Before the
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C. 20554

In the Matter of	)	
	)	
Revision of Part 15 of the Commission's Rules to Permit Unlicensed National Information Infrastructure (U–NII) Devices in the 5 GHz Band	)	ET Docket No. 13-49

To: The Commission

REPLY COMMENTS OF THE
TELECOMMUNICATIONS INDUSTRY ASSOCIATION

The Telecommunications Industry Association (TIA)[1] hereby submits reply comments to the Federal Communications Commission (Commission) in the above-captioned proceeding.[2]

I. Strong Consensus Exists On Many 5 GHz Band Issues

To again draw upon the words of the D.C. Circuit (paraphrasing Voltaire), "[t]he best must not become the enemy of the good, as it does when the FCC delays making any

[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. Among their numerous lines of business, TIA member companies design, produce, and deploy a wide variety of devices with the goal of making technology accessible to all Americans.

[2] Revision of Part 15 of the Commission's Rules to Permit Unlicensed National Information Infrastructure (U-NII) Devices in the 5 GHz Band, Notice of Proposed Rulemaking, 28 FCC Rcd 1769 (2013) ("*NPRM or* "Notice"*)*.

determination while pursuing the perfect [outcome]."[3] The FCC can take immediate action in this proceeding on set of rule changes for which there is unanimous agreement. The Commission should work to move forward on areas where there is consensus based on the record.

The 5GHz band can be much more efficiently utilized, especially as WiFi demand continues to grow and requires more spectrum. The benefits of WiFi are known to all, but it is crucial that the Commission act now to promote the 5 GHz band because of the importance of WiFi. Although a number of issues remain to be resolved, a core group of issues exists upon which there is uniform agreement among the stakeholders. As the 2.4 GHz band is becoming exhausted, the appeal of the 5 GHz band as an ideal expansion band is becoming more apparent. Standards are already in place for the 5 GHz band, and devices are already being built for it. Much of the band is globally harmonized, and Europe is considering expanding the 5 GHz footprint as well.

On a technology neutral basis, the Commission should strive to provide U-NII devices access to the broadest possible swath of contiguous spectrum under harmonized rules that will accommodate the evolution towards substantially wider channel bandwidths and the efficiency that result from those wider channels.[4] The Commission should learn from the congestion occurring in the 2.4 GHz band and act to prevent congestion in the 5 GHz band. At the same time the Commission should protect the interests of incumbent users. By first addressing the

[3] TIA at 8; Revision of Part 15 of the Commission's Rules to permit Unlicensed National Information Infrastructure (U-NII) Devices in the 5 GHz Band, ET Docket No. 13-49, (Filed May 28, 2013) ("TIA Comment") citing *MCI Telecommunications Corp. v.- FCC*, 627 F.2d 322, 341-42 (D.C. Cir. 1980).

[4] TIA Comment at 8; Ericsson at 5-6, Revision of Part 15 of the Commission's Rules to permit Unlicensed National Information Infrastructure (U-NII) Devices in the 5 GHz Band, ET Docket No. 13-49, (Filed May 28, 2013) ("Ericsson Comment").

issues where there is industry consensus, the Commission can demonstrate that it is able to move forward and provide balance within the band.

Regarding WRC-15, TIA notes that NTIA has set forth milestones throughout 2013 and 2014 for coordinating international studies needed in preparation for the WRC-15. NTIA and FCC work is positioning the United States for work in the ITU-R, developing domestic approaches to sharing that can be provided at the WRC-15. TIA concurs with other commenters that the final outcome of the FCC 5 GHz proceeding will be an integral input to preparations for WRC-15, and thus we support the FCC moving this proceeding expeditiously.[5]

As TIA noted in our initial comment "[S]everal of the issues raised by the NPRM have been the subject of extensive study by the Commission, other governmental stakeholders and industry over the course of several years. In those cases, the Commission can and should take advantage of that experience to promptly address the proposals set forth in the NPRM and issue appropriate changes to the 5 GHz rules and implementing procedures. The public interest is best served if the FCC can adopt decisions for which the record is well developed and/or for which there is general agreement among commenters:[6]

- Access to an additional 195 MHz on unlicensed spectrum in the 5 GHz band on a technological neutral basis.

[5] TIA at 7; NCTA at 13, Revision of Part 15 of the Commission's Rules to permit Unlicensed National Information Infrastructure (U-NII) Devices in the 5 GHz Band, ET Docket No. 13-49, (Filed May 28, 2013) ("NCTA Comment"), FCC should use WRC-15 to promote robust unlicensed operations in 5 GHz. Ericsson Comment at 3, Ericsson posits that the ideal manner for the Commission to further the U.S. position at WRC-15 is to move this proceeding forward expeditiously; developing domestic approaches to sharing that can be shared at WRC-15 in furtherance of America's global leadership with respect to the 5 GHz band.

[6] TIA Comment at 8-9.

- Extend U-NII-3 by 25 Megahertz.[7]
- Amend 15.407(a)(3) to provide that maximum output power is up to 1W.[8]
- Adopt proposed changes to power spectral density requirements.[9]
- Require all U-NII devices to have minimum 6-dB bandwidth of 500 kilohertz changing the minimum emissions bandwidth limit from 26-dB to 6-dB.[10]
- Adopt proposed modification of measurement bandwidth in 15.407(a)(5).[11]

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[7] Notice ¶29; IEEE 802 Comment at 17, 26 improves U-NII access to the band Revision of Part 15 of the Commission's Rules to permit Unlicensed National Information Infrastructure (U-NII) Devices in the 5 GHz Band, ET Docket No. 13-49, (Filed May 28, 2013) ("IEEE 802 Comment"); WFA at 11-12, rules will be "clear and consistent" Cisco Comment at 42, Revision of Part 15 of the Commission's Rules to permit Unlicensed National Information Infrastructure (U-NII) Devices in the 5 GHz Band, ET Docket No. 13-49, (Filed May 28, 2013) ("Cisco Comment"); TIA at 11; Ericsson at 4; NCTA at 17; Motorola Mobility at 2-3, Revision of Part 15 of the Commission's Rules to permit Unlicensed National Information Infrastructure (U-NII) Devices in the 5 GHz Band, ET Docket No. 13-49, (Filed May 28, 2013) ("Motorola Mobility Comment"); Fastback at 2, Revision of Part 15 of the Commission's Rules to permit Unlicensed National Information Infrastructure (U-NII) Devices in the 5 GHz Band, ET Docket No. 13-49, (Filed May 28, 2013) ("Fastback Comment"); First Step at 3 Revision of Part 15 of the Commission's Rules to permit Unlicensed National Information Infrastructure (U-NII) Devices in the 5 GHz Band, ET Docket No. 13-49, (Filed May 28, 2013) ("First Step Comment"); WISPA at 12, Revision of Part 15 of the Commission's Rules to permit Unlicensed National Information Infrastructure (U-NII) Devices in the 5 GHz Band, ET Docket No. 13-49, (Filed May 28, 2013) ("WISPA Comment").

[8] Notice at ¶30; IEEE 802 Comment at 17; WFA Comment at 12; Cisco Comment at 43; Ericsson Comment at 5.

[9] Notice at ¶30; IEEE 802 Comment at 17; WFA Comment at 12; Cisco Comment at 44; Ericsson Comment at 5.

[10] Notice at ¶32; IEEE 802 Comment at 18; WFA Comment at 12-13, 20; Cisco Comment at 45 Cisco would apply this rule to ALL 5 GHz U-NII bands to help ensure that 5 GHz does not become congested with narrow bandwidth applications for which other spectrum is available. *See also more generally* TIA at 8, FCC should act to "minimize congestion" as is occurring in 2.4 GHz.

[11] Notice at ¶31; IEEE 802 Comment at 18; WFA Comment at 12; Motorola Mobility Comment at 4; Cisco Comment at 46, noting there is a separate open docket on testing procedures and seeking clarification that nothing decided in the 5 GHz proceeding will impact a manufacturer's ability to demonstrate compliance under ANSI C63.10-2009. Cisco further notes that the issues raised by multiple antenna ports in MIMO antenna configurations are being

- Adopt more restrictive emissions limits in 15.407(b), concurring with the FCC's approach to unwanted emissions and requiring emissions below -17 dBm/MHz within 10 MHz of the band edge, and below -27 dBm/MHz beyond 10 megahertz of the band edge.[12]
- Adopt proposed Bin 1 changes to DFS sensing rules and test procedures.[13]
- Adopt 'Miscellaneous Rule Modifications' (Notice Para 113).[14]
- Adopt proposed transition plan.[15]

II. Identifying and Grouping Issues to be Resolved Quickly

TIA recommends that the FCC identify and group related issues into modules that can be resolved quickly. By allowing for a series of partial decisions in the immediate term, consumers

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discussed separately from this docket, and should be resolved in a future KDB. Until that issue is resolved, the FCC should clarify that using the 1 MHz bandwidth for testing does not require determining if any part of the signal from the antenna port is correlated across the band.

[12]Notice at ¶34; IEEE 802 Comment at 19; Cisco Comment at 47; Motorola Mobility Comment at 4, Agreeing that there is no adverse effect to Wi-Fi devices; WFA at 13; Cisco at 47 noting that over time, RF environment will improve.

[13]Notice at ¶73; IEEE 802 Comment at 23; WFA Comment at 9, 17; Cisco Comment at 28-29.

[14] Notice at ¶ 113; IEEE 802 Comment at 24-25; WFA Comment at 31; Cisco Comment at 51-52; TIA Comment at 11; Ericsson Comment at 12.

[15] Notice at ¶114, adopt plan after 12 months, new certifications will have to comply to new rules; 24 months from date of rule change to cessation of permissive changes to formerly compliant equipment. IEEE 802 Comment at 25; WFA Comment at 31; Cisco Comment at 52, noting that the timeline should begin upon the effective date of the new or modified rule, not Federal Register publication; Ericsson Comment at 12, noting that existing devices should be grandfathered; NCTA Comment at 13,18, allow "reasonable" period for manufacturers to adapt and recommending extending the time to 18 month; *But see* Cambium at 5 Revision of Part 15 of the Commission's Rules to permit Unlicensed National Information Infrastructure (U-NII) Devices in the 5 GHz Band, ET Docket No. 13-49, (Filed May 28, 2013) ("Cambium Comment") two years is not long enough and need a longer period; WISPA Comment at 18-19 asking to add 12 months on to each of the FCC proposals.

and business users will benefit immediately.[16] Then the FCC can turn their focus to additional more complex issues.

- **U-NII-2C/3 & Resolving TDWR Interference Module**. TIA notes significant support for FCC proposals and potential rule changes.[17] There is significant agreement around adoption of Section 15.407, together with an improved security requirement and adoption of DFS improvements. These changes, taken together, will resolve enforcement cases that have arisen. The record is well developed and the FCC could help U-NII manufactures by eliminating uncertainty.
- **U-NII-4 Module.** Similarly there is a uniform recognition of the primary status of DSRC and that it should not be subject to harmful interference. There is broad agreement that the FCC should not authorize sharing until technical due diligence demonstrates sharing can work.[18] TIA supports the FCC, NTIA, and all interested parties working together in a timely manner to address any harmful interference concerns and develop appropriate sharing solutions. We stand ready to participate in that important collaborative process.

[16] IEEE 802 Comment at 12; Cisco Comment at 24; TIA Comment at 8, timely action is essential; Ericsson at 4;

[17] IEEE 802 Comment at 3; WFA Comment at ii-iii; Cisco Comment at 25; TIA Comment at 9-10 resolve issues in a TDWR module; WFA Comment at ii-iii, 7, TDWR issues: improved security, extend revised 15.407 to U-NII-3, limit user ability to configure domain so DFS cannot be turned off ; IEEE 802 Comment at 3, 12 Adopt revised Bin 1; WFA Comment at ii, expand U-NII-3 by 25 MHz to 5850 MHz; WFA Comment at ii, 8, significant record exists already and significant benefits if issues can be resolved, e.g., elimination of 50 megahertz wide notch; IEEE 802 Comment at 12; WFA Comment at ii-iii, 7-8; TIA Comment at 9, example is the Bin 1 waveform, around which there is consensus *But see* TIA Comment at 11, suggesting that the application of a harmonized 15.407 to 5725-5850 MHz may take longer than the "immediate" rule changes discussed by other commenters.

[18] IEEE Comment at 4, 12; WFA Comment iii, 8; Cisco at 25; TIA Comment at 8, provide a "clear path forward" to designate this spectrum for U-NIIs; TIA Comment at 12-1 discussing that these issues likely to take longer to solve; NCTA Comment at 25 wants U-NII-4 opened expeditiously.

- **U-NII-2B module.** NTIA has taken the important first step of analyzing interference to government systems. Broadcast TDWRs should not be treated any differently than FAA TDWRs.[19]
- **U-NII- 1 module.** U-NII-1 can be harmonized to U-NII-2A, eliminating the indoor only requirement. [20] Although significant agreement that it should align with 2A, additional study is appropriate to determine if alignment with U-NII-3 can work. [21]

[19] IEEE Comment at 4,12; WFA Comment at iii, 8; Cisco Comment at 25; TIA Comment at 8 – provide a "clear path forward" to designate this spectrum for U-NIIs; TIA Comment at 12-13 – these issues likely to take longer to solve.

[20] IEEE Comment at 4; WFA Comment at iii, 8.

[21] Cisco Comment at 25; TIA Comment at 10-11; NCTA Comment at 16 wants the U-NII-1 band "moved expeditiously."

II. CONCLUSION

For the foregoing reasons, TIA urges the Commission to adopt policies consistent with the recommendations above.

Respectfully submitted,

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