

**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
)	

REPLY COMMENTS OF THE CONTENT COMPANIES

CBS Corporation, Discovery, Inc., The Walt Disney Company, 21st Century Fox, Inc., Univision Communications Inc., and Viacom Inc. (collectively, the “Content Companies”) file these reply comments to the Commission’s Notice of Proposed Rulemaking (“NPRM”) in the above-captioned proceeding, which seeks comment on the future of the 3.7-4.2 GHz spectrum band (“C-band”).¹

To be clear, should the Commission decide to reallocate a portion of the C-band, the Content Companies have not endorsed any plan for repacking the C-band, whether under a market-based or auction mechanism. Regardless of the spectrum-clearing mechanism employed, any such plan should be measured against whether it puts forth specific, enforceable conditions to ensure the continued, reliable distribution of video programming. No plan before the Commission has met that standard.

The record does reflect, however, widespread agreement as to the crucial importance of the C-band for video delivery. Commenters also emphasized the characteristics of the C-band that make it uniquely suited for video content transmissions across the country. Meanwhile, those that continued to propose reliance on alternatives like fiber or other spectrum bands failed to demonstrate that these alternatives have sufficient availability, reliability and cost efficiency to

¹ *In re Expanding Flexible Use of the 3.7 to 4.2 GHz Band et al.*, Order and Notice of Proposed Rulemaking, FCC 18-91, GN Docket No. 18-122 et al. (rel. July 13, 2018) (hereinafter “NPRM”).

replace the C-band's role in video distribution. It thus is not surprising that several commenters joined the Content Companies in urging the Commission to protect existing and future fixed satellite service ("FSS") use in the C-band via enforceable rules and/or license conditions, as part of any plan to repack the C-band to allow mobile use. Finally, a broad consensus of commenters—including both parties that seek to protect incumbent C-band uses and parties seeking a large amount of C-band spectrum for mobile use—made clear that the Commission should not authorize any new fixed point-to-multipoint ("P2MP") transmissions in the C-band.

I. MANY COMMENTERS EMPHASIZED THE IMPORTANCE OF THE C-BAND FOR VIDEO DISTRIBUTION, AND THE LACK OF SUITABLE ALTERNATIVES.

The Content Companies were joined by a wide variety of commenters, including some of the commenters seeking to reallocate large portions of the C-band, in highlighting the critical importance and unique suitability of the C-band for nationwide video content delivery. These commenters described how the C-band forms the backbone of the infrastructure for delivering video content to nearly 120 million American consumers regardless of how they watch television, and that none of the proposed alternative transmission methods or technologies are adequate substitutes for these C-band transmissions.²

For example, the American Cable Association ("ACA") stated that FSS backhauls via the C-band "are nothing less than vitally important for its members," and that "far from lying fallow, the C-band is used extensively for the satellite backhaul of video to MVPDs, broadcast stations

² See, e.g., Comments of the Content Companies, GN Docket No. 18-122 at 2–4 (filed Oct. 29, 2018) (hereinafter "Content Companies Comments"); Comments of the American Cable Association, GN Docket No. 18-122 et al. at 2, 6–7 (filed Oct. 29, 2018) (hereinafter "ACA Comments"); Comments of Comcast Corporation and NBCUniversal Media, LLC, GN Docket No. 18-122 et al. at i-ii (filed Oct. 29, 2018) (hereinafter "Comcast Comments"); Comments of the National Association of Broadcasters, GN Docket No. 18-122 et al. at 3–4 (filed Oct. 29, 2018) (hereinafter "NAB Comments").

and others.”³ Comcast Corporation and NBCUniversal Media, LLC (collectively, “Comcast”) described the C-band as the “ideal medium for transmitting video from studios to distribution centers, as well as for remote newsgathering operations.”⁴ Comcast’s comments also highlighted that the C-band often serves as the “sole link” carrying video programming from one place to another, as well as a critical redundant backup in the case of outages due to weather, fiber cuts, or other unexpected events.⁵ And the National Association of Broadcasters (“NAB”) stated that the C-band is a “key component of a near-flawlessly reliable distribution network that is free of service interruptions and outages that plague fiber optic networks and higher-frequency satellite systems.”⁶

Even wireless companies and other parties strongly advocating for substantial band-clearing recognized the importance of the C-band for video content delivery. The C-Band Alliance (“CBA”) stated that the “record demonstrates that video and audio programmers rely on the unparalleled quality and dependability of C-band FSS to provide video programming to tens of millions of U.S. households.”⁷ And AT&T Services, Inc. (“AT&T”) pointed to the “highly valued C-band uses that have been documented in the record,” including video content delivery,

³ ACA Comments at 2, 6–7.

⁴ Comcast Comments at i.

⁵ Comcast Comments at i-ii.

⁶ NAB Comments at 3–4.

⁷ Comments of the C-Band Alliance, GN Docket No. 18-122 et al. at 12 (filed Oct. 29, 2018) (hereinafter “CBA Comments”); *see also, e.g.*, Joint Comments of Intel Corporation, Intelsat License LLC, and SES Americom, Inc., GN Docket No. 18-122 et al. at 2 (“C-Band infrastructure . . . has become the backbone of U.S. content distribution and an invaluable failsafe for viewers and listeners due to its unmatched reliability and ubiquity.”).

and that “there are a number of use cases and locations where there presently seem to be no comparable alternatives to such C-band uses.”⁸

Despite this widespread recognition of the importance of the C-band for video content delivery, some commenters continued to assert, incorrectly, that fiber, alternative spectrum bands, or enhanced compression technologies could substitute for video content delivery via the C-band.⁹ But these commenters have failed to grapple with the fact that these purported alternatives are no substitute for the ubiquity, reliability, or cost effectiveness of the C-band for video content delivery. As the Content Companies and others have explained, current fiber deployments are not nearly extensive enough to replace nationwide C-band usage (especially but not exclusively in rural areas), and are prone to fiber cuts during, for example, construction projects or severe weather events.¹⁰ Alternative spectrum bands like the Ku- and Ka-bands suffer from atmospheric rain fades, and regardless there has been no showing that these alternative spectrum bands have sufficient existing capacity to replace even current C-band video content transmissions.¹¹ And while compression technologies are improving, they cannot keep pace with the growing need for significant C-band spectrum, particularly given increasing consumer demands for 4K and ultra-HD programming.¹²

⁸ Comments of AT&T Services, Inc. at 10–11, GN Docket No. 18-122 at 10–11 (filed Oct. 29, 2018) (hereinafter “AT&T Comments”).

⁹ *See, e.g.*, Comments of T-Mobile USA, Inc., GN Docket No. 18-122 et al. at 8–9 (filed Oct. 29, 2018); Comments of CTIA, GN Docket No. 18-122 et al. at 17–20 (filed Oct. 29, 2018) (hereinafter “CTIA Comments”); Comments of Qualcomm Incorporated, GN Docket No. 18-122 et al. at 5–6 (filed Oct. 29, 2018).

¹⁰ *See, e.g.*, Content Companies Comments at 3–4; Comcast Comments at 17–20; NAB Comments at 5–6; ACA Comments at 3–4; CBA Comments at 14–15.

¹¹ *See, e.g.*, Content Companies Comments at 3; Comcast Comments at 20–22; CBA Comments at 14–15.

¹² *See, e.g.*, Content Companies Comments at 4; ACA Comments at 7–8; NCTA Comments at 16–17.

In short, the record establishes the unique importance of the C-band for nationwide video content delivery. The Commission thus should reject proposals premised on faulty assertions that alternative transmission methods or other technologies are adequate substitutes for current or future use of the C-band for video content delivery.

II. THE RECORD IS CLEAR THAT THE COMMISSION SHOULD NOT REALLOCATE ANY PART OF THE C-BAND UNLESS IT ADOPTS ENFORCEABLE LICENSE CONDITIONS AND RULES TO PROTECT VIDEO CONTENT DELIVERY.

Given the vital importance of the C-band for video content delivery (among other important uses), any Commission plan to repack the C-band use should be accompanied by rules and enforceable license conditions to protect incumbent users. In initial comments, the Content Companies proposed certain baseline protections that the Commission should implement prior to any spectrum-clearing in the C-band, regardless of the clearing mechanism used. These include limiting band-clearing to no more than 100 MHz of the lowest portion of the C-band, specific and enforceable technical measures to protect FSS uses from harmful interference, lifting the current freeze on new C-band registrations and licenses, and retaining full-band, full-arc protection for FSS use of the C-band.¹³

Several commenters echoed the need for these or similar protections for video delivery in the C-band, including limiting the amount of spectrum cleared and technical rules to protect incumbents from harmful interference. For example, NCTA stated that any band clearing for mobile usage should be limited to an amount that leaves room for existing and future FSS use of the C-band, including backup capacity.¹⁴ Comcast stated that solutions to protect incumbent

¹³ Content Companies Comments at 5–10.

¹⁴ Comments of NCTA - The Internet & Television Association, GN Docket No. 18-122 et al. at 7 (filed Oct. 29, 2018) (hereinafter “NCTA Comments”).

usage “should be codified in the rules and not based on ‘commitments’ or other promises.”¹⁵

And the NAB stated that the Commission should require a “specific, documented, actionable and public plan for accommodating existing users” that accounts for “robust expansion as the video marketplace evolves,” with costs borne by the beneficiaries of spectrum clearing (satellite operators or mobile carriers).¹⁶

As the Content Companies detailed in their initial comments, clearing up to 100 MHz of spectrum for mobile use while protecting existing FSS uses from harmful interference would represent a significant amount of spectrum newly available for mobile usage—but clearing that amount of spectrum will be a difficult task requiring significant planning and attention.¹⁷

Clearing more than 100 MHz of spectrum simply is not possible. The leading full-service satellite transmission company in the United States agreed that 100 MHz—consistent with the original proposal by satellite operators—should be the maximum amount of spectrum cleared for mobile usage.¹⁸ Anything more than that could have severely adverse consequences for video content delivery via the C-band, potentially including “wiping out occasional use businesses such as PSSI Global.”¹⁹ Nor is there any empirical support in the record, including in the CBA’s comments, that clearing 200 MHz or more of C-band spectrum (up to and including the *entire* C-band) for mobile use could be accomplished while sufficiently protecting video delivery via the C-band.²⁰

¹⁵ Comcast Comments at 24.

¹⁶ NAB Comments at 6–8.

¹⁷ Content Companies at 6–7.

¹⁸ Initial Comments of PSSI Global, GN Docket No. 18-122 et al. at 12–13 (filed Oct. 29, 2018).

¹⁹ *Id.*

²⁰ *See, e.g.,* ACA Comments at 11; NAB Comments at 10; NCTA Comments at 7–8.

Several commenters also agreed with the Content Companies that the Commission should retain full-band, full-arc protection for the portion of the C-band that remains available for FSS use, which is “essential to broadcasters and other users that rely on satellite services.”²¹ Perhaps most notably, AT&T, which seeks spectrum for mobile use in addition to currently using C-band spectrum for video content delivery, stated that the loss of full-band, full-arc protection in the FSS portion of the C-band “would stifle the C-band services market and render it unsustainable.”²² Meanwhile, commenters pushing for elimination of full-band, full-arc protection continued to rely on incorrect assertions that use of the C-band is “declining and overstated.”²³ In fact, as the Content Companies and others explained, registered use of the C-band is robust and growing, with estimates of as many as 30,000 total C-band earth stations operating in the United States.²⁴ Even since initial comments were filed in this proceeding, over 1,000 additional fixed earth stations have been registered in the IBFS database, for a total of more than 17,000 registered just since April 1, 2018.²⁵

In addition to the C-band’s critical role in supporting nationwide video content delivery, airline industry commenters raised concerns about the impact of reallocation proposals on their use of the C-band and directly adjacent spectrum for critical airline safety functions. For example, Lockheed Martin stated that the Commission thus far has failed to “ask what impact the

²¹ NAB Comments at 13; *see also, e.g.*, Content Companies Comments at 9–10; NCTA Comments at 24–28; Comcast Comments at 32–35; Comments of the Boeing Company, GN Docket No. 18-122 et al. at 2 (filed Oct. 29, 2018) (hereinafter “Boeing Comments”).

²² AT&T Comments at 15.

²³ T-Mobile Comments at 17–19; *see also, e.g.*, Comments of the Broadband Access Coalition, GN Docket No. 18-122 at 16 (filed Oct. 29, 2018) (hereinafter “BAC Comments”); Comments of Microsoft Corporation, GN Docket No. 18-122 at 5 (filed Oct. 29, 2018).

²⁴ *See, e.g.*, Content Companies Comments at 10; CBA Comments at 12; NAB Comments at 12.

²⁵ *See* FCC Advanced IBFS Search.

loss of C-band satellite services would have on the direct and indirect users of C-band satellite services, and nowhere does [the NPRM] meaningfully consider the protection of users in adjacent-band spectrum (including radio altimeter operations in the 4.2-4.4 GHz band).”²⁶ While the Content Companies do not have firsthand experience with the 4.2-4.4 GHz adjacent band concerns raised by Lockheed Martin and others, their comments underscore the complexity of reallocating portions of the C-band to mobile broadband use.

III. THERE IS A BROAD CONSENSUS THAT THE COMMISSION SHOULD NOT ALLOW P2MP TRANSMISSIONS IN THE C-BAND.

If there is one thing that incumbent users of the C-band and parties seeking a mobile allocation of C-band spectrum agreed upon in their comments, it was that the Commission should *not* allow P2MP transmissions (i.e., fixed wireless broadband) in a repacked C-band. In addition to the Content Companies, the CBA, T-Mobile, CTIA, NCTA, AT&T, and several other commenters established a broad consensus that the Commission should reject the Broadband Access Coalition’s (“BAC”) proposal to permit P2MP operations in the C-band.²⁷

As the Content Companies and several other commenters explained, P2MP transmissions necessarily emit high-powered signals in many directions, which would require the elimination of full-band, full-arc protection in the C-band and cause significant harmful interference to existing FSS usage.²⁸ Indeed, even commenters seeking to clear significant amounts of spectrum for mobile use agreed that to introduce P2MP into the C-band would effectively prevent

²⁶ Comments of Lockheed Martin Corporation, GN Docket No. 18-122 at 3 (filed Oct. 29, 2018); *see also, e.g.*, Boeing Comments at 2–7.

²⁷ *See, e.g.*, Content Companies Comments at 10–12; CBA Comments at 39–52; T-Mobile Comments at 20–22; CTIA Comments at 25–27; NCTA Comments at 21; AT&T Comments at 13–15.

²⁸ *See, e.g.*, Content Companies Comments at 10–12.

incumbent FSS users from clearing spectrum for mobile usage.²⁹ The ACA, for instance, therefore agreed with the Content Companies that the Commission must choose between authorizing mobile or fixed wireless usage of the C-band.³⁰

The BAC and other parties seeking P2MP use in the C-band continued to assert that P2MP could co-exist with FSS use in the C-band via existing coordination processes, but still failed to explain credibly how this coordination could be accomplished, particularly on the extremely short notice that video programmers rely on to ensure uninterrupted coverage for live sporting and breaking news events transmitted via the C-band.³¹ For instance, the BAC asserted that deployment of P2MP (on both a co-channel and non-co-channel basis) in the C-band “will not affect FSS use” of the C-band, but paradoxically proposed to eliminate full-band, full-arc protection and require FSS stations to “use the frequencies for commercial or revenue-generating purposes at least daily” in order to qualify for any interference protection.³² Proposals for sharing of P2MP with FSS also overlook the role of the C-band in enabling production of breaking news, sporting events, and other on-the-spot coverage—a process that requires both uplinking and downlinking of content from remote locations.³³

The record thus is clear that the Commission cannot, as a matter of physics, allocate C-band spectrum for mobile use while at the same time authorizing new P2MP usage in the band *and* protecting the U.S. video delivery systems. To do so would cause significant harmful

²⁹ See CBA Comments at 40–41.

³⁰ See ACA Comments at 2.

³¹ See, e.g., Comments of the Broadband Access Coalition, GN Docket No. 18-122 at 15 (filed Oct. 29, 2018) (hereinafter “BAC Comments”).

³² BAC Comments at 15–17.

³³ As Comcast explains, “Programmers and their viewers also rely on the C-Band for itinerant uses and remote programming, including to report on live, breaking news and emergencies.” Comcast Comments at 20.

interference to video content delivery via the C-band, and would undermine the Commission's goals to make additional spectrum available for 5G services.

CONCLUSION

While the Content Companies remain supportive of the Commission's efforts to accommodate 5G deployments with additional spectrum, the record is clear that these efforts must not come at the cost of ubiquitous and reliable video content delivery via the C-band that Americans enjoy today. Any proposal to clear C-band spectrum for mobile use must therefore be accompanied by enforceable rules and license conditions to ensure that incumbent C-band users, including the Content Companies, are adequately protected from harmful interference *and* that sufficient spectrum remains available for video content delivery—today and in the future—to accommodate ever-growing demand for higher definition programming. Finally, the Commission should adopt the broad record consensus to reject the proposal to introduce P2MP transmissions into the C-band, which would only complicate and undermine the Commission's efforts to reallocate some of the band for mobile uses.

Respectfully submitted,

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