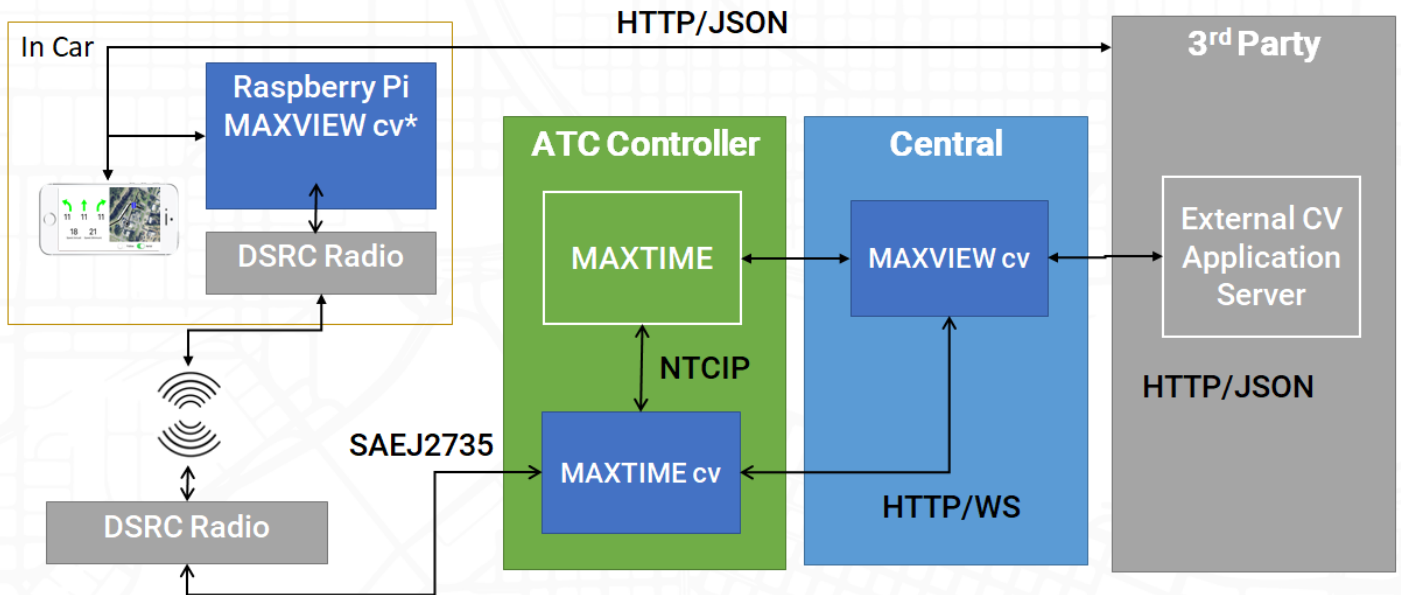


## Overview

Intelight's Connected Vehicle applications, MAXTIME cv and MAXVIEW cv, are built upon the latest ATC, NTCIP and DSRC J2735 standards. MAXTIME cv is built as a stand-alone embedded firmware application designed to run on ATC 5.2b or above compliant controller hardware. In addition, by leveraging the Linux kernel and the ATC API Standard v2.06b, MAXTIME cv can run on the same physical ATC engine board as the existing MAXTIME intersection firmware, thereby reducing the overall hardware cost of the connected vehicle deployment.

MAXTIME cv communicates directly with the signal firmware utilizing NTCIP 1201, 1202 and 1211 message sets. MAXTIME cv then creates valid J2735 messages including SPaT, MAP, and SSM to be broadcast on a connected DSRC radio or via a connected MAXVIEW cv server application over the internet. Intelight's in-car CV App (Android and Apple devices supported) provides real-time connected vehicle data from MAXVIEW cv (Cellular) or MAXTIME cv (DSRC Radio). The application currently displays: real-time position and lane tracking, time to green/time to red, actual/suggested speed, preempt/EV notification, and traveler information messages.



## MAXTIME

CV

- Runs on the same ATC intersection controller as MAXTIME signal controller software
- Uses ATC API specification for shared interface
- Full web browser with rich status and configuration view
- Web-based configuration of MAP data — shared across MAXTIME, MAXVIEW, and other apps
- Broadcast SPaT, MAP, SRM/SSM to connected DSRC or web service
- Connect with a broad set of DSRC radio or external services vehicle services
- Connected Vehicle Application Platform
- Supports subset of NTCIP 1202 v.3 connected vehicle objects

## MAXVIEW

CV

- Central based connected vehicle data aggregator
- Direct real time communication with MaxTime CV over HTTP/Web socket for fast exchange
- Log and analyze incoming SPaT, MAP, SRM/SSM messages
- Provides third-party real-time access to aggregate SPaT, MAP, etc. data with <1 sec latency.

**Connected Devices Status**

| Device | Device Type | Device ID | Connection Status |
|--------|-------------|-----------|-------------------|
| 1      | MaxTime     | 1         | Connected         |
| 2      | WaveRSU     | 2         | Connected         |
| 3      | None        | 0         | Not Connected     |
| 4      | None        | 0         | Not Connected     |
| 5      | None        | 0         | Not Connected     |
| 6      | None        | 0         | Not Connected     |
| 7      | None        | 0         | Not Connected     |
| 8      | None        | 0         | Not Connected     |
| 9      | None        | 0         | Not Connected     |
| 10     | None        | 0         | Not Connected     |
| 11     | None        | 0         | Not Connected     |
| 12     | None        | 0         | Not Connected     |
| 13     | None        | 0         | Not Connected     |
| 14     | None        | 0         | Not Connected     |
| 15     | None        | 0         | Not Connected     |
| 16     | None        | 0         | Not Connected     |
| 17     | None        | 0         | Not Connected     |
| 18     | None        | 0         | Not Connected     |
| 19     | None        | 0         | Not Connected     |
| 20     | None        | 0         | Not Connected     |

[Next](#)

MAXTIME cv provides web pages with status screens showing connected devices and the generated messages.

**Devices**

| Device | Device ID | Device Type | IP / Hostname | IP Port | HTTP Port | Serial Port | Device Address | Secondary Device Address | Peer Timeout | Description |
|--------|-----------|-------------|---------------|---------|-----------|-------------|----------------|--------------------------|--------------|-------------|
| 1      | 1         | MaxTime     | 192.168.1.32  | 161     | 80        | 0           | 0              | 0                        | 15           |             |
| 2      | 2         | WaveRSU     | 192.168.1.11  | 161     | 80        | 0           | 0              | 0                        | 15           |             |
| 3      | 0         | None        |               | 161     | 80        | 0           | 0              | 0                        | 15           |             |
| 4      | 0         | None        |               | 161     | 80        | 0           | 0              | 0                        | 15           |             |
| 5      | 0         | None        |               | 161     | 80        | 0           | 0              | 0                        | 15           |             |
| 6      | 0         | None        |               | 161     | 80        | 0           | 0              | 0                        | 15           |             |
| 7      | 0         | None        |               | 161     | 80        | 0           | 0              | 0                        | 15           |             |
| 8      | 0         | None        |               | 161     | 80        | 0           | 0              | 0                        | 15           |             |
| 9      | 0         | None        |               | 161     | 80        | 0           | 0              | 0                        | 15           |             |
| 10     | 0         | None        |               | 161     | 80        | 0           | 0              | 0                        | 15           |             |
| 11     | 0         | None        |               | 161     | 80        | 0           | 0              | 0                        | 15           |             |
| 12     | 0         | None        |               | 161     | 80        | 0           | 0              | 0                        | 15           |             |
| 13     | 0         | None        |               | 161     | 80        | 0           | 0              | 0                        | 15           |             |
| 14     | 0         | None        |               | 161     | 80        | 0           | 0              | 0                        | 15           |             |
| 15     | 0         | None        |               | 161     | 80        | 0           | 0              | 0                        | 15           |             |
| 16     | 0         | None        |               | 161     | 80        | 0           | 0              | 0                        | 15           |             |
| 17     | 0         | None        |               | 161     | 80        | 0           | 0              | 0                        | 15           |             |
| 18     | 0         | None        |               | 161     | 80        | 0           | 0              | 0                        | 15           |             |
| 19     | 0         | None        |               | 161     | 80        | 0           | 0              | 0                        | 15           |             |
| 20     | 0         | None        |               | 161     | 80        | 0           | 0              | 0                        | 15           |             |

Apply

MAXTIME cv also provides web pages for configuring the connected devices and intersection geometry.

