

A photograph of an automotive manufacturing plant. The scene is filled with industrial machinery, including several yellow robotic arms (welders) positioned around a central assembly area. Bright orange sparks are being generated by the welding process, creating a dynamic and busy atmosphere. The factory floor is marked with yellow safety lines, and the overall color palette is dominated by the teal and yellow of the machinery.

Automotive Manufacturer Case Study

Customer Profile

A manufacturer of premium passenger vehicles with internationally recognized brands, a global distribution network, and strong research and development capabilities.



Industry
Automotive

Business Challenges

- Provide a secure network with standard design and high availability
- Increase speed of deployment
- Adhere to budget constraints

Panduit Solution

- Pre-configured Network Zone System
- Fiber Optic and Copper Cable and Connectivity
- Network Identification

Business Benefits

- Standardized solution
- Speed of deployment
- Visual identification for cabling network
- Reduced operating expenses
- Reduced deployment time by 75%

Pre-configured Network Zone System Increases Network Reliability and Productivity for Major Automotive Manufacturer

Business Challenges

Engaging numerous automation providers to supply its industrial network infrastructure created equipment compatibility challenges for a major automotive manufacturer. The company realized that its carefully selected and validated architecture of switches, routers, and servers required a robust physical infrastructure that consistently delivered across all equipment and integrator suppliers.

To avoid start-up delays and costly operational problems, the company made the leap to globally standardize industrial Ethernet for its new production lines.

With this transition, the company needed to ensure that its plants would meet its uptime and performance goals as it collaborated with a diverse ecosystem of line builders and system integrators. The company also wanted to scale its business operations, meet customer goals, and comply with regulatory environmental standards. A secure, reliable, highly available network infrastructure would allow the company to achieve these goals along with the following:

- Introduce Ethernet technology on plant floor
- Accelerate the design and implementation of new production lines
- Update existing production lines for model upgrades
- Achieve fast deployment across the company's global facilities
- Reduce both troubleshooting time and risk of errors

It was also important for the company to engage global solutions partners to help design and deliver global standard network solutions within a realistic budget. The solutions partners involved needed to identify and provide best practices to accommodate the company's anticipated growth.

Panduit Solution

Panduit collaborated with the global alliance partner on a training seminar about the physical layer and the logical layer. This seminar helped identify the knowledge gaps with the automotive manufacturer and its system integrators. Best practices related to managed switch deployment resonated with the company, which deployed the Panduit Pre-configured Network Zone System as part of its zone architecture design. Panduit also assisted in developing a physical infrastructure specification and component guide to simplify network deployment for the system integrators and line builders.

The complete solution Panduit recommended consisted of its Pre-configured Network Zone System, fiber optic cable and connectivity, In-Field™ fiber connector termination, IndustrialNet™ copper cable and connectivity, DIN rail mounted patching, and network identification.



The Panduit tailored physical infrastructure solution addressed the following areas:

- Plant Floor** – Pre-configured Network Zone System
- Enclosures** – IndustrialNet™ DIN-Rail Mount Patching Systems
- Connectivity** – Opti-Core® OM2 multimode LSZH (low smoke zero halogen) Fiber Optic Indoor Cable; IndustrialNet™ Category 5e SF/UTP and IndustrialNet™ Category 6 S/FTP Copper Cable

The Pre-configured Network Zone System rapidly deploys an EtherNet/IP network on the plant floor with a reliable, structured approach that reduces installation time and lifecycle costs. This solution is ideally suited for the automotive manufacturer's applications where the switch is part of a plant-wide Ethernet architecture, and allows the use of either fiber or copper downlinks.

With guidance from Panduit, the company installed Opti-Core® OM2 Multimode LSZH Cables to provide high-density connectivity and ease of installation for its cable runs of 80m or longer.

IndustrialNet™ Category 5e SF/UTP and Category 6 S/FTP Copper Cable provide reliability, high performance and availability, and quick installation as an integral component of the end-to-end solution for industrial Ethernet and EtherNet/IP-based communications networks.

Business Benefits

The structured, engineered approach to physical infrastructure design addressed the automotive manufacturer's need for a secure standardized network system that improves reliability and security while reducing deployment and operating costs. In addition, the customer is now able to achieve:

Speed of Deployment

- Delivers up to 75% reduction in deployment time compared to systems that are not pre-engineered, validated, and tested
- Reduces costs by removing complexity and delivering a validated solution optimized for partner technology applications

Mitigated Risk of Downtime

- Increases reliability with pre-tested dual fiber uplink and mitigated risk of line restarts
- Allows rapid expansion of switches as the network grows

Reliability

- Localizes network traffic to improve resiliency
- Provides improved manufacturing operations
- Significantly reduces costs and complications associated with integrating the manufacturing floor and enterprise networks

Standardization

- Leads to better operational efficiency, reliability, and lower operational costs



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