MEETING NOTES

Iowa Advisory Council on Automated Transportation (ATC)
Infrastructure Readiness Subcommittee Meeting
Skype Conference Call – 319-467-1100, conference ID: 8442672#

Tuesday, August 27, 2019

2-3pm

1. Introductions (10 minutes) – Anna Dizack, University of Iowa National Advanced Driving Simulator

    Attendees:
    - Erin Mullenix (Infrastructure Readiness Subcommittee Chair) – Iowa League of Cities
    - Chris Cournoyer – Iowa Senate
    - Dylan Mullenix – Des Moines Area MPO
    - Mark Peterson – AAA – The Auto Club Group – Minnesota/Iowa
    - John Gibson – Iowa Division of the FHWA
    - Mike Lauer – Iowa Communications Network
    - Dan McGehee, Omar Ahmad, Anna Dizack – UI National Advanced Driving Simulator
    - Neal Hawkins, Skylar Knickerbocker – ISU Institute of Transportation (InTrans)
    - Adam Shell – Iowa DOT
    - Peter Rafferty – Gannett Fleming

2. Update on ATC meeting held Wednesday, June 12th (5 minutes) – Erin Mullenix, Infrastructure Readiness Subcommittee Chair
    - Erin Mullenix – Subcommittee chairs presented on respective areas, Scott Marler provided an update on the National Strategy for Highway Automation, discussed recent state legislation SF302 and HF387, reviewed the vision planning
    - Anna Dizack – Visit the SharePoint site to view ATC meeting and subcommittee meeting notes and documents.

3. ATC Vision Project (10 minutes) – Peter Rafferty, Gannett Fleming
    - Peter Rafferty – reviewed three-prong approach, six strategic focus/objective areas, how infrastructure readiness is not just about pavement (physical infrastructure, digital/cyber infrastructure, and institutional/workforce infrastructure), and Infrastructure Readiness five pursuits (accelerate infrastructure readiness, implement national guidance, improve traffic control assets, leverage communications infrastructure, and develop agency workforce).
    - Adam Shell – these pursuits align well with the Cooperative Automated Transportation Service Layer Plan (CAT SLP)
        - Peter Rafferty – pursuits related to other DOT service layer plans (SLPs). Review them here: https://iowadot.gov/tsmo/Service-Layer-Plans

- Erin Mullenix – these sum up the themes and conversation threads well. They are organized and give our subcommittee good focus.

4. Cooperative Automated Transportation Service Layer Plan (CAT SLP) (5 minutes) – Adam Shell, Iowa DOT
   - Adam Shell – As part of the Transportation System Management and Operations (TSMO) process, which aims to strategically improve the transportation system to ensure safe, efficient, and convenient travel for the traveling public, the Iowa DOT has developed the Cooperative Automated Transportation (CAT) service layer plan (SLP). The CAT SLP serves as the tactical plan for managing the CAT service layer in way that is consistent with and supportive of the Iowa DOT TSMO Strategic and Program Plans.
     - Provided definitions for CAT and timeline of development.
     - The SLP identifies and describes the challenges and opportunities, existing services and conditions, future direction, gaps and actions to bridge them, performance metrics, and estimated costs as it relates to CAT. CAT, as part of the overall TSMO approach, will help the Iowa DOT continue working toward its vision to be smarter, simpler, and customer driven.
     - The CAT SLP joins seven other TSMO SLPs. Discussed how relationships will help to achieve the CAT objectives.
     - The Iowa DOT will gather input and direction from a variety of sources and stakeholders.
     - CAT SLP focuses on the DOT business case.
     - Next steps: August 2019 – final draft. September/October – final plan and presentation to TSMO Steering Committee. Update about every three years.

5. Iowa's Digital Infrastructure (15 minutes) – Mike Lauer, Iowa Communications Network
   - Mike Lauer – Iowa Communications Network (ICN) backbone and leased connections. How does one plan steps to move forward with automated transportation?
     - 8,000 miles of fiber (3,000 leased, 5,000 owned by Iowa)
     - History of the ICN:
       - 1989 – Governor Brandstad established the ICN with Iowa Code 8B
       - 1994 – Iowa Telecommunications and Technology Commission (ITTC) established, by statute, to supervise the management, development, and operation of the ICN
       - 2008/2012 – period when they started seeing more expansion
       - 2016 – implement and deploy 100GB capacity. ICN is not antiquated – 100GB is a big deal.
       - 2018 – new layer of cyber security
       - Bulk of calls support 911 calls
     - Current DOT assets/ICN maintained
       - Close network/partnership with DOT
       - DOT installs own fiber network, closely mirrors the ICN network
       - Metro areas are evolving.
     - DOT proposed ITS buildout
       - DOT focus is on I-80, I-35, I29, US20, I-30, and US 61.
     - ISICS system overview
       - 5G network requires towers
       - Recent local area network (LAN) radio group allows for 5G deployment

- Anything LAN-based – Iowa has that
  - 700 MHz coverage – Iowa has 98% coverage
    - We're not a very hilly state, which is good
  - 5G shift to the edge – edge clouds allow for processing to be done remotely and improve latency of transfer/transmission of data. May not see this easily in an app but will see when conducting computations.
  - 5G and automated transportation (AT) – right now, a lot of things are being kept in the car. But we can start to off-load a lot to the edge, like facial recognition.
    - Will scale greater
    - 5G needs towers
    - Iowa just needs a few changes to push it through
  - What can Iowa do to prepare? Pertinent/important needs moving forward:
    - Security
      - Foundation of all networks
      - Guidelines will be critical
      - Building and scoping projects consistent with national blueprints, standards, and requirements. Meeting federal structural guidelines will allow for possible federal funds.
    - Collaboration opportunities – using federal funds to allow others to use the network.
    - Testing with industry partners
      - Need private partners to be involved and conduct/support testing
      - Proof-of-concept testing will be key (UI, ISU). There's a big use case to get partners in to test.
    - Legislative actions – needed to keep costs low
- Dylan Mullenix – what legislative actions need to be taken?
  - Mike Lauer – ICN is an important asset, but it's limited to certain users: education, healthcare, and state. Costs stay up because of same consumer base. Open it up, provide ICN services to other users could drive costs down, accelerate 5G.
- Erin Mullenix – is there momentum in putting together this legislation already?
  - Mike Lauer – isn't aware of any.
  - Chris Cournoyer – sent Mike an email, requested him to give her a call.
- Anna Dizack – follow-up on this at next ATC meeting.

6. Iowa Signal Phasing and Timing (SPaT) and MAP Demonstration Project (15 minutes) – Neal Hawkins and Skylar Knickerbocker, Iowa State University Institute for Transportation
   - Neal Hawkins – provided update and background on the intersection design and issues for users. Eyesight and attention is required currently for human operators. How could connected AV be used at an intersection if the driver can't see/windshield is painted black?
     - National connected SPaT challenge
     - DSRC radios – have had a year to plan and procure. Took a long time to order. Ordered 20, took 7-8 months.
     - Initial focus – signal phasing and timing (red, yellow, green) as well as the basic safety message

- o Picked 20 locations, had to get FCC approval.
- o Discussed Dubuque installation
- Skylar Knickerbocker – programming and calibration, creating maps, defining lanes and attributes. Vehicle calibration – don't have any DSRC vehicles so had to buy onboard unit to view the messages.
  - o Field testing – sample messages shown of what the signal status is, how many more seconds until the next phase and when the light will change status.
  - o Left turn lane detection – the RSU was able to detect the vehicle was in the left lane with a red waiting to turn while the thru lanes had a green light.
- Adam Shell – recommended to have a presentation to the ATC when this has been deployed in more locations and provide an update on the use of this technology by the UI in the Lincoln.
- Omar Ahmad – ISU's work is great and will be helpful going forward
- Dan McGehee – agreed
- Anna Dizack – recommended including other subcommittees (ex. Policy & Legislation) in these discussions, maybe in a workshop format
- Neal Hawkins – a great opportunity to show people the capability of this technology. Also seeing some opportunity for work zone applications as well.

7. Information and key upcoming dates
   - Iowa ATC Meeting: Thursday, September 12th, 10:30am-12:30pm

SUBCOMMITTEE MEMBERSHIP

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