

USDOT's 3rd V2X Summit: Saving Lives with Connectivity

Summit Summary Highlights



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Background

On October 26, 2023, the United States Department of Transportation (USDOT) hosted the third Vehicle-to-Everything (V2X) Communications Summit, on the campus of the University of Michigan in Ann Arbor, Michigan. Participation included 210 in-person attendees and ~570 unique virtual logins (peak concurrent virtual participation was 279). Discussions, presentations, videos, panels, and breakout groups focused on creating a path towards achieving national interoperable connectivity and providing feedback on the draft National V2X Deployment Plan.

Summit Purpose

The event was the third in a series of USDOT sponsored events bringing together V2X stakeholders. The purpose of this event was to share the draft National V2X Deployment Plan, hear from industry and public agencies on how they plan to accelerate V2X deployment, and hold breakout sessions to refine a collective strategy to advance connectivity. Participants were asked to provide feedback on the Deployment Plan with the goal to release a finalized plan in 2024.

Highlights

The Summit opened with introductions from event emcee Egan Smith (*Managing Director, Intelligent Transportation Systems (ITS) Joint Program Office (JPO)*) and Dr. Robert Hampshire (*Deputy Assistant Secretary for Research and Technology and Chief Science Officer, USDOT*). A formal departmental Welcome and call to action was provided via a video welcome from the Secretary of Transportation Pete Buttigieg.

Secretary of Transportation Pete Buttigieg Video Welcome

The Secretary emphasized the importance of technologies in promoting safety and noted that connected vehicles are a part of the next frontier of safety. The Secretary shared that the USDOT is actively working to promote connected vehicle technologies through the recently released draft V2X Deployment plan and through a new \$40M grant funding program to help public agencies, industry, communities, and researchers to advance their V2X efforts. The USDOT's goal is to have at least 50 interoperable deployment sites nationwide by 2034. The Secretary stressed that the USDOT cannot do this work

alone and that it will take contributions from across the public and private sectors to make this vision a reality. The USDOT is eager to hear feedback and insights on the deployment plan and continued work together to ensure that V2X technologies become not just feasible but practical, effective, and perhaps most importantly interoperable. Key to these efforts will be partnerships, expertise, and support. The Secretary's hope is that in the future this technology will be as routinely accepted and applied as seatbelts and airbags are today.

Key highlights included:

- **National V2X Deployment Plan:** Secretary Buttigieg announced the development of the draft V2X National Deployment Plan. The plan was created by the USDOT with input from V2X community stakeholders in prior workshops and other venues. The goal of the plan is to accelerate the development and deployment of these lifesaving technologies.
- **USDOT V2X Funding Opportunity:** Secretary Buttigieg announced the USDOT's newly released Notice of Funding Opportunity (NOFO) entitled, *Saving Lives with Connectivity: Accelerating Vehicle to Everything (V2X) Deployment*.
 - This NOFO makes up to \$40 million in Federal funding available for eligible entities to deploy, operate, document, and showcase integrated, advanced roadway deployments featuring applications enabled by interoperable wireless connectivity (among vehicles, mobile devices, and smart infrastructure) that substantially and quantitatively improve system safety, enhance traveler mobility, improve efficiency of goods movement, mitigate environmental impacts, and address disparities in transportation equity.

Video Remarks from Representative Debbie Dingell

Representative Debbie Dingell (D-MI-6) highlighted the significance of V2X communications in the National Roadway Safety Strategy, emphasizing its pivotal role in transitioning to electric and automated vehicles (AV). Representative Dingell underscored the importance of ongoing research, collaboration with entities like the University of Michigan, and continued congressional support to promote clean vehicle technologies and maintain US leadership in connected vehicle technology.

How DOT Supports Accelerating V2X Deployment

Following the video welcomes, Lynda Tran, *Director of Public Engagement and Senior Advisor to the Secretary (USDOT)* led a "fireside chat" with Federal Highway Administration (FHWA) Administrator Shailen Bhatt, National Highway Traffic Safety Administration (NHTSA) Acting Administrator Ann Carlson and Dr. Robert Hampshire to discuss how the USDOT is supporting accelerating V2X deployments, and why this is critical to roadway safety.

Key highlights from this session included:

- **There is a real urgency to address roadway safety.** The economic consequences of crashes are in the billions of dollars. The application of V2X technology is one element of a multi-thread, systems approach within the National Roadway Safety Strategy (NRSS) to save lives.

- **V2X plays a role in reducing both injury AND fatality crashes**, as illustrated in two key areas:
 - **Post-Crash Care.** V2X technologies can improve emergency responder response times and save lives.
 - **Pedestrian Safety.** In-vehicle fatalities have remained steady while pedestrian fatalities have increased. V2X technologies can be key in improving pedestrian safety.
- **The \$40M NOFO will be used as a tool to apply V2X and demonstrate improved safety.** The NOFO is expected to fund multiple large scale and interoperable projects, with particular interest in improving the safety of vulnerable road users (VRUs).
- **The United States must take action to remain a leader in V2X.** The US been a leader in deploying ITS technologies, including V2X technologies. That said, there is recognition that others are also pursuing V2X, and immediate action is required.

Reactions to the Draft V2X National Deployment Plan

The USDOT convened three panel sessions with experts from (1) Industry, (2) Public Agency Deployers and (3) the Cooperative Automated Transportation (CAT) Coalition. The CAT Coalition serves as a ‘collaborative focal point for federal, state and local government officials, academia, industry and their related associations to address critical program and technical issues associated with the nationwide deployment of connected and automated vehicles on streets and highways.’ CAT Coalition associations and groups represent some of the key V2X stakeholders.

The general reaction to the draft plan was positive, particularly with respect to demonstrating USDOT leadership. The table below provides additional reactions and thoughts.

Stakeholder Panel	Questions	Reactions
Industry	Initial Reactions to the draft Plan?	<ul style="list-style-type: none"> ■ <i>A national plan is needed and welcomed.</i> Panelists expressed relief and appreciation to have a vision for the V2X community. ■ <i>Establishes a base for further action.</i> Panelists noted there are missing pieces, but that is expected at this stage. ■ <i>Recognizes the full range of V2X stakeholders.</i> Panelists noted that key stakeholders were identified with areas of responsibility.
	What they liked about the draft Plan?	<ul style="list-style-type: none"> ■ <i>The plan is actionable.</i> Panelists were pleased with the format of specific action items assigned by stakeholder group. ■ <i>Reflects many paths to V2X.</i> Panelists expressed that there are many ways to get to V2X use cases, and that this plan addressed the breadth of technologies. ■ <i>Recognizes multiple communication modes.</i> Panelists applauded an approach where a diversity of V2X communication modes are in scope, while noting this creates challenges in making solutions interoperable. ■ <i>Focuses on safety.</i> The panel emphasized the importance of safety as a driver of V2X deployment.
	What is missing in the draft Plan?	<ul style="list-style-type: none"> ■ <i>Address scalable security credential management.</i> Panelists observed that scalable governance for national security credential management must be addressed. ■ <i>Emphasize deployer resources.</i> For example, one panel member recommended a comprehensive “cheat sheet” to lower technical barriers, expedite deployment, and ensure interoperability. ■ <i>Don’t ignore operations and maintenance.</i> Panelists agreed that support, operations, and maintenance (and the associated costs) must be a part of any plan.

Stakeholder Panel	Questions	Reactions
Public Agency Deployers	Initial Reactions to the draft Plan?	<ul style="list-style-type: none"> ■ <i>Demonstrates needed federal leadership.</i> Panelists observed that the plan can be a tipping point for encouraging technology adoption. ■ <i>Encourages immediate action.</i> One panelist observed of the plan: “It is aggressive, and this is great – and needed.” Another observed that the plan is “a catalyst for hope.”
	What they liked about the draft Plan?	<ul style="list-style-type: none"> ■ <i>Clear goals and an accelerated timeline.</i> Panelists applauded the aspirational nature of the plan’s goals, specific metrics, and expedited timeline. ■ <i>Emphasizes a safety-focus for the 5.9 GHz spectrum.</i> Panelists commended the plan for focusing on the use of 5.9 GHz spectrum on safety applications. Panelists agreed that intersections may be a valuable immediate target area for V2X safety applications.
	What is missing in the draft Plan?	<ul style="list-style-type: none"> ■ <i>Link V2X with related NHTSA efforts.</i> Panelists encouraged NHTSA to consider V2X as a part of the New Car Assessment Program (NCAP) safety labeling activity. ■ <i>Emphasize safety benefits.</i> Panelists felt the plan could be made stronger with specific goals around crashes and fatalities. ■ <i>Facilitate shared experiences.</i> Panelists emphasized the importance of sharing deployment experiences and procurement processes.
Cooperative Automated Transportation (CAT) Coalition	Initial Reactions to the draft Plan?	<ul style="list-style-type: none"> ■ <i>Drives the V2X community forward.</i> Panelists found the plan to be highly positive for community stakeholders to rally around. In particular, the plan promotes V2X as a shared responsibility across the community, which is required to inspire collective action.
	What they liked about the draft Plan?	<ul style="list-style-type: none"> ■ <i>The plan is well-structured.</i> Panelists noted the plan’s clear mission and vision, concrete goals, and specific targets/metrics. ■ <i>Recognizes that progress must be made over time.</i> Panelists commended the use of three timeframes for goals and metrics.
	What is missing in the draft Plan?	<ul style="list-style-type: none"> ■ <i>Missing local perspectives.</i> Some panelists offered that municipal and local perspectives were not adequately addressed. In particular, smaller agencies may lack deep technical understanding in V2X and face significant financial barriers.

Workshopping the Plan: Highlights from the Breakout Sessions

The USDOT facilitated breakout sessions, where attendees, both in-person and virtual, were asked to provide their feedback to specific questions relating to the plan. Participants were divided into randomly assigned groups (five in-person, six virtual). Six questions were posed to participants for feedback. Facilitators managed the discussion and followed a schedule to ensure that all six questions were answered by the groups. Virtual participants were encouraged to document their feedback by way of the Zoom chat feature and in-person attendees were encouraged to complete a questionnaire that was distributed. Stakeholders were encouraged to provide comments either during the event, or within the next three months by emailing their feedback to the USDOT at V2XDeploymentPlan@dot.gov.

Summit Conclusions and Next Steps

Dr. Robert Hampshire provided a wrap up of the day and discussed next steps. The USDOT has created an official email account where stakeholders are encouraged to provide feedback on the current draft Plan (V2XDeploymentPlan@dot.gov). Over the next 3 months the USDOT will be soliciting additional comments and feedback on the draft Plan and will be reviewing the feedback shared during the Summit’s panel and breakout sessions.