

To

Mr. Wanshi Chen
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Cc:

Mr. Xizeng Dai
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August 3, 2021

Dear Mr. Chairman,

Subject: Liaison Statement regarding standardization of a new band (Upper 700 MHz A Block) for NB-IoT

This letter is being filed on behalf of a list of companies who provide utility services to residential, business, and governmental customers in the United States as well as utilities-related industry trade associations. Together, as an industry, we provide electric, gas, water, and wastewater services to millions of customers. Each of our companies is expanding its wireless infrastructure to support more reliable and efficient operation. We are also working to adapt our networks to changing technologies and demands, particularly in the electric sector due to increasing use of distributed and sustainable generation resources and changing patterns of use and energy storage.

While telecommunications approaches vary from utility to utility, we see the use of standardized wireless technologies deployed using licensed spectrum as an important tool that can help our industry meet these demands. Utility companies are considering NB-IoT and LoRa as potential candidate wireless technologies for their systems. In the U.S., the Federal Communications Commission (FCC) has not officially designated any specific spectrum to be reserved for use by utilities. However, there is a general consensus in the industry that Upper 700 MHz A block is well suited for utilities. In this regard, we would like to request 3GPP to standardize the Upper 700 MHz A block as a new band to be used for NB-IoT.

Description:

The Upper 700 MHz A Block ("700A") is a paired 1+1 MHz spectrum. It is currently not part of any 3GPP band plan. The 700A is situated between Upper C & Public Safety Broadband Blocks in FCC band plan.

The UL transmit is 787-788 MHz. The DL transmit is 757-758 MHz. Given it is 1+1 MHz FDD spectrum, only NB-IoT operation in stand-alone configuration is being proposed for this new band.

Background:

The 700A band was auctioned off by the FCC on a country-wide basis in 2000 and 2001. Currently, more than 20 utilities in the United States own licenses to this spectrum. It has also been licensed by

other Critical Infrastructure Industries (“CIIs”) including high-speed railway and gas transportation and processing companies. In addition, other types of users have also expressed interest in the utilizing the spectrum for Smart City and other IoT applications.

In the absence of any 3GPP technology option for this block of spectrum, various proprietary technologies have been developed over the years to serve the needs of utilities and critical infrastructure industries. Some vendors offer a variant of IEEE 802.16 adapted to this block of spectrum. LoRa and SigFox technologies are also finding some traction, due to lack of 3GPP alternatives. For all these reasons, the demand for 3GPP-based solution has been building up over the past few years.

The CIIs require the technology they deploy to be highly reliable, secure, flexible with long-term supplier commitments and a strong evolution roadmap. The current proprietary ecosystem does not have the robust and healthy vendor ecosystem as the 3GPP. Its drawbacks include vendor lock-in, lack of futureproofing, and high Total Cost of Ownership (TCO). Historically, utilities have always adopted and invested in standardized technologies, and their interests are not different when they are looking at wireless IoT solutions.

Motivation:

Standardizing NB-IoT in this block of spectrum will unlock a whole new category of solutions to meet the needs of CIIs.

Most of the utility companies understand the importance of IoT and all the benefits a standardized technology could bring, such as efficiency, large ecosystem, flexibility and investment protection. Key leaders in the industry have already realized that NB-IoT is the most appropriate solution to automate and modernize many aspects of their operations, and we expect this view to become consensus with 3GPP designation of the 700A block as an NB-IoT band. Typically, utilities prefer to build, own, and operate their private networks for security, flexibility, longevity, and other reasons. Therefore, they would become another group of “operators” in the 3GPP community.

In the absence of any designated spectrum for critical infrastructure industries in the United States, and since many have already embraced the 700A band, it has become the leading option for CII companies. In Canada, the band is currently held by the government regulator and would become more attractive for auction and use if it becomes a 3GPP band. Such designation will pave the way for the utility industry to fully adopt NB-IoT as a preferred technology and go full speed with large-scale investment and deployments.

Therefore, in summary, we strongly believe 700A band designation by the 3GPP will be a win-win for both the utility companies and the 3GPP ecosystem, with potentially large lucrative market opportunity for the vendor community.

Early Success:

Some early adopters have already successfully deployed stand-alone NB-IoT deployments using this band in a “pre-standard” implementation.

JEA, an electric, water, and wastewater utility based in Jacksonville, FL began testing a pre-standard NB-IoT system provided by Puloli for operation in this block of spectrum in [2019](#). FCC-certified NB-IoT devices and network equipment have been in operation in the band for the past two years. Given the success of this pre-standard system, many utilities, industry trade associations, and utility research institutions have called for formal standardization of NB-IoT operation in this block of spectrum.

We thank you for your consideration of this request and would be happy to respond to any questions you may have.

Sincerely,

/s/ Brett Kilbourne

Sr. Vice President of Policy & General Counsel

Brett Kilbourne

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