I-STREET: A REAL-WORLD TRANSPORTATION TESTBED IN GAINESVILLE, FLORIDA

A Collaboration of UF, Florida Department of Transportation (FDOT), and the City of Gainesville

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Overview

- UF, FDOT, CoG partnership
- Strong relevant research groups at UF
- Aligns well with UF strategic plan for campus

**FDOT-Funded Project (completed Sept. 2017):** Develop a plan for an advanced transportation technologies testbed at UF/CoG
I-STREET Infrastructure Projects

• FRAME – 150 RSUs along I-75 and around the city, plus vehicle instrumentation
• AID – 13 signalized intersections and 7 mid-block crossings
• Gainesville Trapezium (45 RSUs around the UF campus)
• GAToRS Autonomous Shuttle
Other I-STREET Projects and Activities (1)

- AV Shuttle Evaluation
- Data analytics platform
- Sensor and sensor fusion development
- Bus bike rack sensors and app
- Ped and bike safety applications based on connectivity
Other I-STREET Projects and Activities (2)

- Simulation of autonomy in the loop
- AV algorithms development
- Evaluation of conflicts and near misses using video
- RFI for Industry participation
Request for Information – Industry Participation

• [http://www.transportation.institute.ufl.edu/research-2/istreet/](http://www.transportation.institute.ufl.edu/research-2/istreet/)

• First set of proposals – discussions under way with several companies

• Second set of proposals – selection in process

• Flexibility in options:
  • Performance Evaluation
  • Equipment/algorithm testing
  • Joint development and implementation
Example: Multi-sensor Fusion

Cohda Wireless MK5 DSRC

GPS Error Analysis

GPS interference (multipath) in urban environments must be addressed to reduce uncertainty in DSRC.

Example: Signal Control

- Traffic management by optimizing AV trajectories
- Most important at bottlenecks (intersections, on-ramps, etc.)
- Optimization methods used to increase throughput and reduce delay
Example: Freeway Operations

Autonomous Vehicles

Conventional Vehicles
Next Steps

• Industry partnerships / MOUs
• Infrastructure instrumentation
• Vehicle/bus instrumentation
• Data analytics and evaluations
Questions?