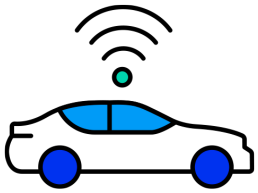
SMART GRANTS PROGRAM



Cloud-Based Vehicle-to-Everything Technology (CbV2X)

Delaware Department of Transportation

PROJECT PARTNERS

University of Delaware
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PROJECT CHALLENGE

The Delaware Department of Transportation (DelDOT) is proposing to develop a fully realized implementation plan to set up cloud-based vehicle-to-everything technology (CbV2X) in three diverse regions throughout the state to improve intersection safety and efficiency. A CbV2X is a communication system enabled through cellular communications to provide road users with live travel advisories. Recognizing the value of lives lost, DelDOT has adopted a Statewide Pedestrian Action Plan with a goal of zero fatalities on its roadways. Implementation of CbV2X will be a crucial component of this plan to help reduce pedestrian and cyclist fatalities. The proposed project will also improve transportation efficiency through data collection to optimize signal timing and reduce traffic congestion.

IMPACT

The proposed solution has the potential to eliminate the nation-wide V2X technology gap. Given that the FCC has ruled out DSRC and the C-V2X is still under development, the solution provides a much-needed alternative technology in this V2X domain. The solution is scalable and low-cost cloud-based technology for real-time SPaT communication that meets the latency requirements for safety critical applications and can be deployed anywhere in the nation.

CURRENT STATE OF THE ISSUE

From 2015 to 2020, the State of Delaware has been ranked in the top five states with the highest pedestrian fatality rates four times. Intersections have played a big role in the high fatality rates, with 39.4% of fatal or severe pedestrian and cyclist injuries having occurred at intersections.

POLICY QUESTIONS

Can we validate the use of the CbV2X architecture as a suitable connected vehicle communications infrastructure solution to support various V2X applications?

STAGE 1 OUTCOMES

Stage 1 of the project will consist of implementation plan development, concept prototyping, implementation of cloud-based communications infrastructure, and prototyping activities.

STAGE 2 VISION

Stage 2 will consist of plan implementation in the proposed project areas.