

C-ITS MANAGER

BACK OFFICE DATA HUB AND EVENT MANAGEMENT FOR V2I COMMUNICATION



OVERVIEW

The C-ITS Manager is a central back office system for vehicle-to-infrastructure (V2I) communication. As the main source of information for road side units (RSUs), the C-ITS Manager enables the exchange of safety, mobility, and environmental-related information between vehicles and infrastructure.

As the main communication hub for all external data sources, the C-ITS Manager aggregates and integrates data from all V2I components to help improve traffic flow and safety, minimize accidents and congestion, and reduce harmful carbon emissions.

Data and events can be manually entered, or the C-ITS Manager can serve as a data hub collecting information from various systems such as traffic information centers and road weather systems then automatically dispatching the information to the road side unit.

The C-ITS Manager is easily scalable and comprised of a user interface, middleware, and central data storage.

BENEFITS

- Operate as a single communication hub for vehicle-to-infrastructure (V2I) communication
- Aggregate data from vehicles, traffic management centers, devices, RSUs, and more
- Create and transfer message content and priority
- Trigger events automatically or manually
- Store data in a central, secure location
- Integrate with other information systems
- Access on any device and browser with internet access

EVENT AND SCENARIO MANAGEMENT

As the primary communication hub for external devices, the C-ITS Manager allows messaging for specific events or scenarios to be created manually or automatically activated based on established criteria.

MANUAL

Manually creating events, such as road work or obstacles on the roadway, can be achieved quickly and easily in the C-ITS by enter event parameters and it will appear:

- Type of event
- Location of the event
- Required speed limits
- Closed lanes

AUTOMATIC

Events can be automatically triggered based on established criteria, such as severe weather and ghost drivers. Data acquisition is carried out via the communication server and messaging is automatically generated from external data sources, such as a traffic management center.

SYSTEM INTEGRATION

External systems acquire data either automatically via traffic sensors or manually through the traffic management center SCADA system. The V2I data concentrator connects these systems via the communication server, processes them properly, and transfers them to the location of the appropriate road side units.

WEB APPLICATION

A user-friendly web interface provides:

- Geographical representation of the concerned highway section with all the V2I road side units and its properties (status of the unit, outgoing messages, etc.)
- Manual activation of DENM messages for specific RSU
- Manual activation of IVI messages
- System reports

V2I DATA CONCENTRATOR

Part of the C-ITS Manager, the V2I data concentrator acquires data from various data sources, processes it, and sends it to the appropriate RSU via the communication system.

Data is processed to determine the appropriate:

- Message type – DENM or IVI
- Message content according to the location of the RSU (distance to the event, appropriate speed limit, etc.)
- Message priority in terms of the co-existence of various different events



C-ITS MANAGER

Acquire, process, and communicate data with road side units

Store data and operate as the main hub for external sources



ROAD SIDE UNITS

Collect and distribute messages to and from vehicles/on-board units

Communicate data with C-ITS Manager



ON-BOARD UNITS

Receive, analyze, and display messages in vehicles

Display road side unit locations
Send messages to road side units

