Driverless Cars & Trucks:
Highlighting the 2018 AVS Program

www.automatedvehiclessymposium.org

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- Now in its **7th Year**, AVS is the Largest Dedicated Automated Vehicles Meeting in the World
- ~1500 attendees
- TRB Co-sponsors with the Association for Unmanned Vehicle Systems International (AUVSI) & produced by ~200 volunteers
- International participation: speakers, organizers, and attendees
- Broad Array of Topics in Plenary, Poster, and 30 Breakout Sessions
- Discussion Topics Include:

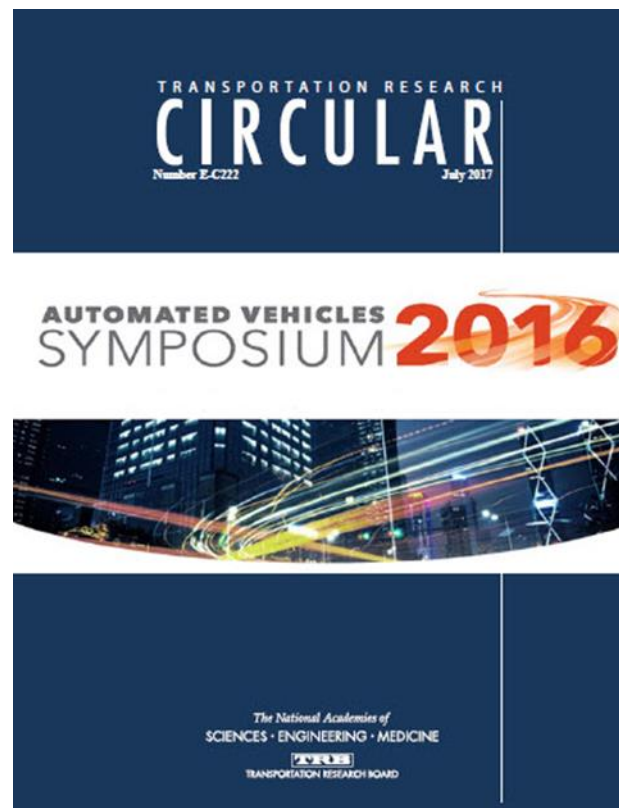|		
Law	Ethics	Human Factors
Infrastructure	Policy	Enabling Technologies
Operations	Cybersecurity	Shared Mobility
Safety	Standards	Cybersecurity
Testbeds	Planning	Shuttles
Freight	Energy	Transit

Proceedings from Recent AVS

www.trb.org/Publications/PubsTransportationResearchCirculars.aspx

AUTOMATED VEHICLES SYMPOSIUM 2017

USERS. VEHICLES. INFRASTRUCTURE.

~1500 Attendees	Ancillary Events
• 43 states; 28 countries • Public & private sectors • Research institutions	• USDOT 'Listening Session • SAE • NCHRP 20-102 Panel Meeting

Some Key Takeaways

Source: U.S.DOT

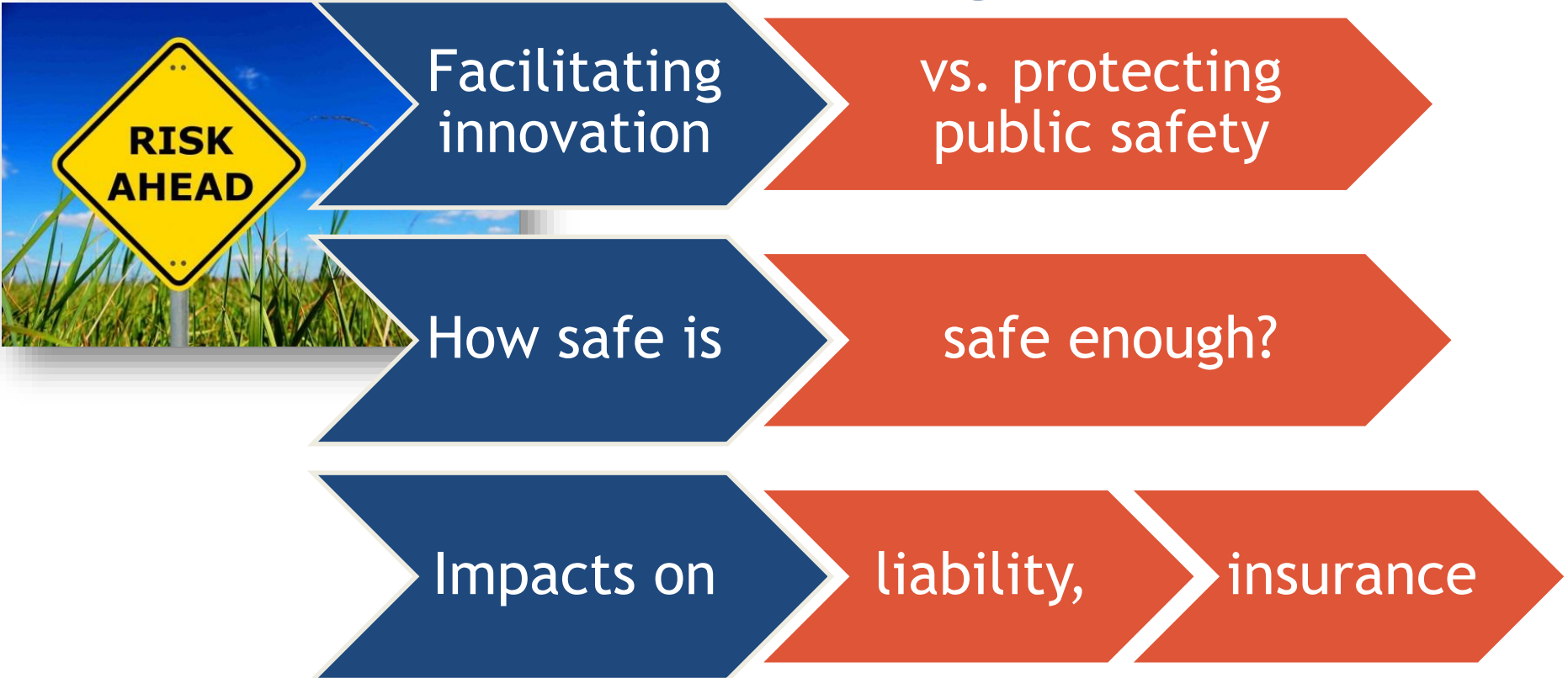|	
Something everywhere,	**vs.** everything somewhere
Private sector is moving ahead,	**with or without public agencies**
Society not likely to accept even a small number of deaths	*caused* by CAVs
Cyber-security	is a major concern

Risks for Public Agencies

Facilitating innovation	vs. protecting public safety
How safe is	safe enough?
Impacts on	liability,	insurance

Laws & Regulations

Uniform laws & regulations

for vehicles and operators

How affected by *different levels* of automation?

Operator training, licensing, and certification

Specialties (e.g., truck platoon drivers)

Impacts on Road Operations

Uniformity and conditions → of traffic control devices

Posted speed limits → vs. actual speeds

Trained ops workforce

Economic & Social Issues

Loss of public revenue streams → (traffic infractions, parking)

Higher costs of operation of system

Societal Equity → Underserved populations → Transportation challenged

Impacts on land use & trip patterns → Corresponding impacts on congestion and pollution

USERS. VEHICLES. INFRASTRUCTURE.

Research Implications

OEMs investing billions in R&D

Conventional US public agency approaches to research may need to be re-examined

Timeframes do not match transformational technologies

Historically looking backward for guidance

vs. looking forward with scenario planning

Inform policy makers based on data,

rather than sensationalism or extremes

Mechanism needed for

coordinating

& sharing research

What you will find at AVS2018

This Year –

Starts Monday Afternoon, July 9th

14 Breakout Sessions, Including:

- Reading the Road Ahead: Insights on Machine Vision
- Top Research Priorities
- AV Technologies and Adverse Weather
- AV for People with Disabilities
- AV crash occurs: What happens next?

- AV & Mobility Planning
- CV & Intersection Control
- Shared Vision for National AV Readiness
- AV Low-Speed Shuttles
- Cybersecurity
- Automated Systems
- AVs & Vulnerable Road Users
- Global Testbed Collaboration

Followed by a Reception & Peer-reviewed Posters

What you will find at AVS2018

Tuesday A.M. July 10th

Plenary and Panel Presentations, Including :

- Technology Advancements: Industry Perspective
- Development of Unsupervised Self-Driving Using Deep Learning Neural Networks
- Technology Challenges

- Consumer Acceptance
- Transformational Technologies
- Safety Assurance
- Low-Speed Operations
- Sensors

What you will find at AVS2018

Tuesday P.M. July 10th

13 Breakout Sessions, Including:

- Driver Training
- AV Speed Dating
- Trucking Automation
- From Construction to Modeling
- Enterprise Solutions Series
- Safety Assurance of AV
- Energy & Environmental Impacts

- Automating Transit & Shared Mobility
- Blockchain in the Automated Vehicle Ecosystem
- ITS Architecture and Standards
- Enabling Technologies
- Digital Infrastructure
- User Needs

Followed by a Reception & Peer-reviewed Posters

What you will find at AVS2018

Wednesday A.M. July 11th

Plenary and Panel Presentations , Including :

- Technology Advancements: Freight
- Ethics
- Work Force Impacts

- Cities
- Regulation, Policy & AVs
- International Programs

What you will find at AVS2018

Wednesday P.M. **July 11th**

15 Breakout Sessions, Including:

- Human Factors
- Trucking Automation
- Ethical & Social Implications
- Shark Tank II
- What we Know – Impacts of AV

- Safety Assurance of AV
- Energy & Environmental Impacts
- Enabling Technologies
- Integrating AVs on City Streets
- Accelerating CAV

- AI & Machine Learning
- OEM/DOT Dialog on AVs
- Policy Implications of AVs
- How to Allow AVs on Public Roads

Followed by a Reception & Peer-reviewed Posters

What you will find at AVS2018

Thursday A.M. July 12th

Plenary Panel Discussions, Including :

- Investor Perspectives on Automated Vehicles
- International AV Programs
- Public Agency Initiatives - EC
- Public Agency Initiatives - UK
- Public Agency Initiatives - Japan

- Public Agency Initiatives - NHTSA
- Public Agency Initiatives - FHWA
- Public Agency Initiatives - FMCSA

Thursday P.M. – USDOT Listening Session

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