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

In the Matter of:	)	
	)	
Expanding Use of the 12.7-13.25 GHz Band for Mobile Broadband or Other Expanded Use	)	GN Docket No. 22-352
	)	
	)	

REPLY COMMENTS OF THE NATIONAL ASSOCIATION OF BROADCASTERS

I. INTRODUCTION AND SUMMARY

The National Association of Broadcasters (NAB)[1] hereby replies to comments submitted in response to the Commission's Notice of Proposed Rulemaking in the above captioned matter.[2] NAB again emphasizes the importance of protecting broadcasters' existing uses that cannot be relocated elsewhere, including both fixed and mobile operations, and of new entrants covering all costs associated with repacking or relocation of incumbent facilities. This protection should not come with an arbitrary end date that assumes without evidence that broadcast operations can be relocated out of the band entirely at some point. NAB notes that many comments support a need for studies and analysis prior to developing updated

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[1] The National Association of Broadcasters (NAB) is the nonprofit trade association that advocates on behalf of free local radio and television stations and broadcast networks before Congress, the Federal Communications Commission and other federal agencies, and the courts.

[2] *Expanding Use of the 12.7-13.25 GHz Band for Mobile Broadband or Other Expanded Use*, Notice of Proposed Rulemaking, GN Docket No. 22-352, FCC 23-36 (May 19, 2023) (NPRM).

rules for the 12.7 GHz band. Based on those concerns, NAB urges the Commission not to speed this docket to completion by deferring key technical decisions to unmoderated work groups or by making unsupported assumptions regarding future operations in the band. Doing so could invite legal and practical challenges as the Commission has seen in past reallocation efforts.[3]

II. INCUMBENT FIXED SERVICE OPERATIONS CANNOT BE COMPLETELY CLEARED FROM THE BAND

NAB emphasizes that wholesale relocation of broadcasters out of the 12.7 GHz band will not be possible.[4] As NAB previously commented, the Commission must first confirm the extent of incumbent use in the band by obtaining certifications from licensees concerning existing Broadcast Auxiliary Service (BAS) operation. Then, it must conduct comprehensive coordination studies to ascertain whether those operations can reasonably be relocated to other bands or might be repacked within the 12.7 GHz band. Only then can it make an informed decision concerning which facilities might be relocated from the 12.7 GHz band and determine the amount of dedicated spectrum required to accommodate those BAS facilities that cannot be relocated to other bands.

The number of BAS licenses in the 12.7 GHz band is relatively small, but those authorized facilities are essential to broadcast operations, providing studio-transmitter links and other functions that, if interrupted, would prevent broadcasters from providing programming and emergency information to the public. CTIA's repeated claim (echoed by

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[3] *See, e.g.*, *AT&T Servs., Inc., v. FCC*, 21 F.4th 841 (D.C. Cir. 2022).

[4] Reply Comments of the National Association of Broadcasters, *Expanding Use of the 12.7-13.25 GHz Band for Mobile Broadband or Other Expanded Use*, Notice of Inquiry and Order, GN Docket No.22-352, January 10, 2023 (NAB NOI Reply Comments).

other commenters)[5] that "[BAS] fixed links … could be moved either to different fixed microwave service bands or to alternative media such as fiber"[6] is completely unsupported. Similarly, Comsearch's bald claim that "all terrestrial incumbents in the 12.7 GHz band can be cleared by relocating to other bands, by moving to other media such as fiber or by turning down altogether . . . depending on technical considerations of the relocated system"[7] is also offered entirely without support and is wholly impractical. If the Commission or other stakeholders want to propose specific bands to which broadcast operations could be relocated – supported by analysis demonstrating that those bands have available capacity adequate for broadcasters' needs – NAB would enthusiastically engage in a productive fact-based discussion. But blithely demanding that broadcasters click their heels together three times to be relocated to other unspecified spectrum bands is not a serious proposal.

The reality is that, in many cases, broadcasters use the 12.7 GHz band precisely because other frequency bands *are not available* due to frequency congestion or regulatory restrictions. Similarly, the remote locations of many broadcast sites are not served by fiber. No one can know what BAS facilities can be relocated until those facilities are inventoried and analyzed, and the Commission must take those first steps not only to identify candidate facilities for relocation but also to provide new entrants with the estimated costs of their possible relocation.

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[5] *See e.g.*, Comments of T-Mobile at 8-9, GN Docket No. 22-352, (Aug. 9, 2023).

[6] Comments of CTIA at 8, GN Docket No. 22-352, (Dec. 12, 2022); Comments of CTIA at 8, GN Docket No. 22-352, (Aug. 9, 2023).

[7] Comments of Comsearch, A Commscope Company at 6, GN Docket No. 22-352, (Aug. 9, 2023).

III. INTERFERENCE PROTECTION MUST NOT ARBITRARILY SUNSET

NAB disagrees with comments supporting an arbitrary sunset date for the fixed and mobile terrestrial incumbents in this band — a date after which incumbents may not cause harmful interference to new band entrants (and presumably are no longer protected from such interference).[8] As previously discussed, fixed BAS links in the 12.7 GHz band provide the essential connectivity that allows a station's programming to reach its transmitter site, TV Translators, cable headends, and other functions without which a station could not serve its audience. No commenter has provided analysis demonstrating whether or how incumbent fixed BAS facilities can be accommodated in other spectrum bands or media, a prerequisite to incumbent band clearing, and there is no reason to believe that broadcasters' reliance on spectrum for these functions has an expiration date.

NAB agrees with the Society of Broadcast Engineers that, "the goal when modifying any existing spectrum allocation should be minimizing disruption to incumbent licensees, who have engendered reliance interests in their incumbent authorizations."[9] While relocation to other spectrum or media may be possible in some cases, some incumbent operations will have no alternative but to continue operations within the 12.7 GHz band. Fixed BAS operations that cannot reasonably be relocated or transitioned must be grandfathered and protected fully from interference from new entrants. The Commission should mandate coordination and cooperation between BAS licensees and new entrants in the 12.7 GHz band with reasonable time periods (such as 30 days) required for advanced notice and testing of

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[8] See, *e.g.*, Comments of T-Mobile at 8, GN Docket No. 22-352, (Aug. 9, 2023).

[9] Comments of The Society of Broadcast Engineers, Inc. at 3, GN Docket No. 22-352, (Aug. 9, 2023).

new entrant's planned operation. If such testing reveals interference, then the new entrant may not bring the site into service until the interference is mitigated.

Mobile BAS operations (*i.e.*, electronic newsgathering or ENG) must similarly be protected indefinitely. The spectrum used for electronic newsgathering is increasingly congested and encumbered by interference, which the FCC has been unable or unwilling to mitigate. An arbitrary sunset will further constrict access to the available ENG spectrum. If mobile operation by new entrants is authorized, guard band spectrum or a preclusion zone in the vicinity of BAS receivers could be required. Further, and as discussed below, the extreme power levels being proposed by some commenters could require substantial measures to avoid interfering with or degrading sensitive BAS receivers.

IV. POWER LEVELS MUST BE REASONABLE IN ORDER TO PROTECT SENSITIVE RECEIVERS

Although the NPRM proposed high power levels of up to +75 dBm/100 MHz (31.6 kilowatts) for base stations, a number of commenters seek even greater power (+85 dBm/100 MHz or 316 kilowatts).[10] Depending upon the antenna configuration and other factors, that amount of radiated power could exceed the limits for safe occupational exposure at a distance of 22.4 meters (73 feet) or more and exceed the FCC limits for general population exposure at a distance of 50 meters (164 feet) or more.[11] As Nokia observes, the combination of high power levels potentially creating large impact areas and a service that may deploy tens or hundreds of thousands of sites necessitates that the Commission

[10] FCC, OET Bulletin No. 65 (Edition 97-01) at 19.

[11] 47 CFR §1.1310

consider whether its rules may have a cumulative effect on the environment.[12] Puzzlingly, the NPRM does not seek comment on such effects.

NAB shares DirecTV's concerns[13] about out-of-band emissions and blocking interference to other services, including incumbent services such as BAS. Excessive RF power at a nearby BAS receiving system from new entrant transmitters may be sufficient to induce degradation and interference if not cause thermal burn-out. NAB believes that the transmitter filtering required to suppress in-band power of 85 dBm/100 MHz (65 dBm/1 MHz) to the proposed out-of-band power limit of -13 dBm/MHz[14] will be difficult or impractical since at least 78 dB of suppression will be needed. NAB's experience with high-power filtering suggests that level of suppression will be very difficult to achieve and maintain, especially over a range of environmental conditions. Even if the transmit system can achieve the required out-of-band suppression, the corresponding requirement for receiver rejection of a nearby 65 dBm/MHz signal is likely to be impractical. For example, the sensitivity of a BAS receiver is expected to be perhaps -97 dBm/MHz with an allowable power density in the adjacent band of perhaps -77 dBm/MHz, thus requiring that emissions from new entrants in adjacent spectrum be suppressed by 80 dB or more.[15] Based on NAB's experience, this amount of suppression cannot be achieved at the BAS receiver without both a high-quality filter and a guard band of 60 MHz or more.

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[12] Comments of Nokia, at 6, GN Docket No. 22-352 (Aug. 9, 2023). (*See also* 42 USC 4321 *et seq*.).

[13] Comments of DirecTV, LLC at 4, GN Docket No. 22-352, (filed Aug. 9, 2023).

[14] NPRM ¶ 125.

[15] Assuming a separation distance of 10 meters between the new entrant transmit antenna and the BAS receive antenna having 20 dBi gain, suppression of 87 dB is needed to prevent interference.

As stated above, NAB urges the Commission to mandate coordination and cooperation between BAS licensees and new entrants in the 12.7 GHz band with reasonable time periods (such as 30 days) required for advanced notice and testing of new entrant's planned operation. If such testing reveals interference, then the new entrant must not bring the site into service until the interference is mitigated. Limiting the power spectral density in the 12.7 GHz band to +55 dBm/MHz would be a prudent means of limiting both potential interference to incumbent facilities and human exposure to RF energy.

V. SETTING TECHNICAL RULES FOR NEW ENTRANTS MAY BE PREMATURE

Many commenters expressed concern about the Commission getting ahead of technology, standards, and industry needs with this proceeding. NAB agrees that the Commission should be neither overly prescriptive or restrictive, or it risks hindering the services it seeks to facilitate. The Commission must also strike a balance between the impacts on incumbent users and allowing new technologies to flourish and ensure that the Commission and incumbent users have an adequate understanding of the impacts of allowing new entrants into the band. While NAB claims no particular expertise in 5G wireless or the standards-setting process for the next generation of mobile broadband, a number of other commenters that do have such expertise caution against speeding toward technical rules. Specifically:

- CTIA urges the commission to "maintain its focus on efforts to advance mid-band spectrum priorities below 8 GHz."[16]
- 5G Americas states that "it is premature to propose technical rules for the 12.7 GHz band . . . [while] . . . [s]tandards-setting bodies, academic research institutions, wireless ecosystem stakeholders and leading mobile wireless associations are still studying the

[16] Comments of CTIA at 2, GN Docket No. 22-352, (Aug. 9, 2023).

technical characteristics and optimal bands for 6G . . . technical rules and a licensing framework for 12.7 GHz are premature at this point."[17]

- Qualcomm comments that "the proposals in the instant NPRM reflect a foundational misunderstanding of the role the 13 GHz band can have in network deployments,"[18] urging that the Commission seek input on a number of additional items prior to adopting any rules.
- AT&T cautions that "more work is needed before the time is ripe to adopt technical and operating rules for the 12.7 GHz band."[19]

We urge the Commission to heed these cautions rather than racing ahead with technical rules that may prove obsolete by the time new entrants commence deployment.

VI. NEW ENTRANTS SHOULD BE LIMITED TO LICENSED SERVICES

Various commenters advocate that the 12.7 GHz band become available for 5G and future generations of mobile broadband, fixed wireless access (FWA), Multichannel Video Distribution and Data Service (MVDDS), satellite, or shared access (including unlicensed operation). At least in areas where fixed BAS facilities must remain in operation and in the spectrum adjacent to the proposed band segment reserved for mobile BAS, NAB urges the Commission to permit only licensed use. Broadcasters will need to coordinate with new entrants to avoid interference from both co-channel and adjacent-channel operations. Coordination with unlicensed users is difficult or impossible because unlicensed uses are unpredictable in both time and location and because unlicensed users are often ill-informed about their responsibilities concerning interference.

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[17] Comments of 5G Americas at 2-3, GN Docket No. 22-352, (Aug. 9, 2023).

[18] Comments of Qualcomm Incorporated at 6, GN Docket No. 22-352, (Aug. 9, 2023).

[19] Comments of AT&T Services, Inc. at 6, GN Docket No. 22-352, (Aug. 9, 2023

As NAB commented previously, licensed use helps limit interference, reduces complexity in frequency coordination, and reduces implementation and transition costs for all users.[20] New entrants must coordinate with incumbent BAS users using well-established methods[21] and any dynamic sharing alternatives[22] must be limited to protection of BAS fixed links and must not be used to protect ENG operations.[23]

VII. CONCLUSION

NAB agrees that it may ultimately be possible to relocate broadcasters to a smaller portion of the 12.7 GHz band, as has occurred in other spectrum reallocation proceedings impacting BAS operations. The 550 MHz of spectrum under consideration in the proceeding is sufficient to accommodate significantly expanded uses while still protecting critical BAS (including both fixed and mobile) operations that cannot be reasonably relocated.

Broadcasters continue to look forward to working with the Commission and reasonable stakeholders to develop a balanced approach to the 12.7 GHz band that will accommodate expanded operations while ensuring that broadcasters retain reliable access to spectrum to cover live events and breaking news, and that broadcasters do not bear any costs associated with relocation.

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[20] Comments of The National Association of Broadcasters, GN Docket No. 22-352, at 7-9 (filed August 9, 2023).

[21] *See*, *e.g.*, 47 CFR § 101.103(d).

[22] NPRM at ¶ 87.

[23] *Id.* at ¶ 91.

Respectfully submitted,

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