

FCC Form 442

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The following provides an overview of the experimentation New Jersey Dept. of transportation (NJDOT) is seeking:

New Jersey Connected Technology Integration and Implementation

The focus of the New Jersey Connected Technology Integration and Implementation (NJCTII) project is to investigate the requirements to install, wire and integrate C-V2X RSUs for the purposes transmitting Signal Phasing and Timing (SPaT) MAP, and Traveler Information Messages (TIMS) data at signalized intersections. This project will serve as NJDOT's first project deploying Connected Vehicle (CV) hardware.

The overall goal of the project is for NJDOT to successfully deploy these RSUs to allow them to broadcast CV data to vehicles that will ultimately allow them to expand to other safety applications. This project will determine the overall integration and installation requirements for future CV projects.

The project has three phases; the Preliminary Investigation phase, the Lab Testing phase, and the Field Deployment phase.

The Preliminary Investigation Phase will consist of the verification and development of the general equipment wiring and system schematics needed to have a fully functional RSU that will communicate via C-V2X. The wiring and hardware needs are based on the specific requirements of the materials being procured by NJDOT.

The Lab Testing phase was conducted in a lab environment constructed at TCNJ. The purpose of this phase is to test the requirements for RSU's to successfully transmit SPaT, MAP and TIMS data using C-V2X communications and integrate these systems with both Adaptive and non-Adaptive traffic signal systems. The lab is set up to simulate a field network that mimics the same business rules of NJDOT's Garden State field Network for the field locations. This simulated network allows NJDOT to ensure all testing is reflective of the eventual field deployment parameters. The lab setup will include RSU's, communication hardware, traffic signal controllers, vehicle On-board Units (OBUs) and any cabling required to wire the hardware. The testing investigates the requirements for OBU's to receive the correct SPaT, MAP and TIMS message

data being transmitted by the RSU from the signal system. The lab also tests the remote communication capability of the system using the back-end management software.

The Field Testing Phase will examine that the requirements discovered during the lab phase will allow for the successful field integration of an RSU to transmit SPaT, MAP and TIMS message data through C-V2X communications. As a part of the deployment, NJDOT will license all the equipment with the FCC. The hardware tested during the lab phase will be installed and tested at field intersections and integrated into the Garden State network. The project team will connect an OBU to a computer and drive through the field locations to test the transmission of SPaT, MAP and TIMS data from the RSU to the OBU. This phase will also include the system verification using a central software. The project team will ensure that the equipment installed in the field is integrated and operational in both the CV software platform and the traffic signal system software.

Hence the request for an Experimental License to achieve the above.

Your consideration is greatly appreciated.

Submitted By:

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