

NEW TECHNOLOGIES DRIVE DEMAND FOR INTELLIGENT TRAFFIC SYSTEMS WORLDWIDE



A JUPITER SYSTEMS WHITEPAPER

BOTH LARGE AND SMALL COMMUNITIES SEEK AFFORDABLE ITS CAPABILITIES

Population growth, safety, security, and environmental concerns are driving local, state and national governments worldwide to seek more effective ways to leverage and use their surface transportation infrastructure. With the availability of new intelligent traffic systems (ITS), now even small communities can implement affordable intelligent traffic management to get more performance from existing road and rail networks.

Intelligent traffic system capabilities provide extensive benefits to traffic management centers (TMC 's), including increased mobility, enhanced safety and security, and faster emergency response. In the face of significant budget pressures and uncertainty from the economic downturn, a growing number of governmental organizations view ITS expenditure as both attractive and a compelling long term investment for future growth. As a result, ITS technologies are poised for exponential growth.

Jupiter Systems, the leading worldwide supplier of display wall processors for command and control applications, is meeting the strong demand for advanced traffic management systems. Jupiter installations can be found in almost every U.S. state including cities such as Orlando, Nashville, Chicago, Phoenix, Denver, Albuquerque, San Francisco and Spokane. Jupiter-driven ITS systems can also be found around the world in Spain, China, Japan, Korea, Mexico and Australia.

GROWING DEMAND FOR INTELLIGENT TRAFFIC SYSTEMS WORLDWIDE

An ITS provides basic management of traffic-signal control systems, roadside cameras and closed-circuit TV systems usually in a centralized, purpose-built Traffic Management Center (TMC) containing one or more display walls. The ITS also incorporates more advanced applications that integrate live data such as weather and news, PC applications, and feedback from other sources such as bridge de-icing systems and systems that coordinate and oversee multimodal transportation for an entire country or state. Video display walls in the TMC enable operators to monitor incoming data feeds and effectively collaborate and respond to situations as they arise around the clock.

At the same time TMC 's are transitioning from older baseband CCTV (closed circuit television) systems to streaming video systems over digital networks. This allows for greater numbers of higher resolution cameras to be brought into the systems, pulling in more views and data than ever before, from even more sources.

Common issues faced by communities worldwide account for the growing demand for ITS. Traffic congestion is a global problem. As population increases, so does congestion, reducing efficiency of the transportation infrastructure and increases travel time, safety problems, air pollution and fuel consumption. Heightened awareness of potential security threats and pandemic events has also forced municipalities to reconsider their public safety, security and emergency response capabilities.

Given the recession's impact on state and local budgets, public agencies are looking for ways to improve their capabilities while minimizing the need for additional staff and operating expense. At the same time, affordable new information technologies are now available for real-time control, simulation and communications. As a result, ITS solutions represent an attractive, practical investment for an increasing number of communities.

TECHNOLOGIES FOR A NEW GENERATION OF TRAFFIC MANAGEMENT SOLUTIONS

While large metropolitan areas have successfully used intelligent traffic systems for many years to improve public safety, security and emergency responsiveness, smaller communities typically could not afford to implement sophisticated systems. New technologies are changing that. For example:

- ▶ Today large and small traffic control entities have at their disposal a great deal of real-time data including live video feeds, traffic counts, messages from mobile phone users, floating car data and more.
- ▶ With the shift from analog to digital systems, video signals can now be quickly sorted and distributed over long distances at low cost with no degradation in quality.
- ▶ New LCD panels with narrow bezels and lower prices have made it feasible to implement videowalls with even modest budgets.



BEIJING MUNICIPAL TRAFFIC AUTHORITY

The result of these technology trends taken together is the emergence of scalable intelligent traffic systems. Small agencies can now afford state-of-the-art systems and large metropolitan areas can cost-effectively increase the scope of their operations.

JUPITER SYSTEMS MAKES ITS SMARTER

With its advanced display wall processors, Jupiter Systems makes ITS smarter. Jupiter is the global leader in display wall processors, with some 10,000 high-performance, continuous-operation command and control systems and traffic management centers installed around the world. The company has a clear understanding of the needs of traffic-control agencies and can help them get the most out of their ITS resources.

CASE 1 : NEW MEXICO DEPARTMENT OF TRANSPORTATION

Faced with tight budget constraints and the need for an evolving, flexible, scalable transportation network, the New Mexico Department of Transportation (NMDOT) took a phased approach to the development of its TMC. Today, the TMC, which was built in three phases using the integration expertise of The Whitlock Group and advanced display wall processing solutions from Jupiter Systems, contains three state-of-the-art display walls and nine operator stations in approximately 2,000 square feet.



NEW MEXICO DEPARTMENT OF TRANSPORTATION TRAFFIC MANAGEMENT CENTER

The two original display walls are driven by Jupiter Fusion 980 display wall controllers. A Jupiter Fusion 964 Display Wall Controller drives the third display wall. A total of 88 data feeds can be shown on all three walls. Video inputs are managed by Jupiter SVS streaming video systems. The TMC provides improved mobility, enhanced safety and a more productive transportation infrastructure in a highly flexible, scalable, cost-saving framework.

CASE 2 : AZTECH

AZTech is an innovative regional transportation initiative that includes 75 public and private agencies in the metropolitan Phoenix area. Its goals are to integrate the existing intelligent transportation system infrastructure into a regional system, establish a regional integrated traveler information system and expand the transportation management system for the Phoenix metropolitan area.

Part of AZTech, the city of Mesa operates a 3,500 square feet TMC that features the largest video display wall in the Phoenix metropolitan area. The 10 x 18 array consists of fifteen 50-inch Toshiba video cubes driven by a Jupiter Fusion display wall processor. Inputs to the TMC include feeds from traffic cameras, sensor data, and local news and weather reports. TMC operators can access real-time traffic information, adjust signal timing, communicate with police, fire and other emergency responders, and send out real-time messages to the public via dynamic messaging signs, the media and the web. Mesa officials estimate the ITS will save up to 2.5 million gallons of fuel and four million motorist hours each year. Traffic delays are expected to drop by more than 40 percent and accident risk is expected to drop by up to 7 percent.

CASE 3 : CHINA

Recent Chinese investment in traffic and transportation infrastructure – from highways to airports, traffic monitoring and security – has helped drive strong economic growth in China and Jupiter display wall processors are part of transportation systems across the country. Jupiter's high-performance display wall processors can be found in the Beijing Municipal Traffic Authority, which served as the Traffic Management Center for the 2008 Summer Olympic Games; Beijing Chaoyang District Traffic Police; Highway Control; and the Beijing, Chengdu, Shanghai and Shenzhen Police Departments.

ABOUT JUPITER SYSTEMS

Jupiter Systems is the leading worldwide supplier of display wall processors for command and control applications. Jupiter's best-of-breed products are designed for continuous, 24/7 operation and are used in network operation centers, electric power generation and distribution control rooms, boardrooms, intelligent traffic control rooms, 911 dispatch centers, financial management control centers, surveillance and security centers, and fixed and mobile military operations control centers in thousands of installations around the world. All Jupiter products are built in the company's ISO 9001:2008-certified US factory. For more information, please visit www.jupiter.com.

JUPITER SYSTEMS TRAFFIC & TRANSPORTATION INSTALLATIONS

Washington State Department of Transportation (WSDOT)
Traffic Management Center Seminole County, Florida
Mesa, Chandler, Scottsdale & Glendale, Arizona Traffic Management Centers
Pennsylvania Department of Transportation

Illinois Department of Transportation
New Mexico Department of Transportation
Sydney Cross City Tunnel, Australia
New Orleans Regional Traffic Management Center
Emergency Operations Centre, Ottawa

Beijing Olympics Traffic Command Center
Hong Kong Transport Department
Instituto Nacional de Vias, Columbia
Narita Airport, Japan
Incheon City TMC, Korea
Taiwan Traffic Control