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FCC appears poised to set aside broadband spectrum for utilities

By **George Lobsenz**

Spurred by growing cyber-security concerns and the soaring data connectivity needs of the increasingly interactive U.S. power grid, the Federal Communications Commission appears poised to approve a proposal to allocate part of the wireless broadband spectrum for the exclusive use of electric utilities and other critical infrastructure operators, industry sources say.

The FCC is expected to rule soon on a long-standing proposal by pdvWireless (PDV), a private wireless provider, and the Enterprise Wireless Alliance calling for the agency to realign part of the 900 MHz LTE spectrum so it can be offered to utilities as a more robust, secure data network than the fragmented wireless communication operations that now characterize the electricity sector.

PDV, a New Jersey-based firm led by the founders of Nextel Communications, has been pushing for the FCC action since 2014, shortly after acquiring 900 MHz spectrum from Sprint. The company says enabling utilities to standardize on a realigned 900 MHz band will not only address cyber-security anxieties but enable utilities to more cost-effectively pursue the broader wireless communications capabilities needed to handle the growing tidal wave of data that is coming with grid modernization.

Among other trends, PDV and utilities backing its proposal—which include Southern Co. and Ameren—note that utilities face huge new connectivity needs due to the growth of distributed energy resources and energy storage providers that are increasingly being tied into their transmission networks. Those green energy resources are being integrated into the grid through new interactive communication systems

that must handle and analyze reams of new operating data for dispatch and payment, often in real-time.

Utilities also are struggling to keep up with data communications needs generated by the deployment of smart meters that let consumers customize their electric service and maximize cost savings and benefits of new technology, such as rooftop solar and home battery storage.

And on top of that, grid operators must comply with cyber-security requirements by deploying sophisticated new monitoring and software systems needed to detect and respond to hostile intrusions into their power networks—again producing massive amounts of data that far exceed the capabilities of most utilities' legacy communications systems.

“The electric utility industry is changing, evolving from centralized generation and distribution to a more efficient and resilient distributed model,” PDV says in a backgrounder explaining its plan to offer utilities dedicated wireless spectrum. “Data connectivity is the nerve system that makes this coordinated, interactive approach possible, but today’s amalgam of narrowband and limited-application networks is too inefficient, complex, and capacity-constrained for utilities to sustain for current usage—much less to support future modernization efforts.

“Though today’s utilities do rely upon dedicated, private networks to support their grid operations, they are generally low-capacity networks that support only one or a few grid functions using old technology in diverse spectrum bands,” the company contends. “As a result, many utilities maintain multiple networks, sometimes a dozen or more—a situation that is both costly and risky. And importantly, these diverse networks are not interoperable, either within

a single utility or across neighboring ones, much less nationwide.

“The absence of a hardened, utility-grade data network to support grid operations increases the likelihood of a major outage with potentially devastating consequences.”

PDV first asked the FCC to allocate broadband spectrum to utilities in a November 2014 filing with the Enterprise Wireless Alliance (EWA), a national association representing business enterprise wireless users and suppliers to the wireless industry.

However, its petition for rulemaking languished at the FCC, in part due to opposition from several parties using the 900 MHz band, including Sensus, which provides advanced metering infrastructure to utilities to do automatic meter reading for more than 14 million meters in the United States. Also opposing the petition were utilities served by Sensus that feared disruption of their operations and other utilities using the 900 MHz band for their internal operations.

However, PDV officials then began extensive outreach to utilities to address their concerns and explain their proposal, winning a few key allies such as Ameren and Southern Co. that helped lobby the FCC in favor of the 900 MHz realignment.

In August 2017, the FCC issued a notice of inquiry seeking comment on use of the 900 MHz band and certain issues related to the PDV-EWA proposal. And in a May 1, 2018, filing, PDV and EWA told the FCC it had reached accommodations with Sensus and other industry groups affected by their proposal, including the American Association of Railroads, that effectively resolved their concerns.

PDV and EWA also leaned heavily on growing concerns about cybersecurity threats to the U.S. grid in urging the FCC to

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move forward on their proposal.

“[F]ew priorities could be higher or more immediate than arming the country’s critical infrastructure sectors...with spectrum on which they can deploy broadband networks designed and operated to their exacting requirements,” they said in their May 2018 filing. “Broadband is essential to modernization and securitization of the national energy grid....”

“The time is now for the commission to support the cybersecurity risk management efforts of critical infrastructure industry operators by proposing a modernized 900 MHz band to enable the modernized grid....”

Backers of the PDV-EWA proposal also noted that the FCC already had taken similar action by allocating dedicated 700 MHz spectrum to public safety agencies across the country.

The FCC quickly gave a positive signal on the PDV-EWA plan, granting in May 2018 a request by Ameren for a two-year experimental license allowing the utility to pilot a first-of-its-kind secure 900 MHz LTE broadband network in its Illinois and Missouri service territories.

Then in September 2018 the commission

issued a freeze on licenses in the 900 MHz band in a move that appeared aimed at clearing the decks for the PDV-EWA proposal to offer utilities first crack on using that spectrum.

Meanwhile, PDV officials say more utilities have seen the benefits of its 900 MHz plan and weighed in at the FCC while also making plans to take advantage of the new broadband licenses.

“[U]tilities and other key players now have a vested interest in seeing our FCC process succeed and have become more vocal of why they want and need the 900 MHz band to be modernized,” PDV President and Chief Operating Officer Rob Schwartz said in a June 5, 2018, earnings call with Wall Street analysts.

“We’ve created much broader industry awareness of our proposed solution...and we’ve built a robust pipeline of real commercial demand from utilities for the 900 MHz broadband spectrum....”

More utility support for the 900 MHz plan emerged this week with the announcement Monday of a new coalition—the Utility Broadband Alliance (UBBA)—aimed at promoting adoption of dedicated wireless broadband by

critical infrastructure operators.

Founding members of UBBA include Ameren, Burns & McDonnell, Cisco Systems, General Electric, Motorola Solutions, National Grid and Southern Linc, the telecom arm of Southern, which is already deploying an advanced LTE network in the utility’s Alabama and Georgia service territories.

Southern officials also say that standardizing U.S. utility communications on the 900 MHz band will drive industry economies of scale, speed development of new utility applications and even allow for improved national response to storms by enabling utilities across the country to remotely collaborate with affected utilities on recovery operations.

“I’m excited to have a vehicle for utilities to collaborate on the inevitable deployment of broadband technologies,” said Cole Crews, a consulting engineer at Ameren. “The focus that this group brings will allow all interested parties to share successes so that they may be replicated across the industry, bringing even more value to the investments in broadband deployments so we can better serve customers.”