



# EdgeLINC™

## IIoT Platform for Transportation

EdgeLINC represents the future of edge-to-cloud connectivity. It provides edge device lifecycle management and streaming analytics, unlocking new capabilities and operational efficiencies at the edge.

Industrial assets generate valuable information at the edge where embedded sensors collect vast amounts of data. When operating heavy machinery in variable environments, the ability to compute, manage, analyze and act upon the data is essential for companies to benefit from the Industrial Internet.

In the rail industry, assets are mobile and constantly moving in and out of communication, making it even harder to derive value from data that lives on the edge. Operators require the ability to take action on their physical assets immediately, either automatically with a train adjusting itself or by human intervention.

Edge-level computing and analytics are about giving people actionable information to better manage how the physical world operates in real-time to improve industrial performance. By distributing compute and analytics from edge-to-cloud, operations can rapidly drive analytical insights to business outcomes across their operations and assets.

**\$40B**

IIoT spending by  
Transportation  
& Logistics Industry  
by 2020

Bain & Company

**27 Billion**

# of networked  
devices by 2021

Cisco White Paper

# The EdgeLINC platform

EdgeLINC is a comprehensive edge device lifecycle management platform providing IIoT connectivity and data streaming analytics, enabling real-time data processing and optimization.

EdgeLINC allows you to maximize your investments in the industrial IoT systems and harness data & insights to drive significant improvements in asset performance and operational efficiency.

## Why EdgeLINC?

- **Industrial IoT lifecycle management:** Designed as a complete end-to-end lifecycle device management system enabling direct interaction with all connected devices
- **Seamless scalability:** Extensible platform that allows for growth in data and devices
- **Efficient design with security in mind:** Offers encryption for data at rest in transit; customer managed device firmware updates with customizable platform authentication
- **Flexible Platform:** Open, vendor-agnostic architecture supports diverse range of devices and applications. Also provides multi-protocol support and flexible deployment options
- **Streaming analytics on a mobile edge platform:** Provides an integrated rules-based engine, edge processing and streaming analytics giving flexibility to create rules and derive insights
- **Emerging ecosystem:** With EdgeLINC you can be part of a growing number of ecosystem partners providing best-in-class analytics, faster integration, enterprise scale and delivery capability

## EdgeLINC Applications

EdgeLINC platform has wide range of applications within transportation including rail and mining industries.

### Train telemetry

EdgeLINC provides a complete train telemetry solution providing location, visibility, health monitoring and onboard rules & edge analytics resulting in reduced fuel costs, improved train handling and higher asset utilization.

### Mining

EdgeLINC can be deployed on mining trucks, loaders and conveyors to improve geo-spatial awareness and improve operational efficiency.

### Enterprise-wide device management

EdgeLINC provides a complete device management solution at enterprise level through device connectivity, consolidated device monitoring & deployment thus reducing total cost of ownership and maximizing IIoT investments.

# Features

## Connectivity

- Connects, monitors and manages devices in complex and ruggedized environments. Supports wide range of sensors & I/O, network aware
- Provides interfaces for wireless IP communication over cellular and Wi-Fi networks
- Offers two customer-configurable cellular data modem sites & supports GSM, CDMA, LTE modems

## Device lifecycle management

- Manages device registration, authentication and encrypted connectivity to external systems.
- Provides remote over-the-air device configuration & firmware updates for GE and third party devices
- Supports flexible deployment across GE, customer and 3rd party edge devices and applications.
- Features browser-based UI for active alerts & history

## Rules engine & streaming analytics

- Provides integrated business rules engine both on-board and off-board and supports graphical rules editor
- Delivers pre-defined rulesets to allow for locomotive telemetry, fuel monitoring, train handling alerts, etc.
- Performs on-board and off-board streaming analytics
- Enables logging, processing, altering and off-boarding of data from multiple sources such as event recorders, etc.

## Industrial IoT lifecycle management, rules engine and analytics

## Outcomes delivered

### Reduces IIoT cost of ownership

Enhances IT productivity and helps enable security by consolidated device monitoring & deployment

### Improves operational efficiency

Deploys rules to improve fuel efficiency, train handling and crew performance

### Optimizes asset performance

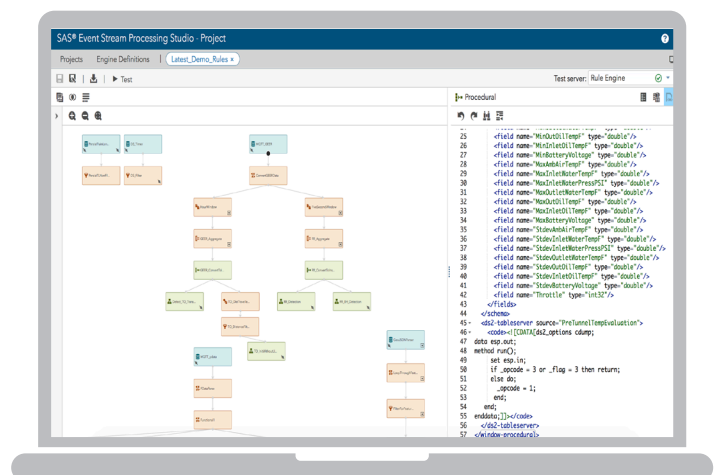
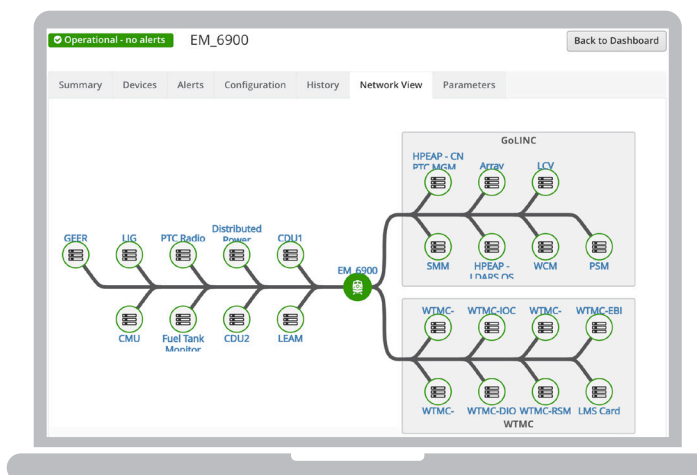
Monitors assets in real-time, reports asset performance, minimizes downtime, reduces equipment damage and maintenance cost

### Maximizes IIoT systems investments

Connects, manages and monitors devices in complex, ruggedized environments

### Enables better decision making

Harnesses real-time streaming data & operational insights

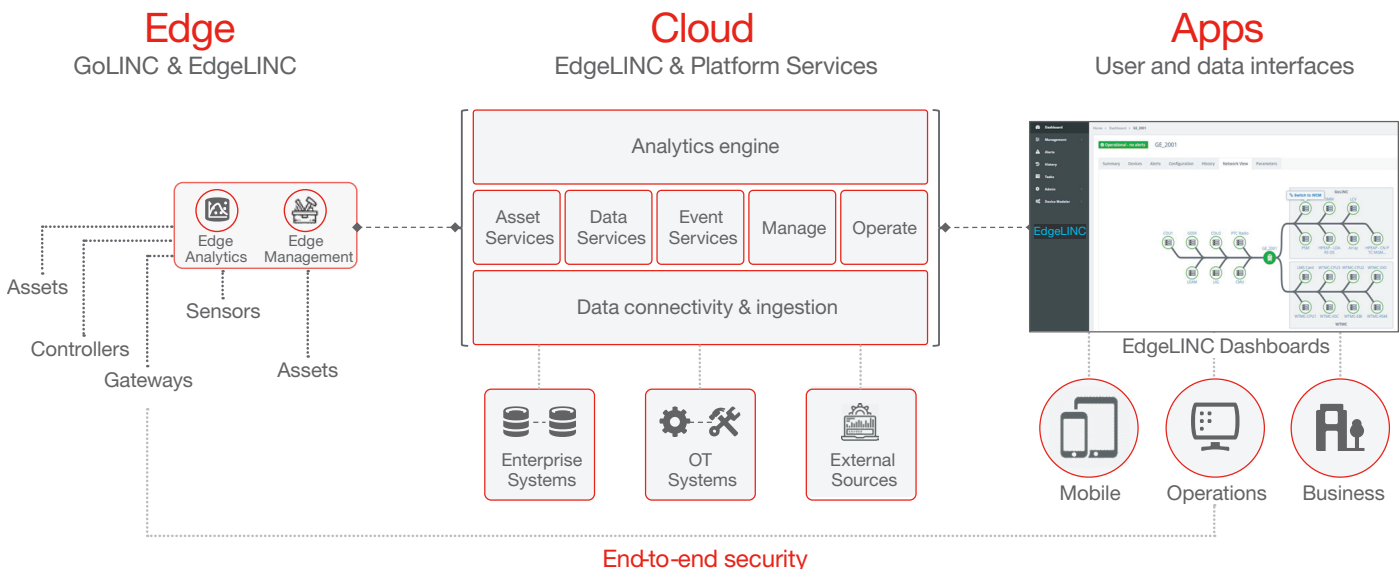


## EdgeLINC enables you to

- Perform remote over-the-air device configuration, firmware update and consolidated data offloading
- Monitor device status and health
- Perform efficient system management including new device enrollment and remote configuration update
- Create and edit rules using graphical and intuitive rules editor or execute standard ruleset from our rules library built specifically for the rail industry
- Process data in real-time using SAS® Event Stream Processing (ESP) Engine at the edge and at the back office
- Gain control over telemetry, alerts, and analytics



## EdgeLINC platform: the future of edge-to-cloud connectivity



EdgeLINC platform consists of both off-board and on-board software. The off-board (back-office) software supports on premises, cloud, and hybrid cloud deployment and integration. This provides the capability to monitor and manage connected devices, and to process and view data from those devices.

On-board software provides local management, analytics capability, and connectivity to the EdgeLINC back-office. EdgeLINC can run on Wabtec's GoLINC platform as well as third party Ancillary Card Cage and other devices.

- **Device management mechanisms:** Supports three mechanisms: gateway (hosted by high-end processors, proxy agent (for external legacy devices), nano and pico agents (embedded software)
- **Supported protocols:** RESTful API architecture supporting HTTPS, SNMP, CoAP, MQTT, EMP
- **Infrastructure requirements:**
  - Off-board: EdgeLINC cloud (AWS), hybrid cloud, on-premise;
  - On-Board: EdgeLINC Gateway w/SAS ESP or EdgeLINC Nano

For more information on EdgeLINC:

[WabtecCorp.com](http://WabtecCorp.com)