

Connected Transportation for Education



Benefits & Outcomes

- Optimize performance by using real-time vehicle telemetry.
- Decrease fuel costs with real-time location, speed, and idle-time tracking.
- Reduce carbon footprint to cut costs by monitoring mileage and driving patterns.
- Increase field employee productivity with office-in-the-truck technology that enables access to applications and data in the field.
- Reduce OpEx with the mobile Wi-Fi hotspot, which allows multiple mobile devices to share cellular bandwidth.

Solution Components

- **Cisco 829 Industrial Integrated Services Router:** The 829 is a compact, ruggedized, Cisco IOS® Software router with support for integrated 4G LTE wireless WAN and wireless LAN capabilities intended for school transportation vehicles.
- **Davra Network RuBAN software:** Provides real-time monitoring, tracking, and management of fleet-based assets while managing the large data set that a fleet generates to drive actionable business insights.
- **Cisco Instant Connect:** IP-based communications and dispatch platform that enables cost-effective, large scale fleet to headquarters information exchange.
- **Cisco Video Surveillance Manager and high-definition (HD) cameras:** IP-based solution that uses the network to deliver and receive live and recorded video surveillance with excellent scalability, reliability, and bandwidth management.
- **Ignition Sense Technology:** Maintains network device power while ensuring the vehicle battery remains charged.

Business and Technical Challenges in Vehicle Management

Transportation managers are under constant pressure to minimize operational costs. There are several approaches to reduce costs that can include an improved miles per gallon (MPG) program, smarter routing and dispatch, as well as preventive maintenance. Further, there is a consistent need to improve utilization that results in maximizing production and improving the superintendent's satisfaction.

Transportation managers are increasingly being challenged to improve fleet uptime through preventive maintenance. Real-time problem alerting specific to each vehicle provides optimization and cost reductions, which are well beyond standard maintenance schedules used in the past.

Optimize Fleet Performance and Minimize Costs

Cisco® Connected Transportation for Education enables a transportation manager to optimize vehicle performance and minimize costs, while easily integrating the bus driver into existing enterprise systems. Connected Transportation for Education offers several benefits:

- **Reduced fuel costs:** With real-time location, speed and idle time tracking, the Cisco solution can provide real-time and historical feedback to manage driver behavior to improve fuel expenditure. Real-time GPS also reduces fuel consumption by optimizing fleet dispatch.
- **More fleet uptime:** With real-time vehicle telemetry, operators can use optimally timed preventive maintenance, as well as respond to real-time alarms to maintain an always-on and available fleet.
- **Real-time vehicle tracking:** The Cisco solution allows for real-time vehicle tracking with geofencing to enable alarming on and off route or for an out-of-region vehicle, automated work orders after leaving a job site, or optimal dispatching based on location.
- **Minimized data:** Connecting the vehicle and driver for real-time improvements can create a significant volume of data that can be both costly to back haul and unwieldy to manage. The Connected Transportation for Education solution can both minimize data that is

sent from the vehicle, as well as provide visual representation of the data volume, which is returned to the transportation manager.

- **Cisco Cyber Security to the vehicle:** The same industry-leading cybersecurity that is secure and easy to deploy in school districts is used in the Connected School Transportation solution. It enables the transportation manager to confidently deploy applications with sensitive data to the fleet without compromising ease of deployment or sustainability.
- **Fleet network and application convergence:** With the Connected Transportation for Education solution, no longer are multiple fleet networks required to support a fleet and its driver applications. The vehicle telemetry, location, wireless hotspot, worker applications, and others can all be converged on one Cisco in-vehicle router resulting in lower operating expenses (OpEx) with respect to carrier fees, and capital expenditures (CapEx) with respect to in-fleet communications equipment.
- **Enable in-cab applications:** These applications digitize manual driver processes for pre-trip and post-trip reports, automate hours-of-service (HoS) reports to maintain compliance, and track and improve Compliance, Safety, Accountability (CSA) Program scores.

Why Cisco?

The Cisco Connected Transportation for Education solution can help transportation managers reduce fuel costs by as much as 10 to 30 percent, while gaining thousands of hours of more productivity from the fleet and its workforce. The solution can also drive a reduction in employee speeding and citations by up to 80 percent. The reduction in operational costs and improvements in transportation management and worker efficiency have allowed school districts to achieve an ROI typically in less than 1 year.

Next Steps

To find out more about the Connected Transportation for Education Solution, visit www.cisco.com/go/education.