

High-Confidence Transportation Cyber Physical Systems: New Research Directions

Workshop Co-chairs:
Radha Poovendran, Raj Rajkumar

A National Workshop



Welcome!

Workshop Objectives

- Bring together automotive, aviation and rail communities
- The transportation sector is vital to the national economy and competitiveness
- Rich and challenging high-confidence CPS domain
- Identify cross-cutting challenges and themes
- Capture challenges, potential approaches and a long-term research roadmap that will benefit all 3 transportation sectors

Workshop comprises of strong representation from Government agencies, Industry and Academia

Workshop Sponsors

- National Coordination Office / Networked Information Technology Research & Development (NCO/NITRD)
- National Science Foundation
- Air Force Research Labs
- NASA
- NSA
- NTSB
- Boeing
- University of Washington

Organizing Committee

- Radha Poovendran, Workshop Co-Chair
- Raj Rajkumar, Workshop Co-Chair
- David Corman, Boeing
- **Frankie King, NCO/NITRD**
- Chris Gill, WUSTL
- **Helen Gill, NSF**
- David Homan, AFRL
- Alan Kushner, NTSB
- Brad Martin, NSA
- Paul Miner, NASA
- Bill Milam, Ford
- Jim Paunicka, Boeing
- Jonathan Sprinkle, University of Arizona
- Russ Urzi, AFRL

Workshop Format

- Keynotes from academia, government and industry
- Government agency perspectives
- 3 Panels
- Brief presentations of position papers
- 5 Breakout Discussions
- Plenary Summaries

of Attendees: (at least) 115

Workshop Agenda: Tuesday

- NITRD Agency Perspectives
- Academia Keynote by Prof. Shankar Sastry
- USDOT Perspectives
- Automotive Sector Perspective and Panel

Workshop Agenda: Wednesday

- The NSF CPS Initiative
- Government keynote by Dr. Amy Pritchett, NASA
- FAA Perspective
- NEXTGEN Perspective
- Academic Perspective on Aviation
- Brief position paper statements
- Aviation Panel
- Cross-Cutting Industry Needs
- Breakout Sessions: V&V, Mixed-Criticality, Platform Challenges, Autonomy and Control, Infotronics/Infotainment
- Roadmapping
- NSF Bridge workshop:
<http://www.cts.umn.edu/events/NSFBridge>

Workshop Agenda: Thursday

- Overview of NCO/NITRD: Dr. Chris Greer
- Industry Keynote: Mr. Don Winter, Boeing
- Train Control and AMTRAK (Rail perspectives)
- EU Perspective - Werner Damm
- Commonalities across Transportation Sectors
- **Brief** Position Paper Presentations
- Continuation of Breakout Sessions
- Plenary Summary Reports from the breakouts
- Concluding Remarks and plans for report writing