

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of)	
)	
Use of Spectrum Bands Above 24 GHz For Mobile Radio Services)	GN Docket No. 14-177
)	
Amendment of Parts 1, 22, 24, 27, 74, 80, 90, 95, and 101 To Establish Uniform License Renewal, Discontinuance of Operation, and Geographic Partitioning and Spectrum Disaggregation Rules and Policies for Certain Wireless Radio Services)	WT Docket No. 10-112
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**REPLY COMMENTS OF THE
TELECOMMUNICATIONS INDUSTRY ASSOCIATION**

The Telecommunications Industry Association (“TIA”)¹ hereby submits these reply comments in response to the Commission’s *Third Further Notice of Proposed Rulemaking* (“*Third FNPRM*”)² in the above-captioned proceeding. In these reply comments, TIA urges the Commission to avoid imposing device operability requirements that span across different millimeter-wave bands, to consider certain viable approaches for coordination in the lower 37 GHz band, and to avoid expanding the *Third FNPRM*’s limited compromise proposal for FSS earth stations in the 50 GHz band at least until UMFUS service rules have been adopted for the 50 GHz band.

¹ TIA is the leading trade association for the information and communications technology (“ICT”) industry, representing companies that manufacture or supply the products and services used in global communications across all technology platforms. TIA represents its members on the full range of policy issues affecting the ICT industry and forges consensus on industry standards.

² [Third Report and Order, Memorandum Opinion and Order, and Third Further Notice of Proposed Rulemaking, Use of Spectrum Bands Above 24 GHz For Mobile Radio Services](#), et al., GN Docket No. 14-177, rel. June 8, 2018, FCC 18-73 [“Third FNPRM”].

I. The Commission Should Not Impose Device Operability Requirements Across Different UMFUS Bands.

The Commission should not adopt operability requirements that extend across multiple different UMFUS bands. Specifically, TIA does not support U.S. Cellular’s proposal to require that any device capable of operating in any of the 20 GHz bands – lower 24 GHz, upper 24 GHz, 26 GHz, 28 GHz – be capable of operating in all such bands, nor its similar proposal to bind the 37 GHz, 39 GHz, and 42 GHz bands together.³ Of course, the record shows and the Commission has recognized that devices in the 24 GHz, 26 GHz, and 28 GHz bands could potentially share a common tuning range,⁴ and a similar suggestion has been made for the bands from 37-43 GHz.⁵ Moreover, the ICT industry has a very strong market incentive to develop radios that operate across multiple bands for reasons of lowering device cost, power consumption, etc. Nevertheless, imposing an *ex ante* multi-band operability requirement through regulation would be inappropriate for several reasons.

First, the various bands are at very different stages of development and deployment. Imposing a multi-band operability requirement on bands that are soon approaching the auction stage could result in unanticipated delays in the rollout of millimeter-wave services including 5G networks. Indeed, the Commission’s 28 GHz auction will proceed in the next few months with the 24 GHz auction expected to follow soon afterwards, and ICT manufacturers fully expect that device deployments will begin in these bands shortly thereafter. Introducing a new multi-band operability requirement that affects these bands at such a late stage would likely require existing device plans to be reconfigured or at least re-optimized – despite the theoretical potential for a

³ [Comments of United States Cellular Corporation](#) at 9-11 [“U.S. Cellular Comments”].

⁴ Third FNPRM ¶ 77 (citing comments from Nokia and Intel).

⁵ [Comments of Ericsson](#) at 10 [“Ericsson Comments”].

common tuning range – potentially delaying the availability of equipment in the marketplace. Given the clear desire of the Commission to further U.S. leadership in the race to 5G, which TIA fully supports, introducing an unexpected technical requirement at such a late stage of the process would be counterproductive.

Second, while it is simple to say that the 37 GHz, 39 GHz, and 42 GHz bands could potentially fall into a common tuning range – or the 24, 26, and 28 GHz bands for that matter – the practical engineering reality may not be so straightforward. For example, the Commission is still working through various issues in these bands that include at least one proposed complete alternative use for the 26 GHz band, a variety of potential mechanisms for sharing the lower 37 GHz band, potential repacking of incumbents in the 39 GHz band, and radio astronomy in the 42 GHz band. While establishing consistent UMFUS technical rules across as many of these bands as possible would seem like a very positive outcome, it is far too early to establish that this will actually happen. As just one example, protection of other services for the 42 GHz band may eventually be implemented through more restrictive out-of-band-emission (OOBE) limits, which might in turn require a radio design that is sub-optimal for the 37 GHz and 39 GHz bands. Operability requirements imposed with the best of intentions could unintentionally cause the potential of various bands to be reduced, or in the worst case could result in first-generation devices being banned from other bands or deprecated entirely due to later rules changes, imposing costs on manufacturers and consumers alike.

Third, while U.S. Cellular cites the experience of the lower 700 MHz band as a basis for imposing such a requirement,⁶ the market reality in the UMFUS bands is likely to be quite different for several reasons. To begin with, as TIA explained in our recent comments on the

⁶ U.S. Cellular Comments at 11-12.

Fourth Further Notice of Proposed Rulemaking in this proceeding, the Commission is making at least 32 different blocks of spectrum available across the UMFUS bands, and potentially even many more if it adopts its proposal (which TIA does not support) to standardize on 100 MHz block sizes.⁷ Unlike the lower 700 MHz band that was essentially divided into five blocks – with some blocks such as Block A that faced potential interference issues -- there is every reason to expect that both large and small market participants will have robust opportunities to purchase licenses of every kind across all of the UMFUS bands, including both potentially impaired licenses as well as many that are completely unimpaired. Next, in the lower 700 MHz case some global technical standards with various overlapping band classes did not always match up neatly with the FCC’s auction plans and goals, whereas the current technical standards are flexible and built around fixed block sizes – 100 MHz, 200 MHz, 400 MHz – that reduce the likelihood of significant post-auction technical obstacles. Finally, the UMFUS bands reflect significant global harmonization that will likely result in a broad ecosystem of equipment even if some major U.S. carriers do not purchase licenses in one of the UMFUS bands. In short, the speculative benefits of a multi-band operability requirement do not outweigh the known risks.

II. The Commission Should Carefully Consider Possible Options for the Lower 37 GHz Sharing Mechanism.

Several commenters have provided significant proposals addressing the lower 37 GHz band. Intel and Cisco have submitted a joint proposal providing significant additional details, and some modifications, to an earlier Intel proposal.⁸ Their joint proposal is built around site

⁷ [Comments of the Telecommunications Industry Association](#), filed Sept. 17, 2018 in GN Docket No. 14-177, at 3-5 [“TIA Fourth FNPRM Comments”].

⁸ [Joint Comment of Intel Corporation and Cisco Systems, Inc.](#) [“Intel-Cisco Joint Comments”].

licenses defined by polygons – a basic structure Ericsson also supports⁹ – and recommends two administrative categories of licenses: general site (GS) and property zone (PZ).¹⁰ Qualcomm, meanwhile, proposes a “medium reservation mechanism” that combines the use of a technology-neutral waveform and energy-based sensing.¹¹ These proposals are worthy of appropriate consideration by the Commission.

However, the Commission should also carefully consider the implications of any proposals that would require a mobile or transportable station to implement new technical features. In the *Third Report and Order*, the Commission has now adopted an operability requirement that applies to all devices in the 37 and 39 GHz bands,¹² so any special requirements that the agency adds for devices to promote sharing in the lower 37 GHz band would thereby affect the design of any device capable of operating in the upper 37 GHz and 39 GHz bands. Again, this could potentially delay the Commission’s efforts to make these bands, especially the 39 GHz band, auction-ready in the near term.

III. The Commission Should Not Broaden Its Proposed Compromise Approach to the 50 GHz Band.

In our initial comments, TIA endorsed the Commission’s proposed compromise of allowing a limited number of fixed-satellite service earth stations to operate in the 50.4-51.4 GHz band segment.¹³ However, some parties seek to upset this balance by pushing for the ability to

⁹ Ericsson Comments at 12.

¹⁰ Intel-Cisco Joint Comments at 6-8.

¹¹ [Comments of Qualcomm Incorporated](#) at 11-12.

¹² Third Report and Order, app. A (adding 47 C.F.R. § 30.208).

¹³ [Comments of the Telecommunications Industry Association](#) at 6-7.

add more earth stations than currently contemplated.¹⁴ It would be premature at best to entertain such proposals at this time. Instead, the Commission should focus on completing its work to establish UMFUS services rules in the 50 GHz band before considering any further modifications to its limited, compromise FSS proposal.

IV. Conclusion

TIA appreciates the Commission's efforts in this proceeding, and urges the Commission to carefully consider the impact on devices before adopting any proposals from the record that may now be under consideration.

Respectfully submitted,

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¹⁴ See [Comments of Space Exploration Technologies Corp.](#), [Comments of Viasat, Inc.](#), [Comments of the Boeing Company](#), [Comments of SES Americom, Inc.](#) and [O3B Limited](#).