



**Before the  
Federal Communications Commission  
Washington, D.C. 20554**

In the Matter of:	)	
	)	
Expanding Flexible Use of the	)	GN Docket No. 18-122
3.7 to 4.2 GHz Band	)	
	)	

**Reply Comments of the North American Broadcasters Association**

The North American Broadcasters Association (NABA)<sup>1</sup> respectfully submits the following reply comments concerning the above-captioned Notice of Proposed Rule-making.

NABA remains concerned that new terrestrial uses in the C-Band downlink spectrum can cause significant harm or disruption to existing satellite users.<sup>2</sup> NABA again emphasizes that the principle of **No Harm** to the broadcasting ecosystem and the public that it serves must be at the core of any rule-making considerations concerning the allocation of spectrum that historically has been used by broadcasters for delivery and collection of content and services. This principle goes beyond technical compatibility in allotments and assignments and must include full compensation for any required changes to operations or equipment.

In these reply comments, NABA emphasizes policies to help avoid potential harm.

**1. There is Widespread Agreement that Co-Frequency Operation Must Be Avoided**

Most commenters agree that co-channel terrestrial operation (including overlay uses) with satellite is a very bad idea. A study commissioned by NABA is one of the studies that were incorporated into Report ITU-R S.2368 that analyzed required separation distances to protect FSS earth stations from the types of services being considered in this proceeding operating in the 3.7–4.2 GHz C-band frequency range. The summary of this ITU Report stated that required separation distances are at least in the tens of kilometers and exceed 100 km to account for

---

<sup>1</sup> The North American Broadcasters Association (NABA) is a non-profit association of the most influential broadcasting organizations in North America committed to advancing the interests of broadcasters at home and internationally, and to identify and take action on technical, operational and regulatory issues affecting North American broadcasters. Both public and private network broadcasters in Canada, Mexico and the United States, work together to provide a common voice for the North American broadcast community. As a member of the World Broadcasting Unions (WBU), NABA creates the opportunity for its members to share information, identify common interests and reach consensus on issues of an international nature. For further information about NABA, please visit: [www.nabanet.com](http://www.nabanet.com).

<sup>2</sup> See Comments of NABA, “Expanding Flexible Use in Mid-Band Spectrum between 3.7 and 24 GHz,” GN Docket 17-183, filed September 29, 2017 and Comments of NABA, “Expanding Flexible Use of the 3.7 to 4.2 GHz Band,” GN Docket 18-122, filed October 29, 2018.

short-term interference conditions, even when the effects of terrain are taken into account. The Report also summarized that separation distances of over 500 kilometers could be required in some cases.<sup>3</sup> These results comport with studies referenced by other entities that co-frequency operation poses a substantial risk of interference with no proven mechanism for mitigation.

With such large interference zones, coordination is impractical. NABA disagrees strongly with commenters that continue to suggest that the Commission should allow licensed or opportunistic point-to-multipoint uses across the portion of the C-Band that remains allocated to satellite use on a primary basis.<sup>4</sup> The suggested mitigation options involving registration of actual satellite earth station operating characteristics are unworkable, impractical and inflexible, and would preclude the agility of the earth station segment that is necessary to ensure reliable operation by allowing for reconfiguration of earth station equipment in near-real time. In the past month, coverage of the massive California fires would have been impractical without C-band satellite newsgathering (SNG) vehicles, including the ability of those vehicles to provide return channel feeds back to the fire area. If the satellite portion of C-Band is compromised by further incursion, we endanger use by news gatherers, first responders and support agencies like FEMA and insurers to maintain critical duplex communications.

## **2. C-Band is Critical to the Broadcast Ecosystem. Continued Flexibility and Expanded Use of C-Band Must Not Be Constrained**

As virtually all commenters associated with broadcasting have indicated, the satellite C-Band is a critical and irreplaceable part of the broadcast ecosystem.<sup>5</sup> There are no equivalent terrestrial or satellite replacement services available that can maintain the present high levels of reliability across the land mass of North America or match the economic efficiency afforded by C-Band. Additionally, broadcast needs for C-Band spectrum are likely to expand with levels of Ultra High Definition (UHD) and High Dynamic Range (HDR) content rising, and with the launch of ATSC 3.0 in the U.S. NABA disagrees with suggestions by commenters that C-Band operations should be phased out over time or restricted such that earth stations would be authorized only to a specific satellite and a specific transponder frequency at one time.<sup>6</sup> Imposing such heavy restrictions would cripple the ability of broadcasters to reliably provide news, emergency information and entertainment programming to viewers, including live on-the-spot coverage of emergency information from public officials. Maintaining full-band, full-arc access is essential to continuing to provide reliable service.

---

<sup>3</sup> ITU-R Report S.2368-0, "Sharing studies between International Mobile Telecommunication-Advanced systems and geostationary satellite networks in the fixed-satellite service in the 3 400-4 200 MHz and 4 500-4 800 MHz frequency bands in the WRC study cycle leading to WRC-15," June 2015, [https://www.itu.int/dms\\_pub/itu-r/opb/rep/R-REP-S.2368-2015-PDF-E.pdf](https://www.itu.int/dms_pub/itu-r/opb/rep/R-REP-S.2368-2015-PDF-E.pdf).

<sup>4</sup> See, Comments of the Broadband Connects America Coalition and Comments of Dynamic Spectrum Alliance, GN Docket 18-122, October 29, 2018.

<sup>5</sup> See, e.g., Comments of American Cable Association, Comcast Corporation and NBCUniversal Media, LLC, Content Companies, Luken Communications, National Association of Broadcasters, National Public Radio, One Media 3.0, LLC, QVC/HSN, Block Communications, Inc., Gray Television, Inc., Meredith Corporation, and many others (citations omitted).

<sup>6</sup> See, e.g., Comments of Starry, Inc. October 29, 2018.

### **3. Spectrum Allocations Must be Technically Justified Not Arbitrary**

Any consideration of reallocating a portion of the C-Band should be based primarily on the principal of accommodating existing users (No Harm) rather than an economic calculation. That is, the maximum amount of spectrum to be reallocated should be determined *a priori* by technical analysis and field testing, and not arbitrarily set with a two-sided auction mechanism (or other means) used to determine the final amount. NABA disagrees with T-Mobile that the entire 500 MHz of C-Band spectrum should be opened to auction or that 300 MHz, or indeed any amount, be set as a “floor” for reallocation.<sup>7</sup> The determination of how much spectrum to be reallocated must be based, first, on the principle of “no harm” and second, on a rigorous technical analysis.

While NABA understands that it may not be possible to publicly disclose the details of all existing C-Band operations, we and other broadcast industry commenters are concerned that the proposal by the C-Band Alliance (CBA) to reallocate “up to 200 MHz” (including a guard band) has not been fully vetted by a complete technical analysis.<sup>8</sup> While the CBA has provided some technical information generally and additional specific information to individual satellite users, further information is required to conduct an independent technical analysis. Such analysis is necessary prior to moving the reallocation process forward. While it may be that only the Commission is privy to the full details of the analysis, individual users must be satisfied that their existing operations will be preserved. In particular, technical details concerning the mobile and base station power levels, signal characteristics, and antenna heights are unspecified in the NPRM.

### **4. The Value of Broadcast Programming to Regional Economies Must Be Considered**

As NABA previously noted, programming that is sent across borders using C-Band represents substantial value to the U.S. (and other nation’s) economy. The FCC should not make any commitments, such as inflexible timelines, reimbursement cost limits, or arbitrary spectrum reallocations, that could disrupt that flow of trade. Especially with regard to satellite uses, which are by their nature regional or global, coordination of spectrum use must be accomplished. [The goal of the ITU Table of Frequency Allocations is to facilitate harmonization of regional and global uses, which are essential to creating the economies of scale that benefit all communications systems. So-called “footnote” allocations can frustrate that goal. Such coordination must consider satellite operators that are not part of the CBA, but nonetheless have footprints covering the U.S. It is unclear whether the proposed “carve-outs” for a few gateway facilities will be adequate to ensure uninterrupted access by North American broadcasters and cable operators to programming originating in, for example, South America.

Additionally, as noted in its October 29 comments, NABA suggests that the FCC adopt the same power flux density (PFD) criterion currently used to protect the FSS in the 3.4–3.7 GHz band. Namely, before an administration brings into use a (base or mobile) station of the mobile service in this band, it shall ensure that the PFD produced at 3 meters above ground does not

---

<sup>7</sup> Comments of T-Mobile USA, Inc., filed October 29, 2018

<sup>8</sup> Comments of the C-Band Alliance, GN Docket 18-122, filed October 29, 2018.

exceed  $-154.5 \text{ dB (W/(m}^2 \cdot 4 \text{ kHz))}$  for more than 20% of time at the border of the territory of any other administration.<sup>9</sup>

## 5. **Any Reallocation to Mobile Use Should be Limited to CONUS**

C-Band provides disparate coverage using specific satellite orbital locations in Alaska and Northern Canada. NABA suggests that Alaska be excluded from any reallocation and that the entire 3.7–4.2 GHz spectrum remain fully available for satellite use only. NABA agrees with Alaska Communications Internet, LLC that high-latitude locations, including the U.S. state of Alaska and Canada's Northern provinces bear special consideration and should not be part of any reallocation.<sup>10</sup> As Alascom observes, in Alaska, C-Band forms an essential and irreplaceable part of the state's communications infrastructure. As well in northern Canada, the low pointing angles to geostationary orbital locations mean that precipitation losses and spreading losses play an outsize role in availability and reliability.

### **Conclusion**

It is imperative that the Commission protect the C-Band downlink spectrum from the potential of significant harm to existing satellite users. For the reasons stated herein, NABA urges the Commission adopt the recommendations reflected and base its decisions on rigorous technical testing of interference so as to minimize adverse effects and protect the significant users of the C-Band spectrum.

Respectfully submitted,

/s/

---

Michael McEwen  
Director-General, NABA

December 10, 2018

/s/

---

Richard Friedel (21CF)  
President, NABA

---

<sup>9</sup> See footnotes 5.431B, 4.432A, 5.434, etc. in Article 5 of the ITU Radio Regulations.

<sup>10</sup> Comments of Alaska Communications Internet, LLC, filed October 29, 2018.