OTIS INSTRUMENTS INC.

CASE STUDY FOR VEHICLE MANUFACTURING IN TEXAS

Enhancing Safety & Operational Reliability

Client Overview

A leading North American truck manufacturing company based in Texas operates a high volume production facility responsible for assembling and finishing commercial vehicles. The facility includes advanced engine testing areas and large scale paint operations; both environments where hazardous gas accumulation presents critical safety and compliance risks.

The Challenge

The customer required a comprehensive gas detection solution capable of:

- Continuously monitoring Carbon Monoxide (CO), Combustible Gases (LEL), Oxygen (O_2), and Nitrogen Dioxide (NO_2)
- Maintaining safe conditions within engine testing areas where exhaust gases can accumulate rapidly
- Protecting personnel and infrastructure in paint operations where volatile gases and combustible atmospheres may be present
- Integrating seamlessly with the facility's existing SCADA system for centralized monitoring and control
- Minimizing installation complexity and downtime within an active production environment

The solution needed to provide real time visibility, dependable performance, and flexible deployment across multiple facility zones.

The Solution

Otis Instruments, Inc designed and deployed a hybrid gas detection system utilizing both WireFree and hardwired technologies to optimize coverage, efficiency, and system integration.

System Architecture

WireFree Detection — OI-6900 Series

- Strategically deployed throughout testing and production areas
- WireFree communication to a centralized OI-7032 Controller
- Continuous data logging, alarm management, and diagnostics
- Rapid installation with minimal operational disruption

Hardwired Detection — OI-6000 Series

- Installed in fixed, high priority monitoring zones
- Direct SCADA integration via 4–20 mA outputs
- Reliable real time signal transmission for critical safety interlocks

Control & Integration — OI-7032 Controller

- Centralized monitoring hub for all WireFree devices
- Seamless integration with the facility's SCADA infrastructure
- System wide visibility, alarm annunciation, and historical data tracking

Implementation

To minimize disruption to ongoing operations, the deployment was completed in carefully planned phases:

- Site assessment and hazard mapping across testing bays and paint operations
- Optimized detector placement for maximum coverage and response time
- Parallel installation of WireFree and hardwired systems based on facility requirements
- SCADA integration and validation for real time monitoring and alarm response
- Final commissioning and system verification to ensure safety compliance

Results

Enhanced Safety

Continuous monitoring of CO, LEL, O_2, and NO_2 helps protect personnel in high risk operating environments.

Seamless SCADA Integration

Real time visibility and alarm management were fully integrated into the customer's existing control infrastructure.

Improved Operational Efficiency

WireFree technology significantly reduced installation time, labor requirements, and infrastructure costs.

Reliable System Performance

The hybrid approach combining WireFree and hardwired technologies provided both operational flexibility and system redundancy.

Scalable Future Expansion

The system architectural lows for straightforward expansion as facility operations evolve.

Client Impact

The customer now operates with a fully integrated, real time gas detection network that enhances both safety and operational productivity across critical manufacturing processes.

The deployment supports regulatory compliance while helping reduce operational risk, downtime, and installation complexity.

Conclusion

This project demonstrates Otis Instruments' ability to deliver engineered gas detection solutions tailored to complex industrial applications.

By combining advanced WireFree technology with proven hardwired systems, Otis Instruments provided a flexible, scalable, and highly reliable monitoring network designed to support long-term operational success.

Otis Instruments, Inc