Are Cars Driving the Future?

Assessing Future Value from Early Adopter Autonomous Vehicle Programs

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2 June 2017
Discussion Topics

- UCF Autonomous and Connected Vehicle Projects
- Babcock Ranch Autonomous Vehicle Project
- Anticipated Autonomous Vehicle Operations
- Items for City and County Manager Consideration
- Leveraging Early Adopter Autonomous Vehicle Projects
- Business Case and User Acceptance
- Opportunities for Collaborative Development
UCF AV/CV Simulator Project

- Test ability of passengers to maintain situation awareness of vehicle operation
- Assess the level of trust in the safety of the underlying technology
- Investigate multimodal AV and CV displays for future vehicles to safely and quickly alert drivers of upcoming vehicle warnings
- Use simulation to gather feedback for further simulation improvement and identification of possible research issues.
- Other Modeling & Simulation Projects
Proposal for
**DESIGNATION of AUTOMATED VEHICLE PROVING GROUNDS PILOT**

Central Florida AV Partnership:
- City of Orlando
- University of Central Florida
- Florida Polytechnic University
- FAMU - FSU College of Engineering
- Florida’s Turnpike Enterprise
- Florida Department of Transportation DB
- Florida Department of Transportation DI
- Central Florida Expressway
- LYNX
- NASA, Kennedy Space Center

**SIMULATION AND TESTING**
- UCF
- Florida Poly
- FAMU-FSU

**CONTROLLED FACILITY DEPLOYMENT**
- NASA, KSC
- SUNTRAX

**OPEN DEPLOYMENT**
- CITY OF ORLANDO
- LYNX
- FDOT DI, DB
- CFK
- FTC

**City of Orlando**
City of Orlando Mayor Buddy Dyer

**Florida Polytechnic University**

**University of Central Florida**
President Dr. Randy K. Avent

**Florida’s Turnpike Enterprise**
Executive Director and CEO Diane Guitierrez-Giacocetti

**Central Florida Expressway Authority**
Executive Director Laura Kelley

**FDOT**
District 5 Secretary Noranne Downs, P.E.

**LYNX**
Chief Executive Officer Edward L. Johnson
18,000 ACRES
NEW TOWN
GREENFIELD
50,000 PEOPLE
19,500 RESIDENTIAL UNITS
6 MILLION SF COMMERCIAL
1 GIG FIBER NETWORK

FLORIDA’S FIRST SOLAR TOWN
POWERED BY 75 MW FLORIDA POWER & LIGHT SOLAR FACILITY
BUILT ON STRATEGIC PARTNERSHIPS
LIVING LABORATORY
Engagement & Development Schedule

- Florida Automated Vehicles Summit – Dec 2015
- Request for Interest (RFI) – July 2016
- Industry Day – Sep 2016
- AUVSI Webinar – Sep 2016
- Request for Proposals – Sep 2016
- Memorandum of Understanding with Transdev – Mar 2017
- Open House and Founders Festival – Mar 2017
- Lake Timber & Founders Square – 1st Qtr 2017
- Babcock Neighborhood School – Fall 2017
- Autonomous Shuttle Operations Begin – Nov 2017

Autonomous shuttle demonstrated for 1,100 riders at the Babcock Ranch Open House, 11-12 March
Project Objective

Provide mobility and logistics services at Babcock Ranch

- Based on the convergence of **autonomous + connected + shared + electric + tailored vehicles**
- Compelling to Babcock Ranch residents and businesses
  - Provide high value at a competitive cost
  - Reduce the need to own and operate personal automobiles
    - Initially 2\(^{nd}\) and 3\(^{rd}\) household vehicles
    - Household vehicles for seasonal residents
- Profitable to providers
  - Yield an attractive return on investment
  - Offer business growth opportunities beyond Babcock Ranch
- Derived from win/win strategic relationships among collaborating companies
  - Develop the best autonomous vehicle system for Babcock Ranch based
  - Living Lab to study technology, operations and user acceptance
  - Learn and succeed together.
Planned Transportation Operations

- Anticipated Autonomous Vehicle Operations
  - Autonomous Sales Tours
  - Shuttle and On-Demand AV Services to Residents, Businesses and Visitors
  - Last Mile Package Delivery
- Match Community Growth with AVs
  - Est. 50 AVs by 2021
  - Shuttles first, pods to follow
- Other Mobility Services & Nodes
  - Car Rentals
  - Ride Sharing
  - Bike Sharing
  - Airport Shuttles
  - School Transportation
  - Nature Trail Heads
Imagine

• Shared AV mobility to reduce the cost of car ownership
  – Loan Payments
  – Insurance
  – Gas & Maintenance

• Smarter and ecologically friendly transportation

• Converting
  – Community parking space to green space
  – Garage space to living space

• Gathering valuable technology, operations and business case information
  – Greenfield community with AVs available from day one
  – Living lab environment with no pre-existing infrastructure or transportation biases
  – Lessons learned and best practices applicable to other communities and urban areas
Items for City and County Managers

• How do we leverage early adopter projects?
  – Test Bed Data Collection and Analysis
  – Business Case and User Acceptance Analysis
  – Smart Community/Neighborhood → Smart City
• Really cool technology…but how do we prevent bringing the wrong system to our community?
  – Bad business case beats good/cool technology
• Consider this as a new transportation way of life
  – Safer and more accessible mobility for the disabled, disadvantaged and elderly
  – Invest in (or subsidize) the RIDE not the PROGRAM
• Opportunities for Collaborative Development
QUESTIONS?

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