

Experimental License Application Justification

The New York Power Authority (“Authority”, “NYPA”) is the nation’s largest state public power organization, with 16 generation facilities and more than 1,400 circuit miles of transmission lines. The Authority provides some of the lowest-cost electricity in New York State, which helps support thousands of jobs statewide while reducing public-sector costs.

The energy industry is in early stages of transformative changes that are expected to dramatically alter the way electric power is generated, delivered and used. The grid must become more adaptable, intelligent, and agile in responding to the massive number of individual decisions made by consumers as they use and generate electricity.

The Authority’s Digital Utility Strategic Plan aims to position NYPA as an integral and valuable part of the future electric system and will support our customers through the following five aims:

- The first end to end digital utility in the United States
- The market leader for both energy efficiency and grid-scale / behind the meter renewable energy services
- Offering the best deal, by far, in electric supply and electricity commodity management for our supply customers
- Having the most impactful transmission and large-scale renewable projects either deployed or in active development.
- Striving to be the most innovative and active service provider in the fields of energy storage and electric vehicle infrastructure

We believe that the successful execution of the first of these aims is critical for NYPA to achieve the others which includes building a secure, robust and reliable Private-LTE (P-LTE) network to manage critical infrastructure.

I **BACKGROUND**

NYPA is looking to build a 3GPP standards based private LTE network to support its efforts to help modernize the electric grid in New York State. This secure and reliable network will support NYPA’s efforts to enhance its operational and programmatic capabilities and leverage the benefits of evolving innovation in wireless equipment, particularly in the following areas:

1. Drone technology to safely monitor and inspect NYPA generation and transmission assets
2. Workforce mobility applications
3. Deep metering services and analytics of our customer energy consumption
4. Wi-Fi telephony and Push-to-Talk (PTT) applications
5. Secure communications for emergency management and service restoration
6. Internet of Things (IoT) applications
7. Data transport to support NYPA’s energy efficiency initiatives

NYPA has a current project to install Optical Ground Wire (OPGW) across 700 miles of the transmission right-of-way. This fiber infrastructure will provide the overall backhaul for the P-LTE project.

A proof-of-concept is planned at NYPA's Clark Energy Center located at 6520 Glass Factory Rd in Marcy, NY and in NYPA's PLTE lab within its headquarters at 123 Main Street, White Plains NY. The lab in White Plains is in an interior office within the building and will be run at minimum power levels. The proof-of-concept tests are in-lab only, not field tests. Following successful in-lab proof-of-concept tests, an additional experimental license will be requested for a field pilot to be held in at our Blenheim–Gilboa Hydroelectric Power Station in North Blenheim NY.

Anterix (formerly pdvWireless) and the Enterprise Wireless Alliance ("EWA") submitted a Petition for Rulemaking to create a 3X3 MHz allocation to facilitate broadband deployment for business enterprise entities, including those classified as Critical Infrastructure Industry (RM-11738) within the 900MHz band. The FCC released a Notice of Proposed Rulemaking ("NPRM") on March 14, 2019 that would realign and modernize the 900 MHz band to allow for broadband service. Currently, the 900 MHz licenses are configured in 20 blocks of 10 contiguous 12.5 kHz channels (125 kHz) that cover entire Metropolitan Trading Areas ("MTAs"), each block is separated by 10-channel allocations of site-specific Business/Industrial/Land Transportation ("B/ILT") frequencies. Since the minimum channel size for an LTE carrier is currently 200KHz, the existing 900 MHz band configuration prevents the deployment of these services. NYPA intends to use PDV's 900 MHz channels as proposed to create and experimental license for broadband service.

II REQUEST FOR CONVENTIONAL EXPERIMENTAL RADIO LICENSE

A Purpose of Test

The goals that are driving NYPA's request for a conventional experimental radio license is to evaluate performance of a private LTE system to support a stringent representative subset of use cases. The purpose of the testing is technical radio research: it is intended to confirm that broadband service can be deployed on 900 MHz spectrum using LTE certified Band Class 8 equipment to provide the necessary capacity and latency for the above listed use cases without causing interference to systems operating on spectrum adjacent to the proposed 900 MHz allocations in the experimental license. The testing will comply with Rule Section 5.84 and will not cause interference to either co-channel or adjacent channel licensees authorized pursuant to the current 900 MHz band plan. It will be conducted on MTA channels held by Anterix and interleaved B/ILT channels. The testing will also be a "proof of concept" opportunity to determine whether LTE data speeds and capacity can support the important fixed field-area functions and applications that are currently conducted on narrowband systems or on legacy copper-based circuits that may be de-constructed.

B Technical Parameters of Test

The testing will involve wireless connectivity to devices within our labs. Details on the transmitting equipment are provided in the technical sections of this application. It should be noted that this is experimental equipment only to the extent that it has not yet been certified for use on Part 90 spectrum; the models NYPA plans to test are LTE Band Class 8 equipment that have been deployed worldwide at 900 MHz.

While most of the monitored testing will take place during normal business hours (9AM-5PM), NYPA anticipates that some data transmissions will occur throughout the 24-hour day. Consistent with the requirements of Rule Section 5.107, system management and monitoring will be supported from NYPA's White Plains NY office location, except for setup and any equipment adjustments that will be conducted by qualified personnel in Marcy, NY.

C An estimate of the length of time that will be required to complete the program of experimentation proposed in the application

NYPA requests a 24-month term for the experimental license for a valid product development trial and to adjust the testing as needed.