



Transportation Institute
UNIVERSITY of FLORIDA

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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FL ITE Winter Workshop, Gainesville FL, February 9, 2018

Overview

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

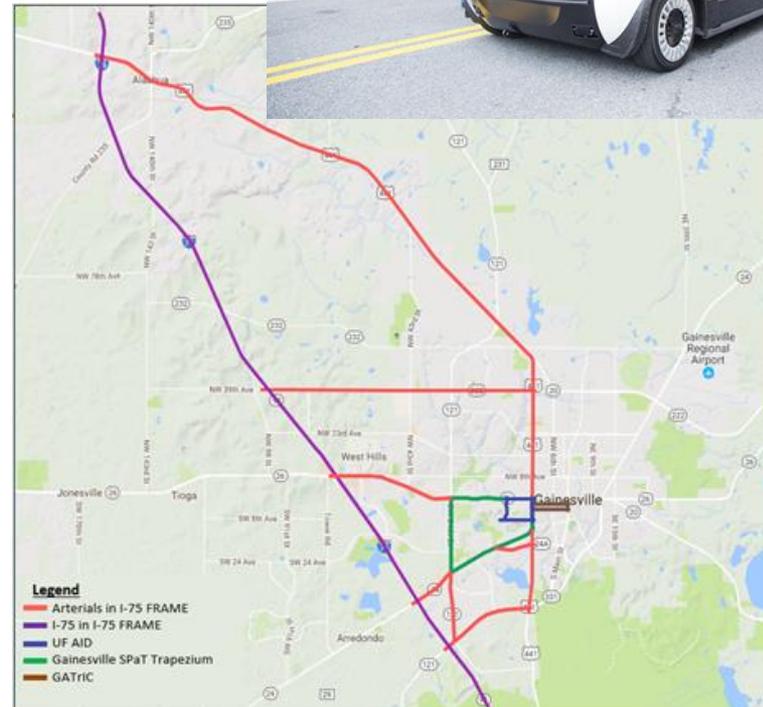
FDOT-Funded Project (completed Sept. 2017):

Develop a plan for an advanced transportation technologies testbed at UF/CoG



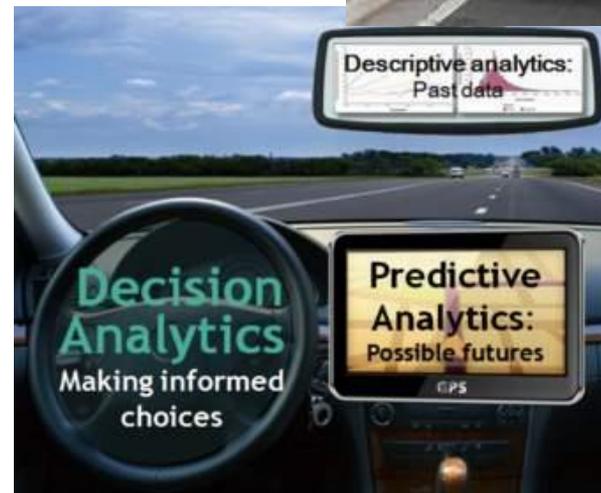
I-STREET Infrastructure Projects

- 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)

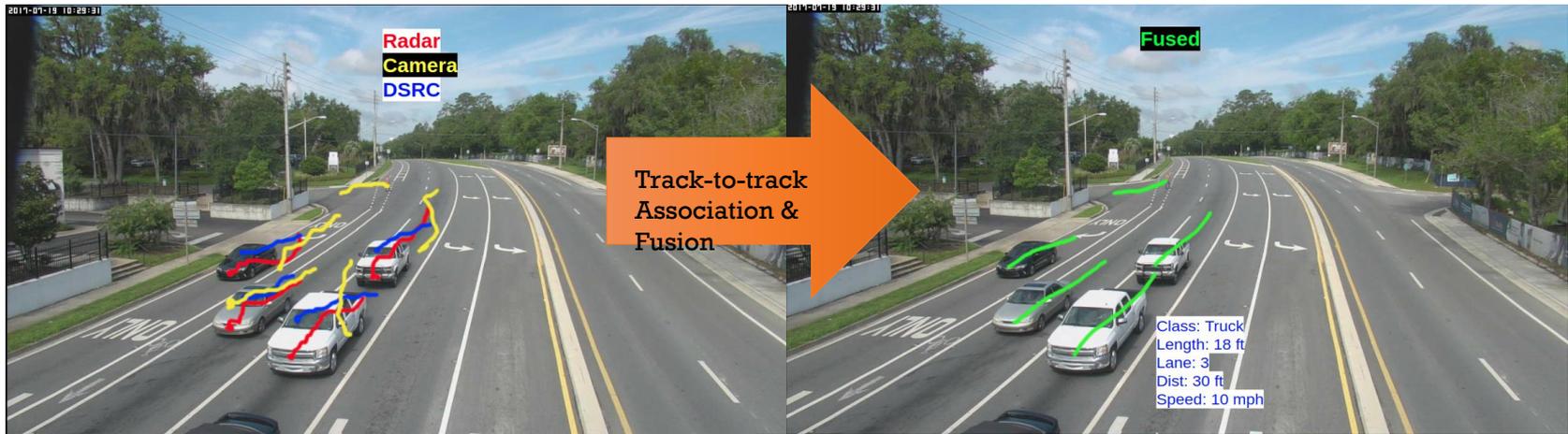
- Simulation of autonomy in the loop
- AV algorithms development
- Evaluation of conflicts and near misses using video
- RFI for Industry participation



Request for Information – Industry Participation

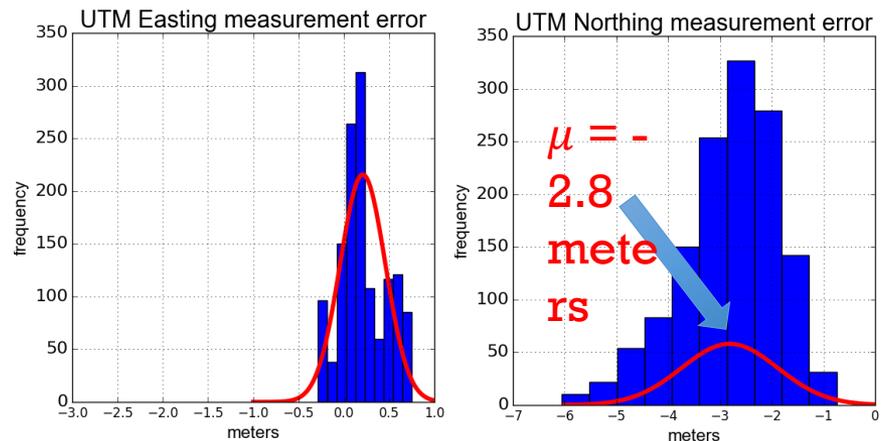
- <http://www.transportation.institute.ufl.edu/research-2/istreet/>
- First set of proposals – discussions under way with several companies
- Second set of proposals – selection in process
- Flexibility in options:
 - Performance Evaluation
 - Equipment/algorithm testing
 - Joint development and implementation

Example: Multi-sensor Fusion



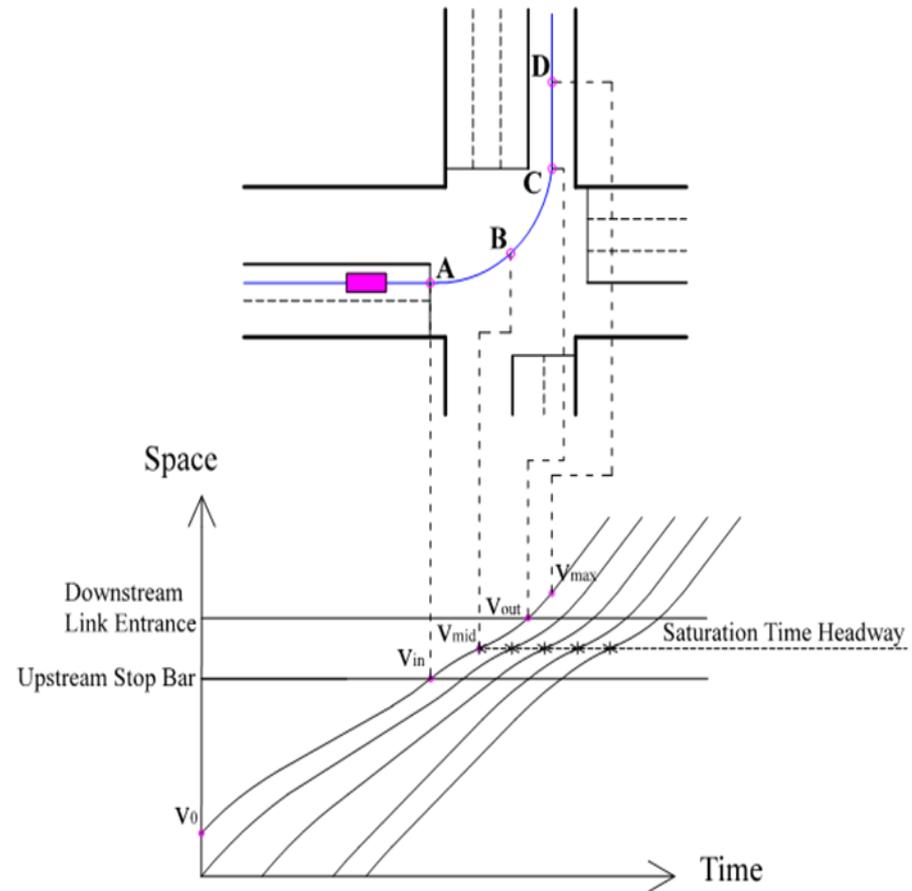
Cohda Wireless MK5 DSRC GPS Error Analysis

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



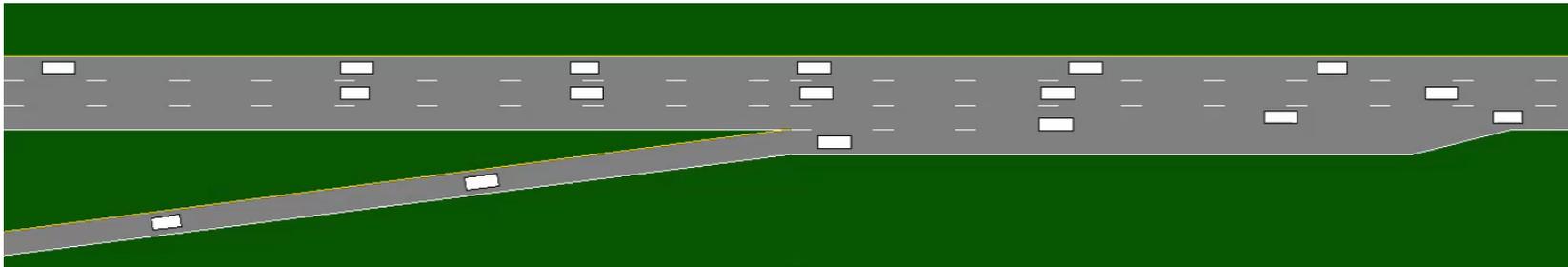
Example: Signal Control

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

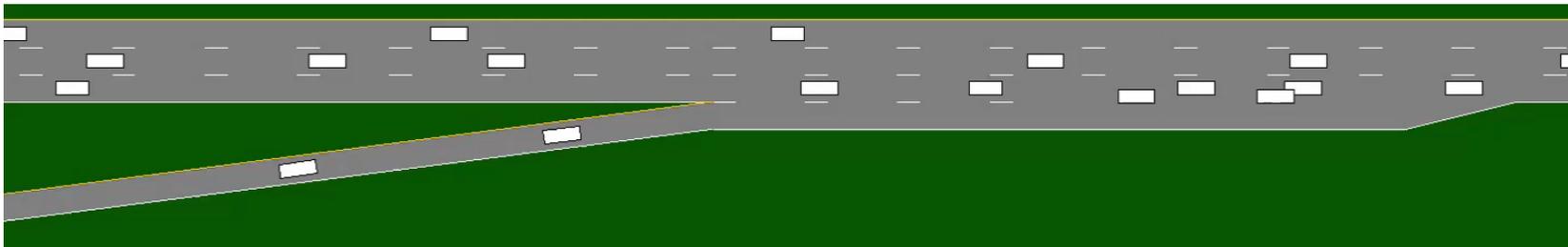


Example: Freeway Operations

Autonomous Vehicles



Conventional Vehicles



Next Steps

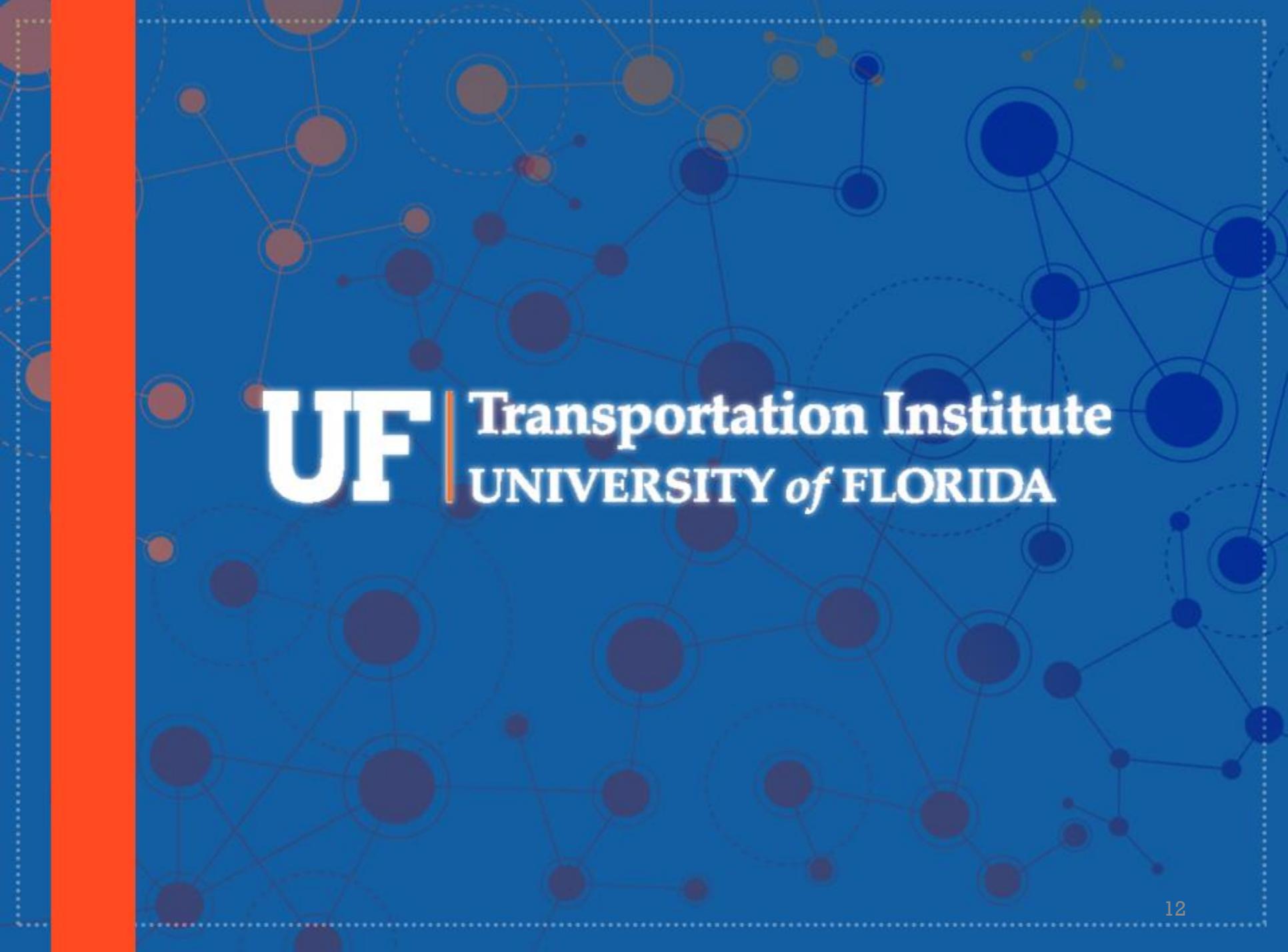
- Industry partnerships / MOUs
- Infrastructure instrumentation
- Vehicle/bus instrumentation
- Data analytics and evaluations



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Questions?



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