Dynamic Spectrum Alliance Limited
3855 SW 153rd Drive
Beaverton, OR 97003
United States
http://www.dynamicspectrumalliance.org

April 17, 2023

Ms. Stephanie Weiner
Acting Chief Counsel
National Telecommunications and Information Administration

Re: Development of a National Spectrum Strategy

Dear Ms. Weiner -

The Dynamic Spectrum Alliance (DSA)[1] respectfully submits these comments to the National Telecommunications and Information Administration (NTIA) Request for Comments (RFC) on Development of a National Spectrum Strategy.[2] We appreciate the opportunity to offer our perspectives on how NTIA can "accelerate U.S. leadership in wireless communications and other spectrum-based technologies and to unlock innovations that benefit the American people."[3]

The DSA welcomes NTIA's efforts to ensure there is sufficient access to spectrum. We fully agree that spectrum access "is vital to national security, critical infrastructure, transportation, emergency response, public safety, scientific discovery, economic growth, competitive next-generation communications, and diversity, equity, and inclusion."[4] We further agree that "[i]ncreased spectrum access will also advance U.S. innovation, connectivity, and competition, create high-paying and highly skilled jobs, and produce improvements to the overall quality of life."[5]

The DSA and our members work with regulatory authorities around the world to promote new and innovative approaches to spectrum management to increase spectrum access options and extend connectivity. Such innovative approaches include the adoption of new licensing frameworks that incorporate licensed, unlicensed, and license-by-rule access options. In addition, the DSA promotes the use of automated dynamic spectrum management systems (DSMS) to make more efficient use of spectrum and support a wide range of commercial services, including wide-area mobile and fixed

[1] The DSA is a global, cross-industry, not for profit organization advocating for laws, regulations, and economic best practices that will lead to more efficient utilization of spectrum, fostering innovation and affordable connectivity for all. Our membership spans multinationals, small-and medium-sized enterprises, as well as academic, research and other organizations from around the world all working to create innovative solutions that will benefit consumers and businesses alike by making spectrum abundant through dynamic spectrum sharing. A full list of DSA members is available on the DSA's website at dynamicspetrumalliance.org/members.
[2] Available at https://ntia.gov/issues/national-spectrum-strategy.
[3] RFC at 3.
[4] Id. at 2.
[5] Id.

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broadband networks, as well as local and private networks, use cases and applications. We believe that these concepts and tools should be key components of a National Spectrum Strategy for the United States.

The DSA and our members are available to discuss these comments and provide any additional information and insights on dynamic spectrum management and its role in the development of a robust National Spectrum Strategy.

Respectfully submitted,

/s/ Dr. Martha SUAREZ
President
Dynamic Spectrum Alliance

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DSA COMMENTS

I. Introduction to the DSA and Automated Dynamic Spectrum Management Systems

Today, we have the technical capability to automate frequency coordination, which lowers transaction costs, uses spectrum more efficiently, speeds time-to-market for new services, protects incumbents from harmful interference with greater certainty, and generally expands the supply of spectrum for wireless connectivity that is fast becoming, like electricity, a critical input for most industries and economic activity.

To maximize the efficient use of spectrum and provide a variety of access options, the DSA recommends that regulators worldwide implement automated Dynamic Spectrum Management System (DSMS) solutions, where applicable, and innovative licensing frameworks. In the whitepaper entitled "Automated Frequency Coordination - An established tool for modern spectrum management,"[6] the DSA explains that the use of databases and other informing capabilities to coordinate spectrum assignments has evolved significantly since its first introduction, but at its heart, is nothing new. The basic steps are the same as in a manual coordination process or where a regulator assesses the opportunities for local licensing on a case-by-case basis. The developments driving DSMS include:

- Surging consumer demand for wireless connectivity leading to the need to intensively share underutilized frequency bands;
- Significant improvements in the computation power to run advanced propagation analysis efficiently and rapidly and coordinate devices and users in near real-time; and
- Availability of more agile wireless equipment that can interact directly with dynamic frequency coordination databases.

Automated DSMS tools, such as those developed for the TV White Spaces (TVWS), the 3.5 GHz Citizens Broadband Radio Service (CBRS), and for unlicensed devices operating in the 6 GHz Band at Standard Power, share similarities. Technical and service rules for incumbent operations and new entrants are converted into algorithms, which are used together with information obtained via a database query or other informing capability to provide a list of available channels and maximum power for that location back to a device seeking to access the

[6] Available at http://dynamicspectrumalliance.org/wp-content/uploads/2019/03/DSA_DB-Report_Final_03122019.pdf.

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band. Differences between the automated DSMS tools for the TVWS, CBRS, and the 6 GHz bands are driven by the type of incumbent operations that require protection in each band.

The DSA anticipates that regulatory authorities worldwide will need to rely increasingly on automated DSMS tools to handle surging demand for wireless connectivity by sharing underutilized frequency bands. Significant improvements in computation power are enabling more efficient and rapid advanced propagation analysis capability, which in turn enables coordination of devices and users in what is close to real-time. Application of artificial intelligence techniques, such as machine learning for spectrum sensing and for signal classification, also can support improved spectrum management.[7] In addition, more agile wireless equipment is being developed that can interact directly with DSMS tools, increasing opportunities for even greater efficiency and scale.

A) Automated Spectrum Sharing in the U.S. 3.5 GHz CBRS Band

One of the best examples of a successful implementation of an automated DSMS and novel licensing framework is the U.S. 3.5 GHz CBRS band (3550-3700 MHz). Authorized by the Federal Communications Commission (FCC) in January 2020, CBRS has been a shining example of the myriad benefits of automated spectrum sharing.

Under the CBRS regulatory framework, the Spectrum Access System (SAS) coordinates CBRS frequency use and manages coexistence among the three tiers of access:

1) Incumbent (e.g., navy radar and commercial fixed satellite services);
2) Priority access license (PAL); and
3) General authorized access (GAA).

An environmental sensing capability (ESC) network detects incumbent naval radar use of the band and alerts the SAS to move new terrestrial commercial operations to non-interfering channels. The SAS also interfaces with the FCC's Universal Licensing System (ULS) to obtain information about fixed satellite service (FSS) incumbents and grandfathered fixed wireless systems. Using this information, the SAS can calculate aggregate interference from new commercial users to incumbents and enforce protection of these systems. In the more than three years of commercial operational experience, no incumbents have reported interference from new CBRS users, demonstrating the effectiveness of SAS management of the band.

[7] Body of European Regulators for Electronic Communications (BEREC), "Draft - BEREC Report on the impact of Artificial Intelligence (AI) solutions in the telecommunications sector on regulation," BoR (22) 191, Dec. 2022, pages 24-26. Microsoft Word - BoR (22) 191 Draft Report on challenges and benefits of Artificial Intelligence (AI) solutions in the telecomm (europa.eu).

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Commercial users in the CBRS band have multiple options for accessing this 150 MHz of spectrum:

- Acquisition of a PAL in the FCC's 2020 CBRS auction where use-or-share rights for county-based licenses were made available;
- Use of the GAA tier, which does not require an individual license to operate, but does require use of certified equipment and connectivity to a SAS to receive a spectrum grant for operations with a particular transmit power and antenna orientation at a specific location and height; or
- Leased rights from a PAL license holder.

Based on the type of device (i.e., base station category), license status (PAL or GAA), geo-coordinates and height, operating parameters, and incumbent protection criteria, the SAS calculation engine determines the list of available channels and maximum permissible radiated power on each available channel for that specific device.

As described above, the SAS not only coordinates protection of incumbent users from new commercial operations, but also manages the assignment of frequencies to PAL and GAA users, protection of PAL operations, and co-existence among GAA users to maximize spectrum efficiency and provide deterministic access for all users. The automated SAS process provides near real-time management of the CBRS band, speeding time-to-market while minimizing uncertainty and administrative burdens.

Through this automation of shared spectrum, a whole host of new services has emerged. In addition to densification of the nationwide public mobile networks, and use of these frequencies by rural wireless Internet service providers (WISPs), a wide variety of private networks are also using the CBRS band. From business to leisure, hundreds of smart office, airport and stadium private networks have been deployed using CBRS as the result of having access to spectrum without the need for an individual license. In fact, today there are over 325,000 CBRS cell sites deployed across the United States, with the vast majority using the GAA tier.

Examples of such private wireless network deployments using the CBRS GAA tier include:

Military logistics:
https://www.fiercewireless.com/private-wireless/federated-demo-dod-highlights-benefits-shared-spectrum

Energy management:
https://www.fiercewireless.com/private-wireless/schneider-electric-adds-private-wireless-smart-factories

Retail:
https://www.druidsoftware.com/2019/11/15/cbrs-ongo-at-american-dream-entertainment-retail-complex-nj-usa/

Municipal government:
https://www.fiercewireless.com/private-wireless/motorola-and-harris-county-build-private-lte-network

https://www.fiercewireless.com/private-wireless/cox-launches-cbrs-pilot-city-las-vegas

Transportation:
https://www.fiercewireless.com/wireless/boingo-deploys-trial-cbrs-network-at-dallas-love-field-airport

Education:
https://www.csrwire.com/press_releases/747561-private-wireless-helps-schools-close-digital-divide

https://www.fiercewireless.com/private-wireless/fort-worth-isd-builds-sustainable-cbrs-network

https://www.fiercewireless.com/private-wireless/samsung-amdocs-deploy-private-cbrs-network-howard-university

Entertainment:
https://inbuildingtech.com/venues/connectivity-wireless-jma-stadium-cbrs/

Hospitality:
https://www.thefastmode.com/technology-solutions/24585-airspan-networks-deploys-5g-cbrs-private-network-for-hospitality-industry

Manufacturing warehouse/supply chain:
https://www.fiercewireless.com/private-wireless/calchip-connect-emerges-key-player-private-wireless

https://www.fiercewireless.com/private-wireless/mxd-adds-second-private-wireless-network

Agriculture:
https://www.fiercewireless.com/private-wireless/three-day-deployment-makes-tractors-autonomous

https://enterpriseiotinsights.com/20220607/smart-farm/how-robot-tractors-and-a-private-network-came-together-at-a-smart-vineyard

B. Automated Frequency Coordination Unlicensed Standard Power Devices in the 6 GHz Band

Another notable example of automated spectrum sharing is the 6 GHz Band, where regulators worldwide are enabling unlicensed WLAN/RLAN use on a shared basis with incumbent services using the following approach:

1) Authorizing up to 1200 MHz (5925-7125 MHz) of the 6 GHz Band for unlicensed use; and

2) Authorizing one or more of the following categories of unlicensed devices:

(i) Very Low Power (VLP) devices across the entire authorized frequency range

(ii) Low Power Indoor (LPI) devices across the entire authorized frequency range, and

(iii) Standard Power (SP) devices that can operate both outdoors and indoors under the coordination of an automated database management system, known as the Automated Frequency Coordinator (AFC), where the authorized frequency range depends on the nature of the incumbents.

Several countries are actively deploying LPI devices on an unlicensed,[8] shared basis in the 6 GHz Band, leveraging wider channel availability (up to 160 MHz with Wi-Fi 6) to increase spectrum efficiency while maintaining the ability to share spectrum with incumbents and other unlicensed deployments. In the future, Wi-Fi 7 will be able to accommodate 320 MHz channels, which will further improve latency, throughput, reliability, and quality of service.

For SP operations, AFC systems have been designed to provide channel availability information to unlicensed devices, while ensuring that incumbent systems, including fixed point-to-point microwave links, are protected from interference. When an authorized and authenticated SP device queries an AFC for spectrum availability, the AFC will assess which incumbent fixed link receivers have the potential to receive excess energy from the unlicensed device based on its location and potential transmit power. The AFC calculates the maximum transmit power for that device's location on each 6 GHz channel and provides a list of options for the device to select. The device must check in with the AFC daily to determine if any changes to incumbent use of the band have occurred that would alter the channel and transmit power options available to it.

[8] While the U.S. and some other countries use the term unlicensed spectrum, other countries use terms such as license-exempt, license-free, or free spectrum to describe a similar concept.

Building on the experience and lessons learned from the use of SAS in the CBRS band and TVWS database described below, several DSA members have developed AFC systems for the 6 GHz Band and have applied to become AFC system operators in the United States and Canada. It is expected that the FCC and ISED will certify multiple AFC system operators and permit unlicensed SP devices to begin using the 6 GHz band in 2023. DSA anticipates that many of these same AFC system developers will also seek to operate in other countries, such as Brazil, Korea, and Saudi Arabia, that are in the process of finalizing their regulations for AFCs that will provide access to unlicensed SP devices seeking to operate in the 6 GHz Band.

C. TV White Spaces

A third example of an automated DSMS capability, one that pre-dates both the SAS and AFC, is in the TVWS, where automated spectrum management systems – TVWS databases -- facilitate unlicensed access to unassigned and unused TV band channels. Rules governing database-coordinated access to TVWS for fixed and personal/portable devices were finalized in 2008 by the FCC and have been updated several times. Similar regulations have been adopted by a growing list of countries since then.

TVWS database systems ingest current technical and operational parameters on incumbents (e.g., broadcast television stations, radio astronomy facilities, wireless medical telemetry service facilities, and others) operating in the broadcast TV bands from the regulatory authority's licensing databases. They also receive additional information regarding 'reservations' for licensed wireless microphones operations made via an online portal and combine this with geolocation information and operating parameters received from the White Space devices to receive a list of available channels and the maximum power of each available channel at that location. While not as complicated as a SAS, the TVWS database is much more complex than an AFC. The complexity of a DSMS is dictated by the nature of the band's incumbents.

II. DSA Responses to the NTIA RFC Questions

A) Are there spectrum access models (e.g., low-power unlicensed, dynamic sharing) that would either expedite the timeline or streamline the process for repurposing the band?

As mentioned above, the DSA urges NTIA to include in the National Spectrum Strategy the use of both innovative licensing frameworks and DSMS tools and technologies to expedite and streamline sharing and repurposing (meaning the introduction of new services into currently occupied bands). Innovative licensing frameworks include licensed, unlicensed, and license-by-rule access options.

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For licensed/licensed-by-rule bands, the DSA recommends considering tiered approaches that offer protection for incumbent services while also offering multiple access options for new users. These automated DSMS solutions and tiered licensing approaches need not be complex. Rather, they need only ensure protection of incumbents and enable the type (or types) of spectrum sharing desired by policy. Ideally, simple automated DSMS and licensing approaches are preferrable.

The simplest model is a two-tier model, whereby new entrants must protect incumbent users. An example of this is the 6 GHz Band where unlicensed devices operating under the Commission's Part 15 rules cannot cause harmful interference to licensed operations and cannot seek protection from interference. Depending on the incumbent services in the desired band, a two-tier system where opportunistic users operating under a licensed-by-rule regime would have to protect incumbent operations could work as well.[9]

Another model includes a three-tier sharing framework, much like that used for the CBRS:

Tier 1 – **Incumbent users** operating in the band have the highest priority in accessing spectrum, with their access always guaranteed during their operations so that their radio equipment need not be aware of other operations sharing the band.

Tier 2 – **Licensed new users** require a degree of certainty in accessing spectrum. To ensure sharing of the band with this tier of users, it is fundamental that the operation of incumbent services is well understood (e.g., operate only in certain areas) and is predictable (e.g., operate at certain times or otherwise offer information about when spectrum needs to be vacated). If such information is not accurate enough or unavailable, then access to the band for Tier 2 users might be greatly reduced or impossible. A use-or-share requirement for licensed spectrum is also important to ensure that spectrum use is maximized.

Tier 3 – **Opportunistic users** can access spectrum on an unlicensed or licensed-by-rule basis. These users may not need access to spectrum over a larger geographic area, may be operating indoors or on a campus, or may be operating in more remote areas where spectrum usage will not be as competitive. In many cases, such networks are deployed in very remote areas where spectrum is largely unused and the risk of interference to higher-tier users is negligible. There might be other cases where there is sufficient spectrum available and the envisioned applications allow QoS flexibility, for example because the band is used to provide additional capacity to networks using other anchor frequencies. In such cases, it is conceivable to have a third tier of users with minimal regulatory barriers and no need for interference protection from other Tier 3 users.

[9] Note that over a decade ago concepts such as License Shared Access and Authorized Shared Access (LSA/ASA) were introduced as a potential two-tier sharing models between IMT systems and incumbents that obtained their spectrum through non-commercial means (e.g., Federal spectrum users). LSA/ASA was proposed as an alternative to the three-tier CBRS frameworks but did not allow for opportunistic use. LSA/ASA never took root.

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B) What factors should be considered in identifying spectrum for the pipeline? Should the Strategy promote diverse spectrum access opportunities including widespread, intensive, and low-cost access to spectrum-based services for consumers?

The DSA strongly supports the promotion of diverse spectrum access opportunities and access options, including widespread, intensive, and low-cost access to spectrum-based services for consumers, as well as for a diverse range of enterprise and other private network use cases. As described above, novel licensing frameworks like the one adopted for the CBRS band increase spectrum access options and streamline the spectrum access process for a wider, more diverse set of users. CBRS band usage has grown dramatically since its commercialization three years ago in part because a variety of public and private network users can access spectrum on a near real-time basis for the duration and location of their choosing through an automated DSMS.

As the CBRS experience shows, increasing and streamlining spectrum access leads to a larger and more diverse set of spectrum users, as well as a larger and more diverse ecosystem of equipment, software and technology developers. Increased diversity in spectrum access and the related increase in ecosystem diversity ultimately benefits competition, creates conditions for innovation, and spurs more rapid deployments of new wireless broadband networks and services. For these reasons, the DSA encourages NTIA to include in the National Spectrum Strategy the diversification of spectrum access options for consumers, enterprises, and other entities as a factor in identifying spectrum for the pipeline.

C) Should the Strategy prioritize for repurposing spectrum bands that are internationally harmonized and that can lead to economies of scale in network equipment and devices? How should the Strategy balance these goals with factors such as potential transition costs for a given band or the availability of alternative spectrum resources for incumbent users? How should the Strategy balance these goals against critical government missions? How should the Strategy assess efficient spectrum use and the potential for sharing?

The DSA recognizes the importance of international harmonization to the development of economies of scale for network equipment and devices. However, international harmonization is not the only factor to be considered as bands are identified for inclusion in the pipeline. Incumbent transition costs (e.g., clearing, relocation, equipment upgrades) are also important. The DSA recommends that opportunities for more efficient use of both Federal and non-Federal bands should be studied and that DSMS tools that can help identify and implement more efficient use should be leveraged as part of this effort – particularly for bands where there is existing or growing international harmonization of technology and equipment.

D) How should the Strategy assess efficient spectrum use and the potential for sharing? What is an ideal timeline framework suitable for identifying and repurposing spectrum in order to be

responsive to rapid changes in technology, from introduction of a pipeline to actual deployment of systems?

The DSA recommends that the assessment of spectrum efficiency should focus on bands where usage is limited in time, location (including indoors vs outdoors and terrestrial vs space), and/or frequency. The DSA further recommends that the assessment of the timeline associated with repurposing spectrum consider the ability of DSMS tools to be adapted rapidly to enable near-term access to bands by new users and to be responsive to changes in technology.

E) Are there changes the government should make to its current spectrum management processes to better promote important national goals in the short, medium, and long term without jeopardizing current government missions?

Much has been learned from the development and implementation of DSMS tools that can be applied to the government's spectrum management processes. For example, applying cloud-computing capabilities to spectrum management enables more predictable quality of service, better congestion avoidance, and improved coordination. Going forward, depending on the specifics of spectrum bands under consideration for sharing between Federal and non-Federal users, cloud platform(s) will likely need to be able to handle different levels of sensitive data.

Key market and technology trends that could improve government spectrum management processes include the use of automation, cloud-computing, and machine learning to increase spectrum efficiency and access. Benefits of automated spectrum sharing technology include:

- Increasing spectrum efficiency and density of usage (e.g., permitting re-use of frequencies to support both indoor and wide area operations in same geographic area and/or enabling more closely spaced deployments);
- Enabling the processing of license applications at a speed and scale not possible with manual processing;
- Supporting a seamless transition from automated license applications to 'full' automated dynamic spectrum access (e.g., with an ongoing machine-to-machine update and reporting process);
- Enabling flexibility of spectrum use in keeping with changing demand across different classes of users and business models (e.g., some business models require only periodic, rather than consistent access to spectrum);
- Facilitating diverse private network deployments at scale by enabling license applications to be made by third-party automated cloud-based services on behalf of a licensee (machine-to-machine interfaces);
- Collecting timely, real-world data on noise floor, propagation, spectrum usage, and interference reports;
- Interfacing directly with licensing databases and other services, easing access, management, and support of offline analysis objectives; and

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- Simplifying regulatory evolution and innovation by:
  - Using same interface for updating databases to support introduction of new regulations;
  - Upgrading entire ecosystem at once, simplifying the transition to new technologies and regulations; and
  - Enabling regulatory customization by location / time / frequency.

F) What are the use cases, benefits, and hinderances of each of the following spectrum access approaches: exclusive-use licensing; predefined sharing (static or predefined sharing of locations, frequency, time); and dynamic sharing (real-time or near real-time access, often with secondary use rights)? Are these approaches mutually exclusive (i.e., under what circumstances could a non-federal, exclusive-use licensee in a band share with government users, from a non-federal user point of view)? Have previous efforts to facilitate sharing, whether statically or dynamically, proven successful in promoting more intensive spectrum use while protecting incumbents? Please provide ideas or techniques for how to identify the potential for and protect against interference that incumbents in adjacent bands may experience when repurposing spectrum.

The DSA supports innovative licensing frameworks that include licensed, unlicensed, and licensed-by-rule access options. For licensed/licensed-by-rule bands, the DSA recommends tiered approaches that offer protection for incumbent services while also offering access options for new users, much like the CBRS or 6 GHz Band frameworks. Rather than exclusively licensing spectrum, we recommend use-or-share requirements to ensure that spectrum is put to use and not warehoused.

The DSA also recommends the adoption of dynamic sharing approaches, rather than static sharing, to account for the ongoing evolution of both incumbent and newly-introduced system operations. While in practice sharing between incumbent and new users may be fairly static, depending on the band, the ability to make changes to sharing parameters (e.g., protection criteria, protected incumbent usage) through DSMS tools is critical to ensure maximum spectrum usage. DSMS tools can collect and report real-world data on noise floor, propagation, spectrum usage, and interference, which can then be leveraged to adjust sharing frameworks to be more or less conservative and lead to greater efficiency. Static sharing approaches, on the other hand, are limited in their ability to adapt to real-world experience and data, which then leads to under-utilization of spectrum.

As described above, the CBRS sharing experience has proven to be notably successful in promoting more intensive spectrum use while protecting both intra-band and adjacent band incumbents. There have been zero reports of interference to protected incumbents by new CBRS users, which have grown to include myriad different entities providing a wide range of public and private services.

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G) What policies should the National Spectrum Strategy identify to enable development of new and innovative uses of spectrum?

The DSA recommends the adoption of policies that promote new licensing frameworks that incorporate licensed, unlicensed, and licensed-by-rule access options as well as DSMS solutions to make more efficient use of spectrum and support a wide range of new commercial services, including broadband mobile and fixed networks and local and private use cases and applications.

H) What role, if any, should the government play in participating in standards development, supporting the use of network architectures, and promoting tools such as artificial intelligence and machine learning for spectrum coordination or interference protections? What technologies are available to ensure appropriate interference protection for incumbents in adjacent bands? What spectrum management capabilities/tools would enable advanced modeling and more robust and quicker implementation of spectrum sharing that satisfies the needs of non-federal interests while maintaining the spectrum access necessary to satisfy current and future mission requirements and operations of federal entities?

The DSA recommends that the government promote the use of tools (e.g., cloud-computing, artificial intelligence, machine learning) for spectrum management to enable more predictable quality of service, better congestion avoidance, and improved coordination. Current DSMS tools can collect and report real-world data on noise floor, propagation, spectrum usage, and interference, which can be leveraged to adjust sharing frameworks to be more or less conservative and lead to greater efficiency for both Federal and non-Federal users.

I) What are some recommendations for developing an enduring, scalable mechanism for managing shared spectrum access using the IIC or other similar mechanism, with the goal of increasing the efficiency of spectrum use? What challenges do non-federal users foresee with potentially having limited access to classified or other sensitive data on federal spectrum uses and operations as part of the IIC or similar capabilities, and what recommendations do users have for ways to mitigate these challenges? What are the costs and complexities associated with automating information on spectrum use?

The DSA encourages NTIA to work with the Federal agencies to identify opportunities to leverage DSMS solutions to make more efficient use of Federal bands so that they can be shared with new non-Federal public and private users. Such DSMS solutions incorporate into their calculations and spectrum management functions information provided to them via multiple sources and processes, including sensing (e.g., the CBRS ESC), scheduling portals, or other automated notification systems yet to be developed. To address security concerns, this information can be obscured so that the actual location or other critical operating parameters are securely maintained while ensuring protection. The DSA recommends that NTIA work

collaboratively with commercial DSMS solution providers to identify ways in which the IIC or similar capabilities can be developed or enhanced.

J) What spectrum bands are candidates for sharing for commercial use to improve efficient use of electromagnetic spectrum?

The DSA is on record that it supports a DSMS approach to facilitate shared use, where feasible, between Federal users and commercial operations in the 3.1 – 3.45 GHz band.

Other opportunities may exist for sharing between Federal and commercial users. For example, the DSA believes that commercial unlicensed low-power indoor (and in the future, very low power) devices can share the 7125-7250 MHz band with Federal incumbents applying the rules the FCC has already approved for the 6 GHz band. Combing this additional 125 MHz with the 6 GHz Band would unlock a fourth 320 MHz Wi-Fi channel that will support Wi-Fi 7 and future generations of Wi-Fi technology.

Additionally, the DSA encourages the Federal agencies and the FCC to work out a mutually agreeable spectrum sharing regime for the 37.0 – 37.6 GHz band. The DSA filed years ago in the FCC's Spectrum Frontiers proceeding in favor of the 37.0 – 37.6 GHz band being shared between commercial fixed wireless access broadband providers and Federal users. Given the limited Federal usage, the band is relatively greenfield. We believe a DSMS solution would be fairly straightforward and could be implemented quickly to facilitate more intensive use of the band by both Federal and commercial users.

Finally, the DSA appreciates NTIA's prioritization of spectrum sharing in its development of a National Spectrum Strategy, rather than a focus on clearing of incumbent users. With additional information about incumbent operations in other Federal bands, the DSA looks forward to providing comments on the opportunities for commercial use, preferably on a shared basis.

III. Conclusion

The DSA appreciates the opportunity to provide input on NTIA's RFC on Development of a National Spectrum Strategy. We believe that innovative licensing frameworks, spectrum sharing, and automated DSMS solutions can help the U.S. Government meet its goals of ensuring spectrum is used efficiently, accelerating U.S. leadership in wireless communications and other spectrum-based technologies, and unlocking innovations that benefit the American people.

DSMS solutions lower transaction costs, ensure that spectrum is used more efficiently, speed time-to-market for new services, protect incumbents from interference with greater certainty, and generally expand the supply of wireless connectivity that is fast becoming, like electricity, a critical input for most industries and economic activity.

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The DSA and our members stand ready to work with NTIA and other government agencies involved in spectrum policy to build on the success of existing spectrum sharing frameworks and extend DSMS solutions to other bands in the near future.