



GEORGIA DEPARTMENT OF TRANSPORTATION

The governmental organization responsible for operating and maintaining the transportation systems of the state of Georgia.

Industry: Government

Geography: United States

Deployment Summary

- System links data input devices such as video cameras, loop detectors, and radar to relay traffic conditions.
- Platform also integrates output devices for controlling traffic, such as signals, ramp metering lights, and changeable message signs.
- Real-time messaging posts traffic data along roads 24 hours a day, 7 days a week.
- Programs communicate quickly, reliably, and securely across local area networks (LANs), wide area networks (WANs), and the internet.

Benefits

- Platform transmits 1.5 million records in each 24-hour period, ensuring that travelers have up-to-the-minute information.
- Flexible, open architecture easily integrates with nearly any type of device that transportation control centers might add in the future.
- 100 percent fault tolerance ensures system availability.
- Improved traffic monitoring helps prevent road congestion and accidents and minimizes pollution caused by gridlock.



“My mission was to find the most reliable, robust product around. TIBCO gave us a fault-tolerant knowledge-based system, and it can be easily scaled to an unlimited number of processes.”

David Spinney, Information Systems Manager, Georgia DOT

Georgia DOT Achieves New Efficiency with Real-Time Integration

When the International Olympic Committee gave the nod to Atlanta, Georgia, for the 1996 Summer Games, the Georgia Department of Transportation (GDOT) realized that its roads would soon experience volumes of traffic never before seen in the state. Georgia would host visitors from around the world – visitors who would likely clog the roads with their cars, pollute the air during traffic jams, and cause accidents.

To accommodate such a massive influx of traffic, GDOT knew it needed to improve its traffic control systems throughout the Atlanta metropolitan area and the rest of the state.

GDOT creates a game plan

GDOT vaulted into action and designed a plan to handle the anticipated increase in traffic throughout the metropolis and surrounding suburbs. It designed a new traffic control system that would drive efficiency into its traffic monitoring process, providing information to help move traffic to the most efficient byways, prevent congestion and accidents, and minimize air pollution.

The new system also included a traffic control center that detects emergencies and dispatches police, ambulance, and fire personnel. This information would immediately post along traffic routes 24 hours a day, 7 days a week. At the center of the system’s from-scratch design were video cameras stationed at key congestion points throughout the interstate and arterial routes. More than 300 fixed-view cameras monitor speed, density, and volume of traffic; 65 pan, tilt, and zoom cameras confirm traffic incidents that might impede traffic flow.

GDOT hoped that its new traffic control system would stand up to the test of the Olympic Games and serve the state of Georgia for many years to come.

“We built for the Olympics and beyond,” says Marion Waters, Georgia state traffic operations engineer. “Whatever we built had to work for the magnitude of anticipated increased traffic for the Olympics and then extend to meet the needs of the rest of the state in the future.”

GDOT teams up with an integration originator

GDOT began with a massive, complex distributed client-server network that includes data input devices such as video cameras, as well as loop detectors and radar to relay traffic conditions. It also includes many output devices for controlling traffic, such as signals, ramp-metering lights for entrance onto the freeways, and changeable message signs (CMS). Additionally, the system includes a highway advisory radio, traveler advisory telephones, a bulletin board service for computers, and an internet home page.

Now that the organization had created a traffic control system that could collect and distribute traffic information from all over the state, it needed to enable the most critical feature of the traffic control system: real-time communication. One-second response time was GDOT's goal for its data collection. But with hundreds of distinct communication devices sending and receiving 1.5 million records in each 24-hour period, GDOT needed the most robust, reliable middleware to handle the interprocess communication requirements that put extreme demands on its system databases. Downtime was out of the question. Flexibility and openness were crucial because the network must accommodate nearly any type of device that the seven individually owned transportation control centers might add in the future.

GDOT turned to TIBCO Software Inc., a leading enabler of real-time business. The organization chose TIBCO's

messaging solution, which enables programs to communicate quickly, reliably, and securely across LANs, WANs, and the internet.

TIBCO's real-time solution integrates data and applications through a common platform. It enables the development of solutions faster than any comparable middleware product, and allows GDOT to quickly integrate disparate systems at any time. The system also can scale to handle the state's future needs with minimum coding.

Real-time integration enables a first-rate performance

Using The Power of Now®, GDOT project teams can create real-time, highly distributed applications in dynamic, heterogeneous environments. TIBCO's solution offers 100 percent fault tolerance, high performance, and unlimited scalability.

"We chose TIBCO's messaging solution because it is part of a modularized family of products, which allowed us to fit into our design only what we required," says David Spinney, information systems manager at GDOT. The open, accessible programming environment of TIBCO's solution allows for easy extension and customization of all features, including security, network protocols, message routing, and recovery.

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Flexibility puts GDOT on the road to smoother growth

In the years since the implementation, the TIBCO-based traffic control system has helped GDOT easily evolve its organization based on new needs – a benefit that GDOT expects will continue well into the future.

"TIBCO's messaging solution is rock solid. It hasn't gone down once. Our software developers are very pleased with its reliability," Spinney says. "Also, because TIBCO's solution is platform-independent and scales to an unlimited number of processes, there is no limit in size or type of product we can add to this system during expansion, which – as modern traffic dictates – GDOT expects to be the rule rather than the exception."



TIBCO Software Inc. (NASDAQ: TIBX) is the leading independent business integration software company in the world and a leading enabler of real-time business, helping companies become more cost-effective, more agile and more efficient. TIBCO has delivered the value of real-time business, what TIBCO calls The Power of Now®, to thousands of customers around the world and in a wide variety of industries.

www.tibco.com

Global Headquarters
3303 Hillview Avenue
Palo Alto, CA 94304

Tel: +1 650-846-1000
+1 800-420-8450

Fax: +1 650-846-1005