

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

In the Matter of )  
 )  
Expanding Flexible Use in Mid-Band ) GN Docket No. 17-183  
Spectrum Between 3.7 and 24 GHz )  
 )

**JOINT REPLY COMMENTS OF  
INTELSAT LICENSE LLC AND INTEL CORPORATION**

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**I. INTRODUCTION AND SUMMARY**

Just months after his term as Chairman began, Chairman Pai declared that he “want[ed] to create a culture of economics at the FCC that supports big-picture thinking” that would be “truly valuable . . . for the agency, and ultimately, for the American people.”<sup>1</sup> Against that backdrop, the Commission in its Mid-Band NOI requested “innovative approaches to promote coexistence between users and minimize the potential for harmful interference” in the 3700-4200 MHz band.<sup>2</sup> Intelsat and Intel responded by delivering a constructive, market-driven approach that provides a win-win for the terrestrial mobile and fixed satellite industries, consumers, and society -- enabling both terrestrial mobile use in portions of the 3700-4200 MHz band for 5G and protection of Fixed Satellite Service (“FSS”) incumbents and the valuable service they provide their customers.<sup>3</sup>

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<sup>1</sup> Remarks of FCC Chairman Ajit Pai at the Hudson Institute, *The Importance of Economic Analysis at the FCC*, at 3, 6 (April 5, 2017), available at <http://bit.ly/2hXbfcc>.

<sup>2</sup> *Expanding Flexible Use in Mid-Band Spectrum Between 3.7 and 24 GHz*, Notice of Inquiry, 32 FCC Rcd. 6373, ¶ 22 (2017) (“Mid-Band NOI”). Intelsat License LLC (“Intelsat”) and Intel Corporation (“Intel”) jointly submit these reply comments in response to the Mid-Band NOI seeking comment on opportunities for expanding flexible use services in spectrum bands between 3.7 and 24 GHz (mid-band spectrum).

<sup>3</sup> See Joint Comments of Intelsat License LLC and Intel Corporation, GN Docket No. 17-183 (filed Oct. 2, 2017) (“Intelsat-Intel Joint Comments”). Unless otherwise noted, commenters filed in GN Docket No. 17-183 on October 2, 2017 in response to the Mid-Band NOI.

Intelsat and Intel encourage the FCC and all stakeholders to evaluate their proposal in comparison to any alternatives, based on the bedrock public interest criteria of whether they bring spectrum to the market voluntarily, efficiently, and expeditiously. For decades, these touchstones have guided the Commission’s achievement of two overarching policy objectives: “promoting economic growth” and “enhancing access to telecommunications service offerings for consumers, producers and new entrants.”<sup>4</sup> When viewed through this lens and compared to the alternatives, the Intelsat-Intel proposal best achieves the ultimate goal shared by many commenters of making mid-band spectrum available for 5G services. The Intelsat-Intel proposal will harness market incentives to make highly-valuable mid-band spectrum available where it is most needed to support terrestrial mobile demand voluntarily, at least cost to society and existing FSS customers, quickly (within 1-3 years), and with minimal FCC involvement relative to other sharing approaches.

Commenters from various industry sectors identified the substantial technical and logistical challenges in co-frequency, co-coverage spectrum sharing between terrestrial mobile and FSS operations in the 3700-4200 MHz band using methods that do not rely on traditional coordination. These challenges can be overcome with proper market incentives for the primarily affected satellite operators to put in place technical and operational solutions to clear a portion of the spectrum, allowing terrestrial mobile services. The market-driven approach incentivizes satellite operators to optimize the amount of spectrum cleared and the pace of this clearing, in geographic areas with demonstrated demand from terrestrial network operators.

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<sup>4</sup> See *Implementation of Section 309(j) of the Communications Act-Competitive Bidding*, Second Report and Order, 9 FCC Rcd. 2348, ¶ 3 (1994) (“Section 309 Implementation R&O”).

Satellite space station operators have unique knowledge of their customers' distribution needs, bandwidth, and migration and redundancy strategies. In contrast, alternative approaches that rely on third-party analysis of incomplete FCC database entries and/or negotiations with select earth station operators simply cannot optimize the total amount of spectrum made available because they lack the information and capabilities necessary to efficiently and effectively carry out such a large-scale undertaking. Intelsat and Intel's proposal would leverage the comprehensive technical and operational knowledge and expertise of satellite space station operators to provide certainty and clarity to the spectrum clearing and incumbent protection process. Other commenters' proposals would involve significant but fundamentally incomplete regulatory determinations regarding numerous relevant technical and business factors. Such approaches are unlikely to achieve the highest and best use of the spectrum on a widespread basis at minimum cost, and/or would fail to provide adequate protections for FSS operations relied on by over 100 million television viewers nationwide.

For example, some suggest that terrestrial operators could negotiate with earth station operators to clear spectrum for terrestrial use on a piecemeal, localized basis.<sup>5</sup> Critically, this approach entirely misses the fact that it is the satellite operators who are the providers of the service in the frequency band. Put another way, the earth station licensee receives a signal only if a satellite operator transmits it. Moreover, it is the satellite operators that have the most investment at risk in the form of billions of dollars in satellite assets. This earth-station focused approach also ignores the sheer number of earth stations that would be involved in such negotiations and the fact that it is the space station operators who uniquely and collectively have

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<sup>5</sup> See Matt Daneman, *Intelsat/Intel C-Band Plan Raises Questions, Critiques*, COMMUNICATIONS DAILY, Oct. 5, 2017, at 7 (quoting Michael Calabrese, director of the Wireless Future Program at New America).

the ability and necessary information to undertake a CONUS-wide inventory of satellite transponder payloads and beam coverage footprints. Such information and the ability to act on it are essential to optimally repurpose the signal delivered to the thousands of registered and unregistered earth stations. Not only would the transaction costs of an earth-station-directed approach be significantly higher, but such a proposal also could result in inconsistencies with the frequencies cleared and the time frames subject to such agreements.<sup>6</sup>

In contrast, by relying on the primarily affected satellite operators to manage the process, the Intelsat-Intel proposal would avoid the fundamental flaws in an earth-station-directed approach and would minimize the need for prescriptive government mandates, thereby quickly making 5G spectrum available in high-demand geographic areas while protecting satellite incumbent operations.

Intelsat and Intel look forward to working with industry stakeholders and the Commission to move promptly to a Notice of Proposed Rulemaking to enable terrestrial mobile use within the 3700-4200 MHz band voluntarily, efficiently, and expeditiously as described in the Intelsat-Intel Joint Comments.

## **II. COMMENTERS CONFIRM THAT UNLOCKING THE C-BAND FOR FLEXIBLE USE IS COMPLEX**

### **A. Commenters Support the Need to Protect Incumbent FSS Operations.**

Numerous commenters agree that FSS operators make extensive use of C-band downlink spectrum and protection of these operations is paramount. The Satellite Industry Association (“SIA”) comments detail satellite operators’ longstanding, intensive use of C-band spectrum for

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<sup>6</sup> In addition, such an approach fails to protect the satellite operators’ video/audio programmer customers, who generally are not the same entity operating the earth stations receiving their content. Neither the satellite operators nor their video/audio programmer customers would know what frequencies – if any – remain usable in any given area.

distributing video and audio content; providing essential communications in remote areas; offering service restoration and redundancy; and supporting maritime operations, among others.<sup>7</sup> Several C-band customers—including content companies, broadcast and cable providers, and a rural service provider—explained that they depend upon C-band FSS operations to provide important services to consumers.<sup>8</sup> The non-profit news organization National Public Radio, Inc. noted, for example, that it uses FSS to deliver annually more than 450,000 hours of news, music, and cultural programming to 1,278 public radio stations nationwide, reaching 95 percent of the U.S. population,<sup>9</sup> and General Communications, Inc. (“GCI”) observed that “[i]n many instances, GCI’s C-Band satellite operations are the only way that Americans in Alaska are able to send and receive life-saving communications.”<sup>10</sup> Several commenters estimate that FSS providers have invested billions of dollars in satellite assets and hundreds of millions of dollars in corresponding ground facilities.<sup>11</sup>

**B. Commenters Describe the Need for Additional Mid-Band Spectrum for Terrestrial Mobile Use.**

Some commenters also agree that terrestrial mobile broadband providers need additional mid-band spectrum to meet rising consumer demand and that the 3700-4200 MHz band is

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<sup>7</sup> Comments of SIA, at 5-14, 16-22 (“SIA Comments”).

<sup>8</sup> See, e.g., Comments of the American Cable Association; Comments of Charter Communications, Inc.; Comments of The Content Companies; Comments of EWTN, Inc.; Comments of General Communications, Inc. (“GCI Comments”); Comments of iHeartMedia + Entertainment, Inc. (“iHeartMedia Comments”); Comments of the National Association of Broadcasters; Comments of National Public Radio, Inc. (“NPR Comments”); Comments of NCTA—The Internet & Television Association (“NCTA Comments”); Comments of the North American Broadcasters Association; and Comments of Sirius XM Radio Inc.

<sup>9</sup> *NPR Comments*, at 4.

<sup>10</sup> *GCI Comments*, at 6.

<sup>11</sup> See *SIA Comments*, at ii; Comments of SES Americom, Inc., at 1 (“SES Comments”); *GCI Comments*, at 4.

valuable for terrestrial mobile use and 5G deployment.<sup>12</sup> Verizon reported that annual wireless data traffic has increased 238 percent between 2014 and 2016 and expects Americans to use five times more data in 2021 than 2016.<sup>13</sup> The 3700-4200 MHz band is well-suited to help satisfy this demand and accelerate deployment of next-generation services. This spectrum has relatively favorable coverage and high reliability propagation characteristics and also offers opportunities for economies of scale in equipment manufacturing due to the potential for harmonization of the radio tuning range with other regions of the world (e.g. Europe has identified the 3.4-3.8 GHz band for terrestrial mobile 5G). For these reasons, both Ericsson and T-Mobile USA, Inc. have called the 3700-4200 MHz band a “prime candidate” for 5G and mobile deployment,<sup>14</sup> and Nokia has said it is “the most favorable mid-band spectrum range to introduce 5G services in the U.S.”<sup>15</sup>

**C. Commenters Identify the Challenges and Opportunities Inherent in Sharing Spectrum in the 3700-4200 MHz Band.**

Tellingly, commenters from both the terrestrial mobile and satellite communities acknowledge that making spectrum in the 3700-4200 MHz band available on a co-frequency/co-coverage basis for flexible terrestrial use while protecting FSS incumbents will be extremely challenging.<sup>16</sup> The thousands of receive-only earth stations operating on an unlicensed,

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<sup>12</sup> See Comments of CTIA; Comments of Ericsson (“Ericsson Comments”); Comments of Huawei Technologies Co., LTD.; Comments of Nokia (“Nokia Comments”); Comments of T-Mobile USA, Inc. (“T-Mobile Comments”); and Comments of Verizon.

<sup>13</sup> *Verizon Comments*, at 3-4 (citing Cisco VNI Mobile Forecast Highlights (2016-2017)).

<sup>14</sup> *Ericsson Comments*, at 5; *T-Mobile Comments*, at 1.

<sup>15</sup> *Nokia Comments*, at 2.

<sup>16</sup> See, e.g., *SIA Comments*, at 34 (“The ubiquity and sensitivity of C-band receive Earth stations make sharing of the 3.7-4.2 GHz spectrum with additional terrestrial services extremely difficult.”); *Ericsson Comments*, at 8 (“Ericsson is less optimistic that wireless broadband systems, C-band earth stations, and fixed microwave facilities will be able to share the 3.7-4.2 GHz band on a co-channel basis.”); *Nokia Comments*, at 10-13 (“Our preliminary study shows

unregistered basis throughout the country adds to the complexity.<sup>17</sup> But many commenters are also open to ideas to overcome these challenges. AT&T—which provides both mobile services and uses incumbent C-band FSS systems to support video distribution for its DirecTV and U-Verse services—cautions that “[t]he characteristics of Lower C-Band use . . . are unlike the sharing scenarios the Commission has previously addressed in the 24 GHz and 28 GHz millimeter wave bands,” but nevertheless believes “workable sharing mechanisms might be explored that would permit the continuation of important C-band functions while still permitting some terrestrial mobile use in the band.”<sup>18</sup>

The Intelsat-Intel proposal would overcome these challenges by enabling primarily affected FSS satellite operators to undertake, voluntarily and with appropriate compensation, the complicated and costly process of clearing portions of the 3700-4200 MHz band for terrestrial mobile operations in markets where there is sufficient demand. And it allows for continued use of the full 3700-4200 MHz band by FSS operators where that use is the highest demand. This proposal is achievable because it would leverage the technical and operational expertise of satellite operators who are uniquely sensitive to C-band customers’ needs and have knowledge of those customers’ existing earth station requirements, while also accounting for the specific spectrum needs of terrestrial mobile operators.

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that the required exclusion zones around [fixed earth stations] could be a limiting factor for 5G deployments when 5G and FSS systems are deployed co-channel.”).

<sup>17</sup> See *SIA Comments*, at 22-24; *NCTA Comments*, at 3; *iHeartMedia Comments*, at 3.

<sup>18</sup> Comments of AT&T Services, Inc., at 9, 12 (“AT&T Comments”).

### III. COMMENTERS RECOGNIZE THAT A MARKET-BASED APPROACH—SUCH AS THE INTELSAT-INTEL JOINT PROPOSAL—IS CONSISTENT WITH THE FCC’S PUBLIC INTEREST OBJECTIVES

Many stakeholders filed comments favoring a market-based approach to making C-band spectrum available for terrestrial mobile use.<sup>19</sup> Intelsat and Intel agree with Verizon that “[o]pening the 3.7-4.2 GHz band for mobile use and allowing the market to determine what services remain would be simpler than the outmoded and lengthy process of repurposing the spectrum by government fiat and forcibly moving incumbent satellite services out of the band.”<sup>20</sup> Ericsson similarly states that market-based mechanisms are “the most expeditious way to gain access to the 3.7-4.2 GHz band in a timely manner,”<sup>21</sup> and the Telecommunications Industry Association noted that secondary markets “offer[] a promising path for increasing spectrum efficiency.”<sup>22</sup>

Intelsat and Intel’s market-based proposal is consistent with and best advances the FCC’s statutory goals of “promoting economic growth” and “enhancing access to telecommunications service offerings for consumers, producers and new entrants.”<sup>23</sup> To achieve these goals, the Commission has long recognized that it must facilitate efficient use of spectrum and rapid deployment by avoiding excessive implementation costs and complexity.<sup>24</sup> In the broadcast television spectrum incentive auction, the FCC emphasized the importance of voluntary

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<sup>19</sup> See, e.g., *CTIA Comments*, at 2, 3-6; *Ericsson Comments*, at 3; *Verizon Comments*, at 16; Comments of the Telecommunications Industry Association, at 4-5 (“TIA Comments”).

<sup>20</sup> *Verizon Comments*, at 16.

<sup>21</sup> *Ericsson Comments*, at 7.

<sup>22</sup> *TIA Comments*, at 4.

<sup>23</sup> See 47 U.S.C. § 309(j)(3); *Section 309 Implementation R&O*, ¶ 3.

<sup>24</sup> See *id.* ¶¶ 77-78.

participation by incumbents to “harness the economies of demand for spectrum in order to allow market forces to determine its highest and best use.”<sup>25</sup>

Evaluated under these foundational standards, the Intelsat-Intel approach provides the best option for making spectrum available for next-generation terrestrial 5G services in the 3700-4200 MHz band. The proposal is *voluntary*. Indeed, it is the most voluntary of the alternatives proffered by the commenters. Market forces would identify and enable the highest and best use of spectrum. Portions of the downlink C-band spectrum would be cleared for terrestrial mobile use in markets with sufficient demand, while FSS incumbents would have continued use of the frequencies not cleared in these markets, as well as use of the entire 3700-4200 MHz band in other areas. The exact amount of spectrum cleared and the geographic areas in which clearing occurs, will be the result of negotiations between the satellite operators and the terrestrial mobile operators. The relevant FSS operators, subject to market forces, would make all the important technical and business determinations in arriving at this clearing of portions of the band. By contrast, government-imposed determinations could negatively impact the businesses that rely on satellite C-band and likely would result in years of regulatory and legal challenges, thereby delaying the availability of C-band spectrum for terrestrial mobile use and jeopardizing U.S. 5G leadership.

The joint proposal would be *efficient*. As noted recently by Chairman Pai, foundational tenets of FCC economic policy provide that stakeholders should not “have to rely on the Federal Communications Commission rather than the ordinary pricing mechanism to determine whether

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<sup>25</sup> *Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, Report and Order, 29 FCC Rcd. 6567, ¶ 2 (2014) (“Incentive Auction Order”).

a particular frequency should be used.”<sup>26</sup> By employing the Intelsat-Intel approach, costs and delays that inevitably befall a government-led approach could largely be avoided. Primarily affected FSS satellite operators and terrestrial wireless operators would negotiate the economic incentive necessary to incentivize satellite operators to relinquish spectrum in designated geographic areas. The Commission could facilitate this market-driven process by suitably amending the Table of Allocations and clarifying that the terrestrial mobile C-band operations would be contingent upon a showing that the applicant had coordinated with primarily affected satellite operators. FCC oversight would be minimal compared to alternative sharing approaches, as FSS incumbent satellite operators would be bound by contract to satisfy their obligations to clear spectrum for terrestrial operations. Satellite operators are best situated to oversee the complicated and costly process of identifying and then taking the necessary measures to ensure adequate protection of particular FSS customer earth stations. This mechanism minimizes transaction costs for industry and implementation costs for the agency. Moreover, because it is purely market-based, with no regulatory determination of how much spectrum should be cleared for use by terrestrial mobile, the Intelsat-Intel proposal would ensure that the amount of spectrum for either satellite or terrestrial operation at any given time is optimal.

Intelsat and Intel’s approach would be *expeditious*. Spectrum can be put to use for 5G services within 1-3 years of an FCC Order adopting the joint proposal. Government-led reallocation efforts, by comparison, have taken between 6 and 18 years from the time of the initial agency order to first deployment.<sup>27</sup> Moreover, ample FCC precedent supports giving

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<sup>26</sup> See *supra* n.1, at 2 (quoting Ronald H. Coase, *The Federal Communications Commission*, *Journal of Law & Economics*, at 16 (1959)).

<sup>27</sup> See CTIA, *FOSTERING 21ST CENTURY WIRELESS CONNECTIVITY: KEY SPECTRUM & INFRASTRUCTURE ISSUES FOR POLICYMAKERS*, at 4 (Jan. 12, 2017); THOMAS K. SAWANOBORI,

incumbent licensees the power to bring flexible use licenses to market. In the 2016 *Spectrum Frontiers Report and Order*, the Commission granted mobile operating rights to incumbent Local Multipoint Distribution Service licensees in the 28 GHz band.<sup>28</sup> The agency determined that the public interest would be served best by granting incumbents flexible use rights—rather than separately licensing mobile rights through an overlay auction—because granting mobile operating rights to existing licensees “will expedite the deployment of service, minimize the difficulties involved in coordinating fixed and mobile deployments, and provide a uniform licensing scheme throughout the United States.”<sup>29</sup> The Commission similarly determined it would be in the public interest to grant AWS-4 terrestrial operating authority to existing Mobile Satellite Service (“MSS”) licensees because it is “the most efficient and quickest path to enabling flexible terrestrial use of this band while ensuring compliance with the MSS protection rule.”<sup>30</sup> The agency also allowed MSS licensees to offer access to their terrestrial operating authority through the secondary market,<sup>31</sup> providing licensees with flexibility to make offerings directly responsive to market demands for particular types of services.

The Intelsat-Intel joint proposal provides the FCC with the fastest, most efficient, voluntary mechanism to make additional mid-band spectrum available for 5G, while also ensuring protection of existing and future satellite operations.

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CTIA, FROM PROPOSAL TO DEPLOYMENT: THE HISTORY OF SPECTRUM ALLOCATION TIMELINES, at 2 (2015).

<sup>28</sup> *Use of Spectrum Bands Above 24 GHz for Mobile Radio Services*, Report and Order and Further Notice of Proposed Rulemaking, 31 FCC Rcd. 8014, ¶¶ 41-42 (2016).

<sup>29</sup> *Id.* ¶ 41.

<sup>30</sup> *Service Rules for Advanced Wireless Services in the 200-2020 MHz and 2180-2200 MHz Bands*, Report and Order and Order of Proposed Modification, 27 FCC Rcd. 16102, ¶ 162 (2012).

<sup>31</sup> *Id.* ¶ 163.

#### **IV. ALTERNATIVE PROPOSALS FALL SHORT OF THE INTELSAT-INTEL JOINT PROPOSAL TO MAKE SPECTRUM AVAILABLE FOR TERRESTRIAL MOBILE USE VOLUNTARILY, EFFICIENTLY, AND EXPEDITIOUSLY**

An FCC-led auction would not promote economic growth and enhance communications access as efficiently and expeditiously as the Intelsat-Intel joint proposal. Compared to primarily affected FSS operators, who have complete knowledge of their operations and customers, the Commission is at a distinct informational deficit with regard to incumbent satellite operations in the 3700-4200 MHz band spectrum band. In these situations, critical issues like the relative value of use, the technical and business effects of alternative means of sharing—for a specific amount of spectrum in a given area at a particular time—are better left to the market, not centrally planned.

Even in situations like the broadcast television incentive auction where, unlike here, the agency possessed all the technical information on station contours and channel positions, government involvement can result in inefficiencies. When the FCC adopted the broadcast incentive auction in 2014, then Commissioner Pai voiced concern that “[t]his complicated scheme provides the Commission with at least three levers for manipulating the market in order to pick winners and losers”—citing the agency’s role in the forward auction to determine when and precisely how much spectrum will be placed in reserved and unreserved spectrum blocks for each clearing target and subsequently at what point formerly reserved spectrum would become unreserved due to lack of demand.<sup>32</sup> FCC auctions also take considerable time to complete. As Federated Wireless commented, “[a] conventional ‘clear and auction’ approach to the 3.7-4.2 GHz band will only serve to ensure that 5G services are not deployed in the band before the end

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<sup>32</sup> Incentive Auction Order, Dissenting Statement of Commissioner Ajit Pai, at 3.

of the decade.”<sup>33</sup> The Intelsat-Intel joint proposal obviates these concerns by minimizing Commission involvement and allowing the market to drive spectrum availability determinations quickly and efficiently.

Moreover, suggestions for an approach where negotiations are directed at earth stations is logistically infeasible. Space station operators are the only logical focal point for such negotiations and related frequency reorganization/consolidation of the transmitted signals. Earth stations—as receivers—are not in control of their signals. With thousands of registered and unregistered earth stations, it is far more efficient and streamlined to facilitate market-based negotiations between terrestrial mobile operators and the small number of FSS operators who deliver the services to those thousands of earth stations and are responsible for maintaining their service quality across the entirety of their customer base.

Further, spectrum sharing proposals like those advanced by the Dynamic Spectrum Alliance,<sup>34</sup> Motorola Solutions,<sup>35</sup> Sony,<sup>36</sup> and others not only lack the efficiency and expedition of Intelsat and Intel’s proposal, they also present a risk of interference to incumbent operations. Comsearch explained that the 3700-4200 MHz band “presents a significant challenge to protect incumbents” due to the substantial potential for interference.<sup>37</sup> To be successful, a Spectrum Access System or similar administrator must be “aware of actual frequencies received by the

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<sup>33</sup> Comments of Federated Wireless, Inc., at 4-5.

<sup>34</sup> Comments of Dynamic Spectrum Alliance.

<sup>35</sup> Comments of Motorola Solutions, Inc.

<sup>36</sup> Comments of Sony Electronics, Inc.

<sup>37</sup> Comments of Comsearch, at 3. Other commenters argue that earth stations require full-band, full-arc protection in order to allow satellite operators quickly to move customers to other frequencies/satellites in response to interference or a satellite anomaly. *See, e.g., SIA Comments*, at ii.

earth stations,” and even then, Comsearch notes that “the required stand-off distance to protect a co-frequency C-band earth station from interference can be significant.”<sup>38</sup> Dynamic Spectrum Alliance similarly notes that sharing schemes are ineffective without detailed information on FSS earth station deployments,<sup>39</sup> a matter complicated by the fact that receive-only earth stations are not required to be licensed, or even registered and, as such, there are thousands of unlicensed, unregistered receive-only earth stations throughout the country that are not reflected in the FCC’s database.<sup>40</sup> The Intelsat-Intel proposal can get spectrum in the hands of terrestrial mobile operators faster and with adequate protection assurance for FSS incumbents, including their future earth stations.

Additionally, recommendations to expand fixed wireless operations would deny FSS incumbents flexibility needed to ensure service continuity and are not the highest and best use of spectrum in the 3700-4200 MHz band. Several commenters in this proceeding opposed proposals by the Broadband Access Coalition (“BAC”) and the Fixed Wireless Communications Coalition (“FWCC”) as limiting FSS operations to the detriment of satellite customers.<sup>41</sup> Furthermore, limiting new uses to additional fixed wireless needlessly jeopardizes putting spectrum in the 3700-4200 MHz band to its highest and best use. Indeed, most commenters assume that when additional mid-band spectrum is made available, it will be used to bring transformative 5G services to market. Proposals to expand fixed service operations in the 3700-4200 MHz band are simply inconsistent with the greater vision for expanded flexible use

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<sup>38</sup> *Id.*

<sup>39</sup> *See DSA Comments*, at 8 (“A clear picture of the actual spectrum usage and protection requirements of FSS earth station is a critical first step and prerequisite to authorizing additional uses of the band.”).

<sup>40</sup> *See SIA Comments*, at 22-24; *NCTA Comments*, at 3; *iHeartMedia Comments*, at 3.

<sup>41</sup> *See SIA Comments*, at 25-34; *SES Comments*, at 6-7; *GCI Comments*, at 13-15.

operations.<sup>42</sup>

## V. CONCLUSION

Intelsat and Intel’s proposal is a win-win for terrestrial mobile and satellite users, consumers and society, constructively balancing the terrestrial mobile industry’s demand for more mid-band spectrum to deploy 5G services with the need to protect existing and future C-band satellite operations. Using market-based mechanisms, the joint proposal best achieves the Commission’s goal of making more spectrum available for 5G services voluntarily, efficiently, and expeditiously, and we believe it is far preferable to other alternatives proffered. Intelsat and Intel look forward to working with industry stakeholders and the Commission to promptly develop a Notice of Proposed Rulemaking to implement this market-driven proposal and facilitate flexible terrestrial mobile use within the 3700-4200 MHz band.

Respectfully submitted,

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<sup>42</sup> See Remarks of FCC Commissioner Michael O’Rielly before the 6th Annual Americas Spectrum Management Conference (Oct. 13, 2017) (“I am not able to support an idea proposed by some commenters that would favor fixed operations, which is counter to the flexible use policies that I have advocated for.”).