



## Workshop

on

# Developing Dependable and Secure Automotive Cyber-Physical Systems from Components

March 17-18, 2011

Michigan State University Management Education Center  
811 West Square Lake Road, Troy, Michigan 48098

## Final Program

### Thursday, March 17

- 7:30 a.m. **Continental Breakfast and Workshop Registration**
- 8:30 a.m. – 8:45 a.m. **Welcome and Introduction** – Bill Milam (Ford), Raj Rajkumar (Carnegie Mellon) and Helen Gill (NSF)
- 8:45 a.m. – 9:05 a.m. **Remarks** – George Strawn (Director, NCO NITRD)
- 9:05 a.m. – 9:45 a.m. **Government Panel** – Participants: Helen Gill (NSF), Paul Jones (FDA), David Kuehn (DOT), John Maddox (NHTSA), Al Wavering (NIST) [Moderator: Ed Griffor (Chrysler)]
- 9:45 a.m. – 10:25 a.m. **Industry Panel** – Participants: Bill Milam (Ford), Ed Griffor (Chrysler), Tom Fuhrman (GM) [Moderator: Raj Rajkumar (Carnegie Mellon)]
- 10:25 a.m. – 10:45 a.m. **Break (Refreshments)**
- 10:45 a.m. – 11:25 a.m. **Academics Panel** – Participants: Stephane Lafortune (U of Michigan), Chunming Qiao (SUNY Buffalo), Xenofon Koutsoukos (Vanderbilt), Ram Vasudevan (UC Berkeley), Raj Rajkumar (Carnegie Mellon) [Moderator: Tom Fuhrman (GM)]

- 11:25 a.m. – 12:10 p.m. **Panel 1: Open Experimental Platforms and Challenge Problems –**  
Participants: Bill Milam (Ford), Brian Park (University of Virginia), Steve Schladover (UC Berkeley), [Moderator: Jonathan Sprinkle (Arizona)]
- 12:10 p.m. – 1:10 p.m. **Lunch** (MI State University Management Education Center Dining Room)
- 1:10 p.m. – 1:55 p.m. **Panel 2: Safety Critical Design Process – as in ISO 26262 -**  
Participants: AFRL (via telecon), Graham Hellestrand (Embedded Systems Technology, Inc.), Phil Koopman (Carnegie Mellon), Ed Griffor (Chrysler), Joe D’Ambrosio (GM), Sushil Birla (NRC) [Moderator: Igor Mezc (UC Santa Barbara)]
- 1:55 p.m. – 2:15 p.m. **Human in the loop: Role of humans in the system –**  
Alan Kushner (NTSB-Retired)
- 2:15 p.m. – 3:00 p.m. **Panel 3: Automotive Secure and High-Confidence Platforms –**  
Participants: Panos Antsaklis (Notre Dame), Ratnesh Kumar (Iowa State), Anuradha Annaswamy (MIT), Sam Weber (NSF), Massimo Osella (GM) [Moderator: Betty Cheng (Michigan State)]
- 3:00 p.m. – 3:15 p.m. **Break** (Refreshments)
- 3:15 p.m. – 3:30 p.m. **Formation** of the three concurrent breakout groups and provide charge/ Guidance for next day’s sessions
- **Breakout Session 1:** Open Experimental Platforms and Challenge Problems
  - **Breakout Session 2:** Automotive Secure and High-Confidence Platforms
  - **Breakout Session 3:** Safety-Critical Design Process
- 3:30 p.m. – 3:45 p.m. **USCAR Overview** – Steve Zimmer, Executive Director, USCAR
- 3:45 p.m. – 5:00 p.m. **Three concurrent breakout sessions**
- 5:00 p.m. **Day One adjourned**
- 6:00 p.m. – 8:00 p.m. **Reception** – Sponsored by USCAR [Location: MI State University, Management Education Center Dining Room]

## **Friday, March 18**

- 7:30 a.m. **Continental Breakfast and Workshop Registration**
- 8:30 a.m. – 8:45 a.m. **Remarks** – Bill Milam (Ford) and Raj Rajkumar (Carnegie Mellon)
- 8:45 a.m. – 9:15 a.m. **Keynote:** Sridhar Kota (Assistant Director for Advanced Manufacturing and ASME Fellow, Office of Science & Technology Policy, Executive Office of the President of the United States of America)
- 9:15 a.m. – 10:00 a.m. **Introduction of the CPS-Virtual Organization (VO) and discussion on an Automotive VO** – Chris vanBuskirk (Vanderbilt University)
- 10:00 a.m. – 10:15 a.m. **Review and Revise Agenda** (Workshop Co-Chairs)
- 10:15 a.m. – 10:30 a.m. **Break** (Refreshments)
- 10:30 a.m. – 12:00 p.m. **Three concurrent breakout sessions**
- 12:00 p.m. – 1:15 p.m. **Lunch** (Box)
- 1:15 p.m. – 2:45 p.m. **Three concurrent breakout sessions**
- 2:45 p.m. – 3:45 p.m. **Plenary Session** (Report outs from breakout sessions)
- 3:45 p.m. – 4:00 p.m. **Action items and wrap-up**
- 4:00 p.m. **Workshop adjourned**