



SOLUTION OVERVIEW

CISCO AND MASTEC PARTNER TO DRIVE INTELLIGENT ROADWAYS SOLUTIONS

Cisco Systems® and MasTec have worked together to design and deliver a core infrastructure that enables traffic network administrators to take advantage of high-performing applications that improve 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 network security, and expands services while delivering the lowest total cost of ownership (TCO) in the industry.

CHALLENGE

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 in many metropolitan cities. 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.

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 network security opportunities. MasTec is one of the largest and most experienced infrastructure companies in the world and has the ability to provide an end-to-end systems integration encompassing design, build, installation, and maintenance.

SOLUTION

Intelligent Roadway includes Advanced Traffic Management Solutions (ATMS), Traffic Management Center (TMC), and Advanced Traveler Information System (ATIS). This multiservice network enables more efficient and cost-effective operations when consolidated over a converged network. The Cisco solution for intelligent transportation systems allows Departments of Transportation (DOTs) to be ready for future applications such as transmitting data to and from vehicles, sending and providing video streams of roadway incidents to responders on handheld devices.

Cisco Intelligent Roadways 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 road conditions, traffic, vehicle crews, and transit information. Both Cisco and MasTec work closely with transportation authorities to design and implement the ideal solution that will address each specific challenge. The MasTec advantage is the fact that it has been designing, building, maintaining, and operating these networks for over 36 years.

BUSINESS BENEFITS

The Cisco/MasTec partnership integrates an IT environment that provides the tools traffic managers need to effectively use resources, including emergency and transit crews, as well as safety transport vehicles. Cisco and MasTec Intelligent Roadway solutions provide critical benefits, such as:

- **Improved Resource Utilization.** Collects information at point of origin, delivering data in real time to traffic managers and public safety personnel simultaneously, allowing operators to proactively manage roadways by quickly assessing data and facilitating appropriate action.
- **Greater Collaboration.** Enables seamless communication among transportation agencies and municipal, emergency, and transit authorities in neighboring jurisdictions.
- **Reduced Costs.** Lowers TCO by converging voice, data, security, and wireless within a single vendor solution and onto a single network, reducing infrastructure costs, as well as reducing network support personnel.
- **Enhanced Security and Safety.** Integrates video surveillance solutions and integrated network security solutions that protect the physical premises and network on the roadway and in the Traffic Management Center from internal and external threats.
- **Expanded Services and Revenue Opportunities.** Provides innovative services such as up-to-date information, allowing drivers to plan ahead by taking alternate routes. Travelers can use the network to access public Internet in designated locations, such as rest stops, restaurants, and roadside cafes.
- **Expert Systems Integration.** Eases the migration process by using the latest technologies to develop the right network design, implementing standardized processes to quickly navigate the development and integration phases, and optimizing network use with proven support plans.

SUPPORTING SOLUTIONS, PRODUCTS, PARTNERS, OR SERVICE OFFERINGS

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 provides wireless protection software and intrusion detection.
- **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:** Cisco Aironet® wireless LAN solutions integrates easily into an existing network as a wireless overlay and can 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 centers, facilitating more engaging and efficient interactions among 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, commuter trains, emergency vehicles, and automobiles.



From MasTec:

- **Design:** From identifying potential locations and navigating zoning and rights of way to handling documentation, material procurement, and scheduling, MasTec's architects and engineers are involved from concept to completion to help ensure that every civil, environmental, structural, and electrical detail is covered and managed properly.
- **Build:** MasTec's construction workers, architects, project managers, and support staff build power delivery systems, cell sites, CATV networks, underground fiber-optic highways, pipelines, intelligent transportation systems, and voice, video and data networks.
- **Install:** MasTec manages the hardware, software, and technologies that enable installation of everything from set-top cable boxes to add-drop multiplexers, wavelength division multiplexers, light-guide interconnects, and digital cross connect terminals in a switching.
- **Maintain:** MasTec, when selected as the prime contractor, monitors and maintains customer systems to continuously monitor LANs and WANs for performance degradation, bottlenecks, threshold overflow, and other problems to help ensure that these systems are optimized and run smoothly.

WHY CISCO/MASTEC ALLIANCE

The Cisco and MasTec alliance combines leadership in networking technology solutions with leadership in IT support dedicated to the public transportation community. The solution provides transportation authorities with best practices in networking and technology delivered by a partner with in-depth understanding of the public transportation industry and experience in developing applications for departments of transportation.

Only Cisco and MasTec combined have the networking depth and breadth required to integrate an ITS infrastructure across the organization's extended communication 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 MASTEC

MasTec is a leading communications, broadband, intelligent traffic and energy infrastructure service provider in North America. MasTec designs, builds, installs, maintains, upgrades, and monitors internal and external networks for leading companies and government entities and is one of the largest infrastructure integration companies in the United States with just under US\$1 billion in annual sales and approximately 7000 employees.

FOR MORE INFORMATION

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

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