

**Before the  
NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION  
Washington, DC 20230**

In the Matter of )  
Implementation of a National Spectrum ) Docket No. 2023-0003  
Strategy )

**COMMENTS OF COMMSCOPE**

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CommScope, Inc. (CommScope) submits these comments in response to the Request for Public Input issued by the Department of Commerce, National Telecommunications and Information Administration (NTIA) in the above-referenced proceeding.<sup>1</sup>

CommScope applauds NTIA’s work on developing the National Spectrum Strategy and we welcome the opportunity to provide input on its implementation.<sup>2</sup> CommScope enthusiastically supports NTIA’s effort to further advance the development and deployment of wireless broadband services while also simultaneously ensuring that important federal incumbents have access to the spectrum resources necessary to support their services.

As discussed in greater detail below, CommScope does not view the needs of non-federal (i.e., commercial) and federal users as mutually exclusive. New strategies, methods and technologies and have facilitated spectrum access by commercial and federal users, and CommScope anticipates that further success can be achieved in the near term.

**I. COMMENTS**

CommScope provides responses to NTIA’s specific questions concerning radio frequency spectrum access, sharing and management below.

**Pillar #1 – A Spectrum Pipeline to Ensure U.S. Leadership in Spectrum-Based Technologies**

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<sup>1</sup> *Implementation of the National Spectrum Strategy, Notice of Opportunity for Public Input*, 88 Fed. Reg. 85,266 (December 7, 2023).

<sup>2</sup> *National Spectrum Strategy*, NTIA, (NSS) (November 13, 2023).

**Strategic Objective 1.1: Ensure sufficient spectrum access to support Federal agency missions now and into the future.**

NTIA mentions several points when assessing spectrum resources for both federal and non-federal operation including considering, "... the potential for improved efficiency and mission effectiveness through new technological developments (such as compression and modulation technology) and coexistence techniques."<sup>3</sup> We recommend that NTIA also consider the FCC's recent Policy Statement regarding improved receiver interference immunity performance.<sup>4</sup>

We were disappointed that the FCC noted at the outset in the initial NOI that it, "...does not seek comment on or address the interagency process between the Commission and NTIA or other Federal agencies on overlapping non-Federal and Federal spectrum management issues."<sup>5</sup> We understand the complexities of attempting to include commercial-federal spectrum management issues in this discussion. However, most of the recent spectrum reallocations have either directly or indirectly involved some degree of commercial-federal spectrum sharing.<sup>6</sup> In addition, the NSS identifies potential future allocations that are more likely to include federal and non-federal spectrum sharing.<sup>7</sup>

We urge NTIA to work with the FCC and all spectrum users to include and address the performance of federal receivers in the context of this discussion. We also note that this

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<sup>3</sup> NSS at p4

<sup>4</sup> *Promoting Efficient Use of Spectrum through Improved Receiver Interference Immunity Performance*, Policy Statement, ET Docket No. 23-122, April 21, 2023, Policy Statement

<sup>5</sup> See *Promoting Efficient Use of Spectrum through Improved Receiver Interference Immunity Performance*, FCC 22-29, April 21, 2022, Notice of Inquiry (NOI) at ¶13

<sup>6</sup> For example, see, Memorandum to Executive Branch Departments and Agencies from Diane Rinaldo, (Acting) Assistant Secretary of Commerce for Communications and Information, "Review of Current Frequency Assignments and Quantification of Spectrum Usage", August 1, 2019, which mentions the 3.1 GHz and 7/8 GHz bands.

<sup>7</sup> NSS on pp 4-6

addresses Strategic Objective 3.1: Improve spectrum efficiency and bolster coexistence by facilitating investments in new and emerging technologies.

**Strategic Objective 1.2: Ensure spectrum resources are available to support private sector innovation now and into the future.**

The NSS identified five spectrum bands that will be subjected to further study:<sup>8</sup>

- 3100-3450 MHz (Lower 3 GHz)
- 5031-5091 MHz
- 7125-8400 MHz
- 18.1-18.6 GHz
- 37.0-37.6 GHz

As we noted in our initial comments to the NTIA NOI, we urge NTIA to work with all stakeholders in the study (or ongoing study) of these spectrum bands. We suggested in our initial comments to the NSS that the PATHSS process established under the NSC is a workable framework that allows for collaboration among federal and commercial stakeholders.<sup>9</sup> Working with federal stakeholders, NSC has established procedures to share both CUI and classified information with commercial stakeholders. We recommend NTIA review the NSC process and consider how to replicate the model for future commercial/federal engagement.

Considering the Lower 3 GHz Band, NTIA notes in the NSS, “Additional studies will explore dynamic spectrum sharing and other opportunities for private-sector access in the band, while ensuring DoD and other Federal mission capabilities are preserved, with any necessary changes.”<sup>10</sup> NTIA should also study methods for managing dynamic spectrum sharing, including the provision of dynamic spectrum sharing systems such the Spectrum Access System (SAS), which is used to manage federal-commercial sharing for the CBRS (3550-3700 MHz) band.

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<sup>8</sup> *Id*

<sup>9</sup> Partnering to Advance Trusted and Holistic Spectrum Solutions (PATHSS).

<sup>10</sup> NSS on p 6

Studies should also consider the best means to provide such SAS-like services including whether a SAS-like system should be managed by commercial or federal entities.

This is also true for the 5030-5091 MHz band where the FCC proposes a Dynamic Frequency Management System (DFMS) to, “... address the complexities involved in coordinating shared interference-protected access to the 5030-5091 MHz band.”<sup>11</sup>

Considering the 7125-8400 MHz band, we strongly recommend that study of this band should commence with NTIA releasing the Federal Government Spectrum Use Reports for allocations in this band at a minimum.<sup>12</sup> We note that Federal spectrum allocations in these bands accommodate Fixed, Fixed Satellite and other services and that there is also an international allocation for Mobile. We also note that this is a workhorse band for federal point-to-point microwave systems.<sup>13</sup> Considering this band is situated just above the commercial 6 GHz band (5925-7125 MHz), we recommend NTIA consider studying the 7125-8400 MHz band for shared commercial-federal Fixed use with the goal of making at least portions of the band available.

We also recommend NTIA collaborate with commercial and federal stakeholders to study sharing and coexistence in this band under the PATHSS framework mentioned above. Releasing the Federal Government Spectrum Use Reports for the band will greatly facilitate any collaboration.

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<sup>11</sup> See *FCC Launches Rulemaking on Licensed Spectrum for Unmanned Aircraft Use*, Notice of Proposed Rulemaking, WT Docket No. 22-323, January 4, 2023

<sup>12</sup> <https://www.ntia.gov/page/federal-government-spectrum-use-reports-225-mhz-7125-ghz>

<sup>13</sup> See *Spectrum Usage for the Fixed Services*, NTIA Report 00-378, March 2000, Robert J. Matheson, p 62. This report indicated that there were over 8200 total U.S. fixed assignments.

**Strategic Objective 1.3: Maintain the spectrum pipeline by applying guiding principles and leading program management practices to identify additional bands for study.**

NTIA states, "... the U.S. Government will implement leading program-management practices to plan and monitor the success of spectrum repurposing objectives underpinning the spectrum pipeline, consistent with prior recommendations from the Government Accountability Office."<sup>14</sup> NTIA also states, "... the U.S. Government will formalize its best practices for conducting these analyses in support of spectrum management decisions."<sup>15</sup>

As we noted in our NSS comments, the Government Accountability Office (GAO) found in 2011 that, "NTIA's data management system is antiquated and lacks internal controls to ensure the accuracy of agency-reported data, making it unclear if decisions about Federal spectrum use are based on reliable data."<sup>16</sup>

We strongly suggest that any effort to implement the NSS must also include among best practices improving the quality of the underlying data upon which spectrum planning analyses and decisions are made. We recommended that NTIA perform a system-wide data accuracy and clean-up effort. This effort is needed to establish a data baseline and address existing errors. We also recommend that NTIA review the data fields captured in the databases to ensure they are fully representative of systems both proposed and in use. In addition, we recommend NTIA establish a framework for ensuring the data for these systems are accurate and up to date. NTIA should collaborate with the FCC considering their Notice of Inquiry on understanding spectrum usage.<sup>17</sup>

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<sup>14</sup> NSS on p 8

<sup>15</sup> *Id*

<sup>16</sup> United States Government Accountability Office, Report to Congressional Committees, Spectrum Management: NTIA Planning and Processes Need Strengthening to Promote the Efficient Use of Spectrum by Federal Agencies, GAO-11-352 (April 2011), available at <http://www.gao.gov/new.items/d11352.pdf>.

<sup>17</sup> See *Advancing Understanding of Non-Federal Spectrum Usage*, Notice of Inquiry, WT Docket No. 23-232 (August 4, 2023)

Regarding the availability of this data, we recommend that restrictions on public access to the federal databases of spectrum usage be reviewed and that public access to this data be made available. We are aware of the need to protect sensitive data on federal spectrum use, but we also suggest that there are portions of this data that can and should be made available. Information on spectrum assignments, locations, configurations, licensees, etc. should be reviewed and considered for public review balancing the need for transparency with the need to protect sensitive operational missions.

Lack of complete and accurate data on federal systems leads to assumptions, which tends to lead to inefficient analyses.

We also note that all bands identified by NTIA for further study will be subject to substantial building penetration loss.<sup>18</sup> Considering more and more mobile data consumption is occurring indoors, typical outdoor macro-cellular deployment models may be inadequate to ensure sufficient in-building signal coverage.<sup>19</sup> We recommend NTIA specifically consider indoor coverage and capacity needs when studying spectrum issues.

## **Pillar Two: Collaborative Long-Term Planning to Support the Nation’s Evolving Spectrum Needs.**

### **Strategic Objective 2.1: Establish a persistent strategic spectrum planning process guided by the best available science and data.**

NTIA mentions in the NSS that they, “... will develop an architecture for a new collaborative framework that leverages these existing advisory groups, identifies new groups that would aid long-term planning, and defines the interactions among them, including roles and

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<sup>18</sup> See ITU-Report P.2346-5 *Compilation of measurement data relating to building entry loss*, June 2023

<sup>19</sup> See *Ericsson Mobility Report*, November 2023, “...the majority of traffic is generated indoors where people tend to spend most of their time; we spend 90 percent of our time indoors, and up to 80 percent of our data is consumed there.”

responsibilities and desired outputs.”<sup>20</sup> NTIA also mentions three advisory groups including the the Interdepartment Radio Advisory Committee (IRAC), the (new) Spectrum Advisory Council (SAC), and the Commerce Spectrum Management Advisory Committee (CSMAC).

We recommend that the collaborative framework include regular (i.e., quarterly) meetings with the respective leaders of these three advisory groups (and any other advisory groups created through the implementation of the NSS). The primary purpose of these meetings would be to ensure information sharing across all advisory groups. These meetings can also be used to support NTIA’s national spectrum planning process by providing insights from both federal and non-federal users. This engagement could also help NTIA implement an ongoing process for solicitation of new and future spectrum requirements and regularly update the NSS.<sup>21</sup>

**Strategic Objective 2.3: Define requirements and implement capabilities to capture essential data and information on spectrum use.**

NTIA states that they, “... will work to modernize spectrum management capabilities that include tools suitable for both public and private sectors, to collect and use higher-fidelity data, including, but not limited to, time of use, waveforms, and area of operation.”<sup>22</sup>

We reiterate our point above that NTIA must improve their data management platforms and consider ways to make non-classified data on federal spectrum use available for public access.

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<sup>20</sup> NSS on p 10.

<sup>21</sup> NSS on p 10-11.

<sup>22</sup> NSS at p 12.



## **Pillar Three: Unprecedented Spectrum Innovation, Access, and Management through Technology Development**

NTIA says that, “...it will—within 12-18 months—complete a “moonshot” effort, in collaboration with industry, to advance research, create investment incentives, and set forth measurable goals for advancing the state of technology for spectrum access, with an emphasis on dynamic forms of spectrum sharing for all users.”<sup>23</sup>

We strongly recommend that the first step of the moonshot effort must be to review the recent report completed by the CSMAC Subcommittee on CBRS.<sup>24</sup> NTIA tasked the Subcommittee with answering the following questions:

1. What are general and specific lessons learned from the CBRS framework for commercial operations sharing with federal incumbents - both positive and negative?
2. How could the commercial-federal sharing in CBRS be improved?
3. What from this CBRS spectrum sharing experience should be considered for implementation in other bands/cases?
4. What from this CBRS spectrum sharing experience should be avoided in other bands/cases?

Expanding on these questions, the Subcommittee conducted 33 interviews with stakeholders across CBRS including:

- Government (operators, regulators and labs)
- CBRS operators
- SAS providers
- Standards Development Organizations
- Industry Associations
- Equipment providers
- Academics

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<sup>23</sup> NSS at p 13.

<sup>24</sup> *Commerce Spectrum Management Advisory Committee (CSMAC) Report of the CBRS Subcommittee*, December 2023, [https://www.ntia.doc.gov/sites/default/files/2023-12/cbrs\\_subcommittee\\_final\\_report.pdf](https://www.ntia.doc.gov/sites/default/files/2023-12/cbrs_subcommittee_final_report.pdf)

The report captures these stakeholders' thoughts on lessons learned and views on improvements in the following areas:

- Technical and sensing
- Policy and economic
- Operational and process
- Standards and certification

The report provides considerations for implementation of federal and non-federal spectrum sharing in other bands. The report finishes with several specific recommendations based on a year-long study of CBRS as described above.

The report is an excellent review of federal and commercial non-federal dynamic spectrum sharing considering three years of efforts among all stakeholders leading up to commercialization and over three years of commercial operation.

## **II. CONCLUSION**

CommScope appreciates the efforts that NTIA has taken to develop a National Spectrum Strategy. We believe that the most critical aspect of implementing the NSS is fulsome collaboration among all stakeholders. We look forward to working with the NTIA and all stakeholders.

Respectfully submitted,

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