FDOT Workforce Development Training for Connected Vehicles (CV)

This training was developed to inform FDOT employees about Florida's Connected and Automated Vehicles (CAV) program. It covers the full lifecycle of Connected Vehicle (CV) deployment, from knowledge of CV technologies, to planning, design, and implementation of CV applications, to operation and maintenance of CV enabled services. It addresses a wide variety of topics including deployment of multimodal CV applications that have the potential to improve safety, mobility, environment, and productivity across the state.

1 - Introduction

This lesson will introduce the goal and learning objectives of the training. It includes introduction of participants and a high-level overview of the 13 lessons.

2 - Background of Connected Vehicles

This lesson will cover an overview of CV basic concepts, building blocks, standards, terminology and definitions.

3 - National Initiatives, Resources and Efforts

In this lesson, instructors will cover USDOT, AASHTO and TRB efforts related to CAV pilots and deployment.

4 – Florida CAV Initiatives

This lesson will include overview of Florida's CAV Business Plan, initiatives and relationship to the Secretary's Vital Few. It will also include other related policy and governance issues such as funding sources for CV projects.

5 – Impacts of CAV

This lesson will discuss the benefits of CAV in terms of safety, mobility, environment and road weather aspects.

6 – Cybersecurity

This lesson will cover and overview to the importance of cybersecurity in CAV deployments. It will also cover the concept and details of Florida's Security Credential Management System (SCMS).

7 – Signalized Arterial Impacts

This lesson will include overview of the role of traffic signals in CAV. It will also cover intersection requirements, communication paths, messaging and how CV will impact operations of signals and arterials in the future.

8 – Data Platforms

This lesson will highlight the importance of data, Vehicle-to-Everything (V2X) Data Value Chain, and describe FDOT's future V2X Data Exchange Platform.

9 – Technology

In this lesson, instructors will discuss communication technology including Dedicated Short Range Communications (DSRC) and Cellular vehicle-to-everything (C-V2X). Communication issues including latency, reliability, availability and security will also be covered. CV components including On Board Units (OBUs), Roadside Units (RSUs), and Internet Protocols will be addressed in some detail as well.

10 – Implementation

This lesson will be the most detailed and cover topics including Systems Engineering and Architecture; Safety, Mobility, and Productivity Applications; Data Collection, Management, and Utilization; Communications, Hardware, and Software; Physical and Cyber Security of Infrastructure and Environment; and Deployment/Operations &Maintenance Considerations.

11 – Lessons Learned

This lesson will cover lessons learned from deployment in Florida and elsewhere.

12 – Future Planned Efforts

In this lesson, the Instructor will discuss Florida specific initiatives include Technology Application Partnerships for Local Agencies (TAPs-LA) and I-Street.

13 – Questions/Answers

During this allocated time, the Instructors will answer questions and lead additional discussion as time allows.