



EMERGENCY

Priority Vehicle Routing System



What is the Emergency Module?

The Emergency Module is an ATMS (Advanced Traffic Management System) software module that integrates with your computer aided dispatch system (CAD) to provide safer and quicker response times for emergency vehicles. In the Emergency Module, Cuic | Trafficware pioneered the concept of utilizing dispatch data from the CAD along with GPS and Automated Vehicle Location (AVL) data interfaced with a proven ATMS system. The result is performance unmatched by any other solution available, providing priority traffic signal service during signal coordination for emergency vehicles.

Because the Emergency Module is ATMS based, it has visibility of the entire response route from the moment the emergency vehicle is dispatched. At that moment, it begins clearing intersections of vehicles using priority signal operation well in advance of the arrival of the emergency vehicle. By the time the emergency vehicle reaches each intersection, it has been flushed of traffic, allowing safe and rapid progress.

In addition to safer and quicker response times, the system also maintains coordinated traffic flow on roadways along the emergency route. This minimizes the disruption to cross street traffic, even as emergency vehicles experience green signals while on route to an incident.

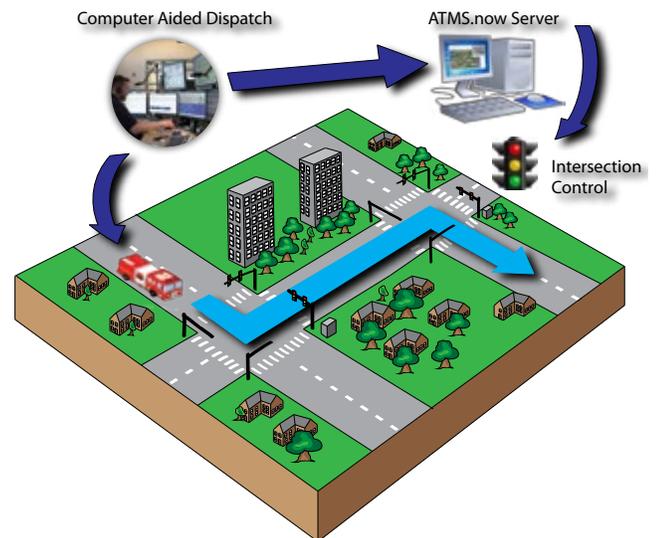
Clears traffic from intersections and roadways prior to the arrival of emergency vehicles.

How does it work?

The Emergency Module provides priority service during coordination, and also extends priority service within free operation. It relies on calculations performed within the local controller - phase reduction and extension times provide an early return to green or extend the green for the emergency vehicle phase. The system operator can vary the priority parameters by timing pattern and time-of-day.

The Emergency Module receives GPS-based location data from units as they are dispatched and uses algorithm-derived predictive travel times to flush traffic through intersections along the route before the emergency vehicle arrives. Emergency vehicle status and location progress can be monitored centrally as the system receives continuous updates from the CAD.

This proactive approach provides a less congested traffic environment, one that is continuously moving and results in safer travel for emergency vehicles, reduced incident response times, and minimal interference with the motoring public.



The Emergency Module can save an agency hundreds of thousands of dollars by eliminating the costly addition of emergency preemption equipment.



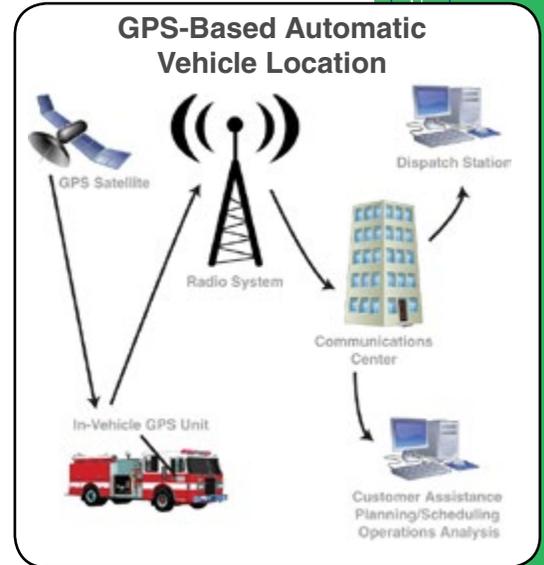


Achieve Faster Emergency Response Times

The Cubic | Trafficware priority vehicle routing system gives traffic flow priority to motoring public vehicles traversing a route between an origin and an incident. By extending green and thus reducing traffic congestion on the selected route, so emergency vehicles can respond to incidents faster.

Minimize Impact to Surrounding Traffic

The Emergency Module works cooperatively with Cubic | Trafficware's ATMS platform to maintain coordinated traffic flow on right-of-ways along the emergency route. Cross streets are minimally impacted by coordinating traffic flow, even as emergency vehicles experience green lights during their route. As traffic signal timing is dynamically adjusted, drivers on adjacent and oncoming right-of-ways drive normally without disruption. In contrast to the Emergency Module's method of operating within a signal priority mode, traditional optical or radio frequency based preemption creates an element of chaos at the intersection. Motorists sitting at a red signal for an extended duration grow impatient, and can act unpredictably and unsafely. The Emergency Module operates in the fashion motorists expect, and while they may get a shorter than normal green phase, the intersection maintains normal traffic signal sequence. A system that operates as motorists expect reduces the risk of motorists growing impatient and responding in a way that would interfere with emergency vehicles.



Leverage Existing Infrastructure While Planning for the Future

Cubic | Trafficware's priority vehicle routing system integrates with and leverages all the available technology that an agency has invested in, including the ATMS, traffic signal controllers, GPS-based AVL devices, and CAD applications. This provides a holistic and effective, yet cost-efficient solution. With the Emergency Module, there is no additional hardware for the vehicle or intersection to purchase, install or maintain.

Typical Approach

Optical and Radio Vehicle-Based Preemption

- Independent system from traffic and computer-aided dispatch systems
- Additional hardware required
- Can only control traffic signals within limited distance
- Interrupts normal operation and coordination and still doesn't guarantee a clear intersection
- Takes several cycles to recover from interruption (5-10 minutes)
- Requires equipment installation and maintenance at intersections and on emergency vehicles

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Cubic | Trafficware's Emergency Module

Emergency Central Priority Control

- Integrates with existing CAD systems
- Transitions signals while in coordination (no skipping)
- No optical/radio or field equipment required
- Can centrally modify signals for entire route, removing the snowplow effect caused by heavily congested routes
- Creates a safer environment for the motoring public and emergency vehicles

Features

- Route based priority for emergency vehicles
- Full GIS-based, real-time display of routes and vehicles
- Works in tandem with computer aided dispatch system and AVL software
- No additional intersection hardware needed
- Priority request initiated from central rather than from field devices
- Full reporting capabilities
- NTCIP 1211-based priority control strategy

ABOUT CUBIC | TRAFFICWARE

Cubic | Trafficware specializes in researching, designing, and developing electronic equipment and enterprise software designed to enhance the transportation industry. Our industry expertise comes from:

1. Hands on experience attained while solving traffic management challenges across the country since 1979.
2. Our in-house team including: professional traffic engineers, hardware and software design and development staff, manufacturing personnel, and customer service/field application engineers.
3. Regular dialogue with our customers to address their real-world operational issues and future traffic management requirements.

Cubic | Trafficware manufactures a full line of traffic equipment in its 90,000 square-foot technology center located in Sugar Land, Texas. In over three decades of manufacturing in the USA, our products have earned a reputation for unmatched quality and reliability.