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Interference in the 6 GHz Spectrum Band Issue Brief

SUMMARY

Electric, water, and natural gas utilities, along with railroads and other critical infrastructure industries, use fixed wireless communications networks housed in the 6 GHz spectrum band. These networks run mission-critical systems essential to the reliable delivery of utility services.

In spite of significant concerns raised by utilities, lifeline industries, and other federal agencies, the Federal Communications Commission (FCC, the Commission) in April 2020 approved a plan to expand the 6 GHz band to non-critical commercial entities. Doing so will likely threaten the reliability of the crucial utility communications networks already licensed to operate in the band.

UTC POSITION

The Utilities Technology Council (UTC) is concerned that expanding the 6 GHz band to unlicensed users will interfere with existing utility microwave systems in the band. Utilities use these systems for mission-critical communications networks which ensure the continued reliable delivery of essential electricity, water, and natural gas services.

Any benefit to expanding access within the band will likely be outweighed by the threat of interference to incumbent mission-critical utility communications systems. Given their importance to everyday life, utilities cannot tolerate even the threat of interference on their networks.

BACKGROUND

The FCC in April 2020 formally approved a plan to expand access to the 6 GHz band for unlicensed use. This order set forth several actions:

- One, it allowed "standard-power operation" of Wi-Fi-enabled devices to operate in the band under control of an untested Automated Frequency Coordination (AFC) system intended to protect utility, public safety, and other existing users in the 6 GHz band from interference
- Two, it allowed so-called "low-power operation" of these devices to use the 6 GHz band to expand connectivity without AFC protection, though at modest levels that likely will not protect existing users; and,
- Three, it set forth a proceeding to remove these modest power levels on low-power devices and allow unlimited access to the band for so-called "very low power" devices with no protection for utilities, public safety or other entities already using the band.

Utilities, public safety, and other critical-infrastructure industries (CII) use the 6 GHz band for a variety of mission-critical operations to support the safe, reliable and effective delivery of essential electric, gas and water services. These systems must meet high standards of performance, as any failure of their operations can have severe and widespread consequences for public and worker safety, as well as operational integrity and security.

The microwave systems serve as the backbone for a variety of utility applications, such as supervisory control and data acquisition (SCADA) networks that utilities use to monitor and control substations and valves as well as security and transfer-trip protection circuits that guard against

external threats and isolate faults on the grid.

Ironically, utilities migrated to the 6 GHz band after the FCC in the 1990s forced them out of another band in order to make way for commercial mobile radio services. With the FCC opening the 6 GHz band more broadly, utilities may likely have to relocate again, a lengthy, expensive process that will impact their customers by imposing additional costs.

SITUATIONAL AWARENESS

The FCC's plan to expand access to the 6 GHz band has generated tremendous controversy. UTC has led the development of a coalition of energy, water, oil, and natural gas companies in expressing strong opposition to the proposal, citing considerable concern about how interference could impact these industries' critical communications systems.

Importantly, the U.S. Department of Energy, the Federal Energy Regulatory Commission (FERC), and numerous members of Congress, including Sen. Lisa Murkowski (R-AK), Sen. John Kennedy (R-LA, a bipartisan group of 12 senators, along with 13 members of California's House delegation have sent letters to the FCC expressing strong concerns with the proposal and urging the agency to protect utilities and other critical infrastructure in the band. In addition, FERC held a panel discussion on the proposal at its 2019 annual Reliability Technical Conference, demonstrating the level of interest in the proceeding.

With the plan final, the focus now moves to the U.S. federal courts, as UTC, other utility groups, public safety, and telecommunications companies have sued the commission over the rule. Given that utilities and other critical-infrastructure industries rely on their microwave systems to support mission-critical communications, any unlicensed access to the band presents an unreasonable risk to safety, reliability and security.

Microwave systems are the workhorse of utility ICT networks and must meet and exceed high standards for reliability. Additionally, utilities lack alternatives to operating in the 6 GHz bands, as for many utilities, the 6 GHz bands are the only option providing what they need to communicate over long distances from point- to-point.

UTC is advocating on behalf of its members to ensure the FCC recognizes the needs of utility and other critical-infrastructure industry incumbents in the 6 GHz band.

ABOUT UTC

The Utilities Technology Council (UTC) is a global trade association dedicated to serving critical infrastructure providers. Through advocacy, education and collaboration, UTC creates a favorable business, regulatory and technological environment for companies that own, manage or provide critical telecommunications systems in support of their core business.

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