MEETING NOTES

Iowa Advisory Council on Automated Transportation (ATC)
Public Safety & Enforcement Subcommittee Meeting
Tuesday, August 4, 2020
9-10 am

Action Items:

- Gannett Fleming and Iowa DOT – continue updating PS&E work plan and maintain on ATC SharePoint
- Subcommittee chair and members – review work plan when available on SharePoint and begin working toward tactical priorities
- Jacob Heiden, Dan McGehee, Adam Shell, Col. Fulk – investigate details of hosting a conference related to law enforcement in automated transportation
- Pat Hoye – follow-up with subcommittee when AV testing data is publicly available

1. Welcome and introductions – Jacob Heiden, University of Iowa, National Advanced Driving Simulator
    - Colonel Nathan Fulk (Public Safety & Enforcement Subcommittee Chair) – Iowa State Patrol
    - Bruce Anderson – Iowa Automobile Dealers Association
    - Commissioner Stephan Bayens, Major Randy Kunert – Iowa Department of Public Safety
    - Susan DeCourcy – National Highway Traffic Safety Administration
    - Neal Hawkins, Theresa Litteral – Iowa State University, InTrans
    - Pat Hoye – Governor's Traffic Safety Bureau
    - John Kraemer – Fire Service Training Bureau
    - Mark Peterson – AAA The Auto Club Group
    - Peter Rafferty, Todd Szymkowski, Lia Yakumithis – Gannett Fleming
    - Chief Dave Lorenzen, Assistant Chief Tom Bruun, Andy Lewis, Renee Jerman, Kristin Haar, Susan Fenton, Sam Sturtz, Dennis Kleen, Adam Shell – Iowa DOT
    - Dan McGehee, Omar Ahmad, Jacob Heiden – University of Iowa, National Advanced Driving Simulator

2. Chair Update – Colonel Nathan Fulk, Public Safety & Enforcement Subcommittee Chair (5 minutes)
    - The Public Safety & Enforcement (PS&E) subcommittee last met on February 18th with presentations from Dennis Kleen on crash reporting in Iowa, Greg Shill on vulnerable road users (bicyclists, pedestrians, etc.), and Peter Rafferty on the work plan development process.
    - The last Council meeting was held on March 11 with subcommittee updates, Iowa rulemaking updates, and presentations from Local Motors, National Advanced Driving Simulator, and Gannett Fleming. Director Marler expressed the importance of law enforcement's ability for roadside recognition of automated vehicles. Since the meeting, Iowa's Automated Transportation Vision has been finalized and subcommittee work plans have been in development.

3. Mountain View, CA Perspective on Current Automated Transportation Dynamics – Col. Fulk, Asst. Chief Bruun, & Adam Shell (5 minutes)
    - Iowa DOT has recently become a member of the newly created Public Sector Advisory Council to the Partners for Automated Vehicle Education (PAVE). At a PAVE council meeting, Captain Jaeger with Mountain View Police Department shared his ability to interact with Waymo due to proximity. Adam Shell connected with Capt. Jaeger and organized a call so Iowa law enforcement could engage in conversations related to the various tactics from Iowa's AT Vision. Colonel Fulk, Asst. Chief Bruun, and Adam Shell held a call with Capt. Jaeger. Some takeaways from the meeting were:

- Mountain View has a process for testing and evaluating automated transportation. There have been mixed responses to automated vehicles in the community.
- Mountain View had an instance of an automated vehicle traveling 25 mph in a 35 mph. It was impeding traffic and problematic.
- Mountain View Police Department is mostly working with small vehicles. California Highway Patrol would be another good connection to learn about their experience with commercial vehicles and trucking companies.
- Iowa is in a similar place to California in preparations for automated transportation. California has the technology in their backyard, but Iowa is positioned strongly – both in the short-term and long-term – for the dynamic advancement of automated vehicles.

- Following the recap of the meeting, Dan McGehee commended this informative, unique collaboration between Iowa and the California counterparts. He suggested hosting a half-day national conference focused on law enforcement in automated transportation, which would position Iowa as a national leader. The group will continue discussions into the logistics of hosting a conference.

4. PS&E Work Plan & Actions – Peter Rafferty, Gannett Fleming and Col. Fulk (5 minutes)
   - The ATC SharePoint site is the hand-off point for subcommittee work plans and other documents. The SharePoint resides with the subcommittee to use and update as needed, especially with the work plan being a living document.
   - The work plans lay out the Iowa ATC background and specific subcommittee tactical priorities including details, actions, roles, resourcing, and timelines. Again, workplans are a living breathing document for subcommittees to update as needed. Priorities may change moving forward so subcommittees have the ability to adapt.
   - The road to automated transportation will take time. Work plans won't be completed by December 2020. It will require continual conversations and effort over time.

   a. Capture AV Crash Data (10 minutes) – Dennis Kleen, Pat Hoye
      - Dennis Kleen is involved in discussions on updating the Model Minimum Uniform Crash Criteria (MMUCC). The updates will include two new fields related to automated vehicles: highest level of automation in the vehicle and highest level of automation engaged during the crash. A challenge will be making the reporting process easy for officers to enter information while ensuring quality data. This MMUCC update will take at least two years with updates to the crash report not expected until January 2023 at the earliest.
      - Pat Hoye is with the Governor's Traffic Safety Bureau (GTSB), which is tasked with directing National Highway Traffic Safety Administration (NHTSA) guidelines in Iowa. He commended the ATC efforts in automation and safety, but Iowa still has work to do to make our roads safer. Accurate data is an important piece of the safety puzzle. Iowa is looking at evolving its data system for improved information. Can NHTSA help support this funding? In relation to the MMUCC update, officers are mentioning the difficulty in obtaining data at the scene. Can data be auto populated to assist officers? 10 companies and 9 states are voluntarily submitting AV testing data that will be publicly available. Pat will follow up on this data later when available. Traffic records assessment began in August, and it will include automated vehicle questions for the first time. Iowa will be monitoring what other states are doing to adapt to evolving data systems.

   b. Explore Vehicle Automation Indicators (10 minutes) – Dan McGehee, Adam Shell
      - Dan McGehee discussed external Human-Machine Interfaces (eHMI) in automated driving. Despite what headlines may say, true automated driving is still decades away. Current AV testing may look like a vehicle is highly automated, but the reality is the vehicle has a limited operational design domain. Level 1 & 2 automation will be prominent for a long period.
      - There are traditional Human-Machine Interfaces inside the vehicle including the radio and infotainment system. eHMIs will be prevalent with automation to help the world outside the vehicle perceive information about the vehicle's state. eHMIs can include the distinctive features of an automated vehicle (sensors, cameras, etc.). These features may not be apparent as technology advances or in the

context of platooning. Lighting could offer another eHMI solution for automated vehicles, but federal standards will make that difficult. Vehicle to infrastructure communications can help share more data than an eHMI. Iowa should work with other states and the Federal Motor Carrier Safety Administration as we advance toward automation.

c. Develop Following Distance Guidelines (10 minutes) – Major Randy Kunert, Asst. Chief Tom Bruun
   - Major Kunert is working with Asst. Chief Bruun on developing minimum following distance guidance. He noted that crashes have increased in Iowa despite increasing levels of automation, which is contrary to what automation could achieve. The Iowa State Patrol is still using reaction time, speed, and distance to determine reasonable and prudent following distance.
   - The USDOT recommends using "reasonable and prudent" for following distance, but that can be subjective. As automation increases, should vehicle manufacturers and engineers determine "reasonable and prudent" distance? Technology will likely outpace US DOT recommendations. Some states have platooning legislation in place. More conversations and work must occur before automation is common.

5. Open Discussion (What's in the News?) – All subcommittee members (5 minutes)
   - ATC Press Clippings that feature news articles related to Iowa's AT Vision will be shared with council and subcommittee members every two weeks. The first was sent on August 3.

6. Information and key upcoming dates – Jacob Heiden, UI National Advanced Driving Simulator
   - Iowa ATC Meeting: Monday, August 31 from 1-3pm. Remote only.

ATC SUBCOMMITTEE MEETING

Public Safety & Enforcement

August 4, 2020

WELCOME AND INTRODUCTIONS

Jacob Heiden

CHAIR UPDATE ON THE ATC MEETING HELD MARCH 11, 2020

Colonel Nathan Fulk

MOUNTAIN VIEW, CA PERSPECTIVE ON CURRENT AUTOMATED TRANSPORTATION DYNAMICS

Col. Fulk,

Asst. Chief Tom Bruun, &

Adam Shell

PUBLIC SAFETY & ENFORCEMENT WORK PLAN & ACTIONS

Peter Rafferty & Col. Fulk

CAPTURE AV CRASH DATA

Dennis Kleen and Pat Hoye

EXPLORE VEHICLE AUTOMATION INDICATORS

Dan McGehee & Adam Shell

THE NATIONAL ADVANCED DRIVING SIMULATOR

IOWA

Public Safety & Enforcement Subcommittee
Iowa Advisory Council on Automated Transportation

external Human-Machine Interfaces in Automated Driving

Dan McGehee
Director
National Advanced Driving Simulator

August 4, 2020

Headline remains:
True Automated Driving Decades Away

- *Limited Operational Design Domain*

Reality is a long period of Level 1 and 2

- ACC
- Lane Keeping

HMI and eHMI: What is it?

- Traditional HMI inside the vehicle
  - From radio to infotainment
- eHMI is outside the vehicle
  - How the outside world receives information about the state of a vehicle

Most studies look at communication between pedestrian and highly automated vehicle

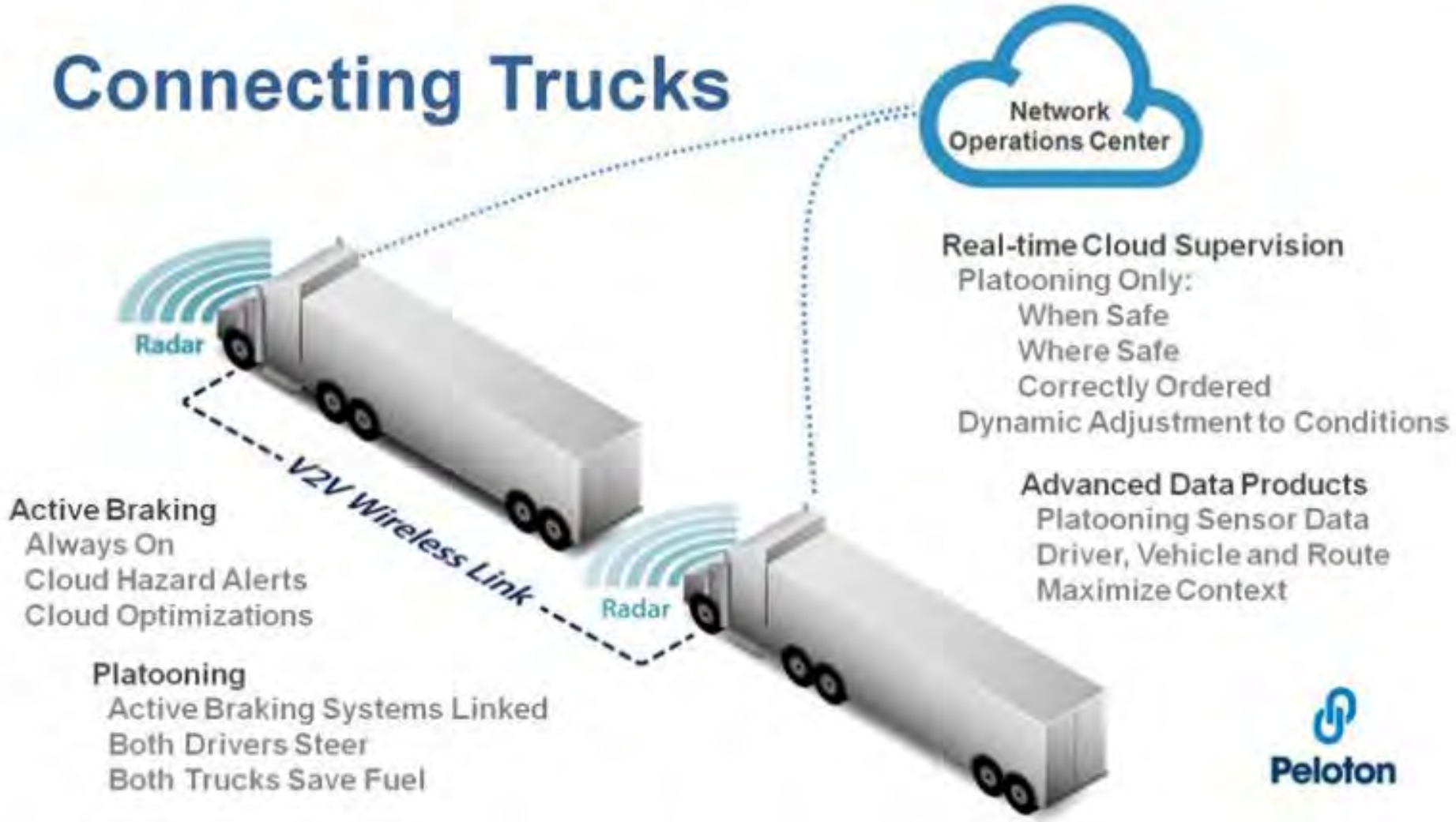
- https://www.wired.com/video/watch/man-dresses-as-a-car-seat-in-the-name-of-self-driving-science

Automated vehicles have distinctive features

IOWA

National Advanced Driving Simulator

Iowa context was on platooning



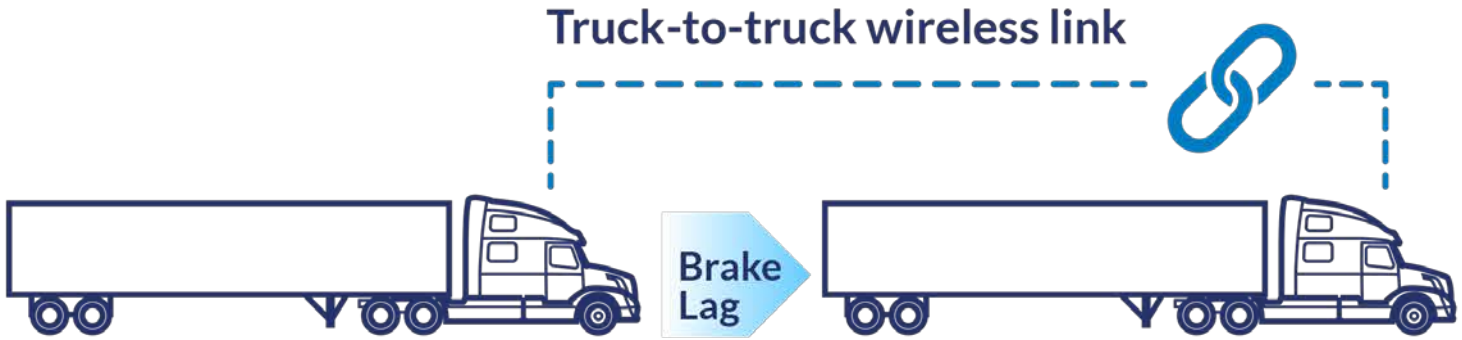
Adding lights

- FMVSS: Standard 108
  - Lamps, reflective devices, and associated equipment

It will be unlikely that additional lighting will be approved by feds, however…

- Since these are commercial vehicles, one thing we could *try* is to squawk a signal that law enforcement can read:

  Platoon Mode (not automation)



Unintended consequences

- Bullying
- Insurance fraud

Conclusions

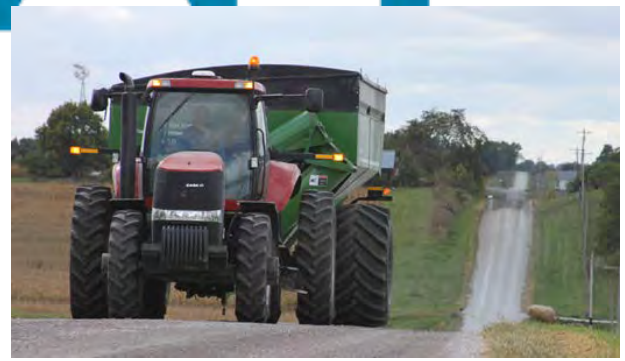
- New lighting will be difficult
- Such lighting can have unintended consequences
  - Bullying, insurance fraud
- Discuss vehicle to infrastructure communications with either TMC or Law Enforcement or both
- Discuss with other states and FMCSA—can’t do this alone

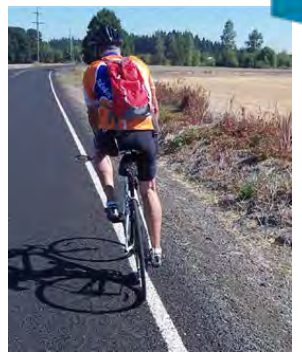
ADS FOR RURAL AMERICA

UNIVERSITY OF IOWA

IN PARTNERSHIP WITH THE IOWA DOT
AND IOWA STATE UNIVERSITY

MARCH 2019





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Questions?
IOWA
10406
OFFICIAL

DEVELOP FOLLOWING DISTANCE GUIDELINES

Major Randy Kunert &

Asst. Chief Bruun

OPEN DISCUSSION (WHAT'S IN THE NEWS?)

All subcommittee members

INFORMATION AND KEY UPCOMING DATES

Next ATC Meeting

- Monday, August 31st, 1-3pm
- Remote only

THANK YOU