Attachment

Institute of Electrical and Electronics Engineers, Inc.

DRAFT LIAISON STATEMENT TO ITU-R WORKING PARTIES 5A AND 5C

Technical and operational characteristics in the frequency range 275 GHz to 450 GHz

1. Source information

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.

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2. Discussion

In 2017, IEEE 802 LMSC provided ITU-R Working Parties 5A and 5C with the technical and operational characteristics based on IEEE Std 802.15.3d™–2017, IEEE Standard for High Data Rate Wireless Multi-Media Networks - Amendment 2: 100 Gb/s Wireless Switched Point-to-Point Physical Layer. ITU-R Working Parties 5A and 5C published Reports ITU-R M.2417[2] and F.2416[3] in 2017, respectively. The frequency bands 275 GHz to 296 GHz, 306 GHz to 313 GHz, 318 GHz to 333 GHz, and 356 GHz to 450 GHz were identified for use by administrations for the implementation of land mobile and fixed service applications at World Radiocommunications

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

[2] ITU-R Report M.2417-0 (11/2017), Technical and operational characteristics of land-mobile service applications in the frequency range 275-450 GHz.

[3] ITU-R Report F.2416-0 (11/2017), Technical and operational characteristics and applications of the point-to-point fixed service applications operating in the frequency band 275-450 GHz.

Conference 2019 (WRC 19). These Reports were revised according to the results of WRC 19[4, 5], but the technical and operational characteristics in those Reports are maintained as it was before.

In IEEE Std 802.15.3™–2023, the frequency bands have been extended up to 450 GHz[6]. Additional characteristics for PHY specification for the extended frequency bands in IEEE Std 802.15.3™–2023 are summarized in Table 1. The characteristics could be added in Tables 2, 3, and 4 in Report ITU-R M.2417 and Table 2 in Report ITU-R F.2416.

Table 1 New operational PHY characteristics

New characteristics	Value
Additional frequency range (GHz)	325 GHz to 450 GHz
Additional bandwidth (GHz)	34.56
Additional modulation scheme	16-APSK, 32-APSK

IEEE 802 would appreciate that ITU-R Working Parties 5A and 5C would keep it informed on the progress of the two Reports.

3. Summary

We applaud the efforts of the participants in ITU-R Working Parties 5A and 5C for undertaking this work and giving IEEE 802 the opportunity to exchange information on the terahertz related matters.

Respectfully submitted
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[4] ITU-R Report M.2417-1 (11/2022), Technical and operational characteristics of land-mobile service applications in the frequency range 275-450 GHz.
[5] ITU-R Report F.2416-0 (2023), Technical and operational characteristics and applications of the point-to-point fixed service applications operating in the frequency band 275-450 GHz.
[6] "IEEE Standard for Wireless Multimedia Networks," in IEEE Std 802.15.3-2023 (Revision of IEEE Std 802.15.3-2016) , vol., no., pp.1-684, 22 Feb. 2024, doi: 10.1109/IEEESTD.2024.10443750, https://ieeexplore.ieee.org/document/10443750 [accessed: 25 February 2025]