

Project Summary

Evaluation of CARMA for I-STREET Testbed Implementation

FDOT Project BDV31-977-145



I-STREET

TRANSPORTATION INSTITUTE
UNIVERSITY OF FLORIDA

OVERVIEW



The I-STREET research team conducted a thorough assessment of the Federal Highway Administration's (FHWA) Cooperative Automation Research Mobility Applications (CARMA) program and on cooperative driving automation (CDA) capabilities for transit applications. Subsequently, they crafted a detailed guidance document aimed at aiding the Florida Department of Transportation (FDOT) in the seamless implementation of this technology on the I-STREET Living Lab.

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METHODOLOGY

- CARMA use cases, including the hardware used were reviewed and status of development and testing assessed
- Public and private sectors consulted to understand required components for CDA-ready vehicle-infrastructure system
- Test tracks and lab facilities visited which have used CARMA hardware



2 GOAL

The mission of the I-STREET research team was to deliver a comprehensive report offering guidance to the FDOT on how best to harness the potential of the CARMA program within the I-STREET Living Lab in Gainesville, FL.



KEY FINDINGS

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Based on an extensive review of a variety of hardware used by various testing facilities and labs, six use cases were developed specifically for field implementation on the I-STREET Living Lab. The use cases were identified as cooperative perception (CP) applications which is expected to improve perception performance of automated vehicles.



REAL WORLD APPLICATIONS

The tailored use cases designed for implementation in the I-STREET Living Lab show significant promise in addressing the prevalent challenges concerning pedestrian and bicyclist safety in Gainesville, FL. This guidance document furnishes FDOT with crucial details regarding technology readiness, a prioritized approach to problem-solving, and a clear financial roadmap for the successful integration of the recommended six use cases within the I-STREET Living Lab.