

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

In the Matter of)	
)	
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
)	
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 COMMENTS OF INTEL CORPORATION, INTELSAT LICENSE LLC, AND
SES AMERICOM, INC.**

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I. INTRODUCTION AND SUMMARY

The Notice of Proposed Rulemaking (“NPRM”) in the above-captioned proceeding lays out a bold vision to close the digital divide and win the race to 5G.¹ To make that vision a reality, the Commission should take steps to facilitate the joint, market-based approach (the “Market-Based Approach”) of Intel Corporation (“Intel”), Intelsat License LLC (“Intelsat”), and SES Americom, Inc. (“SES,” and collectively, the “Joint Parties”) and bring highly valuable mid-band spectrum to market voluntarily, in an efficient and expeditious manner, and with minimal Commission administration, while preserving important incumbent satellite services.

¹ 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, ¶ 2 (rel. July 13, 2018) (“NPRM”).

The Market-Based Approach enjoys cross-industry support and is a win-win-win for consumers, terrestrial 5G interests and Fixed-Satellite Service (“FSS”) operators. To enable terrestrial services in the 3.7-4.2 GHz band (the “C-Band Downlink”) in the fastest, most efficient way possible and maximize consumer benefits, the FCC should adopt the Market-Based Approach without delay.

The Market-Based Approach will advance the United States’ efforts in the race to 5G. The Joint Parties agree with the Commission that the Market-Based Approach can “make [C-Band Downlink] spectrum available more quickly than other available mechanisms, such as an FCC auction, and thus could facilitate rapid deployment of next generation wireless broadband networks.”² Speed to market has enormous value to society. For instance, an economic white paper from The Brattle Group (the “Brattle Paper”) estimates that the accelerated pace of the Market-Based Approach will create billions of dollars in total public benefit compared to other alternatives in the NPRM.³

Equally important, the Market-Based Approach is the only mechanism that considers the “unique characteristics” of the C-Band Downlink, adequately “account[s] for incumbent operations” and solves the problem that “terrestrial mobile operations could cause harmful interference to the [co-frequency] earth station receivers.”⁴ Avoiding involuntary disruption of incumbent satellite service is paramount because FSS operators have invested billions of dollars in C-Band infrastructure that has become the backbone of U.S. content distribution and an invaluable failsafe for viewers and listeners due to its unmatched reliability and ubiquity.

² *Id.*, ¶ 67.

³ See Appendix A, Coleman Bazelon, The Brattle Group, *Maximizing the Value of the C-Band, Comments on the FCC’s NPRM to Transition C-Band Spectrum to Terrestrial Uses*, at 31 (Oct. 29, 2018) (“Brattle Paper”).

⁴ NPRM, ¶¶ 10, 50, 52.

The Market-Based Approach provides the optimal way to enable terrestrial mobile operations in the 3.7-4.2 GHz band.⁵ It creates market-based incentives for FSS space station incumbents to undertake cooperatively and voluntarily the complicated, arduous, costly process of clearing C-Band Downlink spectrum and facilitating coordinated terrestrial mobile use as rapidly as possible. This ability and incentive to cooperate allows the satellite operators to bring solutions to the problem that they would not do individually, such as, for example, relocating an existing satellite or launching new satellites to densify coverage over the United States. The FSS industry has embraced this idea—Intelsat, SES, Eutelsat, and Telesat, which account for virtually all of the C-Band revenue in the continental United States, already have formed the C-Band Alliance to act as the Transition Facilitator envisioned in the NPRM and facilitate the Market-Based Approach.

The Joint Parties encourage the Commission to provide the C-Band Alliance with as much flexibility as possible to allow market forces to identify and enable the highest and best use of spectrum. The Market-Based Approach will let the market—rather than the government—determine the optimal amount of C-Band Downlink spectrum made available for terrestrial services and ensure operating conditions that permit productive use of that spectrum by new terrestrial providers while protecting incumbent satellite services. Indeed, the Brattle Paper confirms that “the Market-Based Approach has many advantages and solves the problems created by the market and regulatory failures” that none of the alternative government-run frameworks adequately address.⁶ The Market-Based Approach will benefit all interested parties and advance the public interest without the risk and delay associated with attempting to impose a

⁵ See, e.g., Brattle Paper, at 45.

⁶ *Id.*, at 29.

sharing framework by regulatory fiat, including the proposal to mandate new fixed operations in the band. A government directive to allow new fixed point-to-multipoint (“P2MP”) operations in the C-Band Downlink is the antithesis of a market-based solution and would create a major roadblock to enabling access to the spectrum for mobile operations by making it more difficult for satellite operators to reassign FSS customers to uncleared spectrum.

The Commission should not adopt any proposal that creates unneeded delay or unnecessary regulatory impediments to efficient terrestrial use of this band. The Joint Parties agree that the “United States will not get a second chance to win the global 5G race.”⁷ The Joint Parties urge the Commission to adopt the Market-Based Approach promptly and provide wireless operators quick access to new mid-band spectrum to accelerate the introduction of terrestrial 5G services, while protecting incumbent satellite operations, benefitting American consumers of both terrestrial mobile and satellite services.

II. THE MARKET-BASED APPROACH WILL ENABLE OPTIMAL USE OF THE MID-BAND SPECTRUM IN THE MOST ECONOMICALLY EFFICIENT MANNER

Only the Market-Based Approach achieves the difficult task of expeditiously reconciling the terrestrial mobile industry’s need for more mid-band spectrum for 5G with the need to protect existing and future C-Band satellite operations. It harnesses market incentives to make mid-band spectrum available for terrestrial 5G voluntarily, quickly, and with minimal FCC intervention, and it enjoys cross-industry support.

Intelsat and SES, by far the two largest providers of FSS in the United States, make extensive use of the C-Band Downlink, utilizing the entire 3.7-4.2 GHz band nationwide to provide a thriving communications network. FSS customers and, by extension, U.S. consumers,

⁷ *China Holds Narrow Lead in Global Race to 5G, Report Finds*, Press Release, CTIA.org (Apr. 16, 2018) (quoting Meredith Atwell Baker, CTIA President and CEO).

depend on C-Band for its unrivaled availability and reliability. Fueled by decades of private investment and assurances of replacement expectancy, FSS operators have invested heavily in the C-Band Downlink as the means of video and radio programming delivery to more than 100 million American households. Put differently, almost all national video and radio programming travels over C-Band satellites that have full coverage of the continental United States. C-Band FSS also provides numerous other critical services, including emergency alerts and communications offerings vital to government users, public safety and disaster recovery.

Terrestrial 5G proponents maintain that the band is ideal for their service. As the NPRM observes, “[m]id-band spectrum is well-suited for next generation wireless broadband services due to the combination of favorable propagation characteristics (compared to high bands) and the opportunity for additional channel re-use (as compared to low bands).”⁸ Moreover, as global terrestrial deployment in portions of the C-Band Downlink accelerates, unlocking the band for mobile use domestically has become critical in the race to 5G.⁹

The “unique characteristics” of the C-Band Downlink call for a unique approach, and the Market-Based Approach answers the call. The Market-Based Approach efficiently overcomes the complexities in the C-Band Downlink by providing FSS operators the necessary incentive to make C-Band Downlink spectrum available for terrestrial 5G by undertaking the extremely complicated and costly task of clearing incumbent operations in a manner that protects those existing users. It enables satellite operators—the entities that face the opportunity cost trade-offs—to make implementation decisions based upon their first-hand knowledge and technical expertise. The Brattle Paper affirms that the C-Band Alliance “would be best placed to know all

⁸ NPRM, ¶ 5.

⁹ *See id.*, ¶ 6.

of the interconnected trade-offs and to find the value maximizing solution to them.”¹⁰

Consumers thus will benefit from both the deployment of innovative terrestrial mobile services *and* the continued operation of media and other applications supported by FSS.

With 5G deployment a national priority, speed is paramount. Getting C-Band spectrum to market quickly enhances consumer welfare, serves the larger public interest, and will help the U.S. win the race to 5G. The Joint Parties agree with the Commission that “a significant benefit of a market-based approach may be a more rapid introduction of C-Band spectrum to the market.”¹¹ The Market Based Approach will clearly provide the speediest, most effective way to repurpose C-Band Downlink spectrum for flexible use—within 18-36 months of a final Report and Order.¹² No other proposal could even come close to making C-Band spectrum available for terrestrial 5G use in such a short time frame.

The Brattle Paper confirms that “[a]ny delay in a beneficial transition is costly, both to the parties and to society.”¹³ Indeed, “[t]he impact of delay can be significant,” as “[t]he economic value of spectrum is only a fraction of its total social value.”¹⁴ The Brattle Paper estimates that delays inherent in alternative, command-and-control proposals would reduce social value by between 7% and 12% for each year of delay. “Consequently, any of the other proposals, which could easily be expected to add years of delay to the Market-Based Approach, would significantly decrease the value of repurposing any C-Band frequencies.”¹⁵

¹⁰ Brattle Paper, at 30.

¹¹ NPRM, ¶ 69.

¹² *See* Brattle Paper, at 31.

¹³ *Id.*

¹⁴ *Id.*

¹⁵ *Id.*

Importantly, providing FSS operators with maximum flexibility in secondary market transactions with mobile operators is essential to the approach's success in enabling terrestrial 5G deployment in C-Band spectrum within 36 months of a final Commission order. Limiting Commission oversight will speed 5G deployment in the band by letting the marketplace determine the adjustments deemed necessary by the parties to protect their respective interests. The Commission correctly observes that parties will "negotiate a full range of transition commitments," and "the private agreements between new terrestrial licensees and incumbent users would contain provisions and penalties sufficient to address either party's failure to satisfy their respective contractual obligations in a timely manner."¹⁶

Furthermore, the Brattle Paper conclusively rebuts concerns in the NPRM that the Market-Based Approach would inefficiently reallocate spectrum,¹⁷ demonstrating that the C-Band Alliance will not have the market power or incentive to limit artificially the spectrum made available for terrestrial 5G. First, given other spectrum available now or in the near term for terrestrial 5G, the potential supply of C-band spectrum does not convey a meaningful amount of market power.¹⁸ Second, the C-Band Alliance would lose money by artificially withholding spectrum from secondary market transactions.¹⁹ Simply put, "[a]s beneficiaries of any transactions that result from a reallocation, the members of the Transition Facilitator will have the incentive to come to agreement on an efficient solution, without the concerns about the holdout problem an unfettered market would create."²⁰ These clear economic incentives counsel against heavy-handed, *ex ante* Commission restrictions on the Market-Based Approach.

¹⁶ NPRM, ¶¶ 85, 97.

¹⁷ *Id.* at ¶ 81.

¹⁸ Brattle Paper, at 40-42.

¹⁹ *Id.* at 40.

²⁰ *Id.* at 32.

The formation of the C-Band Alliance represents an important milestone in making the Market-Based Approach a reality. Intelsat, SES, Telesat, and Eutelsat, the four operators that provide virtually all C-Band services to the continental United States, stand ready to facilitate secondary-market transactions through the C-Band Alliance to feed America’s 5G spectrum pipeline in the quickest way possible.

III. ALTERNATIVE PROPOSALS ARE LESS EFFICIENT AND CREATE UNNECESSARY RISK TO INCUMBENT SATELLITE SERVICES

By contrast, other proposals would slow and impair deployment of 5G operations in the C-Band Downlink because they involve government mandates and intervention, not market-based solutions. Any forced solution is likely to result in years of regulatory and legal challenges and delay the availability of C-Band spectrum for wireless use.

A. Mandating Fixed P2MP Is Not Market-Based and Would Impair Satellite Operators’ Ability to Clear Spectrum

The proposal for the Commission to mandate fixed P2MP co-frequency sharing in the C-Band Downlink that will be retained for satellite services is the antithesis of a market-based solution. The Broadband Access Coalition proposal to have the Commission dictate C-band operations acknowledges that P2MP use produces less benefit than competing terrestrial 5G uses or the satellite operations P2MP would displace. Mandating P2MP co-frequency sharing with FSS operations will “limit[] the flexibility to incorporate other uses of the C-Band” by “lock[ing] in one approach”—fixed wireless—“that would predetermine how the C-Band would be repurposed without considering and reacting to dynamically evolving market information.”²¹ Moreover, to the extent sufficient demand exists for fixed wireless services, the Market-Based Approach does not block potential buyers from deploying P2MP if that is the highest and best

²¹ Brattle Paper, at 45.

use of the C-Band Downlink. The Commission should reject P2MP co-frequency sharing and avoid placing unnecessary, market-distorting constraints on the efficiency of the Market-Based Approach.

Moreover, a command-and-control decision to force P2MP in the C-Band Downlink will impair future 5G use of the band by greatly reducing the flexibility and incentive for FSS operators to clear spectrum. Simply put, the P2MP proposal is incompatible with expanded terrestrial mobile 5G use of the band. The Joint Parties agree with Commissioner O’Rielly that for the Market-Based Approach to best help the U.S. win the race to 5G, “[t]here can be no unnecessary delays or distractions” and that inserting fixed P2MP in the C-Band Downlink presents “serious concerns.”²² The ability of satellite operators to clear spectrum by compressing their operations will be greatly hindered if satellite operators have less spectrum into which to move their customers as the result of P2MP operations near satellite earth stations. It is illogical to incentivize FSS operators to clear spectrum for 5G mobile use while also mandating new P2MP fixed operations that will make that clearing much more difficult, if not impossible.

B. A Government-Run C-Band Auction Would Result in Significant Delay and Could Harm Incumbent Satellite Operations

Government-run auction approaches in this band would be inefficient, fraught with regulatory delay, and misalign market incentives. Both market and regulatory failures make a government-run reallocation of the C-Band Downlink inferior to the Market-Based Approach.

Market failure stems from existing legal rights, which pose obstacles to achieving the highest and best use of the C-Band Downlink. Satellite operators have overlapping rights in the C-Band. While efficient for satellite services, this commonality of rights creates a “significant holdout problem” in any reallocation process because to clear “any portion of the band at any

²² NPRM, Statement of Commission Michael O’Rielly, at 1-2.

specific location requires the agreement of all relevant rights holders.”²³ Holdouts will prevent value-creating trades, which the NPRM acknowledges makes an approach where “FSS licensees act independently unlikely to succeed.”²⁴ The Joint Parties agree with the NPRM 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.”²⁵

Regulatory failure stems both from the difficulty of predicting the optimum use of the C-Band resource and an informational deficit that the Commission cannot overcome without extensively delaying 5G deployment in the C-Band Downlink. The FCC is unlikely to collect “all of the relevant information about current and potential uses and the relevant alternative means of meeting those uses” in a timely matter that would allow it to make a decision that benefits the public interest.²⁶ This information includes: (i) identification of earth station locations, responsible parties, technical uses, and economic uses; (ii) identification of satellite capacity and potential investments; and (iii) identification of potential new terrestrial licensees.²⁷ Gathering this information will take years, during which time it is likely to become outdated. The U.S. cannot afford delay in the race to 5G. And crucially, this information is dynamic and adapts to market forces, making the Commission’s challenge of finding an optimal policy solution even more daunting. The Market-Based Approach eliminates this problem, because the C-Band Alliance already has this information or can easily get additional information from its

²³ Brattle Paper, at 13.

²⁴ NPRM, ¶ 70.

²⁵ *Id.*

²⁶ Brattle Paper, at 13.

²⁷ *Id.* at 14-15.

customer relationships. For this reason, the C-Band Alliance is “best placed to evaluate the trade-offs presented.”²⁸

None of the alternative government-run auction mechanisms mentioned in the NPRM overcome these fundamental flaws, and all will take significantly longer to implement than the Market-Based Approach. Delay compared to the Market-Based Approach will cost Americans an untenable 7% to 12% annually in social welfare.²⁹ The Market-Based Approach solves the problems of market and regulatory failure and represents the fastest path to bring 5G spectrum to market. Accordingly, the Commission should expeditiously act to authorize the Market-Based Approach.

²⁸ *Id.* at 30.

²⁹ *See id.* at 31.

IV. CONCLUSION

The Market-Based Approach can unleash mid-band spectrum for terrestrial 5G deployment in the quickest, most economically efficient way while also protecting valuable incumbent FSS operations. The Joint Parties urge the Commission to afford FSS operators maximum flexibility and adopt the Market-Based Approach as soon as possible.

Respectfully submitted,

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