Welcome to the Consensus Safety Measurement Methodologies for ADS-Equipped Vehicles Workshop!

June 25-26, 2019

NIST Campus in Gaithersburg, MD

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David Wollman
david.wollman@nist.gov

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Safety First: NIST safety video will be shown

• In an emergency, please exit auditorium and if safe, turn left and head out exit doors to the right past where you picked up badges (or follow exit signs)

• Once outside, NIST staff will lead you to assembly points in the parking lots

• If alarm sounds, loudspeaker instructions will follow with additional information (shelter in place, etc.)
Consensus Safety Measurement Methodologies for ADS-Equipped Vehicles Workshop

NIST, Gaithersburg, MD on June 25-26, 2019

#NISTADSVehicles

Webcast audience input:
david.wollman@nist.gov
Some simple ground rules to help facilitate the discussions:

- Use aisle microphones if possible, one person speaks at a time
- Please give name/affiliation, and limit response to a minute
- Please focus on one concept/question at a time (avoid asking long list of questions ...)
- Reserve judgment during idea gathering (be constructive)
- Mute your electronics

Moderators and Speakers: Please stay on time!

Workshop plenary sessions are being webcast and recorded.
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Chris Greer
David Wollman
Ed Griffor

Ken Leonard

Workshop Partners & Organizing Committee

Jack Weast
Greg Leeming

John Maddox
Simone Wilson

Ed Straub

Myra Blanco

#NISTADSVehicles

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Agenda – Tuesday morning

• 9:15AM Workshop Overview, Goals, and Opening Statements
  [Chris Greer, moderator]
  • Chris Greer (NIST)
  • Loren Smith (USDOT)
  • Jack Weast (Intel Corporation)
  • John Maddox (Lyft)

• 10:15AM State and Users Perspectives
  [Greg Leeming, moderator]
  • Gummada Murthy (American Association of State Highway and Transportation Officials - AASHTO)
  • Kevin Biesty (Arizona Department of Transportation)
  • Marisa Walker (Arizona Commerce Authority)
  • Jessica Cicchino (Insurance Institute for Highway Safety - IIHS)

• 11:00AM Break

• 11:15AM Developers Perspectives: Manufacturers and Technology Companies
  [Ed Griffor, moderator]
  • Jack Weast (Intel Mobileye)
  • John Maddox (Lyft)
  • Ron Medford (Waymo)
  • Colm Boran (Ford Motor Company)
  • Steve Kenner (Uber)
  • Padma Sundaram (GM)
  • Nick Royal (Ricardo Innovation)

• 12:20PM Current Standards and Testing Methods (US and International)
  [Myra Blanco, moderator]
  • Edward Straub (Automated Vehicles Safety Consortium - SAE)
  • Myra Blanco (Virginia Tech Transportation Institute - VTTI)
  • Aviral Shrivastava (Arizona State University)
  • Brian Williams (Massachusetts Institute of Technology - MIT)

• 1:00PM Lunch (on your own, NIST cafeteria)
Agenda – Tuesday afternoon

• 1:50PM Evolving Methods and Frameworks
  [Jack Weast, moderator]
  • Frank Barickman (USDOT)
  • Jack Weast (Intel Corporation)
  • Michelle Chaka (VTTI)

• 2:50PM Instructions for Breakouts and Short Break
  • David Wollman (NIST)

• 3:00PM Day 1 Breakouts

• 4:15PM Break to Reconvene (Green Auditorium)

• 4:30PM Breakout Group Reports

• 4:45PM Wrap-up, Day 2 Plan
  • Chris Greer (NIST)
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Dr. Edward Griffor
NIST Campus in
Gaithersburg, MD

Ed Griffor
edward.griffor@nist.gov
Measuring ADS-Equipped Vehicle Safety: The Opportunity

• Need to understand where we are on safety
• Need to assess if and by how much our innovations improve safety
• Need to understand the tradeoffs with other concerns
• Need to understand the relationship to complexity
Smart Grid and Cyber-Physical Systems (SGCPS) Program at NIST

- Metrology mission of NIST
- NIST as part of the Department of Commerce mission
  - Transportation as one of the top three elements of the economy
  - AVs will transform markets
- Ed Griffor Background
  - Academic Research (Mathematics and EE in the US, Europe and South America)
  - Industry Experience (Chief Scientist for EE at DaimlerChrysler, Fiat-Chrysler)
    - Functional Safety and Cybersecurity
  - Gov’t Experience (Assoc. Director for Cyber Physical Systems/IoT)
    - NIST CPS/IoT Framework
    - System Trustworthiness (Safety, Security, Privacy, Resilience and Reliability)
Serendipity?

• NIST Breakthroughs: CPS/IoT Framework, Trustworthiness Reasoning and AV Testbed
• Right group of people (from ADS Manufacturers to early adopters/transportation as a service Lyft and UBER)
• Right time (deployment of partial autonomy is underway and of full autonomy is immanent)
• There is a large body of good work to build on:
  • Industry testing/validation practices for Automated Driving features
  • NHTSA Framework for Test Cases
  • RAND Framework
  • and others …
• Surging work on AI in CPS/IoT