Utilities Technology Council™

3.5 GHz Issue Brief

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SUMMARY

The radio portion of the electromagnetic spectrum is needed to enable wireless applications for utilities, public safety, and telecommunications providers, among others. This radio spectrum is subdivided into various "bands" (measured by "hertz") that have different properties. Utilities often operate their own "private" communications networks (which, in this case, means networks not operated by telecommunications providers, typically to ensure optimal reliability for critical infrastructure sectors such as utilities). Such utilities have, in some cases, purchased or otherwise gained access to certain bands of spectrum to enable wireless applications.

The 3.5 GHz (gigahertz) band represents both an opportunity and a challenge for utilities in terms of spectrum access for wireless communications. The 3.5 GHz band creates an opportunity to expand capacity because utilities will have access to as much as 150 MHz of spectrum (3550-3700 MHz) as well as LTE (a "long-term evolution" network, which is a standard for high-speed wireless communications) equipment that will be available for use in the band. The challenge for utilities is that they have incumbent systems in the 3.65 GHz portion of the band (3650-3700 MHz) and those incumbent systems must contend with the threat of interference from new operations coordinated by a spectrum access system database. Such a situation is untested and may not effectively mitigate the threat of interference to incumbent utility systems in the 3.65 GHz band. Additional complications arise because the utilities that will ultimately need to transition from the current Part 90 rules that apply to their incumbent systems will lose special protections against interference and will need to comply with the new rules, including interconnection with the spectrum access database. Utilities have extensive incumbent systems in the band and they are understandably concerned that the new licensing regime in the 3.5 GHz band will undermine the reliability of and strand the investments made in these systems.

BACKGROUND

In the spring of 2015, the FCC issued GN Docket 12-354, a Report & Order (R&O) and Second Further Notice of Proposed Rulemaking. This R&O implements a three-tiered spectrum-sharing framework to make up to 150 MHz of 3.5 GHz band spectrum available for mobile broadband in the new Citizens Broadband Radio Service (CBRS). The CBRS spans from 3550 MHz to 3700 MHz and consists of 100 MHz newly available spectrum (3550 -3650 MHz) and 50 MHz (3650- 3700 MHz) of spectrum already available for commercial use. The three-tiered licensing scheme is composed of a general authorized access (GAA) tier, a priority access (PAL) tier, and an incumbent access tier. Federal incumbent users in the 3550-3650 MHz band will be protected from harmful interference from PAL and GAA users through a two-phase approach. In phase one, federal radar systems will be protected by smaller than proposed geographic exclusion zones and in phase two, they will be protected by a new environmental sensor capability that will detect federal radar transmissions and report them to the Spectrum Access System (SAS) database. The Second Further Notice of Proposed Rulemaking includes a fixed transition period to protect existing licensees in the 3650-3700 MHz band, many of them held by UTC member utilities, from harmful interference from Citizens

Broadband Radio Service.
Subsequent to the FCC's R&O, the FCC issued a Public Notice that invited comment on the parameters for the Grandfathered Wireless Protection Zones (GWPZ s), which would protect incumbent utility systems in the 3.65 GHz band from interference from new CBSDs, which would operate on a GAA basis in the band. UTC filed comments urging the FCC to protect utility systems by expanding the size of the GWPZ, but others commented that the GWPZ should be smaller than what the FCC proposed. In June 2015, the FCC issued another Public Notice that established the GWPZ. The GWPZ will protect utility incumbent systems based upon center coordinates of their base stations extending outward in segments to a radius of approximately 18 kilometers where there are entities with registered "customer premise equipment" (CPE). In other areas where there are no registered entities with CPEs, the GWPZ will only extend out to a radius of approximately four kilometers from the center coordinates of the base station of the incumbent utility system.

UTC POSITION

UTC welcomes efforts by the Federal Government, FCC and NTIA to make more spectrum accessible through spectrum sharing, as is the case in the 3.5 GHz band. This may make it possible for more efficient use of spectrum for utilities and other CII. UTC supported allowing utilities (and others) to apply for PALs in areas where they were the only applicant (an idea that the FCC initially did not adopt, but ultimately granted on reconsideration). This may enable utilities to obtain PALs in some remote areas, but it remains unclear whether utilities will have much success attaining PALs in urban areas where commercial carriers are likely to outbid everyone for those licenses.
However, UTC is concerned that the decision to expand the 3.5 GHz band to include the 3.65 GHz band will potentially cause interference to the incumbent systems that operate there. Moreover, UTC is concerned that the GWPZ does not adequately protect utilities in the band and that it does not enable them to expand the coverage of their base stations as they expected when they originally deployed their systems. UTC will monitor developments to determine whether these incumbent systems become subject to interference from CBSDs in the 3.65 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.
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.

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