

## 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 and other lifeline industries, the Federal Communications Commission (FCC, the Commission) is considering expanding the 6 GHz band to non-critical commercial entities. Doing so could threaten the reliability of the crucial communications networks already licensed to operate in the band.

### UTC POSITION

The Utilities Technology Council (UTC) is concerned that expanding the 6 GHz band generally will interfere with existing utility microwave systems in the band. Utilities use these systems for mission-critical Information and Communications Technology (ICT) 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 interference on their networks.

### BACKGROUND

FCC officials have said they expect the agency

to issue a rulemaking on expanding access to the 6 GHz spectrum band this fall. This comes after two agency bureaus in early 2017 granted a waiver permitting a startup company to operate a nationwide mobile network in the 5925-6425 MHz band (6 GHz band). The waiver allows the company to operate nearly 50,000 C-Band mobile earth stations to support Internet of Things (IoT) applications controlled through a spectrum database that it will manage and operate. The FCC's decision came despite the strong objection of UTC and numerous other microwave licensees. Following this action, the FCC in August 2017 launched an inquiry into whether it should expand the 6 GHz band for use by other entrants.

Utilities 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 back-bone 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.

These systems also support voice applications, including utility nuclear emergency telecommunications systems. These systems are

used for both primary and redundant communications.

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 already allowing one company to operate in the 6 GHz band and now considering opening the band more broadly, utilities may likely have to relocate again, possibly disrupting existing systems and imposing additional costs.

In its decision authorizing the startup firm to operate in the 6 GHz band, the FCC not only waived rules that prohibit mobile operations in the 6 GHz band, it also waived requirements that applicants obtain frequency coordination prior to the filing of their applications with the FCC. Instead of coordinating its operations in advance through authorized frequency coordinators, the startup may circumvent the coordination process. The company claims it will use its own spectrum database to control its operations and prevent interference to microwave systems.

### **SITUATIONAL AWARENESS**

UTC is hopeful that by pursuing a rulemaking on expanding the 6 GHz system, the FCC will consider the numerous concerns raised in the earlier proceedings. Given that utilities and other critical-infrastructure industries rely on their microwave systems to support mission critical communications, any expanded 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. The 6 GHz bands are the only option providing what utilities need to communicate over long distances from point- to-point.

UTC has filed comments to the FCC raising these and other concerns about the proposal.

### **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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