



SOLUTION OVERVIEW

CISCO AND NAZTEC PARTNER TO DRIVE INTELLIGENT ROADWAY SOLUTIONS

Cisco Systems® and Naztec have worked together to design and deliver traffic control solutions that help improve the overall efficiency of today's high-volume roadways. The Cisco® Intelligent Roadway solution—an integrated, scalable, converged voice and data network—facilitates operational efficiency, enhances safety and security, and expands services while delivering the lowest total cost of ownership (TCO) in the industry.

CHALLENGE

According to the U.S. Conference of Mayors, more than 3.6 billion hours of delay and 5.7 billion gallons of excess fuel are consumed in traffic congestion on the four million miles of highways and roadways in the United States on an annual basis. Average drivers lose more than 62 hours a year sitting in gridlock with the typical cost of congestion per peak road traveler reaching US\$1160 a year.

With congestion on urban roadways impeding traffic for upwards of seven hours per day in major metropolitan cities and suburbs, safe, accessible, and efficient public transportation has become a top priority. However, budgetary constraints, regulatory compliance for increased safety measures, and disparate traditional IT networks have created barriers that make it nearly impossible to address today's challenges. One of the most important emerging strategies in recent years has been the deployment of intelligent transportation systems. Traffic Engineers and Departments of Transportation (DOTs) are looking to Intelligent Transportation Systems (ITS) to help them solve the issues of congestion, safety, security, and maintenance on America's roadways. Cisco and Naztec have worked together to deliver the following solution sets.

Cisco Intelligent Roadway, a unified, standards-based communications solution, takes advantage of existing investments in disconnected traditional systems to help transportation authorities capitalize on emerging operational, customer service, and security opportunities. Naztec brings the solution to life with a strategic end-to-end systems integration plan that encompasses design, build, installation, and maintenance.

SOLUTION

Cisco Intelligent Roadway includes advanced traffic management solutions, traffic management centers, and advanced traveler information systems. This multiservice network enables more efficient and cost-effective operations when consolidated over a converged network. The Cisco solution for ITS deployment allows DOTs to be ready for future applications such as transmitting information to and from vehicles and providing video streams of roadway incidents to emergency responders on handheld devices.

Cisco and Naztec are working together to deliver a core infrastructure that takes full advantage of existing infrastructure, enabling administrators to use high-performance applications that improve the overall efficiency of roadways. The Cisco Intelligent Roadway solution consists of an intelligent information network that connects disparate network systems to improve the flow of traffic, reduce and minimize roadside incidents, and provide operators with a central view of the highway system—including data on road conditions, traffic, vehicle crews, and transit information. Both Cisco and Naztec work closely with transportation agencies to design and implement the ideal solution that will address each specific challenge.

BUSINESS BENEFITS

The Cisco and Naztec partnership provides leadership, innovation and expertise in traffic control, monitoring and information exchange, and, safety and security management in an IT environment, to support transportation departments as well as emergency and transit operations, and medical transport vehicles.

Cisco and Naztec Intelligent Roadway solutions provide critical benefits, such as:

- **Leading Edge Products for Traffic Monitoring and Control.** Naztec has incorporated the Cisco Mobile Access Router into the Naztec NEMA and 2070 IP Traffic Signal Controllers to enable a completely integrated wireless traffic signal solution.
- **Improved Resource Utilization.** Collects information at point of origin, delivering it in real time to traffic managers and public safety personnel simultaneously, allowing operators to shift from reactive to proactive road management by quickly assessing raw data and facilitating the appropriate action.
- **Greater Collaboration.** Enables smooth, reliable communication among transportation agencies and municipal, emergency, and transit authorities in neighboring jurisdictions.
- **Reduced Costs.** Lowers TCO by converging voice, data, security, and wireless communications within a single-vendor solution and onto a single network, reducing infrastructure costs and network support headcount.
- **Enhanced Security and Safety.** Integrates video surveillance and network security solutions that protect the physical premises and networks on the roadway and in the Transportation Management Center from internal and external threats.
- **Expanded Services and Public Information Opportunities.** Provides innovative services such as up-to-date information that allows drivers to plan ahead by taking alternate routes. Travelers can use the network to access public Internet via personal devices or in designated locations, such as rest stops, restaurants, and roadside cafes.
- **Expert Systems Integration.** Simplifies the migration process by using the latest technologies to develop the optimal network design, implementing standardized processes to quickly navigate the development and integration phases, and optimizing network usage with proven support plans.

SUPPORTING SOLUTIONS OR PRODUCTS

From Cisco Systems:

- **Cisco Network Security Solutions:** Using advanced encryption and tunneling, Cisco network security solutions enable secure, end-to-end, private network connections over third-party networks, such as the Internet or extranets and provide wireless protection software and intrusion detection system.
- **Cisco Core and Edge Network Solutions:** Cisco WAN core solutions tightly integrate IP and ATM technologies through tag switching, which allows IP services and ATM services to be delivered on a single infrastructure with dynamic bandwidth sharing between services.
- **Cisco Wireless Solutions:** The Cisco Aironet® Series of wireless LAN solutions integrates easily into an existing network as a wireless overlay, or creates freestanding all-wireless networks, enabling mobility and increasing productivity quickly and cost effectively.

- **Cisco IP Communications Solutions:** Enterprise-class solutions include IP telephony, unified communications, IP video- and audioconferencing, and contact center that facilitate more engaging and efficient interactions amongst employees, partners, and customers.
- **Cisco CWDM/DWDM Optical Solutions:** Employs multiple light wavelengths to transmit signals over a single optical fiber, maximizing the use of installed fiber cable and allowing new services to be quickly and easily provisioned over existing infrastructure.
- **Cisco Mobile Access Router:** The Cisco 3200 Series Mobile Access Router, designed for “always-on” connectivity, facilitates mobility of entire networks of communication devices in moving vehicles such as trucks, light rail, emergency vehicles, and automobiles.

From Naztec:

- **Naztec StreetWise Advanced Transportation Management System:** StreetWise offers a number of features that facilitate complete traffic management for traffic systems of any size. Among them are real-time status screens with text and graphical displays, map screens for systemwide overview, automated data collection, event logging, video monitoring, HTML file export, arterial progression status displays, Dynamic Message Sign (DMS) control, automated website congestion level update, Geographical Interface System (GIS) compatibility, remote dial-in and access via cellular telephone modem connection, emergency vehicle preemption, and many other traffic control features.
- **Naztec NEMA and 2070 IP Traffic Signal Controllers:** The Naztec family of controllers offers the capability to implement an Ethernet interface to “interconnect” an Advanced Traffic Management System (ATMS). Naztec has implemented Ethernet support in the StreetWise ATMS as a “virtual serial port” so RS-232 and Ethernet hardware devices can be integrated in a hybrid system. This communication system fully supports the NTCIP protocol.
- **Naztec ATMS Innovation:** Naztec offers a number of leading-edge system applications, including PDA handheld devices for database storage and retrieval, Web server design, extensible markup language (XML) data exchange, and wireless fidelity (Wi-Fi) hot spot access.

WHY CISCO/NAZTEC ALLIANCE

The Cisco and Naztec alliance combines leadership in networking technology solutions with leadership in ITS support dedicated to the public transportation community. The solution provides transportation authorities with best practices in networking and technology delivered by a partner with an in-depth understanding of the public transportation industry and experience in Department of Transportation applications.

Only Cisco and Naztec have the networking depth and breadth required to optimize the components that enable Intelligent Transportation Systems infrastructure to work as an integrated system throughout the organization and across the organization’s extended infrastructure.

ABOUT CISCO

Cisco Systems, Inc. is the worldwide leader in networking for the Internet. Today, networks are an essential part of business, education, government and home communications, and Cisco Internet Protocol-based (IP) networking solutions are the foundation of these networks. Cisco hardware, software, and service offerings are used to create Internet solutions that allow individuals, companies, and countries to increase productivity, improve customer satisfaction, and strengthen competitive advantage.

ABOUT NAZTEC

Naztec, Inc. is a leading-edge manufacturing and design firm of both advanced traffic control hardware, including NEMA and 2070, and ATMS software. The components used at intersections, and other locations of interest, use the latest microprocessor technology. Additionally, the software used in the NEMA and 2070 controllers includes the most powerful features and options available in the industry.

Naztec's StreetWise ATMS software has been installed and successfully operating traffic control systems since 1994. Because StreetWise is stable and mature, Naztec is able to add features and capabilities as they are requested by users, rather than devoting resources to the completion of the base platform. Naztec also provides services in traffic engineering, operations, signal timing, and systems integration. The underlying principle of the Naztec project management approach is teamwork with the transportation agency staff and efficient utilization of resources to produce the best and most cost-effective traffic management implementation for each user.

FOR MORE INFORMATION

For more information on the Cisco Intelligent Roadway Solution, visit <http://www.cisco.com/go/transportation> or contact your local account representative.



Corporate Headquarters

Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
www.cisco.com
Tel: 408 526-4000
800 553-NETS (6387)
Fax: 408 526-4100

European Headquarters

Cisco Systems International BV
Haarlerbergpark
Haarlerbergweg 13-19
1101 CH Amsterdam
The Netherlands
www-europe.cisco.com
Tel: 31 0 20 357 1000
Fax: 31 0 20 357 1100

Americas Headquarters

Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
www.cisco.com
Tel: 408 526-7660
Fax: 408 527-0883

Asia Pacific Headquarters

Cisco Systems, Inc.
168 Robinson Road
#28-01 Capital Tower
Singapore 068912
www.cisco.com
Tel: +65 6317 7777
Fax: +65 6317 7799

Cisco Systems has more than 200 offices in the following countries and regions. Addresses, phone numbers, and fax numbers are listed on **the Cisco Web site at www.cisco.com/go/offices.**

Argentina • Australia • Austria • Belgium • Brazil • Bulgaria • Canada • Chile • China PRC • Colombia • Costa Rica
Croatia • Cyprus • Czech Republic • Denmark • Dubai, UAE • Finland • France • Germany • Greece • Hong Kong SAR
Hungary • India • Indonesia • Ireland • Israel • Italy • Japan • Korea • Luxembourg • Malaysia • Mexico
The Netherlands • New Zealand • Norway • Peru • Philippines • Poland • Portugal • Puerto Rico • Romania • Russia
Saudi Arabia • Scotland • Singapore • Slovakia • Slovenia • South Africa • Spain • Sweden • Switzerland • Taiwan
Thailand • Turkey • Ukraine • United Kingdom • United States • Venezuela • Vietnam • Zimbabwe

Copyright © 2004 Cisco Systems, Inc. All rights reserved. . Aironet, Cisco, Cisco Systems, and the Cisco Systems logo are registered trademarks of Cisco Systems, Inc. and/or its affiliates in the United States and certain other countries.

All other trademarks mentioned in this document or Website are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (0403R) DP/LW6459 0604