

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554**

In the Matter of:	)	
	)	
Use of Spectrum Bands Above 24 GHz For	)	GN Docket No. 14-177
Mobile Radio Services	)	
	)	
Amendment of Parts 1, 22, 24, 27, 74, 80, 90, 95,	)	WT Docket No. 10-112
and 101 To Establish Uniform License Renewal,	)	
Discontinuance of Operation, and Geographic	)	
Partitioning and Spectrum Disaggregation Rules	)	
and Policies for Certain Wireless Radio Services	)	

**REPLY COMMENTS OF CTIA**

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## **TABLE OF CONTENTS**

<b>I.</b>	<b>INTRODUCTION AND SUMMARY. ....</b>	<b>1</b>
<b>II.</b>	<b>THE RECORD SUPPORTS ADOPTION OF TERRESTRIAL ALLOCATION AND LICENSING OF THE 26 GHZ, 42 GHZ, AND 50 GHZ BANDS. ....</b>	<b>3</b>
<b>III.</b>	<b>THE COMMISSION SHOULD REJECT PROPOSALS THAT WOULD INHIBIT USE OF THE 26 GHZ, 42 GHZ, AND 50 GHZ BANDS FOR 5G SERVICES. ....</b>	<b>5</b>
<b>A.</b>	<b>Requests To Use The 26 GHz Band For Airborne Platform Systems Should Be Rejected. ....</b>	<b>5</b>
<b>B.</b>	<b>No Federal Allocation Should Be Added To The 42 GHz Band And The Band Should Not Be Made Available for Unlicensed Uses. ....</b>	<b>8</b>
<b>C.</b>	<b>Satellite Use of the 50 GHz Band Should Be Governed By Existing Sharing Rules And Requests For Additional Allocations Should Be Denied. ....</b>	<b>9</b>
<b>IV.</b>	<b>CONCLUSION .....</b>	<b>10</b>

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**REPLY COMMENTS OF CTIA**

CTIA respectfully submits these reply comments in response to the Third Further Notice of Proposed Rulemaking (“*Third FNPRM*”) seeking comment on the Federal Communications Commission’s (“Commission” or “FCC”) continuing efforts to make available millimeter wave spectrum at or above 24 GHz.<sup>1</sup>

**I. INTRODUCTION AND SUMMARY.**

The robust record received in response to the *Third FNPRM* demonstrates the continued need to allocate and license additional spectrum bands above 24 GHz for licensed use. The bands proposed by the Commission—25.25-27.5 GHz (“26 GHz”), 42-42.5 GHz (“42 GHz”), and 50.4-52.6 GHz (“50 GHz”)—will play a critical role in enabling 5G wireless services. Initial comments show widespread agreement with the Commission’s vision for the regulatory framework for these spectrum bands.

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<sup>1</sup> *Use of Spectrum Bands Above 24 GHz For Mobile Radio Services, et al.*, Third Report and Order, Memorandum Opinion and Order, and Third Further Notice of Proposed Rulemaking and Order, GN Docket No. 14-177, *et al.*, FCC 18-73 (rel. June 8, 2018) (“*Spectrum Frontiers Third Report and Order*” or “*Spectrum Frontiers Third FNPRM*”).

Specifically, CTIA notes the overwhelming support of commenters for adopting the Part 30 licensing framework for the 26 GHz, 42 GHz, and 50 GHz bands, rather than exploring experimental approaches to licensing. This tested and successful approach will provide certainty to wireless providers and equipment manufacturers as 5G deployments commence. Likewise, CTIA urges the Commission to reject proposals for these bands that would inhibit the flexibility of wireless providers to facilitate these 5G deployments. For example, the Commission should reject the proposal of Elefante Group, Inc. (“Elefante”) to use the 26 GHz band for airborne platform systems. Despite Elefante’s contention, the 26 GHz band is an especially critical band for 5G services given its proximity to other bands already allocated for licensed terrestrial use and the potential for international harmonization. Moreover, CTIA agrees with the numerous commenters that urge the Commission to prohibit unlicensed uses in the band and to refrain from adding a Federal allocation to the 42 GHz band. Finally, CTIA encourages the Commission to allow sharing of the 50 GHz band with FSS only after terrestrial licensing rules are adopted, utilize the existing sharing framework applied to other bands above 24 GHz, and deny requests from satellite operators for additional allocations in the band.

CTIA applauds the Commission for its efforts to identify millimeter wave spectrum that can be reallocated for mobile uses. By adopting clear service and licensing rules, the Commission can pave the way for improved wireless service, facilitate the IoT revolution, and secure U.S. mobile leadership for 5G.

## II. THE RECORD SUPPORTS ADOPTION OF TERRESTRIAL ALLOCATION AND LICENSING OF THE 26 GHZ, 42 GHZ, AND 50 GHZ BANDS.

CTIA agrees with the numerous commenters that support licensing of the 26 GHz, 42 GHz, and 50 GHz bands under the Commission’s Part 30 framework.<sup>2</sup> As CTIA previously explained, the Part 30 licensing scheme has been successfully tested and utilized in other bands and should be implemented in the bands highlighted by the Commission in the *Third FNPRM*.<sup>3</sup>

With regard to the 26 GHz band in particular, Ericsson explains that there is “considerable value due to the amount of spectrum in the band” as well as “its proximity to spectrum already allocated for mobile service.”<sup>4</sup> Samsung notes that the band “presents an opportunity to speed deployment at reduced costs.”<sup>5</sup> Further, T-Mobile observes that there is “international momentum around use of the 26 GHz band for terrestrial 5G services,”<sup>6</sup> while TIA emphasizes that “equipment manufacturers could readily integrate the 26 GHz band into a tuning

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<sup>2</sup> See e.g., Comments of AT&T Services, Inc., GN Docket 14-177 *et al.* (filed Sept. 10, 2018); Comments of Competitive Carriers Association, GN Docket 14-177 *et al.* (filed Sept. 10, 2018); Comments of Ericsson, GN Docket 14-177 *et al.* (filed Sept. 10, 2018) (“Ericsson Comments”); Comments of Nokia, GN Docket 14-177 *et al.* (filed Sept. 10, 2018) (“Nokia Comments”); Comments of Qualcomm, GN Docket 14-177 *et al.* (filed Sept. 10, 2018) (“Qualcomm Comments”); Comments of Samsung Electronics America, GN Docket 14-177 *et al.* (filed Sept. 10, 2018) (“Samsung Comments”); Comments of T-Mobile USA, Inc., GN Docket 14-177 *et al.* (filed Sept. 10, 2018) (“T-Mobile Comments”); Comments of United States Cellular, GN Docket 14-177 *et al.* (filed Sept. 10, 2018) (“U.S. Cellular Comments”).

<sup>3</sup> Comments of CTIA, GN Docket 14-177 *et al.*, at 2 (filed Sept. 10, 2018) (“CTIA Comments”).

<sup>4</sup> Ericsson Comments at 6-7. See also Nokia Comments at 3 (observing that the 26 GHz band “can easily be used in conjunction with the nearby 24 GHz and 28 GHz bands.”).

<sup>5</sup> Samsung Comments at 7.

<sup>6</sup> T-Mobile Comments at 16.

range that already includes the 24 GHz and 28 GHz bands.”<sup>7</sup> As CTIA has previously noted, this approach would allow for manufacturing economies of scale that would result in lower prices, facilitate international roaming with affordable user devices, and accelerate the availability of equipment in newly authorized bands that share a tuning range with early-deployed bands.<sup>8</sup>

These benefits for wireless consumers will similarly accrue in the 42 GHz band if the Commission authorizes it for licensed, terrestrial 5G. As TIA explains, the 42 GHz band would be “within the tuning range of radio equipment designed for the 37-40 GHz bands,”<sup>9</sup> facilitating a reduction in equipment costs for providers.<sup>10</sup> Given that other countries are looking at the upper part of the tuning range,<sup>11</sup> international harmonization will further facilitate economies of scale and accelerate deployment of 5G services. Further, as AT&T notes, implementing the Part 30 framework in the 42 GHz band would “foster consistency, familiarity, and efficiency in the

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<sup>7</sup> Comments of The Telecommunications Industry Association, GN Docket 14-177 *et al.*, at 45 (filed Sept. 10, 2018) (“TIA Comments”).

<sup>8</sup> CTIA Comments at 8.

<sup>9</sup> TIA Comments at 2.

<sup>10</sup> Ericsson Comments at 10.

<sup>11</sup> For example, the European Conference of Postal and Telecommunications Administrations (“CEPT”) has identified the 40-43.5 GHz range as a priority band on its 5G roadmap. CEPT, Spectrum for wireless broadband – 5G (July 17, 2018), <https://www.cept.org/ecc/topics/spectrum-for-wireless-broadband-5g>. China has also invested significant in research for 5G in the 37-42.5 GHz range. David Abecassis, Chris Nickerson, and Janette Stewart, Global Race to 5G—Spectrum and Infrastructure Plans and Priorities, Final Report for CTIA, ANALYSYS MASON, at 17 (Apr. 2018), [https://api.ctia.org/wp-content/uploads/2018/04/Analysys-Mason-Global-Race-To5G\\_2018.pdf](https://api.ctia.org/wp-content/uploads/2018/04/Analysys-Mason-Global-Race-To5G_2018.pdf).

rollout of 5G services.”<sup>12</sup> This is especially true given the global focus on the 37-43.5 GHz band for terrestrial fixed and mobile services.<sup>13</sup>

Finally, to “ensure the continued innovation and deployment of 5G technologies,”<sup>14</sup> CTIA encourages the Commission to act promptly to authorize the 50.4-52.6 GHz band for 5G services “according to the same basic principles as the 26 GHz and 42 GHz bands.”<sup>15</sup> Harmonizing the licensing rules across these bands will promote certainty for providers, helping to facilitate deployment of 5G services in these bands.

### **III. THE COMMISSION SHOULD REJECT PROPOSALS THAT WOULD INHIBIT USE OF THE 26 GHZ, 42 GHZ, AND 50 GHZ BANDS FOR 5G SERVICES.**

#### **A. Requests To Use The 26 GHz Band For Airborne Platform Systems Should Be Rejected.**

Only a single entity, Elefante Group, Inc. (“Elefante”), has suggested that the 26 GHz band should not be dedicated to 5G terrestrial services.<sup>16</sup> However, Elefante incorrectly asserts that the 26 GHz band is not a key enabler for the deployment of 5G services and contends that the other benefits cited by commenters are exaggerated.<sup>17</sup> Elefante also provides engineering

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<sup>12</sup> AT&T Comments at 3.

<sup>13</sup> CTIA Comments at 11.

<sup>14</sup> Samsung Comments at 9.

<sup>15</sup> Ericsson Comments at 14.

<sup>16</sup> *See generally* Comments of Elefante Group, Inc., GN Docket No. 14-177 *et al.* (filed Sept. 10, 2018) (“Elefante Comments”).

<sup>17</sup> *Id.* at 3-4.

studies that purport to show the harmful interference to its future use of the 26 GHz band by its airborne platform service as well as to existing incumbent services in the band.<sup>18</sup>

The record before the Commission strongly rebuts Elefante’s primary objection to use of the 26 GHz band. Wireless providers and equipment manufacturers have unanimously argued for the importance of the 26 GHz band for 5G services. For example, AT&T notes that “given the critical importance of the 26 GHz band to 5G services, the Commission should not proceed with either HAPS use of the band or Elefante’s SBCS proposal.”<sup>19</sup> Likewise, T-Mobile urged rejection of the Elefante proposal, noting that “the 26 GHz band would enable wireless providers to further densify their already far-reaching networks and provide greater speed and capacity to many more people.”<sup>20</sup> On the equipment side, Qualcomm observes that unfettered use by HAPS “could lead to interference with terrestrial fixed and mobile systems operating under Part 30 regulations,”<sup>21</sup> and Ericsson agrees with Elefante that mobile deployments “cannot share the band with unaffiliated stratospheric communications systems” and thus urges the Commission to “prohibit such airborne systems in the band.”<sup>22</sup>

Additionally, Elefante erroneously argues that studies by the International Telecommunications Union (“ITU”) that model terrestrial 5G services do not reflect real-world operations.<sup>23</sup> However, the participants in those efforts are wireless operators and equipment

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<sup>18</sup> *Id.* at 29-67.

<sup>19</sup> AT&T Comments at 14.

<sup>20</sup> T-Mobile Comments at 18-19.

<sup>21</sup> Qualcomm Comments at 14.

<sup>22</sup> Ericsson Comments at 8.

<sup>23</sup> Elefante Comments at 34.



manufacturers who are actively involved in the 3GPP wireless standards efforts that will shape the deployment of 5G. These companies are intimately familiar with the technical characteristics and requirements of wireless operations, making them best positioned to determine the viability of deploying 5G services in the 26 GHz band. Thus, the Commission should reject Elefante's attempt to undermine these international coordination efforts.

Moreover, Elefante incorrectly suggests that Federal incumbent services would be subject to increased interference risks from terrestrial 5G services.<sup>24</sup> However, the wireless industry has a long history of working collaboratively with the Federal government to ensure that their primary systems are protected from harmful interference. For example, industry and Federal government entities have worked together closely on coordination and sharing efforts in the 3.5 GHz band and AWS-3 spectrum.<sup>25</sup> Any potential interference issues in the 26 GHz band could be handled through similar efforts.

In sum, the record before the Commission supports the benefits associated with the auctioning of spectrum licenses for 5G in the 26 GHz band. Elefante's proposal is inconsistent with that policy outcome and is simply seeking a method to avoid participating in a marketplace

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<sup>24</sup> *Id.* at 54-63.

<sup>25</sup> See Testimony of Mr. Karl Nebbia, Associate Administrator, Office of Spectrum Management, NTIA (June 27, 2013) (noting the progress made between industry and Federal government on cooperation and information exchanges for the AWS-3 spectrum) (found at: <https://www.ntia.doc.gov/speechtestimony/2013/testimony-associate-administrator-nebbia-hearing-equipping-carriers-and-agencie>). See also *Using On-Shore Detected Radar Signal Power for Interference Protection of Off-Shore Radar Receivers*, NTIA Technical Report 16-521 (March 2016) (noting the ability of commercial sensors to allow the sharing of the 3.5 GHz band between commercial and Federal users and efforts to promote sharing in AWS-3 spectrum) (found at: <https://www.its.bldrdoc.gov/publications/2828.aspx>).

mechanism—in this case, an auction—to deploy its service.<sup>26</sup> The Commission should heed the overwhelming opposition to the Elefante request for access to the 26 GHz band<sup>27</sup> and move forward with licensing and service rules for 5G services.

**B. No Federal Allocation Should Be Added To The 42 GHz Band And The Band Should Not Be Made Available for Unlicensed Uses.**

Given the priority for commercial terrestrial services in the 42 GHz band, the Commission should not consider a new Federal primary allocation in this band. Adoption of a co-primary Federal allocation would inject “significant uncertainty into the auction process” and “would reduce commercial interest in the band.”<sup>28</sup> As T-Mobile notes “no federal agency has requested access to the spectrum and there has been no demonstration that the spectrum is needed for additional federal operations.”<sup>29</sup> CTIA agrees with these commenters and recommends that the Commission refrain from providing a new Federal primary allocation that would undermine the value and certainty associated with licensing the 42 GHz band for terrestrial fixed and mobile services.

Similarly, there is no record support for allowing unlicensed use of the 42 GHz band. Specifically, U.S. Cellular “urges the Commission not to permit unlicensed or other operations to share this band.”<sup>30</sup> CTIA agrees with T-Mobile that the Commission should “license the 42 GHz

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<sup>26</sup> See AT&T Comments at 15; T-Mobile Comments at 19; TIA Comments at 6.

<sup>27</sup> See e.g., Opposition and Comments of the National Radio Astronomy Observatory, RM-11809 (filed June 25, 2018); Opposition of CTIA, RM-11809 (filed July 11, 2018); Opposition of T-Mobile USA, Inc., RM-11809 (filed July 11, 2018).

<sup>28</sup> Ericsson at 11

<sup>29</sup> T-Mobile at 6

<sup>30</sup> U.S. Cellular Comments at 6.

band on an exclusive basis,” as any sharing approaches “would diminish the benefits of designating spectrum on an exclusive licensed basis.”<sup>31</sup> Finally, Ericsson asserts that “the Commission should not permit unlicensed operations in the 42 GHz band” as there is “ample unlicensed spectrum” that is “already available in the millimeter wave bands.”<sup>32</sup>

**C. Satellite Use of the 50 GHz Band Should Be Governed By Existing Sharing Rules And Requests For Additional Allocations Should Be Denied.**

A number of satellite parties suggest that the 50.4-51.4 GHz band be made available for FSS earth stations. Some argue that the existing sharing framework established by the Commission for the 47 GHz band should be applied,<sup>33</sup> while others suggest a revisiting of the entire sharing framework.<sup>34</sup> In addition, some entities argue for a new Fixed-satellite service (“FSS”) primary allocation for the 51.4-52.4 GHz band.<sup>35</sup>

As CTIA and other commenters noted,<sup>36</sup> the Commission should take no action with respect to FSS earth station licensing in the 50.4-51.4 GHz band until the service and licensing rules are completed for 5G services. Moreover, there is no need to revisit the sharing rules for FSS earth stations at this time. After a lengthy and complicated rulemaking process, the

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<sup>31</sup> T-Mobile Comments at 5.

<sup>32</sup> Ericsson Comments at 11.

<sup>33</sup> ViaSat Comments at 5.

<sup>34</sup> Comments of Boeing Comments at 5-6; EchoStar Satellite Operation Corporation and Hughes Network Systems, LLC, GN Docket No. 14-177 *et al.*, at 5-6 (filed Sept. 10, 2018); Comments of SES Americom, Inc. and O3B Limited, GN Docket No. 14-177 *et al.*, at 3-6 (filed Sept. 10, 2018); Comments of Space Exploration Technologies Corp., GN Docket No. 14-177 *et al.*, at 6-7 (filed Sept. 10, 2018).

<sup>35</sup> ViaSat Comments at 5-6; Boeing Comments at 6.

<sup>36</sup> Nokia Comments at 4; TIA Comments at 7.

Commission has established a sharing regime to allow FSS earth station access to spectrum used by 5G services in a fair and effective manner. Finally, the Commission should reject calls for an additional FSS allocation in the 51.4-52.4 GHz band. This request is outside the scope of the Commission's FNPRM and FSS proponents have not established a need for more spectrum—especially when FSS already has access to considerably more spectrum than terrestrial licensees above 24 GHz.<sup>37</sup>

#### IV. CONCLUSION

As the record demonstrates, there is overwhelming support for allocating spectrum in the 26 GHz, 42 GHz, and 50 GHz bands. CTIA asks that the Commission expeditiously adopt flexible licensing and technical rules for these bands, consistent with the proven, workable regulatory framework established for other millimeter wave bands. The Commission also should reject unnecessary and burdensome requests that would inhibit use of these spectrum bands and instead focus on dedicating additional spectrum for licensed use. By adopting stable and flexible service and licensing rules for these bands, the Commission can ensure the continued innovation and investment necessary to maintain U.S. mobile wireless leadership and deliver next-generation services to Americans.

Respectfully Submitted,

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<sup>37</sup> See Reply Comments of CTIA, GN Docket No. 14-177 *et al.*, at 2-3 (noting that FSS entities have “access to more than *five times* the millimeter wave spectrum that terrestrial mobile providers have nationwide (22 GHz for FSS versus 3.85 GHz for terrestrial mobile)”).

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