

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

Expanding Flexible Use of the 3.7 to 4.2 GHz Band	)	GN Docket No. 18-122
	)	
	)	
Expanding Flexible Use in Mid-Band Spectrum Between 3.7 and 24 GHz	)	GN Docket No. 17-183
	)	(Inquiry Terminated as to 3.7-4.2 GHz)
	)	
Petition for Rulemaking to Amend and Modernize Parts 25 and 101 of the Commission's Rules to Authorize and Facilitate the Deployment of Licensed Point-to-Multipoint Fixed Wireless Broadband Service in the 3.7-4.2 GHz Band	)	RM-11791
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Fixed Wireless Communications Coalition, Inc., Request for Modified Coordination Procedures in Bands Shared Between the Fixed Service and the Fixed Satellite Service	)	RM-11778
	)	
	)	

**JOINT REPLY COMMENTS OF  
INTEL CORPORATION, INTELSAT LICENSE LLC, AND SES AMERICOM, INC.**

Intel Corporation (“Intel”), Intelsat License LLC (“Intelsat”) and SES Americom, Inc. (“SES,” and together with Intel and Intelsat, the “Joint Parties”) are pleased that commenters across diverse industries overwhelmingly recognize that only the proposed Market-Based Approach balances competing interests of speeding 5G deployment and ensuring continued provisioning of valuable services delivered by C-Band satellites to more than 100 million American households in a manner most likely to best promote consumer welfare and the larger public interest.<sup>1</sup> Backed by this wide-ranging support, the Federal Communications Commission (“FCC” or the “Commission”) should act promptly to adopt the Market-Based Approach.

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<sup>1</sup> See *Expanding Flexible Use of the 3.7-4.2 GHz Band*, Order and Notice of Proposed Rulemaking, GN Docket No. 18-122, FCC 18-91, ¶¶ 66-97 (rel. July 13, 2018) (“NPRM”). Unless otherwise noted, all comments were filed in response to the NPRM in this docket.

## **I. THE RECORD DEMONSTRATES STRONG CROSS-INDUSTRY SUPPORT FOR THE MARKET-BASED APPROACH**

Various stakeholders with divergent interests in the future of the C-Band reinforce the spectrum's "unique characteristics"<sup>2</sup> and the reasons why the Market-Based Approach presents the optimal way to enable terrestrial mobile operations – within 18-36 months of a final FCC Order.

Wireless parties confirm that the Market-Based Approach offers significant benefits for U.S. 5G deployment and growth. Verizon agrees that the Market-Based Approach is "the right approach" and the "most reasonable path" to "advance U.S. interests in the global race to 5G."<sup>3</sup> The Market-Based Approach "offers a meaningful basis to swiftly transition a significant swath of spectrum while addressing the various stakeholders' key interests."<sup>4</sup> Verizon provides economic analysis demonstrating that the Market-Based Approach, with the C-Band Alliance acting as the Transition Facilitator, "will provide a degree of flexibility that will help address a complicated transition like this one involving thousands of entities with independent interests" and "can lead to more efficient outcomes."<sup>5</sup> Cisco states the speed of the Market-Based Approach "is one feature . . . that is head and shoulders more important than any other."<sup>6</sup> That is why it supports the Market-Based Approach "to repack satellite downlink facilities, merge downlink operations into one portion of the band, and clear 200 MHz of spectrum for terrestrial broadband use [a]s an important contribution to our 5G future."<sup>7</sup> Likewise, Motorola Solutions "supports a voluntary, market-based approach to most quickly clear a portion of the band."<sup>8</sup>

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<sup>2</sup> NPRM, ¶ 10.

<sup>3</sup> Comments of Verizon, at i-ii.

<sup>4</sup> *Id.*, at 4-5.

<sup>5</sup> *Id.*, at 5.

<sup>6</sup> Comments of Cisco, at 3.

<sup>7</sup> *Id.*

<sup>8</sup> Comments of Motorola Solutions, Inc., at 2.

Even wireless operators and manufacturers who do not take a position on the Market-Based Approach recognize that it will yield the fastest use of a portion of the C-Band for 5G. The Telecommunications Industry Association (“TIA”) confirms that “[m]aking C-Band spectrum available through a voluntary private sale market-based mechanism would likely improve speed-to-market for next-generation services, helping the United States maintain its competitive edge in the global race to 5G.”<sup>9</sup> Thus, “opening spectrum more rapidly would significantly benefit the public interest.”<sup>10</sup> Nokia agrees that “the major benefit of a private sale proposal is the potential for a speedy transfer of spectrum when compared to the length of time, and regulatory steps likely required to execute a Commission-led public sale.”<sup>11</sup> These commenters reinforce the Brattle Group’s economic analysis demonstrating that the speed of the Market-Based Approach will generate billions more in total public benefit than government-run alternatives.<sup>12</sup> This is because “[s]pectrum is not a storable asset[,] so any potential gains delayed are lost forever.”<sup>13</sup> “Any delay in a beneficial transition is costly, both to the parties and society.”<sup>14</sup>

Current C-Band customers, who depend on the C-Band for its unparalleled reliability, quality, and availability, also support the Market-Based Approach. Numerous commenters agree that the Market-Based Approach “presents the most practical solution for introducing next generation terrestrial mobile operations in the C-band.”<sup>15</sup> QVC/HSN acknowledge that the C-Band Alliance “would be more optimally positioned to protect and work with QVC/HSN and

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<sup>9</sup> Comments of TIA, at 4.

<sup>10</sup> *Id.*

<sup>11</sup> Comments of Nokia, at 2.

<sup>12</sup> See Comments of Intel, Intelsat, and SES, Appendix A, at 31 (“Joint Party Comments”).

<sup>13</sup> *Id.*, at 27.

<sup>14</sup> *Id.*

<sup>15</sup> See, e.g., Comments of Cumulus Media Inc. and Westwood One, LLC, at 15; Comments of Olympusat, Inc., at 3.

other incumbent users than a Commission-based mechanism.”<sup>16</sup> National Public Radio correctly acknowledges that “[s]atellite operators have the tools to adequately assess [how] to preserve existing C-band FSS service, and contractual obligations and incentive to do so.”<sup>17</sup> Indeed, the Market-Based Approach “will provide the flexibility needed during the transition process and will benefit from the combined industry experience of the C-Band Alliance’s members, something that cannot be said of an auction.”<sup>18</sup> That is why the Market-Based Approach “offers the best means of achieving the Commission’s goals while protecting existing users.”<sup>19</sup> PSSI Global concurs that the Market-Based Approach “can more rapidly permit introduction of mobile services in the frequency band, while coordinating and matching the needs of mobile service providers and those of the satellite customers and other incumbent users of C-Band services, than any of [the] auction proposals outlined in the NPRM.”<sup>20</sup> These comments recognize that the C-Band Alliance’s implementation of the Market-Based Approach will afford service continuity to the current C-Band users.

Other commenters highlight the need to allow market forces to identify and enable the highest and best use of spectrum. Satellite operator CB2.0 “favors a market-developed solution,” and Inmarsat believes that “flexible commercial and technological approaches are a preferable mechanism to achieve the Commission’s goals of identifying new spectrum for 5G.”<sup>21</sup> Lockheed Martin asks the Commission to “embrace a balanced and equitable market-based approach that meaningfully benefits both satellite and terrestrial services in a way that allows both to develop,

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<sup>16</sup> Comments of QVC, Inc. and HSN, Inc., at 6. Intelsat and SES strongly disagree with QVC/HSN, however, that the transition would take 60 months or more. *See id.*, at 2.

<sup>17</sup> Comments of National Public Radio, at 10.

<sup>18</sup> *Id.*

<sup>19</sup> *Id.*, at 9.

<sup>20</sup> Comments of PSSI Global, at 12.

<sup>21</sup> Comments of CB2.0 Communications Inc., at 5; Comments of Inmarsat, at 3.

and that allows the marketplace to decide which one or ones will thrive.”<sup>22</sup> The independent, nonpartisan Information Technology and Innovation Foundation (“ITIF”) touts the Market-Based Approach as “best suited to quickly bring [C-Band] spectrum to market, transition it to a more valuable use, and accelerate U.S. leadership in 5G services, all while preserving the important incumbent uses of the band.”<sup>23</sup> Likewise, the R Street Institute writes that the Market-Based Approach “could remedy the tragedy” of holdouts and achieve optimal market transactions.<sup>24</sup> In short, the Joint Parties agree with Aviation Spectrum Resources, Inc. that “the CBA proposal presents the most viable approach for all C-band interests to ensure a managed and timely transition to 5G.”<sup>25</sup>

The C-Band Alliance will act as the Transition Facilitator the NPRM envisions to fast-track U.S. 5G deployment and protect the quality and reliability of U.S. FSS C-Band operations. With the technical expertise of their dynamic operating environment and first-hand information about their customers’ needs, FSS operators under the Market-Based Approach are best positioned to evaluate the trade-offs facing them, their customers and mobile carriers and to successfully execute a plan that quickly unlocks the C-Band’s terrestrial 5G potential.

## **II. BY CONTRAST, COMMENTERS ROUNDLY OPPOSE INTRODUCING POINT-TO-MULTIPOINT IN THE C-BAND BY REGULATORY MANDATE**

While the Market-Based Approach enjoyed support across divergent industry sectors, the Broadband Access Coalition (“BAC”) proposal to reserve C-Band spectrum for fixed point-to-multipoint (“P2MP”) was broadly opposed.

First, the record evidence demonstrates that introducing P2MP services by government fiat would put at risk enabling fast 5G C-Band deployment. CTIA states that “[a]ny proposal to

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<sup>22</sup> Comments of Lockheed Martin Corporation, at 3.

<sup>23</sup> Comments of Information Technology and Innovation Foundation, at 2.

<sup>24</sup> Comments of the R Street Institute, at 10.

<sup>25</sup> Comments of Aviation Spectrum Resources, Inc., at 8.

allow use of even some portion of the band for P2MP is at odds with the goal of clearing existing uses and maximizing the amount of spectrum to be repurposed for 5G.”<sup>26</sup> Nokia also believes that a P2MP set-aside “would be counter to the Commission’s goal of more intensive mobile terrestrial services.”<sup>27</sup> Similarly, TIA agrees that dedicated P2MP introduction “with very uncertain market potential could lead to unnecessarily cluttering this valuable band.”<sup>28</sup>

Second, the record reflects that numerous other frequency bands remain available for P2MP. The Joint Parties agree with GCI Communication Corp. (“GCI”) that “the need for new P2MP spectrum was vastly inflated in the BAC Petition.”<sup>29</sup> CTIA states that the 3.5 GHz band, the U-NII-1 band, the U-NII-3 band, and potentially the 4.9 GHz and 2.5 GHz bands would be “far better options for the P2MP proposal” than the C-Band.<sup>30</sup> Nokia concurs that the FCC should “look to other spectrum bands to accommodate [P2MP] service.”<sup>31</sup>

Additionally, the record shows that a P2MP overlay would be incompatible with continued FSS use of the band. NCTA and ACA correctly note that P2MP proponents have not provided adequate technical analysis demonstrating a lack of harmful interference to FSS earth stations.<sup>32</sup> The Content Companies write that video delivery via C-Band would face “insurmountable” challenges if the Commission authorized new P2MP transmissions.<sup>33</sup> This is because P2MP “transmissions necessarily emit high-powered signals in many directions, which greatly increases the difficulty of frequency coordination and the potential for harmful

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<sup>26</sup> Comments of CTIA, at 26.

<sup>27</sup> Comments of Nokia, at 9.

<sup>28</sup> Comments of TIA, at 8.

<sup>29</sup> Comments of GCI Communication Corp., at 23.

<sup>30</sup> Comments of CTIA, at 26.

<sup>31</sup> Comments of Nokia, at 10.

<sup>32</sup> Comments of NCTA, at 21; Comments of American Cable Association, at 13.

<sup>33</sup> Comments of the Content Companies, at 10.

interference to existing C-band usage.”<sup>34</sup> Given the sensitivity to interference for FSS operators, GCI maintains it would be “extremely difficult, if not impossible, to protect incumbent FSS operations in the C-Band from P2MP.”<sup>35</sup> PSSI Global agrees that “[i]f P2MP service were to be authorized, th[e] ability to coordinate and accommodate last minute programming requests would not be possible” which, in turn, “would have a devastating effect on the ability to conduct” broadcasts like NCAA college football, basketball, and professional sports playoffs.<sup>36</sup>

In short, the costs of introducing P2MP in the C-Band greatly outweigh any speculative benefits. The Commission should reject mandating a P2MP set-aside or overlay in the C-Band.

### **III. THE RECORD CONFIRMS THAT ALTERNATIVE GOVERNMENT-RUN PROPOSALS WILL DELAY SIGNIFICANTLY 5G DEPLOYMENT AND COULD HARM INCUMBENT SATELLITE OPERATIONS**

The Joint Parties’ comments show that existing legal rights in the C-Band produce “a significant holdout problem,” which presents a barrier to achieving the spectrum’s highest and best use.<sup>37</sup> None of the alternative, government-run approaches address this fundamental problem in any feasible manner. Indeed, the recognition that traditional FCC auction and clearing tools (which are not designed to deal with nationwide, non-exclusive, full-band licensees) do not resolve the holdout issue led to the Market-Based Approach. Furthermore, all the alternatives would require the FCC to impose difficult, contentious, and legally questionable mandates restricting utilization of satellites and earth stations now operating in the band, which would at a minimum lead to inefficiency and substantial delay.

Any delay imparts real and substantial social cost. The Brattle Paper estimates that the slow pace inherent in alternative, government-run proposals would reduce social value by

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<sup>34</sup> *Id.*, at 11.

<sup>35</sup> Comments of GCI Communication Corp., at 22-23.

<sup>36</sup> Comments of PSSI Global, at 15.

<sup>37</sup> Joint Party Comments, at 9-10.

between 7% and 11% for each year of delay.<sup>38</sup> “The economic value of spectrum is only a fraction of its total social value,” where, “[f]or example, every \$1 billion in delay costs would create social costs of \$10 billion to \$20 billion. Consequently, any of the other proposals, which would easily be expected to add years of delay relative to the Market-Based Approach, would significantly decrease the value of repurposing any C-Band frequencies.”<sup>39</sup>

Additional economic analysis affirms that these government-run mechanisms would be “less successful than the market-based mechanism in quickly repurposing a significant amount of spectrum.”<sup>40</sup> According to Verizon, the “alternative models are not well-suited to the way spectrum is held and used in the C-band, and rely on various degrees of Commission regulation and involvement, which will likely delay repurposing the spectrum and lead to less efficient outcomes than the market-based mechanism.”<sup>41</sup> And ITIF agrees that the Market-Based Approach “helps avoid the particular difficulties existing nonexclusive rights pose to auction design.”<sup>42</sup> Indeed, the holdout problem poses a fundamental barrier for any alternative proposal relating to the lower C-Band.

Put differently, without a viable solution to the holdout problem, any alternative proposal fails, regardless of other claims about projected outcomes. For instance, T-Mobile incorrectly presumes that the *voluntary* C-Band Alliance would facilitate its proposal. Critically, however, the *voluntary* C-Band Alliance is available only under the Market-Based Approach. The C-Band Alliance was formed for the sole purpose of allowing satellite operators – not the FCC or other third party – to optimize decisions regarding their network resources, bandwidth, customers,

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<sup>38</sup> Joint Party Comments, Appendix A, at 27.

<sup>39</sup> *Id.*

<sup>40</sup> Comments of Verizon, at 6.

<sup>41</sup> Comments of Verizon, at 9.

<sup>42</sup> Doug Brake, ITIF, *Keeping Up with Spectrum Policy: Mid-band Opportunities*, at 5 (Nov. 2018), <http://www2.itif.org/2018-spectrum-policy-mid-band.pdf>.



costs, and timelines in response to an economic incentive for repurposing C-Band spectrum. The T-Mobile proposal assumes that the Commission would force or threaten to force the satellite operators to do more than they *volunteered* to do under the Market-Based Approach with regard to how much of their shared, non-exclusive spectrum they are able to collectively repurpose within an 18-36 month timeline while maintaining high service quality for their customers. The voluntary nature of such critical business and operational decisions is the *sine qua non* of the formation of the C-Band Alliance. Put simply, imposition of the T-Mobile approach would forego the benefits of the C-Band Alliance, put satellite customers at risk, and leave the holdout problem unsolved. The Joint Parties agree with the Commission that “[a] market-based approach that uses a Transition Facilitator would enable the satellite operators to use private negotiations to obtain participation and agreement from the relevant satellite operators, rather than requiring the Commission to address holdouts using more regulatory mechanisms.”<sup>43</sup> Here, the Commission lacks authority to force C-Band Alliance members to jointly participate in an incentive auction, which should eliminate its consideration of T-Mobile’s approach.<sup>44</sup>

Equally important, the Joint Parties agree with QVC/HSN that “[t]he other Commission-based approaches would not mitigate disruptions to the operations of impacted C-band users and likely would impose high transactional costs directly on C-band users.”<sup>45</sup> Only the Market-Based Approach will optimally determine the amount of spectrum to be repurposed and enable the clearing of that spectrum in the shortest time. The Commission should not adopt any proposal that creates costly and unneeded delay, fails to solve the holdout problem, or poses unnecessary regulatory impediments to efficient use of a portion of this band.

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<sup>43</sup> NPRM, ¶ 70.

<sup>44</sup> 47 U.S.C. §§ 309(j)(8)(G), 316; *see also* Reply Comments of the C-Band Alliance, GN Docket No. 18-122, at 31-33 (filed Dec. 7, 2018).

<sup>45</sup> Comments of QVC/HSN, at 6.

#### IV. CONCLUSION

The record demonstrates strong, cross-industry support for the Market-Based Approach and its ability to enable terrestrial 5G in C-Band spectrum quickly and efficiently while protecting valuable incumbent FSS operations. The Joint Parties urge the Commission to adopt the Market-Based Approach as soon as possible.

Respectfully submitted,

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