UTC INFORMATION BULLETIN

Re: FCC 6 GHz Second Report & Order and Second Further Notice of Proposed Rulemaking
Date: November 27, 2023

Summary:
On November 1, 2023, the Federal Communications Commission (FCC) released a Second Report and Order (R&O) and a Second Further Notice of Proposed Rulemaking (FNPRM). The R&O would allow very low-power (VLP) devices to operate in both indoor and outdoor settings at specific power levels. These VLP devices would be permitted to operate in the U-NII-5 (5.925-6.425 GHz) and the U-NII-7 (6.525-6.875 GHz) bands without Automated Frequency Coordination (AFC) or geofencing. The FNPRM seeks comment on having higher-power VLP devices operate only in locations where the potential for harmful interference is insignificant and restricted by geofencing. The FNPRM also invites comments on expanding higher-power VLP operations to the rest of the 6 GHz spectrum band.

Comments and reply comments will be due 30 and 60 days, respectively, after publication in the Federal Register.

Background:
Since 2019, the Utilities Technology Council (UTC) and other incumbent stakeholders have expressed concerns about unlicensed operations interfering with licensed microwave systems in the 6 GHz band. Despite evidence from real-world field studies and simulations, the FCC has continued to allow unlicensed devices to operate in the 6 GHz band.

In December 2021, UTC and other 6 GHz incumbent stakeholders submitted a Petition for Rulemaking, which asked the FCC to provide interference mitigation cost recovery and to establish a detailed process for handling 6 GHz interference complaints. The FCC has yet to act on our Petition.

Key Points:
Second Report and Order

- Concluded that any recorded interference from VLP devices will be insignificant based on various simulations submitted by proponents of unlicensed operations.
- Requires VLP devices to use transmit power control (TPC)
- Rejects concerns about additive interference from multiple unlicensed devices operating in near proximity to an incumbent 6 GHz device.
- Prohibits VLP devices from being attached to outdoor fixed infrastructure (e.g., poles and buildings).

Second Further Notice of Proposed Rulemaking

- Asks for comment on allowing VLP devices to operate at higher power levels only in locations where the potential for harmful interference to incumbent operations remains "insignificant" and restricted by geofencing.

- Asks for comment on different TPC requirements for VLP devices and geofenced VLP devices.
- Asks for comment on VLP device requirements and limits for operation in the 6 GHz sub-bands of U-NII-6 (6.425—6.525 GHz) and U-NII-8 (6.875—7.125 GHz).
- Proposes to allow client-to-client communication operations by VLP and low-power indoor (LPI) devices.

UTC Concerns:
UTC believes that the FCC's actions will cause additional interference to utilities' licensed microwave systems. UTC believes its members may encounter the following ancillary and consequential issues given the authorization of VLP device operations in the 6 GHz band.

- Network Security: Increased unlicensed operations in the 6 GHz band could expose utility networks to significant cybersecurity risks, especially given how unlicensed VLP devices create new attack vectors for which a threat actor to exploit and threaten the secure and reliable data transmission of incumbent 6 GHz microwave systems and networks.

- Operational Reliability: Utilities depend on having reliable communications systems for the operations and management of the energy grid. Any interference from unlicensed devices could disrupt these communications systems, which would lead to service outages or otherwise compromised utility systems.

- Increased Cost for Monitoring and Risk Mitigation: With the FCC expanding unlicensed operations, utilities will need more sophisticated equipment and technologies to monitor their systems and mitigate any interference. This will require an increase in capital and operational expenses, which could include upgrading existing infrastructure or an investment in hiring additional personnel. This cost will have to be borne by everyday Americans and their families.

- Regulatory & Compliance Challenges: The utility regulatory environment is ever-changing, especially given how the R&O is allowing further usage of VLP devices across the 6 GHz spectrum band Adapting to and ensuring continued compliance with both the physical security and cybersecurity requirements of utility communication systems will be extremely resource-intensive for many utilities.

- Data Accuracy & Integrity: Interference from expanded unlicensed operations could impact the accuracy of data transmitted across a utility's communications network. Both accuracy and integrity of data are critical for utility operations given its dependence on real-time data for decision-making and resource management.

- Emergency Response: Reliable communication is vital for utilities during emergencies. Interference in the 6 GHz band could hinder emergency response efforts, affecting public safety and system restoration.

- Long-Term Strategic Planning: The uncertainty about the extent of interference and the evolving regulatory environment could complicate long-term strategic planning for utilities, especially regarding technology investments and infrastructure development.

- Interference with Remote Sensing and Telemetry: Utilities often use remote sensing and telemetry to monitor and control remote assets. Interference in the 6 GHz band could disrupt these critical functions.

- Public Perception & Trust: Increased incidents of service interruptions or perceived security risks due to interference by unlicensed devices can impact public trust in utility providers.

Conclusion:
The 2nd Report & Order, unfortunately, expands 6 GHz unlicensed operations by permitting VLP operations to continue without effective safeguards (e.g., automated frequency coordination systems or geofencing) to limit the potential for interference. In addition, the 2nd FNRPM asks about higher-powered VLP devices, with proposed geofencing safeguards and the expansion of VLP operations into the U-NII-6 and U-NII-8 bands. UTC intends to file comments in response to the 2nd Further Notice of Proposed Rulemaking. UTC welcomes member feedback for any further action.