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

In the Matter of	)	
	)	
Petition for Rulemaking: Amendment of	)	CG RM-11844
Rules Governing Ultra-Wideband Devices	)	
and Systems	)	

Ex Parte OF IEEE 802

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I. Introduction

IEEE 802 LAN/MAN Standards Committee (LMSC) is pleased to provide a response in the above-captioned petition for a comprehensive review of Part 15, Subpart F, regulations governing Ultra-Wideband (UWB) devices and systems. IEEE 802 would like to express support for such a review and revision of the UWB rules.

IEEE 802 LMSC is a leading consensus-based industry standards body, producing standards for wireless networking devices, including wireless local area networks ("WLANs"), wireless specialty networks ("WSNs"), wireless metropolitan area networks ("Wireless MANs"),

and wireless regional area networks ("WRANs"). We appreciate the opportunity to provide these comments to the Commission.

IEEE 802 is a committee of the IEEE Standards Association and Technical Activities, two of the Major Organizational Units of the Institute of Electrical and Electronics Engineers (IEEE). IEEE has about 420,000 members in about 190 countries and supports the needs and interests of engineers and scientists broadly. In submitting this document, IEEE 802 acknowledges and respects that other components of IEEE Organizational Units may have perspectives that differ from, or compete with, those of IEEE 802. Therefore, this submission should not be construed as representing the views of IEEE as a whole.[1]

IEEE Std 802.15.4-2015 includes two UWB Physical Layer (PHY) specifications. These have been widely adopted for applications requiring precise ranging and localization, such as RFID, industrial asset tracking, motion detection and surveillance, patient monitoring (fall detection), industrial robotics, sports tracking, factory automation, stock (animal) health and tracking, bus and train monitoring and communication, and many other applications that require precise near-instantaneous ranging capabilities uniquely enabled by UWB.

The IEEE 802.15 Working Group (WG) is now developing the next generation of precision ranging capable UWB PHY enhancements through Project P802.15.4z. The participation in the development of enhanced ranging includes individuals affiliated with major consumer electronics and mobile handset makers, with mass market application targets based on UWB capability in mobile devices, vehicles, buildings and other structures.

II. Conservative Rules with Extreme Margins

When the Commission issued the Report and Order establishing the UWB rules in 2002, it characterized the limits and restrictions of subpart F as "ultra-conservative" and stated its intention to reconsider many of the restrictions and conditions at a later date, based upon industry experience[2]. Commissioner Copps wrote in his statement that this "ultra-conservative ultra-wideband step we take today" was at the "extreme (conservative) end of what FCC engineers – the best spectrum engineers in the country – believe necessary"[3].

[1] This document solely represents the views of the IEEE 802 LAN/MAN Standards Committee and does not necessarily represent a position of either the IEEE, the IEEE Standards Association or IEEE Technical Activities.

[2] First report and order, : February 14,2002, clause 1.1 https://ecfsapi.fcc.gov/file/6513194036.pdf

[3] Commissioner Copps Feb 14 2002 statement https://transition.fcc.gov/Speeches/Copps/Statements/2002/stmjc205.html

Extensive industry experience now confirms the characterization by the Commission. UWB has been widely used and proven to cause no harmful interference to other radio services. As noted in the petition, the FCC has acknowledged the extremely low risk of harmful interference by issuing waivers to reduce some of the subpart F restrictions.

The FCC subsequently provided, in Subpart C §15.250, means to approve UWB devices operating in the band 5925-7250 MHz and has subsequently approved many devices without the restriction on outdoor infrastructure use. Experience with these approved devices has shown no issues with causing harmful interference.

III. Recommendations

The petition proposes adoption by rule of changes to the process and methods used to test and certify UWB devices that have been approved in multiple waivers. In general, we agree. This will assure consistent application of testing process and methods.

The petition requests increasing the power spectral density limits by +10dB. We strongly agree that this is a positive change. The new limit would enable new applications of UWB without undue risk of interference and make a large amount of already allocated spectrum available for new uses.

The petition requests removal of the restriction on fixed outdoor use of UWB. We endorse this change. Many applications for precise real time localization utilize fixed devices in conjunction with mobile devices. Waivers for such systems have been granted for applications such as safely guided robotic outdoor lawn mowers operating without causing any harmful interference to incumbent users. Consumer applications such as secure access to vehicles and buildings, as well as high precision real time tracking of transportation assets, personnel and other assets via mobile devices, can be enhanced with the use of fixed devices in outdoor locations.

We note that some of the changes requested may have broader benefits than noted in the petition. Specifically, changes to allow swept frequency and frequency agility to be used to meet the minimum bandwidth will have the additional benefit of enabling a broad range of technologies to be adapted to the UWB rules. Combined with the removal of restrictions on outdoor use, these small changes will expand opportunity and stimulate innovation, which ultimately results in greater utility from the spectrum.

IV. Conclusion

Considering the points mentioned above, we therefore respectfully request the Commission to begin rulemaking to revise and update the rules governing UWB operation.

Regards,

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