

## Central Management Software (CMS) for traffic signal priority control



### Opticom™ Central Management Software

- Emergency Vehicle Preemption (EVP) and Transit Signal Priority (TSP) solution
- Remotely manage intersections and inventory to maximize resources
- Real-time access to data and priority control settings ensures safer transport
- Seamless interoperability between IR and GPS technologies

*“We had to do more with less. CMS allows us to monitor the entire traffic signal priority control system from the traffic center to save time, leverage resources and optimize efficiencies.”*

- David Kumke, traffic supervisor

**Municipality:** The city of Olathe Public Works Department – Traffic Signal Division, Mid America Regional Council (MARC), and Olathe Fire and EMS Departments.

**Challenge:** Facing more vehicles on the roads and widespread budget cuts, the Olathe Traffic Division sought to improve existing traffic signal service levels and reduce emergency response times by leveraging existing infrastructure and resources.

**Solution:** The city partnered with MARC to integrate Opticom™ CMS with the existing Opticom™ traffic priority control system for remote, real-time access to activity logs, diagnostic readings and key performance indicators.

**Performance:** With Opticom™ CMS, traffic operators monitor, manage and maintain intersection activity remotely to improve service levels, maximize resources and expedite emergency response.

### Planning for the most efficient system

Olathe is the fourth largest city in Kansas, located about 20 miles south of Kansas City. As its population grew rapidly, the city's Traffic Signal Division sought to become an early adopter of a scalable, cutting-edge advanced traffic management system (ATMS) that could handle the influx of vehicles on the road, improve service levels and expedite emergency response.

The first roadblock was acquiring funding for the ATMS. It wasn't easy, or quick. As leading-edge communications strategies evolved, traffic officials transitioned from a SONET ring networking topology to one featuring Ethernet-equipped intersections because it offered scalability for long-term growth. It was a forward-thinking decision that would pay off for Olathe several years later.

ATMS implementation included four installation phases and took nearly a decade to complete. During this time, Olathe and 26 other municipalities partnered to form “Operation Greenlight” — a regional initiative designed to improve traffic flow and reduce emissions. Part of the group's efforts included evaluating traffic signal priority control software options.

Fast forward to 2010. Facing budget cuts, the Olathe Traffic Signal Division wanted to add real-time management software to their existing traffic signal priority control system and streamline operations.

“We had to do more with less,” said David Kumke, Operations Traffic Supervisor for the city of Olathe. “The new Opticom™ CMS is an integral part of our city's overall traffic system. CMS allows us to monitor the entire traffic signal priority control system from the traffic center to save time, leverage resources and optimize efficiencies.”

### Enhance efficiency of existing infrastructure

By installing an embedded, scalable ATMS featuring state-of-the-art Opticom™ preemption hardware from the outset, the city's Traffic Division had the infrastructure in place to add Opticom™ CMS.

Previously, traffic signal operators had limited access to service interruptions at intersections. Often, the TOC relied on updates from motorists and emergency response personnel before technicians could troubleshoot the problem. In addition, preventive maintenance on traffic preemption equipment was performed only once per year, so service interruptions at intersections went undetected.

“Every second counts for emergency response,” said Kumke. “We had the infrastructure we needed to add real-time reporting. It was time to deploy the best solution and resolve issues ahead of time to give our city's response teams every opportunity to reach the scene as quickly as possible.”



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## EMERGING APPLICATIONS



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The city's traffic department deployed Opticom™ CMS along 75 transit routes and high-traffic corridors. The CMS deployment went smoothly. Its wide-ranging surveillance capabilities — including real-time access to activity logs, diagnostic readings and performance indicators — immediately improved technician service levels and emergency response times.

### **CMS had an immediate impact**

The Traffic Signal Division partnered with key municipalities to devise mutual aid strategies that could enhance traffic priority control and expedite CMS implementation. Vehicle numbers and other identification information were collected from Olathe EMS and Fire Department vehicles and used for encoding and validation reporting. The detailed information helped to identify preemption abuses. In addition, emitters were tested and replaced where necessary to ensure optimal functionality while reducing labor-intensive tasks for technicians.

With Opticom™ CMS, operators can conveniently monitor and manage intersection activity remotely from the centralized TOC. It offers immediate access to system activity at the intersection and inventory management. In fact, one glance at the computer screen offers a snapshot of every service interruption in the system.

The CMS includes a customizable warning feature that informs operators, via an email to the TOC and by smartphones to field technicians, when there is a service interruption in the system. As a result, fewer technicians are required to maintain high standards of uninterrupted service, and fewer strains are placed on the budget. This powerful management software was easy to implement because Olathe planned ahead and deployed a scalable ATMS.

"We were surprised at how easy it was to get up and running. CMS runs great and it's very intuitive. Our technicians were able to begin monitoring preemption activity almost immediately."

### **Establishing accountability for smoother traffic flow**

For traffic signal priority control operators, performance is measured via emergency response times. With real-time access to intersections, operators can remotely monitor preemption equipment, expedite maintenance and reroute traffic so vehicles have clearer, safer paths to their destinations.

Every detail from every connected traffic signal is documented. TOC operators can receive daily email reports — featuring specific, customized metrics — for quick, convenient access to the critical data they need most. Diagnostic tests also occur at the TOC, so technicians are no longer dispatched blindly to the scene.

In addition, operators have one-click access to the specific vehicle number that initiated preemption. Kumke and his team use this information to strengthen partnerships with the Olathe EMS and Fire Departments and curb preemption abuse.

"CMS brings more accountability to our traffic management system," said Kumke. "With more than 11,000 preemptions every month, it's critical that we can see exactly who is preempting the signal, and whether the preemption is warranted."

The innovative CMS includes specific details — down to whether an emergency vehicle has its turn signal on — that can be used to maximize traffic signal priority control at upcoming intersections.

"CMS has exceeded our expectations," said Kumke. "I'd recommend it for any organization that wants to improve the efficiency of its traffic management system."