How Will Connected/Autonomous Vehicles Affect Automotive Safety?

“Focus on the Future”
UM Automotive Research Conferences

WELCOME!

Link to Presentations Will Be Sent This Weekend

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Affiliate Program
- Supporting Members
- Research Partners

Funding

Research
- Globalization
- Powertrains
- IT

Conferences
- 5 Annual Conferences
# Affiliates Members and Research Partners

## Suppliers
- Chevron
- Visteon
- Denso
- Dana
- Delphi
- Peterson Spring
- Continental
- TRW
- Valeo

## Suppliers
- Michelin
- Continental
- JCI
- BorgWarner
- Yazaki
- Eaton
- BASF
- Dow
- Bosch
Upcoming UMTRI-AA Conferences

• **April 16, 2014 (Wednesday): Inside Russia: Understanding the Current and Future Russian Automotive Industry.** Russia is the final BRIC market in our study of the globalization of the auto industry that is expected to be a growth market for automakers in the future. This conference will provide insight into how government, industry, and consumers view the current and future Russian automotive market.

• **July 23, 2014 (Wednesday): Powertrain Strategies for the 21st Century.** Our 6th annual conference that provides insight into how manufacturers and suppliers are managing their resources to meet the needs of consumer while meeting government requirements.
Upcoming UMTRI-AA Conferences

• September 10, 2014 (Wednesday): *The Business of IT: Transforming the Organization and the Vehicle.* Our 6th annual conference on how IT innovation is changing the auto industry. The first half of the conference will focus on how IT is change automotive organizations, and the second half will focus on IT’s effect on the vehicle.

• November 12, 2014 (Wednesday): *Inside China: Understanding the Current and Future Chinese Automotive Industry.* Our 6th annual China conference focuses on our continuing research on the world’s largest auto industry. We try to provide a variety of perspectives on the industry including government, domestic and foreign manufacturers and suppliers, labor, environment, and consumers in order to provide an accurate vision of the future trends of the industry.
Upcoming UMTRI-AA Conferences

The UM Alumni Discount

Alumni who sign up in advance for five conferences in a row receive a $250 discount
Panelists

AM Session

• Dr. Amine Taleb, Project Manager of Advanced Driving Assistance Systems (ADAS) for Valeo’s Comfort and Driving Assistance (CDA) Business Group in North America

• John Capp, Director of Electrical & Control Systems Research at General Motors R&D

• Dr. André Weimerskirch, Associate Research Scientist at the University of Michigan Transportation Research Institute (UMTRI)
Panelists

PM Session

• **Prasanth Jeevan**, Senior Research Engineer at Volkswagen/Audi Electronics Research Lab

• **Collin Castle**, Connected Vehicle Technical Manager for the Michigan DOT.

• **Alan Korn**, Director - Vehicle Dynamics and Control at Meritor WABCO
Morning Schedule

• 9am
  – Bruce Belzowskí
  – Amine Taleb
  – John Capp

• 10:20am-10:35am  Break

• 10:35am
  – Andre Weimerskirch

• 11:10am-Noon  AM Session Q&A

• Noon-1:30pm  Lunch
Afternoon Schedule

• 1:30pm
  – Prasanth Jeevan
  – Collin Castle

• 2:35pm-2:45pm Break

• 2:45pm
  – Jinyun Liu

• 3:20pm-4:00pm PM Session Q&A

• 4:00pm Adjourn
Conference Questions

- What are the technology evolutionary paths for these technologies?
- What are the industry opportunities for manufacturers and suppliers in connected and autonomous vehicles?
- What opportunities do these technologies offer drivers in terms of safety and convenience, and when should we expect to see them?
- Are there key missing pieces in technology, infrastructure, or regulations that will hold back or accelerate connected/autonomous safety?
Conference Questions

• Do we see a path government is taking in the evolution of connected and autonomous vehicle safety?

• What are the electronic security issues related to connected/autonomous vehicle safety and can they be overcome?

• How are other countries dealing with electronic security in vehicles?

• How are states using connected vehicle technology?
Conference Questions

• What can we expect from the states and the federal government in terms of infrastructure support for connected/autonomous vehicles?

• How does the heavy truck industry view the introduction of connected/autonomous vehicles in terms of vehicle safety?

• What are some of the drivers for the introduction of connected/autonomous vehicle safety technology for heavy trucks?
USDOT Announcement: Safety

- DOT research indicates that safety applications using V2V technology can address a large majority of crashes involving two or more motor vehicles.

- With safety data such as speed and location flowing from nearby vehicles, vehicles can identify risks and provide drivers with warnings to avoid other vehicles in common crash types such as rear-end, lane change, and intersection crashes.

- These safety applications have been demonstrated with everyday drivers under both real-world and controlled test conditions.
USDOT Announcement: Technologies

- The safety applications currently being developed provide warnings to drivers so that they can prevent imminent collisions, but do not automatically operate any vehicle systems, such as braking or steering.

- NHTSA is also considering future actions on active safety technologies that rely on on-board sensors. Those technologies are eventually expected to blend with the V2V technology.

- In addition to enhancing safety, these future applications and technologies could help drivers to conserve fuel and save time.
USDOT Announcement: Security

• V2V technology does not involve exchanging or recording personal information or tracking vehicle movements. The information sent between vehicles does not identify those vehicles, but merely contains basic safety data.

• In fact, the system as contemplated contains several layers of security and privacy protection to ensure that vehicles can rely on messages sent from other vehicles and that a vehicle or group of vehicles would be identifiable through defined procedures only if there is a need to fix a safety problem.
USDOT Announcement: Report

• NHTSA is currently finalizing its analysis of the data gathered as part of its year-long pilot program and will publish a research report on V2V communication technology for public comment in the coming weeks.

• The report will include analysis of the Department’s research findings in several key areas including technical feasibility, privacy and security, and preliminary estimates on costs and safety benefits.
USDOT Announcement: Next Steps

• NHTSA will then begin working on a regulatory proposal that would require V2V devices in new vehicles in a future year, consistent with applicable legal requirements, Executive Orders, and guidance.

• DOT believes that the signal this announcement sends to the market will significantly enhance development of this technology and pave the way for market penetration of V2V safety applications.
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