Data Exchanges to Enable Automated Vehicle Integration

November 8, 2018

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Data Program Manager
ITS Joint Program Office
U.S. Department of Transportation
Today’s Webinar

✓ Purpose & Target Audience

✓ Agenda
  • AV 3.0 & Data
  • Roundtable on Data for Automated Vehicle (AV) Safety
  • Data for Automated Vehicle Integration (DAVI)
  • Work Zone Data Exchange (WZDx) Project
  • Q & A
  • Resources
AV 3.0 & Data

- Provides new multimodal safety guidance, clarifies policy and roles, and outlines how to work with U.S. DOT as automation technology evolves
- Calls on stakeholders to identify opportunities for voluntary data exchanges
- Features efforts aimed at enabling voluntary data exchanges
Roundtable on Data for AV Safety

https://www.transportation.gov/av/data
U.S. DOT’s Data for AV Integration (DAVI) Initiative

• USDOT launched DAVI to identify, prioritize, monitor, and – where necessary – address data exchange needs for AV integration across the modes of transportation.

• Access to data is a critical enabler for the safe, efficient, and accessible integration of AVs into the transportation system. A lack of access to data could impede actions to accommodate AVs and delay their introduction.
U.S. DOT’s Guiding **Principles** on Data for Automated Vehicle Safety

1. Promote proactive, data-driven safety, cybersecurity, and privacy-protection practices.

2. Act as a facilitator to inspire and enable voluntary data exchanges.

3. Start small to demonstrate value and scale what works toward a bigger vision.

4. Coordinate across modes to reduce costs, reduce industry burden, and accelerate action.

https://www.transportation.gov/av/data
# U.S. DOT’s Data for Automated Vehicle Integration Framework

<table>
<thead>
<tr>
<th>Category</th>
<th>Goals</th>
<th>Data Generators &amp; Users Participating in the Exchange</th>
<th>Specific Data to Exchange</th>
<th>Real-World Examples</th>
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<tbody>
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<td>• Heavy- and light-duty original equipment manufacturers (OEMs)</td>
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<td>• Improve industry-wide safety through shared learning in safety-critical and edge case scenarios</td>
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<td>• Understand performance of rapidly evolving technology during testing phases</td>
<td>• Heavy- and light-duty OEMs</td>
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*Last updated 11/5/2018*
Operationalizing the DAVI Framework

1. Identify
   needs for data exchange

2. Prioritize
   data exchanges

3. Address
   barriers or market failures
   preventing priority data
   exchanges

4. Monitor
   emergence of
   market-based solutions

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Work Zone Data Exchange (WZDx) Project
The Local Data Challenge

• Up-to-date information about dynamic conditions occurring on the roads—such as construction events—can help AVs navigate safely and efficiently.

• Many infrastructure owners and operators (IOOs) maintain data on work zone activity, but a lack of common data standards and convening mechanisms makes it difficult and costly for third parties—including original equipment manufacturers (OEMs) and navigation applications—to access and use these data across various jurisdictions.
Learning from the Open Transit Data Story

A **simple** specification…

…with a **wide range** of uses

https://www.transportation.gov/av/data
A Federated Front Door to Transit Data

• Now, basic transit data is easy to find and use nationwide.
• Transit agencies and their users continue to collaborate on the specifications.

https://www.transportation.gov/av/data
Can This Be Replicated?

1. Simple, Open Specification
2. Broadly Adopted
3. Saves Lives

https://www.transportation.gov/av/data
Work Zone Data Exchange (WZDx) Project

Purpose

• To jump-start voluntary adoption of a basic work zone data specification
• To enable collaborative maintenance and expansion of the specification

Outcomes Within Six Months

• **Data producers** make an active work zone data feed available using a common, non-proprietary specification
• **Non-government developers** use that data in a meaningful way – thus establishing a minimum viable product of voluntary data exchange for work zone data

Big Picture Outcome

• Repeatable approach to accelerate harmonization of local data sources
Work Zone Data Exchange (WZDx) Project (Cont.)

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Big Picture Outcome

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Can This Be Extended – Iteratively?

1. Simple, Open Specification
2. Broadly Adopted
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Your Contributions

• How can we make the Framework on Data for Automated Vehicle Integration a useful tool to clarify data exchange needs and how they are – or aren’t – being addressed?
• What are the highest priority data exchanges?
• What market-based solutions are already emerging?

Find out about events and requests for information at www.transportation.gov/av
To learn more about the DAVI initiative and access available resources, please visit:

- Data for Automated Vehicle Integration Website
- Automated Vehicles 3.0
- AV Data Framework
- AV Data Roundtable Summary Report
- B2B Example: Automotive ISAC
- B2G Example: Voluntary Safety Self-Assessment
- General Transit Feed Specification
- I2B Example: National Transit Map
- National Dialogue on Highway Automation
- Open Example: Platooning Data
- USDOT AV Events & Public Notices
- Work Zone Data Exchange v1.1 Spec

Contact me: Ariel.Gold@dot.gov
Thank you!

A feedback form will be emailed to all participants following the webinar. We appreciate your response and value your input.