IoT SOLUTIONS FOR LAND TRANSPORT & RAIL

ST Engineering

IoT Within Reach

The internet of things (IoT) is a steadily growing billion-dollar market largely driven by companies undergoing digitization for greater efficiency and transparency, as well as by 5G and emerging applications like smart cities. Satellite's inherent capabilities—such as its ability to reach remote areas, its ability to scale, to extend coverage for other providers—make it an essential part of a hybrid network needed to support an interoperable IoT system.

IoT and the Land Transport & Rail Market

The promise of predictive analytics, more accurate reporting, decreased operational expenditure, and overall greater efficiencies has put new pressure on transport companies to leverage intelligence from IoT systems. As a result, companies are equipping vehicles with more and more sophisticated computers and devices.

In the transportation market, cargo and asset tracking management are the greatest drivers of IoT adoption. This is particularly true for land-based shipping and logistics, which account for the majority of asset transportation in the world. Satellite connectivity has become increasingly popular for this high-value asset tracking, as continuous status updating is necessary. Satellite provides reliability, global coverage, and added security benefits.

Market Snapshot

Transportation by land, air, and sea is by far the largest IoT market with more than $400 million in revenue annually expected by 2028 and with about 3 million in-service units. Already, 75% of fleet managers rely on a fleet management application or vehicle telematics to help support day-to-day operations in at least some of their vehicles.
[Government Fleet's 2019 annual benchmarking survey]

iDIRECT

Land Transport: Improving Fleet Management with IoT

Managing a fleet of vehicles can be challenging, no matter the fleet size. With connectivity to power fleet management applications, fleet managers gain real-time visibility into their operations with predictive analytics and accurate reporting. For example, IoT can help fleet managers with the following:

Fleet tracking: Fleet managers often rely on GPS technology and other GPS tracking systems to know where their vehicles are and to increase visibility into their fleet operations and vehicle safety.

Electronic Logging Device (ELD) compliance: Compliance oftentimes requires commercial vehicle operators to record hours of service (HOS) electronically to replace paper logging and reduce instances of dangerous driving caused by fatigued drivers.

Total cost reduction: Whether its fuel management or lowering operating costs, fleet managers can identify and weed out any unnecessary expenses to create more cost-friendly and efficient fleet operations.

Vehicle acquisition: To effectively manage a fleet, a fleet manager needs to forecast how many and what type of vehicles a fleet will need in order to operate efficiently.

Event detection: IoT can monitor a variety of operating conditions such as fluid levels, high operating vibration, or speeding drivers through sensors onboard the vehicle. Combine and compare this data to operating thresholds to trigger workflows in a fleet management application, log these events, generate alerts or initiate mitigating process automations.

Rail Transport: The Evolution of Smart Railways

The railway industry is seeking to reduce its lifecycle costs for large rail network infrastructure through the integration of smart connected services, such as integrated asset management, predictive maintenance, and safety services. These new connected services will improve decision making for system capacity, safety, scheduling, and dispatch. With IoT enabled trains, control room staff can manage:

Predictive Maintenance: Continuous monitoring of trains and trackside infrastructure can highlight patterns and allows for improved operational efficiency and predictive maintenance.

Intelligence Sharing: Data coming from connected train tracks and stations enable the sharing of intelligence required for scheduling, routing and safety services across a network.

Real-time Monitoring: Connected sensors on the train and track enable for real-time monitoring of performance and events to forecast deterioration and suggest preventative maintenance and delays to service.

Video Analytics: Camera feeds can provide automated monitoring and alerting to control room staff of potential problems so that action may be taken.

IoT Within Reach With ST Engineering iDirect

Though the demand for IoT is high, many end users are looking for a feasible way to align technical functionality and total cost of ownership. ST Engineering iDirect's IoT Services leverages the innovative hiSky satellite communication network to enable robust, low-cost satellite services for a large number of low data rate (LDR) and medium data rate (MDR) users, so service providers can quickly expand into the IoT market without steep upfront costs and the operational complexity usually associated with creating a connectivity platform.

Our IoT Services offering with hiSky is comprised of our flexible service platforms, Dialog or Evolution; hiSky's cloud-based management solution; hiSky's innovative small form-factor terminals; and flexible connectivity-as-a-service options.

At ST Engineering iDirect, our IoT Services are ideal for LDR (small data bursts of 30 Kbps or 1-2 MB per month usage) and MDR (continuous, on-demand throughput of 10-500 Kbps) applications. Need more data than that? Our Evolution and Dialog multi-service platforms are both ideal for fixed and mobility applications that range from low to very high data rates and that require highly reliable and complex network configurations.