IEEE P802.18
Radio Regulatory Technical Advisory Group (RR-TAG)

|  |
| --- |
| Proposed response to Oman TRA’s consultation on UWB regulation |
| Date: 2024-08-22 |
| Author(s): |
| Name | Company | Address | Phone | email |
| Dries Neirynck | Ultra Radio |  |  | dries.neirynck@ultra-radio.com |
| Benjamin Rolfe | BCA |  |  | Ben.rolfe@ieee.org |
| Edward Au | Self |  |  | edward.ks.au@gmail.com  |

This document drafts a proposed response to Oman Telecommunications Regulatory Authority (TRA)’s consultation “Public Consultations on the Draft Regulation for the Ultra-Wide Band Technology”.

**Notice:** This document has been prepared to assist IEEE 802.18. It is offered as a basis for discussion and is not binding on the contributing individual(s) or organization(s). The material in this document is subject to change in form and content after further study. The contributor(s) reserve(s) the right to add, amend or withdraw material contained herein.

Electronic filing September 6, 2024

Re: Public Consultations on the Draft Regulation for the Ultra-Wide Band Technology

Dear Executive President,

IEEE 802 LAN/MAN Standards Committee (LMSC) thanks the Telecommunications Regulatory Authority (TRA) for issuing a consultation “Draft Regulation for the Ultra-Wide Band Technology” and for the opportunity to provide feedback on this important topic.

IEEE 802 LAN/MAN Standards Committee (IEEE 802 LMSC) is a leading consensus-based open standards development committee for networking standards that are used by industry globally. It produces standards for networking devices, including wired and wireless local area networks (“LANs” and “WLANs”), wireless specialty networks (“WSNs”), wireless metropolitan area networks (“Wireless MANs”), and wireless regional area networks (“WRANs”). Technologies produced by implementers of our standards are a critical element for all networked applications today.

IEEE 802 LMSC is a committee of the IEEE Standards Association and of Technical Activities, two of the Major Organizational Units of the IEEE. IEEE has about 400,000 members in over 160 countries and its core purpose is to foster technological innovation and excellence for the benefit of humanity. IEEE is also a major accredited standards development organization whose standards are recognized worldwide. In submitting this document, IEEE 802 LMSC acknowledges and respects that other components of IEEE Organizational Units may have perspectives that differ from, or compete with, those of IEEE 802 LMSC. Therefore, this submission should not be construed as representing the views of IEEE as a whole[[1]](#footnote-1).

Please find below the IEEE 802 LMSC’s comments on this consultation.

Ultra-Wide Band (UWB) devices, as specified in IEEE 802.15 standards, are being used worldwide for a wide range of applications in communication, measurement, location, imaging, surveillance, and medical systems[[2]](#footnote-2), often in conjunction with other short range device technologies. UWB enhances the operation of such technologies and is an efficient means to share spectrum.

The next generation of UWB technology, being developed under IEEE P802.15.4ab[[3]](#footnote-3), builds on IEEE Std 802.15.4z-2020[[4]](#footnote-4). Future developments supported by this project include:

* Improved link budget and reduced air-time
* Enhanced sensing capabilities for presence detection and environment mapping
* Improved accuracy, precision, and reliability for high-integrity ranging
* The use of interference mitigation techniques to support greater device density and higher traffic use cases
* Improved coexistence with other services
* Reduced complexity and power consumption
* Enhanced support for ultra-low power, low latency streaming
* Support for emerging applications such as high-definition audio

IEEE 802 LMSC commends TRA for recognizing the rapidly growing value of UWB. Use of extremely low power UWB devices in accordance with ECC Decision (06)04[[5]](#footnote-5) and the ETSI EN 302 065 series of standards harmonizes with worldwide regions, creates further economies of scale, and supports a robust equipment market, benefitting Oman’s businesses, consumers, as well as increasing the societal benefits.

We would like to inform the TRA that the reference to ETSI EN 302 500-1 in Article 2(6) of the regulation can be removed. ETSI EN 302 500-1, which previously covered UWB location tracking systems, has now been incorporated into the ETSI EN 302 065 series of standards harmonized for UWB devices. Specifically, the relevant requirements are now covered in ETSI EN 302 065-2[[6]](#footnote-6) for UWB location tracking devices. As such, the separate reference to ETSI EN 302 500-1 is no longer necessary, as compliance with the appropriate part of ESTSI EN 302 065 sufficiently covers the relevant technical requirements for UWB location tracking systems. We recommend updating Article 2(6) to refer only to the ETSI EN 302 065 series of standards, which comprehensively covers the various types of UWB devices and applications.

In addition, we encourage TRA to consider adopting additional updates reflected in the 2022 update of ECC Decision (06)04, including the enhanced indoor scenarios as detailed in Annex 1.3.2. Specifically, we suggest including the following technical parameters for indoor UWB devices supporting radiodetermination, location tracking, tracing, or data acquisition applications in this frequency range:

* Maximum mean e.i.r.p. spectral density: -31.3 dBm/MHz
* Maximum peak e.i.r.p. (defined in 50 MHz): 10 dBm
* Duty cycle: limited to maximum 5% per second

These parameters are based on extensive sharing and compatibility studies documented in ECC Report 327[[7]](#footnote-7), which demonstrates that the enhanced indoor power does not cause harmful interference to existing services. The report shows that, with appropriate limitations on duty cycle and usage conditions, these higher power levels can be accommodated without compromising the protection of incumbent services. Including these provisions would align the TRA’s regulations with the latest European framework for UWB devices and enable innovative indoor applications that require only slightly higher power levels for optimal performance.

**Conclusion**

IEEE 802 LMSC thanks TRA for the opportunity to provide this submission and respectfully requests to consider updating Article 2(6) to refer only to the ETSI EN 302 065 series of standards and adopting additional uses of UWB applications as reflected in the 2022 update of ECC Decision (06)04.

Respectfully submitted

By: /ss/.

James Gilb

IEEE 802 LAN/MAN Standards Committee Chairman

em: gilb\_ieee@tuta.com

1. This document solely represents the views of IEEE 802 LMSC and does not necessarily represent a position of either the IEEE or the IEEE Standards Association or the IEEE Technical Activities. [↑](#footnote-ref-1)
2. See FiRa Consortium: Unleashing the Potential of UWB: Regulatory considerations, August 2022, <https://www.firaconsortium.org/sites/default/files/2022-08/Unleashing-the-Potential-of-UWB-Regulatory-Considerations.pdf> [accessed: 22 August 2024]. The introduction of IEEE 802.15 UWB-enabled devices in smartphones and laptops puts forecasts at more than 1 billion devices shipped annually worldwide by 2025. [↑](#footnote-ref-2)
3. See IEEE P802.15.4ab, <https://www.ieee802.org/15/pub/TG4ab.html> [accessed: 22 August 2024]. [↑](#footnote-ref-3)
4. “IEEE Standard for Low-Rate Wireless Networks--Amendment 1: Enhanced Ultra Wideband (UWB) Physical Layers (PHYs) and Associated Ranging Techniques,” in IEEE Std 802.15.4z-2020 (Amendment to IEEE Std 802.15.4-2020), vol., no., pp.1-174, 25 Aug. 2020, doi: 10.1109/IEEESTD.2020.9179124. [↑](#footnote-ref-4)
5. ECC Decision (06)04, The harmonised use, exemption from individual licensing and free circulation of devices using Ultra-Wideband (UWB) technology in bands below 10.6 GHz, approved 24 March 2006, as amended 18 November 2022. [↑](#footnote-ref-5)
6. ETSI EN 302 065-2 V2.1.1 (2016-11): Short Range Devices (SRD) using Ultra Wide Band technology (UWB); Harmonised Standard covering the essential requirements of article 3.2 of the Directive 2014/53/EU; Part 2: Requirements for UWB location tracking. [↑](#footnote-ref-6)
7. ECC Report 327, Technical studies for the update of the Ultra Wide Band (UWB) regulatory framework in the band 6.0 GHz to 8.5 GHz, approved 1 October 2021. [↑](#footnote-ref-7)