

Before the  
**U.S. DEPARTMENT OF COMMERCE**  
**NATIONAL TELECOMMUNICATIONS AND INFORMATION**  
**ADMINISTRATION**  
Washington, DC 20230

In the Matter of )  
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Developing a Sustainable Spectrum Strategy for ) Docket No. 181130999-8999-01  
America's Future )  
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**COMMENTS OF THE AEROSPACE INDUSTRIES**  
**ASSOCIATION**

January 22, 2019

The Aerospace Industries Association (“AIA”) is pleased to respond to the National Telecommunications and Information Administration’s (“NTIA”) request for comments on developing a sustainable spectrum strategy for America’s future.<sup>1</sup> NTIA’s request comes in response to the October 2018 Presidential Memorandum, “Developing a Sustainable Spectrum Strategy for America’s Future.”<sup>2</sup> NTIA is asking for input on developing recommendations that include, but are not limited to, increasing spectrum access, improving spectrum sharing, enhancing spectrum management, and maintaining and improving our nation’s global competitiveness.<sup>3</sup>

## I. INTRODUCTION

AIA is the nation’s most authoritative and influential voice of the aerospace and defense industry. AIA represents more than 100 leading aerospace and defense manufacturers, along with a supplier base of nearly 200 associate members, supporting 2.4 million jobs. Each year, our members innovate new products that require increased use of existing spectrum allocations as well as new allocations in order to perform their required objective.

AIA and our members applaud the Administration’s desire to “accelerate our development and deployment of 5G” and “ensure American leadership in 5G.”<sup>4</sup> Spectrum is vital to the entire aerospace and defense industry, and our members plan to fully embrace these emerging technologies; however, we should also take caution and ensure a proper balance

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<sup>1</sup> Department of Commerce, National Telecommunications and Information Administration, *Developing a Sustainable Strategy for America’s Future*, 83 FR 65640 (Dec. 21, 2018) (“Call for Comments”).

<sup>2</sup> Memorandum for the Heads of Executive Departments and Agencies, *Developing a Sustainable Spectrum Strategy for America’s Future*, 83 FR 54513 (Oct. 30, 2018) (“Spectrum PM”).

<sup>3</sup> Call for Comments, 83 FR at 65640-41.

<sup>4</sup> “America Will Win the Global Race to 5G.” *The White House*, 25 Oct. 2018, [www.whitehouse.gov/articles/america-will-win-global-race-5g/](http://www.whitehouse.gov/articles/america-will-win-global-race-5g/).

between allowing new users to operate in existing bands with other users and protecting existing services currently operating within those bands. Before any new allocation of spectrum is implemented, we must conduct sufficient analysis and testing to ensure compatibility with the advanced technologies and critical systems already in place. Rushing ahead with the implementation of new services could create harmful interference issues with the aviation, space, and defense services that currently operate in the existing or adjacent spectrum bands, without also taking into account the innovation impact in those areas where the United States also wants to continue global leadership.

We expect some of our member companies, who are studying this issue in greater technical detail, to provide comments going into greater depth and thus limit these comments to touch on issues that we feel are of critical importance to the entire aerospace and defense industry.

## **II. SHARING REGIMES ARE CRITICAL TO FUTURE ALLOCATIONS**

Spectrum is a finite resource. This has led the FCC and NTIA to identify frequency bands that are suitable to be shared in order to allocate additional spectrum for new and emerging technologies. When a band is deemed suitable, sharing regimes are necessary and critical to ensuring that technological innovations are possible. Advancing additional sharing regimes will be necessary since new technologies like 5G require significant allocations in encumbered spectrum.

While creating new sharing regimes is important, it is also critical to conduct proper compatibility studies and testing before any new sharing regime is initiated. These studies and testing must account for both future and current spectrum needs of the incumbent user of the band, as well as the impacts that new entrants will have on the adjacent spectrum bands. One

current example deals with the C-band. The recent passage of the Ray Baum Act has led the FCC to consider reallocating the C-band (3.7-4.2 GHz) for 5G.<sup>5</sup> The C-band is used by satellite operators and provides high availability services important to the aviation community for redundancy, weather distribution, and backhauling of aviation data. The adjacent 4.2-4.4 GHz band has been allocated for Aeronautical Radionavigation equipment<sup>6</sup> and currently houses critical aviation safety technology.

While this example is current, it is by no means unique. Prior to any reallocation, the FCC and NTIA must test or allow industry to conduct full testing of the impacts that new entrants will have on not only the spectrum under consideration, as in this case of the frequency band 3.7-4.2 GHz, but also any adjacent bands, such as the 4.2-4.4 GHz band.

Any new sharing regime must also be predicated on the ability of the incumbent user to continue to innovate and utilize that spectrum band. When an entire allocated band is no longer available to an incumbent user, it is also important that the incumbent user be able to operate on the remaining portions of that band to their fullest capability both now and in the future. While some communications systems, like those provided on geostationary satellites, are deployed under a robust coordination framework to be shared throughout their entire band, this is not the case for all current and emerging technologies. Certain technologies without appropriate sharing constraints, such as 5G, would be unable to share spectrum without constraining the incumbent service.

Accordingly, in a sharing regime, a new technology entering a band without appropriate

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<sup>5</sup> H.R. 4986, 115<sup>th</sup> Congress (2018)

<sup>6</sup> “Band Allocation: 4200-4400 MHZ.” NTIA, 2014, [www.ntia.doc.gov/files/ntia/publications/compendium/4200.00-4400.00\\_01MAR14.pdf](http://www.ntia.doc.gov/files/ntia/publications/compendium/4200.00-4400.00_01MAR14.pdf).

constraints could limit the incumbent user to current capacities or, over time, cause the incumbent the need to find alternative spectrum altogether. AIA and our members recommend that any new technology be required to meet sufficient thresholds to ensure all users of the band have the ability to continue to innovate and make use of the spectrum resource.

### **III. WINNING THE “RACE TO 5G” CANNOT SACRIFICE SAFETY**

AIA and our members agree with the Administration that “America cannot risk lagging behind other countries”<sup>7</sup> when it comes to the global race to 5G leadership. CTIA President and CEO Meredith Baker indicated that “[i]t’s clear: the global race to 5G is on, and the stakes are high. The nation that leads on 5G will capture millions of new jobs and billions in economic growth.”<sup>8</sup> At stake are up to 3 million new jobs, and a reported \$500 billion in economic growth.<sup>9</sup> AIA and our members agree with this outlook, and will look to fully embrace this technology; however, we also recognize the need for proper testing to ensure that 5G is rolled out in a manner that ensures public safety and respects the investment that incumbents have made in complex, sophisticated communications systems.

As noted above, we believe that any new sharing regimes or spectrum allocations should first be properly studied, and, if need be, tested to ensure that no harmful interference will take place in the context of either the incumbent user of the specific or of the adjacent spectrum

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<sup>7</sup> “America Will Win the Global Race to 5G.” *The White House*, 25 Oct. 2018, [www.whitehouse.gov/articles/america-will-win-global-race-5g/](http://www.whitehouse.gov/articles/america-will-win-global-race-5g/).

<sup>8</sup> The Race to 5G: Exploring Spectrum Needs to Maintain U.S. Global Leadership, 115th Cong., 14 (2018) (testimony of Meredith Attwell Baker) [https://www.commerce.senate.gov/public/\\_cache/files/1359dab0-b442-475b-945f-39a94e8b40af/4B69891EE2157AB53989688855FBDBEF.ctia---baker-testimony.pdf](https://www.commerce.senate.gov/public/_cache/files/1359dab0-b442-475b-945f-39a94e8b40af/4B69891EE2157AB53989688855FBDBEF.ctia---baker-testimony.pdf).

<sup>9</sup> “Smart Cities: How 5G Can Help Municipalities Become Vibrant Smart Cities.” *Accenture Strategy*, 2018, [www.accenture.com/t20170222T202102\\_w\\_us-en/acnmedia/PDF-43/Accenture-5G-Municipalities-Become-Smart-Cities.pdf](http://www.accenture.com/t20170222T202102_w_us-en/acnmedia/PDF-43/Accenture-5G-Municipalities-Become-Smart-Cities.pdf).

bands. It is imperative that prior to any new allocation of spectrum, or the implementation of any new sharing regime, that testing take place to see the full impacts of the new entrants on the specific spectrum band, as well as any adjacent bands that could be impacted. Without this testing, the safety of the over 941 million passengers who fly in North America<sup>10</sup> per year could be at risk.

The availability of adequate spectrum for 5G will be critical to ensuring the United States is able to win this race. For this reason, over the past few years, the wireless industry has secured new spectrum and positioned themselves to roll out 5G as soon as feasible. It is equally important that the FCC and NTIA continue to identify spectrum bands that are suitable for sharing and look to establish new sharing regimes if the spectrum is required.

To that point, it will be important to study and take into account the amount of spectrum that is needed in order for companies to deploy this technology. Recently, on January 9, 2019, Verizon Wireless was the first wireless carrier to report that it will not need to acquire any new spectrum to roll out 5G. In fact, Verizon claims that it is only using 53% of its existing spectrum holdings.<sup>11</sup> Going forward, it will be critical for carriers to distinguish spectrum presently needed for 5G from spectrum intended for future technologies.

#### **IV. MORE TRANSPARENCY TO HELP STRENGTHEN THE PROCESS**

AIA and our members also believe more transparency could be brought into NTIA's processes, especially those related to supporting or opposing spectrum allocations, modifications

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<sup>10</sup> Rosen, Eric. "Over 4 Billion Passengers Flew In 2017 Setting New Travel Record." *Forbes*, Forbes Magazine, 8 Sept. 2018, [www.forbes.com/sites/ericrosen/2018/09/08/over-4-billion-passengers-flew-in-2017-setting-new-travel-record/#6df0566a255b](http://www.forbes.com/sites/ericrosen/2018/09/08/over-4-billion-passengers-flew-in-2017-setting-new-travel-record/#6df0566a255b).

<sup>11</sup> Kapko, Matt. "Verizon Wireless Says Current Spectrum Holdings Are Sufficient for 5G Buildout." *Fierce Wireless*, 9 Jan. 2019, [www.fiercewireless.com/wireless/verizon-wireless-says-current-spectrum-holdings-are-sufficient-for-5g-buildout](http://www.fiercewireless.com/wireless/verizon-wireless-says-current-spectrum-holdings-are-sufficient-for-5g-buildout).

to the NTIA Manual of Regulations and Procedures and analyzing sharing scenarios for Federal Radio Frequency Management or the “Redbook.” The accelerated growth of technology may have exceeded the intentions of the current process, which relies on a guidebook initially published in 1991.<sup>12</sup> Furthermore, no agency processes exist that permit an entity to establish a spectrum sharing regime or pursue a new allocation. Enabling such processes could advance the growth of technology.

At a minimum, we would recommend that the NTIA establish a website that publishes periodic status updates to ensure that industry is updated throughout the process. This website would not need to disclose any proprietary details but could simply serve as a portal to publish status updates and estimated timelines. Those steps alone would create a better process for all stakeholders involved.

The system to update the NTIA Redbook should also be upgraded. The NTIA Redbook is regularly updated; however, this process is undertaken with limited public input. Between 2008 and 2017, the NTIA website has 13 revised copies available.<sup>13</sup> Each time it is revised, some of the revisions may be less substantive changes, but other times significant policy-related changes are incorporated.

If, in fact, a policy-related change is being made, it should be subject to the same public input stages of any other policy-related change from a government agency in compliance with the Administration Procedures Act.<sup>14</sup>

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<sup>12</sup> “Federal Spectrum Management: A Guide to the NTIA Process.”, 1991, [www.ntia.doc.gov/report/1991/federal-spectrum-management-guide-ntia-process](http://www.ntia.doc.gov/report/1991/federal-spectrum-management-guide-ntia-process).

<sup>13</sup> “Manual of Regulations and Procedures for Federal Radio Frequency Management (Redbook). *National Telecommunications and Information Administration*, 2011, [www.ntia.doc.gov/page/2011/manual-regulations-and-procedures-federal-radio-frequency-management-redbook](http://www.ntia.doc.gov/page/2011/manual-regulations-and-procedures-federal-radio-frequency-management-redbook).

<sup>14</sup> [5 U.S. Code § 553 - Rule making](#)

Although this would be a much-needed step in the right direction, some could argue such a change might also have the effect of adding time to the process. While perhaps a reasonable criticism of this approach, planning ahead and posting for public input early in the process could ensure that there would be little, if any, time added to the process.

Finally, the NTIA should make efforts to modernize and standardize IT systems such as those utilized by the DoD (i.e. EL-CID, Stepstone, Spectrum XXI, Spectrum Certification System, Host-Nation Spectrum World-Wide Database Online, and Joint Spectrum Data Repository) and provide greater access to these systems to government contractors and other spectrum users. An online portal similar to the FCC's Universal Licensing System or Equipment Authorization Electronic System would permit users to view real-time information about frequency assignments and spectrum certifications. Such improvements would provide greater transparency to spectrum users, would expedite both Federal users' access to spectrum and the frequency sharing process, and would reduce delays in the development of technology that is critical to the Federal government.

## **V. CONCLUSION**

The aerospace and defense industry is on the cutting edge of technological innovation and will continue to be in the years to come. Spectrum access is vital to our industry's success. Every time an aircraft takes off, a new satellite is launched, or a missile is fired, they rely on spectrum to perform. 5G will change the way our world connects, increase the speeds at which we engage, and transform so many parts of our lives. However, the technology must be introduced in a safe manner.

As the Administration looks to continue to develop a "National Spectrum Strategy," it is critical that it establish sharing regimes that ensure adequate testing is completed beforehand,



take into account safety over speed of introducing new allocations, and add more transparency to the process. Such an approach will help maintain the United States' global competitiveness, allow all industries to flourish in the new 5G world while maintaining the right levels of safety for all spectrum users. AIA and our members look forward to continuing to work with NTIA and the Administration to help craft that strategy.

Respectfully submitted,

**AEROSPACE INDUSTRIES ASSOCIATION**

By: \_\_\_\_\_

A handwritten signature in black ink, appearing to read 'D. Silver', written over a horizontal line.

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