize FCC’s Spectrum Authority” (Aug. 1, 2022) <https://www.rstreet.org/outreach/coalition-urges-congress-to-reauthorize-fccs-spectrum-authority>
- Jonathan Cannon, “Banding Together on Spectrum Policy” (April 12, 2022) <https://www.rstreet.org/commentary/banding-together-on-spectrum-policy>

As I noted in the aforementioned article, “With spectrum becoming increasingly scarce, and auction authority close to lapsing, it is imperative that the federal government develops an efficient and pragmatic long-term strategy to ensure the best use of spectrum that preserves American leadership in wireless connectivity. Federal stakeholders must work together to ensure that industry is able to utilize spectrum to innovate and develop new technologies—meanwhile, federal users must also have access and rights to spectrum. As the pipeline becomes smaller, it becomes more important that parties have access to licensed spectrum, unlicensed spectrum and shared models where appropriate.”²

¹ Development of a National Spectrum Strategy Request for Comment, NTIA-2023-0003, National Telecommunications and Information Administration, last accessed April 17, 2023. <https://www.regulations.gov/docket/NTIA-2023-0003>.

² Jonathan Cannon, “Banding Together on Spectrum Policy,” R Street Institute, April 12, 2022. <https://www.rstreet.org/commentary/banding-together-on-spectrum-policy>.



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Most sincerely,

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ANALYSIS

Battle of the Bands: Moving Forward on Spectrum

BY JONATHAN CANNON

DEC 12, 2022

ISSUES: SPECTRUM POLICY, TECHNOLOGY AND INNOVATION

Spectrum is a finite resource that is the backbone of our wireless communication systems. Due to spectrum's scarce nature, the federal government must ensure it is efficiently allocated to optimize its utility. Policymakers and stakeholders must work to ensure a balanced approach to allocation that fosters an innovative environment with robust competition in the marketplace.

As the 117th Congress begins to wind down and legislators look to advance “must pass” bills including spending packages before the end of the session, one issue remains unresolved. On September 30, President Joe Biden signed a continuing resolution into law keeping the government funded until Dec. 3, 2022 that included a short-term reauthorization of the Federal Communications Commission's (FCC) spectrum authority. Since 1994, the FCC has utilized a competitive bidding process that uses reverse auctions to assign licenses to specific frequency bands (portions of specific wavelengths) of spectrum. This has generated over \$230 billion in revenue for the U.S. Treasury and has transformed our wireless connectivity and networks nationwide. This approach has become a hallmark of U.S. telecom policy, but, absent congressional intervention, auction authority will lapse, generating concerns and uncertainty for future allocations of increasingly scarce bands of spectrum.

Spectrum Auction Authority Reauthorization

In the United States, the spectrum auctions and competitive bidding process have become the gold standard in spectrum allocation. The concepts are based on the work of economists who earned a Nobel prize for this innovative process. On July 27, 2022, the Spectrum Innovation Act, which would in part extend the FCC's spectrum auction authority for 18 months, was passed by the House under suspension of the rules, but the Senate has yet to consider the bill. Both Republicans and Democrats in the House have urged the Senate to pass the measure, expressing that “[t]his crucial bill gives Congress time to build consensus on a clear path forward to make more spectrum available for commercial use, while at the same time ensuring the FCC has the authority to continue its spectrum auction work without disruption.” This is a rare bipartisan framework that will continue the FCC's long-running precedent to maximize the allocation of spectrum for its best and most efficient uses.

In August, R Street led a coalition letter calling on Congress to pass the Spectrum Innovation Act. The letter noted that “[a]fter conducting over one hundred auctions, the results speak for themselves. The FCC has successfully allocated a finite resource in a way that promotes innovation and competition in the marketplace. It is important that they continue to do so, given the continued evolution of 5G, fixed wireless, satellite broadband and eventually, 6G.” With the future of the FCC's spectrum authority in limbo, congressional intervention is the only path to ensure a future pipeline for continued spectrum auctions. While Congress did include a brief extension through December in the recent continuing resolution, it is insufficient for developing a robust long-term pipeline of spectrum and ensuring our spectrum future.

Balance Between Licensed, Unlicensed and Shared Spectrum

There are currently two types of spectrum available for devices and services to utilize: licensed and unlicensed. Licensed spectrum requires the FCC to assign a user an exclusive license to transmit on a specific frequency in a geographic area, ensuring that they will be able to have exclusive usage without interference. These licenses are allocated through auctions and granted to the winning bidder. On the other hand, unlicensed spectrum is the “wild west” of radio communication as users can transmit in any band frequency designated for unlicensed use. This also means that there is more potential for interference. Both licensed and unlicensed spectrum have their uses, benefits and drawbacks, and the FCC seeks to ensure there is both licensed and unlicensed spectrum available for connectivity. There is also a hybrid system that involves a shared-approach spectrum, where multiple users can share spectrum at different times. This can take many forms and may feature blends of both licensed and unlicensed users at different times and power levels.

The FCC must coordinate a strategy to ensure a balance between licensed, unlicensed and shared spectrum. A future spectrum pipeline needs to ensure maximal use so that every hertz is utilized and allocated to its highest valued potential use, since it is such a critical and limited resource. Auctions provide an efficient way to accomplish this goal.

Spectrum Pipeline

At the end of October, the FCC voted to begin a proceeding to explore repurposing up to 550 megahertz (MHz) of spectrum in the 12.7-13.25 gigahertz (GHz) band for next generation wireless. Despite the current uncertainty surrounding spectrum auction authority, the FCC is still looking to the future and working to develop an efficient and robust future spectrum pipeline.

What's more, a *Forbes* article outlined a selection of spectrum bands that could be allocated in future spectrum auctions. These bands are presently either under consideration to be auctioned or are reserved for federal government uses. The article highlighted the importance of Congress's role in building a spectrum pipeline. This pipeline would ensure a balance between frequencies by all users and ensure there is dedicated spectrum for both 5G, Wi-Fi and other uses.

Another provision of the House Spectrum Innovation Act (H.R. 7624) includes a band of frequencies between 3100 and 3450 MHz or 3.1-3.45 GHz—the lower three blocks of mid-band spectrum. The bill would require the FCC to commence an auction within seven years for parts of this spectrum, with the National Telecommunications and Information Administration (NTIA) responsible for identifying how much of the spectrum currently reserved for federal uses would be available for the FCC to auction. This has created a tension between different stakeholders who see value in this spectrum as either licensed and allocated through auction, or unlicensed and allocated by the FCC without an auction. Both the House and Senate are weighing variations of the Innovation Act as they weigh how much of this spectrum band should be licensed and auctioned and how much should be allocated by the FCC directive. The FCC and NTIA together are primed to address this debate, and future debates on how to maximize best uses of specific bands of spectrum.

The Future of Spectrum

With spectrum becoming increasingly scarce, and auction authority close to lapsing, it is imperative that the federal government develops an efficient and pragmatic long-term strategy to ensure the best use of spectrum that preserves American leadership in wireless connectivity. Federal stakeholders must work together to ensure that industry is able to utilize spectrum to innovate and develop new technologies—meanwhile, federal users must also have access and rights to spectrum. As the pipeline becomes smaller, it becomes more important that parties have access to licensed spectrum, unlicensed spectrum and shared models where appropriate.

Image credit: Benedek Alpar



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August 1st, 2022

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We, the undersigned, write this letter to express our support for [H.R. 7624](#), the Extending America's Spectrum Auction Leadership Act of 2022, which would extend the Federal Communications Commission's (FCC's) authority to auction and license spectrum until March 31, 2024. Unless Congress acts, the FCC's spectrum authority will lapse on September 30, 2022. The passage of this bill will ensure spectrum continues to be allocated efficiently, unlocking new potential for connected devices and telecommunications.

As House Energy and Commerce Chairman Rep. Frank Pallone (D-N.J.) [noted](#): "Failure to replenish the commercial spectrum pipeline risks the United States falling behind . . . in producing cutting-edge consumer innovations and enhancing our national security capabilities." Already, [wireless](#) carriers are seeing an increasing demand for mid-band spectrum for next-generation networks.

With the advent of new technologies, the demand for these bands and others will continue to increase. Spectrum is a limited and finite resource that can be deployed to [support](#) both federal and commercial

wireless uses. Delaying the allocation and availability of critical spectrum bands will hinder the deployment of new technologies and slow the rollout of new consumer products and services.

Spectrum auctions effectively and efficiently allocate these scarce resources. Beginning in 1994, the FCC has allocated spectrum through a competitive bidding [process](#). Congress, in the 1993 [Omnibus Budget Reconciliation Act](#), gave the FCC authority to use a reverse auction to “more effectively assign licenses.” This reduced the average time from the initial application to license grants to under a year, and raised \$230 [billion](#) for the treasury. The most recent C-Band auction brought in nearly \$90 billion alone. As the [FCC](#) described in 1997, spectrum auctions have “fostered the entry of new companies into the market and encouraged the development of innovative wireless technology.”

After conducting over one hundred auctions, the results speak for themselves. The FCC has successfully allocated a finite resource in a way that promotes innovation and competition in the marketplace. It is important that they continue to do so, given the continued evolution of 5G, fixed wireless, satellite broadband and eventually, 6G.

H.R. 7624’s short term extension from September 30, 2022 to March 31, 2024 provides the perfect window to complete existing auctions, determine future priorities for spectrum bands, and enable Congress to use proceeds of future auctions [as they see fit](#). We urge Congress to pass this legislation to ensure our communications networks and devices continue to be the most innovative and efficient networks in the world.

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ANALYSIS

Banding Together on Spectrum Policy

BY JONATHAN CANNON

ISSUES: FEDERAL GOVERNMENT AFFAIRS, SPECTRUM
POLICY, TECHNOLOGY AND INNOVATION

APRIL 12, 2022

The Federal Communications Commission (FCC) has been charged with ensuring that the finite amount of spectrum is distributed and utilized efficiently. One of their most important responsibilities is allocating spectrum (electromagnetic radio waves) for commercial use, such as phone companies employing wireless services and 5G. In 1993, Congress gave the FCC authority to use competitive bidding to assign spectrum to commercial users. They do this by conducting auctions in which carriers bid for the most desirable bands of spectrum. Different bands have different functions due to their wavelength and amplitude. The agency has had tremendous success pioneering the efficient use of spectrum bands through competition, allowing our connected world to flourish. However, some agencies have challenged the FCC's expertise, frustrating the FCC's goal of making unused spectrum commercially available.

The Current Dispute

Back in 1999, the FCC allocated the 5.9 GHz band to the Department of Transportation (DOT) for transportation-related communications. But since 1999 this spectrum has been severely underutilized, and as a result the FCC took action to reallocate the spectrum for both unlicensed broadband and automotive use. In response to this, DOT released a study undermining the FCC's action, arguing that "there will be a significant, negative degradation of transportation safety communications and the ability to support the range of vehicle to vehicle (V2V), vehicle-to-infrastructure (V2I), and public safety functions as currently defined." The FCC order ensured that there would be gaps of unused spectrum reserved as guardrails to prevent interference, addressing many of the concerns raised by DOT.

As a result of DOT's action, in March the R Street Institute joined with nearly a dozen other organizations from across the political spectrum calling on Congress to resolve the interagency dispute between DOT and the FCC regarding which agency has authority over the 5.9 GHz spectrum band deployment. But this is hardly the first time such an issue has arisen.

Previous Disputes

In 2019, the National Oceanic and Atmospheric Administration (NOAA) and the National Aeronautics and Space Administration (NASA) argued that U.S. forecasting capabilities would degrade if the FCC proceeded with its plan for the 24 GHz band that had been recently auctioned. When allocating the 24 GHz band, the FCC intentionally left guardrails (gaps between the 24 GHz band and 23.8 GHz band) in place to avoid the interference NOAA feared would happen with the critical 23.8 band used for weather research. Though this spectrum has been allocated and used, the fears have yet to be realized. Once again, an agency that is not the primary spectrum regulator raised a red flag in the eleventh hour, despite multiple opportunities to coordinate and communicate with the FCC.

More recently, the Federal Aviation Administration (FAA) raised concerns that the auctioned C-Band spectrum would impede aircraft safety. The FCC considered this before awarding the bands and generating \$81.11 billion of dollars in revenue for the treasury. But the FAA's complaints led to a delay in rollout that could have been easily resolved if proper interagency coordination occurred. This is a problem. American businesses and competitive industries should not have to wait months or years for a government drowning in red tape to resolve a needless dispute.

The Path Forward

Fortunately, in February, the FCC and the National Telecommunications and Information Administration (NTIA) announced a new initiative to “improve U.S. government coordination on spectrum management.” As both the NTIA and the FCC manage spectrum resources, this is a necessary and critical step to ensure that these agencies collaborate. Additionally, Congress is considering legislation that would require the FCC and the NTIA to update a Memorandum of Understanding (MOU) written in 2003. The purpose of the MOU is to improve the process for spectrum allocation disputes, ensure spectrum is used efficiently and encourage the agencies to collaborate effectively.

However, while collaboration between the FCC and the NTIA is important, it does not address concerns with other interagency disputes. These agencies lack the expertise and resources to address spectrum concerns. As a result, the FCC continues to struggle with interference from agencies like the FAA, NOAA, NASA and DOT. To avoid this, the federal government needs to speak with a unified voice on spectrum policy. The FCC has worked to ensure that the agency’s actions are open, transparent and receptive to public comment: orders put out by the agency are shared in advance and receive a number of public comments before being voted on at the open meeting. If agencies have concerns about a spectrum matter, they have the opportunity to file comments in the record, engage in ex partes and coordinate meetings to raise the issue directly. Agencies without expertise or authority on spectrum should not be publicly releasing statements that contradict other agencies. Executive agencies must work in good faith with the FCC to ensure that their concerns are addressed.

As is highlighted by the recent DOT complaint, the government has undermined its own efforts, causing confusion and unnecessary delays that cost taxpayer dollars and time. Agencies have avenues to raise apprehensions without creating interagency conflicts. A unified government needs to coordinate to alleviate concerns and ensure that unnecessary and unproductive interagency disputes over spectrum allocation do not keep happening.

Image: jaiz anuar