



AIM Innovation Showcase Application

Sponsor

Nominations must be submitted by an AASHTO member DOT willing to help promote the innovation. If selected, the sponsoring DOT will be asked to present the innovation at the Innovation Showcase during the AASHTO Spring Meeting.

1. Sponsoring DOT (State): **California DOT**
2. Name and Title: **Rajpreet S Khangura, Division Chief of Traffic Operations and Safety**

Organization: **California Department of Transportation**

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State: **CA**

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Innovation Description (30 points)

The term "innovation" may include processes, products, techniques, procedures, and practices.

3. Name of the innovation:

Situation Data Exchange integration into the CA DOT's Intelligent Transportation System

4. Please describe the innovation.

Caltrans' District 11 installed backoffice applications in the Transportation Management Center that streamlines the creation of traveler information messages and reaches a broader audience through connected vehicle technologies and 3rd party navigation applications. Safety through connectivity.

5. What is the existing baseline practice that the innovation intends to replace/improve?

The current practice of sending out traffic critical information is through changeable message sign, local news calling, or through public sharing in various social media platforms.

6. What problems associated with the baseline practice does the innovation propose to solve?

The accuracy and latency of critical traffic information. The targeted traveling public is too broad requiring unrelated information inundating unaffected drivers.

7. Briefly describe the history of its development.

The current process in disseminating traffic information, latency from time of incident, and the delays in the V2X deployment are the reasons an intermediary approach is necessary. Until a better process in distributing traffic information at a low latency or when V2X deployment is at 95 percent or better, the Situation Data Exchange (SDX) is a viable solution to meet the above-mentioned difficulties.

8. What resources—such as technical specifications, training materials, and user guides—have you developed to assist with the deployment effort? If appropriate, please attach or provide weblinks to reports, videos, photographs, diagrams, or other images illustrating the appearance or functionality of the innovation below (if electronic, please provide a separate file). Please list your attachments or weblinks here.

Click or tap here to enter text.



State of Development (10 points)

Innovations must be successfully deployed in at least one State DOT. The AIM selection process will favor innovations that have advanced beyond the research stage, at least to the pilot deployment stage, and preferably into routine use.

9. How ready is this innovation for implementation in an operational environment? Please select from the following options. Please describe.

- Innovation is fully functional and yet to be piloted.
- Innovation has been piloted successfully in an operational environment.
- Innovation has been deployed multiple times in an operational environment.
- Innovation is ready for full-scale implementation.

The backoffice application is currently installed, running various scenarios, Transportation Management Center (TMC) operator's familiarization training is ongoing. The pilot project is half completed. The last 2 quarters will be fully integrated and operational.

10. What additional development is necessary to enable implementation of the innovation for routine use?

The connected vehicle environment lacks both State and Federal mandates for adoption of the CA MUTCD and the MUTCD sign standard into the Traveling Information Message (TIM) standards. It would be a best practice to use a national standard for symbols and signs as shown in the MUTCD in various navigation application to eliminate traveling public's confusion.

11. Do you have knowledge of other organizations using, currently developing, or showing interest in this innovation? Yes No

If so, please list organization names and contacts.

Organization	Name	Phone	Email
Wyoming DOT	Click or tap here to enter text.	Click or tap here to enter text.	Click or tap here to enter text.
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INNOVATION

 MANAGEMENT

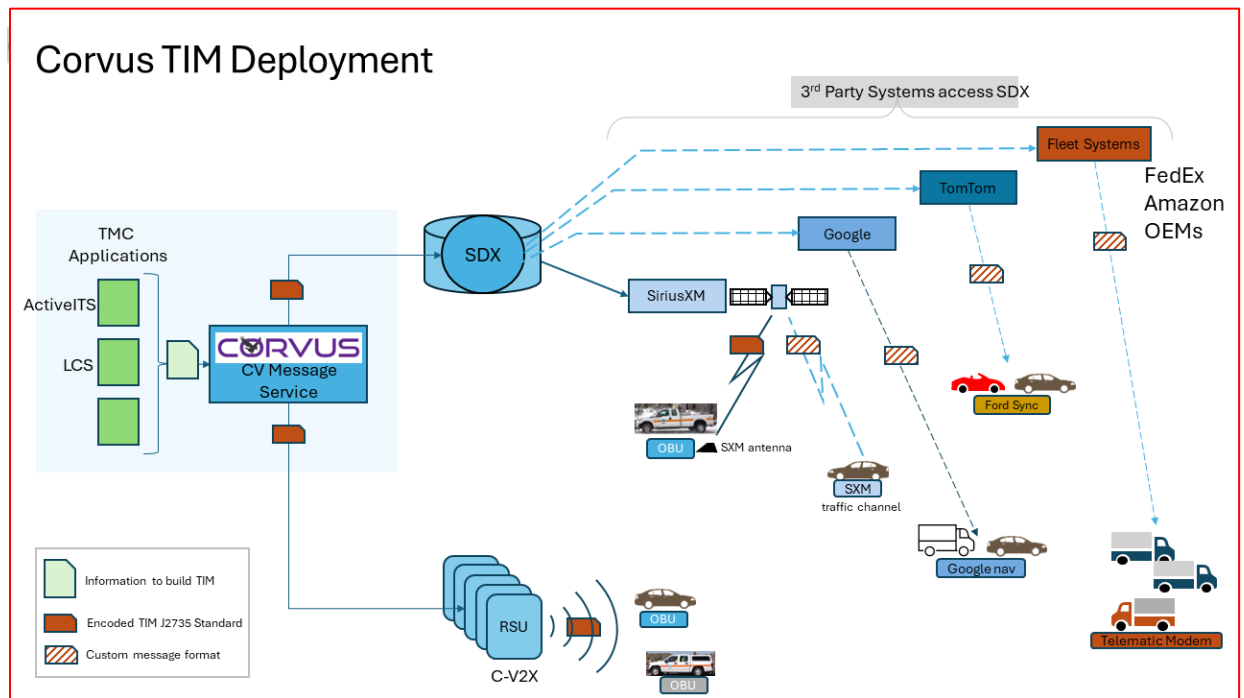
Potential Payoff (30 points)

Payoff is defined as the combination of broad applicability and significant benefit or advantage over baseline practice.

12. Identify the top three benefits your DOT has realized from using this innovation. Describe the type and scale of benefits of using this innovation over baseline practice. Provide additional information, if available, using quantitative metrics, to describe the benefits.

Benefit Types	Please describe:
Improved Safety	The immediate availability of critical traffic information aid in the traveling public's behavior ahead of the traffic incident
Improved Quality	Providing traffic information to 3rd party navigation and in-vehicle infotainment vehicles is dependent on the accuracy and immediacy of the information which, in turn, builds trust and reliability of the DOT's information infrastructure
Improved Customer Service	Sharing traffic data to local government agencies, non-profit agencies and private companies help to improve safety, to ease traveling experience and to show transparency of the Department

Provide any additional details below:



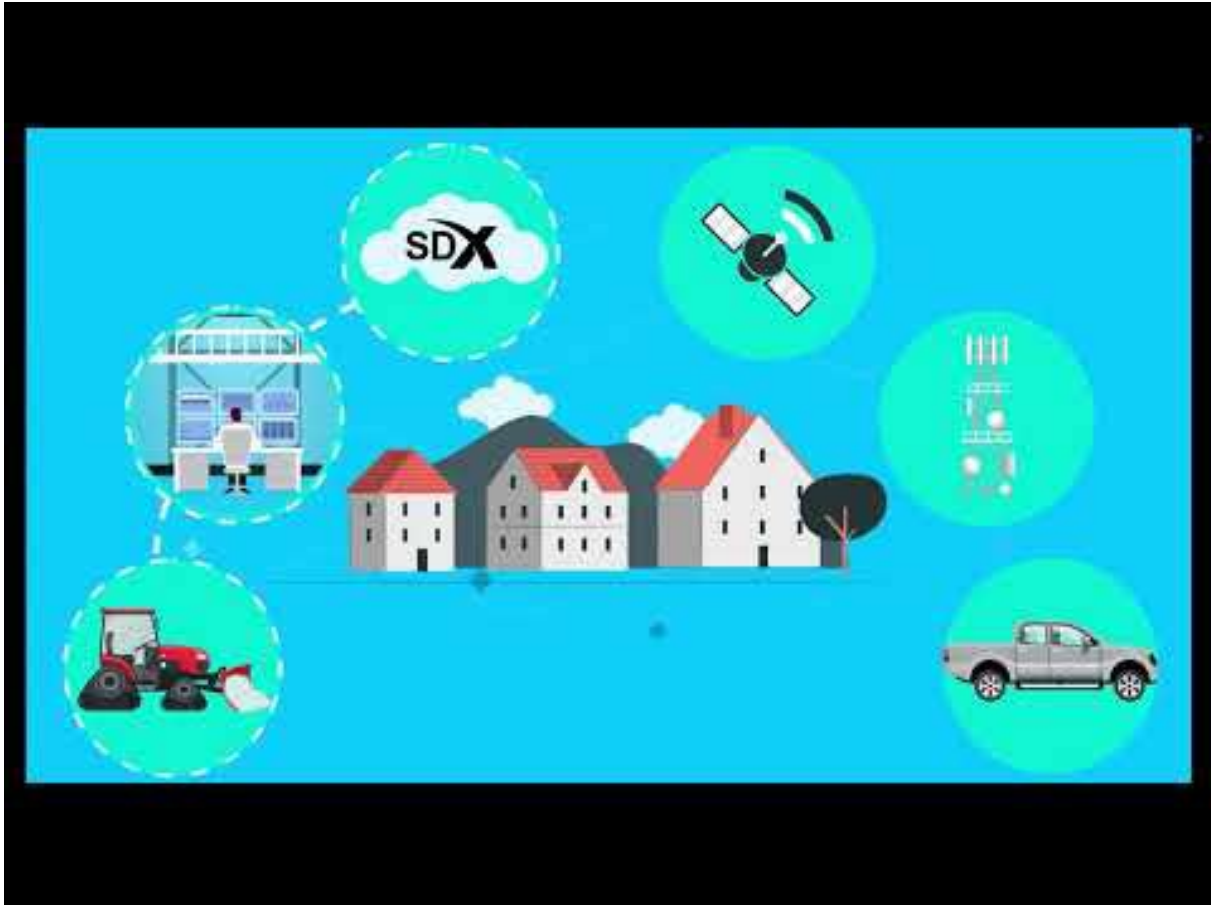
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Deployability (30 points)

The AIM selection process will favor innovations that can be adopted with a reasonable amount of effort and cost, commensurate with the payoff potential.

13. What challenges and/or lessons learned should other organizations be aware of before adopting this innovation?

The server in the TMC must support the API software to connect to the SDX with sufficient data storage to consume incoming and outgoing data. The extent of the usage is dependent of existing or extending coverage of V2X infrastructure or integrating current Intelligent Transportation System (ITS) assets in a corridor.

14. Please provide details of cost, effort, and length of time expended to deploy the innovation in your organization.

Cost: \$300 k

Level of Effort: The integration is not difficult depending on TMC's personnel level of experience in software integration to current TMC's backoffice servers.

Time: 1 year to fully integrate with testing, 1 year to run case studies and scenarios, and 1 year to monitor. 3 years total.

15. To what extent might implementation of this innovation require the involvement of third parties, including vendors, contractors, and consultants? If so, please describe. List the type of expertise required for implementation.

The software vendor provides integration and technical support with IT personnel assisting with cybersecurity and communication aspect of the integration. Depending on the extent along the corridor, some field work would be necessary.