INFRASTRUCTURE OPEN-SOURCE TOOLS

The Federal Highway Administration (FHWA) has developed various infrastructure-related, open-source tools to promote the deployment of interoperable transportation systems.

Infrastructure open-source software (OSS) allows infrastructure owners and operators, software companies, and device manufacturers to deploy intelligent transportation systems and to collaborate and contribute to these tools.

FHWA infrastructure open-source tools include:

- VX HUB
- Operational Data Environment
- Secure Data Commons
- CARMA STREETS
- Intersection Situation Data (ISD) Message Creator

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SAXTON LABORATORY

- **Vehicle-to-Everything Hub:** a multimodal OSS that enables networked, wireless communications among entities in the transportation system.

- **Operational Data Environment**: a real-time virtual data router that ingests and processes operational data from various connected devices.

- **Secure Data Commons[1]**: a cloud-based analytics platform that enables traffic engineers, researchers, and data scientists to access transportation-related datasets.

- **CARMA[SM] Streets:** an infrastructure component of the CARMA[SM] ecosystem that enables coordination among different transportation users.

- **ISD Message Creator[2]:** a tool that allows for the creation and encoding of ISD, MAP, or signal phase and timing messages using a web-based graphical interface.

1 FHWA. 2022. Secure Data Commons (software). https://www.transportation.gov/data/secure, last accessed August 18, 2022.

2 FHWA. 2022. ISD Message Creator (software). https://webapp.connectedvcs.com/isd/, last accessed August 18, 2022.

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