DRISI
CALTRANS DIVISION OF RESEARCH, INNOVATION AND SYSTEM INFORMATION

Research Notes

Traffic Operations

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Project Title:
Caltrans Traffic Operations Data Standards Implementation Recommendations

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Caltrans Traffic Operations Data Standards Implementation Recommendations

Provide guidance for Caltrans within the state to improve data and system interoperability across the transportation system. The project will focus on improving standardization of traffic operations data communications across California's transportation infrastructure.

WHAT IS THE NEED?

Transportation data standards are an increasingly complex topic, particularly as the types and volume of data becoming available is exploding. New data sources, private data providers, and uses for data are exploding. Data standards can provide significant benefits, including the ability to integrate different systems and different vendor products, improve and ease data analysis, and enable Transportation Systems Management and Operations (TSMO) and many cross-jurisdictional and cooperative solutions and strategies. Without data standards, these benefits cannot be realized.

However, data standards are not always universal, are constantly evolving with transportation technology and information technology advances and are not always implemented universally and in the same manner across the vendor community. Resulting patchwork solutions increase costs, undermine integration efforts, and invite opportunities for wasted effort.

California needs a roadmap for data standardization, ensuring that it has a universal set of standards for all its contractual systems integration efforts and that those standards are implemented in the same manner across its vendor community.

WHAT ARE WE DOING?

This project will review the current information technology and standards landscape, currently used by Caltrans Division of Traffic Operations, and provide practical guidance. Analysis and recommendations will address the following:

DRISI provides solutions and knowledge that improves California's transportation system

- A list of data standards and their usage to be applied to various information technology related projects.
- An analysis, where information is available, of implementation of selected standards across multiple vendor products, identifying similarities and differences in implementations.
- Roadblocks to standardizing the implementation of selected data standards.
- Review of various data semantics, temporal differences, and other data characteristics that can hinder standardization.

WHAT IS OUR GOAL?

Provide guidance for Caltrans within the state to improve data and system interoperability across the transportation system. The project will focus on improving standardization of traffic operations data communications across California's transportation infrastructure.

WHAT IS THE BENEFIT?

The project will focus on improving standardization of traffic operations data communications across California's transportation infrastructure with the following benefits:
- Improve systems integration effort success and reduce integration costs.
- Improved ability to access, analyze, and utilize data.
- Increase opportunities for new systems capabilities and related benefits.
- Improve the ability to connect all elements of the California transportation system.
- Cultivate a marketplace where vendors develop compatible components according to a public set of common data standards and commonimplementation of those standards.

WHAT IS THE PROGRESS TO DATE?

The kick-off meeting was held on October 12th & first monthly status meeting was held on December 6th, 2023.The schedule was updated and compressed to 12 months.

Initial work was conducted to gather information on several Caltrans Integrated Corridor Management (ICM) and Connected Vehicle (CV) pilots in D3, D8, D11, D12 and to gather information about some key agencies and partners with relevant projects. Literature review is going on and first deliverable is expected in February 2024.