How Fleet Management Tools Keep School Buses Safe and Efficient

When a private school with a split campus needed a better way to manage buses serving its two sites, school leaders began looking for a cloud-based platform that would provide near-real-time awareness of the location and operations of every bus in its fleet.

A partnership with Emergent, a solution provider, and Samsara, a leading fleet-management platform, helped the school streamline operations and collect up-to-date insights on every one of its buses. Here's a quick look at how it all came together.

The challenge: tracking, managing and maintaining a bus fleet

The private school comprises two campuses a few blocks apart: one for boys and the other for girls. Buses shuttle students between the two campuses throughout the school day and take them to sporting events and other extra-curricular activities.

"We're responsible for nearly 2,000 children every day," says the school's bus fleet supervisor. "We need to know where every bus is at every second."

The school educates children from pre-kindergarten through high school. Girls study with girls (and boys with boys) in the early grades, but the campuses start mixing in middle school through high school. This structure relies on microbuses to ferry students to and from the girls' and boys' campuses. Any delays can mean significant disruptions for class schedules, so it's vitally important to keep the buses running on time.

Meanwhile, the school's transportation needs shift constantly. While the microbuses operate on set schedules, the rest of the bus fleet must contend with ever-changing last-minute demands. This reinforces the need for near-real-time data on the location and mechanical viability of every vehicle in the fleet.

Before partnering with Emergent and Samsara, the school used a GPS-based application that provided basic location data. The software was glitchy and always had a 10- to 15-second delay — if it performed at all. "The major problem was that it was not reliable," recalls an assitant transportation director. His job is to get every bus where it needs to be, on-time and without delay. "I'd have it most of the time, but then it would go down when I really, truly needed it," he says.

Samsara's technology ended all that. "We are managing as many as 16 buses at any given time and we need to know where they all are," says the fleet supervisor. "Samsara is the best we've seen at doing that."

The solution: Samsara cloud-based fleet-management platform

Emergent's team had just added Samsara to its portfolio of technology partners when they began the engagement with the private school. Samsara provides much more than GPS-location data: It's a comprehensive fleet-management platform designed for easy, intuitive use and quick implementation.

The software shows every vehicle in near real time. Managers can view a live map with labels showing each vehicle in their fleet. When the vehicles move, the application streams the data in real time with a live aerial representation of every bus in the fleet.

Hosting the platform in the cloud makes it available to any internet-connected device — desktop computers, tablets, smartphones.

Samsara's solution includes an advanced sensor, called a vehicle gateway, that plugs into a vehicle's on-board diagnostics (OBD) port. This links the fleet manager to a wealth of data, whether it's real-time location and analytics, engine diagnostics and fault codes, or even fuel usage and idle time.

"There's also a safety component," says Jake McKenzie, the Emergent sales representative who helped the school implement the platform. Thanks to the OBD-connected device, managers can detect risky driving habits and harsh events such as excessive braking or acceleration. "If you have a repeat offender in your employee base, you can coach them to improve," McKenzie says.

The vehicle gateway is designed to be easy to use and connect. The simple plug-and-play installation takes roughly 15 minutes once the diagnostic port is found.

"It's so easy to use," says Peter Scura, sales director at Emergent. His company has worked with the private school's fleet managers to make sure they understand how to optimize the numerous data points they now have at their fingertips. For instance, the Samsara platform can connect to ID card scanners that show which students are on each bus. That's an extra layer of security that provides peace of mind for parents and educators.

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>
> Private School Bus Fleet Supervisor

Results: a safer, more efficient bus fleet

The fleet supervisor says he had high hopes for the management solution.

"The new program looked above and beyond what we were receiving with our previous GPS provider," he recalls. "I expected everything to be far better — and those expectations were realized in a very short period of time."

Full situational awareness of the location and performance of the entire vehicle fleet has provided unexpected benefits, too. For instance, when someone complained that a bus driver had run late, the transportation team checked and found out that, in fact, the bus has been right on time, supporting the driver's side of the story.

The fleet supervisor also recalls when a mechanical problem sidelined one of two buses taking students on a field trip. Teachers on the trip loaded all the students onto the functioning bus, and the trip went on as planned. But it was important to get the troubled bus back on the streets as soon as possible.

"We didn't know what was wrong with it," the supervisor says. "But we went into the diagnostics on the Samsara platform, which told us it was a sparkplug failure, and which cylinder it was in."

This insight prevented him from having the bus towed to a repair garage and having to wait several days for it to be serviced. "We would've been without the bus for a week," he says. "Instead, we turned it around in one day because we knew exactly what was wrong with it, and we were able to go in and do it ourselves."

These kinds of efficiencies and savings quickly add up across an entire fleet. Through plug and play, the system will gather diagnostic data to provide guidance on predictive maintenance, enabling fleet managers to replace important components before they fail.

Ultimately, however, the greatest value comes from always knowing the status of the buses and their passengers at all times.

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