



**Intel Corporation comments to the public consultation on “Modified RLAN Instructions”**

**To:** Telecommunication Regulatory Commission (“TRC”)  
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Intel Corporation (“Intel”) welcomes the opportunity to respond the public consultation on “Modified RLAN Instructions” in Hashemite Kingdom of Jordan.

Intel appreciates Telecommunication Regulatory Commission (“TRC”) for leading and supporting new advanced high-speed wireless broadband technologies in Jordan and the Middle East region.

In this response, Intel focuses on 6GHz band. If our comments are unclear in any area or if additional information is required, we would be pleased to provide the necessary clarification or additional information in whatever appropriate format the TRC desires.

Intel’s comments are contained in the subsequent pages.

A handwritten signature in black ink, appearing to read "Turhan Muluk", is located below the text of the letter. The signature is somewhat stylized and overlaps with some faint lines.

Yours sincerely  
Turhan Muluk

## **General Comments**

TRC is one of the leading spectrum agencies in the EMEA region to initiate proceeding on allocation of 6GHz band for license exempt operation. Intel recognizes and appreciates TRC progressive view on the proceedings for license-exempt designation for 6GHz and strongly recommends alignment of the policies and regulatory requirements with other leading countries in the world such as U.S. As a country known for the innovative and effective use of frequency bands, U.S. develops spectrum policies in full alignment with the leading global manufacturers according their roadmap and product availability.

Intel fully supports both 5G and advanced Wi-Fi technologies and believes that the two technologies are complementary. As an example, in a recent trial by three South Korean mobile carriers, KT Corp., SK Telecom, and LG U+, a peak speed of 1.8Gbps was achieved in Seoul Metro subway system using Wi-Fi 6E routers using 28 GHz 5G mmWave backhaul [9]. Current typical average speeds, over Wi-Fi 4/5 using LTE backhaul, on subways in the capital of Seoul is around 71 Mbps.

The last time a significant new allocation of spectrum was made to WLAN was more than 18 years ago, at the 2003 World Radiocommunication Conference for 5 GHz. Considering the ever-increasing demand for broadband connectivity, leading countries, such as US, Canada, Brazil, Republic of Korea, Saudi Arabia, are opening the entire 6 GHz spectrum band for license-exempt technologies and many other countries or regions such as CEPT, UK, UAE authorized license-exempt operation in 5925-6425GHz. IEEE 802.11ax standard is fully ratified and leading manufactures have developed a strong ecosystem for early product availability based on Wi-Fi Alliance Wi-Fi 6E certification already established as standard feature in new consumer products (with more than 340 million Wi-Fi 6E devices coming to market in 2021 according to IDC).

## **6GHz License Exempt Spectrum Allocation**

Intel appreciates and supports TRC's proposal to authorize the use of the 5925-6425 MHz band by license-exempt RLAN but we also recommend that TRC consider extending the allocation of license-exempt spectrum to the upper 6 GHz band (6425-7125 MHz).

Intel responded to TRC's public consultation concerning WiFi 6E in Dec 2020 where we explained our reasoning for allocation of the entire 6GHz band (6425-7125 MHz). In addition to the reasons offered in our response, we would like to emphasize that opening the entire 5925-7125 MHz band for license-exempt use would contribute to global harmonization that is supportive of robust technological innovation. In the EMEA region, in April of this year, Saudi Arabia CITC decided to adopt the entire 6GHz band (6425-7125 MHz) for licensed-exempt operation and Qatar CRA is considering designating the entire band as licensed-exempt as well. More specifically, joining the world's major economies in all regions globally, including the United States, Canada, Brazil, Saudi Arabia, and the Republic of Korea in opening the full 6 GHz band to license-exempt operations, will benefit business and consumers in Hashemite Kingdom of Jordan.

## **Regulatory Requirements for 6GHz License-Exempt Operation**

Intel supports TRC's proposal to authorize operation of RLAN in 6GHz band using different modes: 1) Low Power Indoor (LPI), 2) Very Low Power (VLP) for indoor and outdoor and 3) consideration for Standard Power outdoor hotspots.

Based on co-existence studies ([1]-[6]) between RLAN and incumbent services in the 5925-7125 MHz band conducted in the United States and globally, with specific consideration given to the conditions specified by the United States FCC [7] and Anatel Brazil [8], Intel encourages TRC to consider improving regulatory requirement to 30 dBm for max transmit power for RLAN LPI and 17 dBm for RLAN VLP equipment operating in the 6 GHz band. More specifically, these max transmit power levels are considered to accommodate larger channel bandwidth of up to 320MHz to be enabled by upcoming Wi-Fi 7 based on IEEE 802.11be.

In addition, Intel recommends TRC to consider enabling Standard Power mode for outdoor and indoor operation at max transmit power level of 36 dBm. Please note that other countries, such as US, Canada, Australia, Mexico, Republic of Korea and Saudi Arabia have already authorized or considering enabling Standard Power outdoor and indoor operation through supervision of AFC System or through other registration mechanism.

## References

- [1] RKF report (commissioned by 6USC, detailed report from 2018): <https://s3.amazonaws.com/rkfengineering-web/6USC+Report+Release+-+24Jan2018.pdf>
- [2] RKF report (commissioned by 6USC, studies VLP): [https://rkfengineering-web.s3.amazonaws.com/RKF+VLP+Report+\(final\).pdf](https://rkfengineering-web.s3.amazonaws.com/RKF+VLP+Report+(final).pdf)
- [3] ECC report 302 (CEPT report with multiple studies developed by European administrations and industry): <https://www.ecodocdb.dk/download/cc03c766-35f8/ECC%20Report%20302.pdf>
- [4] ECC report 316 (CEPT report with multiple studies developed by European administrations and industry, focuses on VLP and short term criteria): <https://www.ecodocdb.dk/download/8951af9e-1932/ECC%20Report%20316.pdf>
- [5] 6USC VLP Sharing Study: [https://ecfsapi.fcc.gov/file/10702302769261/VLP%20Ex%20Parte\\_28June2019.pdf](https://ecfsapi.fcc.gov/file/10702302769261/VLP%20Ex%20Parte_28June2019.pdf)
- [6] Ex parte filed by CableLabs, March 30, 2020: <https://www.fcc.gov/ecfs/filing/1033043576413>
- [7] [FCC Opens 6 GHz Band to Wi-Fi and Other Unlicensed Uses | Federal Communications Commission](#)
- [8] [SEI/ANATEL - 6600480 - Ato](#)
- [9] <https://www.fiercewireless.com/5g/samsung-5g-mmwave-trial-clocks-1-8-gbps-wi-fi-speeds-seoul-subway>
- [10] Wi-Fi Spectrum Needs Study, Quotient Associates, February 2017
- [11] <https://www.cisco.com/c/en/us/solutions/collateral/service-provider/visual-networking-index-vni/white-paper-c11-738429.html>