



Spectrum Challenge: Mobile Operations Threaten Interference to Utility Systems in the 6 GHz Band

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SUMMARY

In early January 2017, two Federal Communications Commission (FCC) bureaus granted a waiver to Higher Ground LLC to operate a nationwide mobile network in the 5925-6425 MHz band (6 GHz band). The waiver permits Higher Ground 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 launched an inquiry (GN Docket No. 17-183) into whether it should expand the 6 GHz band for use by other entrants.

UTC POSITION

UTC is concerned that expanding the 6 GHz band generally will interfere with existing utility microwave systems in the band. Any benefit to expanding access within the band will likely be outweighed by the threat of interference to incumbent mission-critical utility communications systems.

UTC has and will continue registering its objections in this proceeding.

BACKGROUND

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, because 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. These microwave systems also support voice applications, including utility nuclear emergency telecommunications systems. These systems are used for both primary and redundant communications.

The 6 GHz band is also where many utilities migrated their microwave systems after they were forced to move when the FCC reallocated the 2 GHz band to make way for commercial mobile radio services in the 1990's. With the FCC's approval of Higher Ground's application and waiver, the threat of interference from Higher Ground's mobile network may force utilities to relocate their systems again to another band, possibly disrupting existing systems and imposing additional costs on utilities. For all of these reasons, interference to these 6 GHz microwave systems from Higher Ground's mobile operations is a major concern.

In its decision authorizing Higher Ground to operate, 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, Higher Ground may cir-

cumvent 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 challenging the Higher Ground order because the proposed operations threaten to cause significant and widespread interference to utility microwave communications systems in the 6 GHz band. UTC doubts that Higher Ground will be able to mitigate potential interference by using its spectrum database, as the underlying assumptions for the database have been shown to be flawed. Given that utilities rely on their microwave systems to support mission critical communications, the interference from Higher Ground presents an unreasonable risk to safety, reliability and security.

Regarding the broader 6 GHz inquiry, UTC has raised similar concerns with the FCC that expanding access into the band may cause interference with mission-critical utility communications. These systems are the workhorse of utility communications networks and must therefore 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 tele-communications systems in support of their core business.

History: UTC was founded in 1948, to advocate for the allocation of additional radio spectrum for power utilities. Over the last 68 years, UTC has evolved into a dynamic organization that represents electric, gas and water utilities, as well as natural gas pipelines, critical infrastructure companies and other industry stakeholders.

UTC CONTACTS

Sharla Artz, VP of Government Affairs, Policy and Cybersecurity

Email: Sharla.Artz@utc.org

Brett Kilbourne, VP & General Counsel

Email: Brett.Kilbourne@utc.org

Rob Thormeyer, Director of Communications and Advocacy

Email: Rob.thormeyer@utc.org

