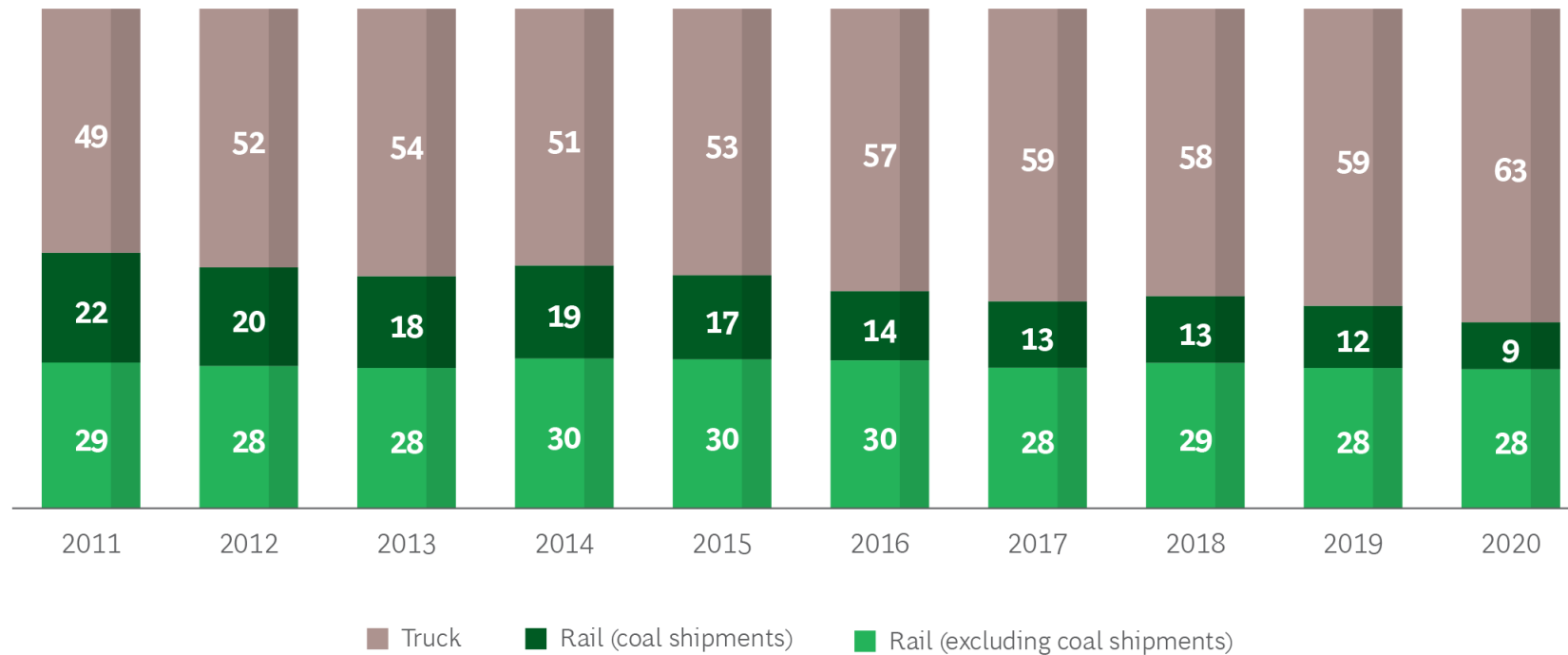


Exhibit 1 - In Freight Transport, Rail Is Losing Share to Trucking

US ton-miles of land freight carried (%)



Sources: US Bureau of Transportation Statistics; US Energy Information Administration.

Note: Excludes freight transport by pipeline (18% of total in 2020), waterways (8%), and air (<1%). Because of rounding, percentages for a given year may not total 100.

RAIL'S INHERENT VALUE PROPOSITION



SAFETY

Fewer

Fatalities per Ton Mile than truck

Fewer

Injured persons per Ton Mile than truck

>99.99%

Hazmat moved by rail reaches its destination without release



EFFICIENCY

470 miles

One ton of freight on one gallon of fuel

\$740Bn

*Private investment in infrastructure
1980-2020*

>50%

*Share of the North American railcar fleet
owned by lessors*



SUSTAINABILITY

0.6%

*Freight rail share of total U.S.
greenhouse gas emissions*

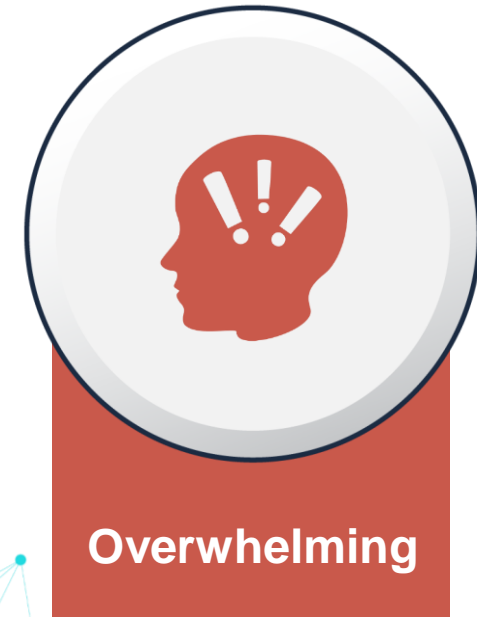
13.1Mn tons

*Reduction in GHG emissions if 25% of
truck traffic moved to rail*

75%

*Emissions reduction converting one load
from truck to rail*

Rail shippers lack visibility into their supply chains...



WHAT IS RAILPULSE?



A joint venture of



TO DEVELOP A NEW TECHNOLOGY PLATFORM

that provides real-time data via GPS and other telematics technology across the North American Railcar fleet

GOAL OF THE NEW PLATFORM:

- Increase adoption of railcar telematics
- Improve overall rail safety
- Provide meaningful insights into rail performance
- Help drive growth for our industry

Represents
30%
of North American
railcar fleet

Expected roll-out by
3Q
2023

Initial focus on
SAFETY
(e.g. Handbrake
and impact data)

SOURCE OF TRUTH

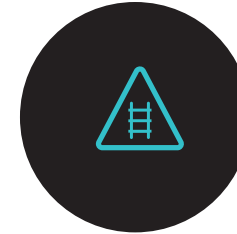
Set the stage for the ultimate full or partial **dismantling of wayside infrastructure** (location and health sensors)



RAIL INDUSTRY SOLUTION

Create a solution for telematics adoption which drives improved:

- Service levels
- Safety
- Visibility
- Productivity



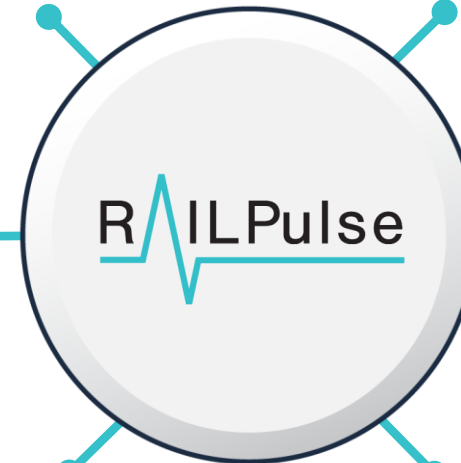
MODAL SHARE GROWTH

Use the information infrastructure to **drive growth and modal share shift**—primarily in the merchandise segment—in North American rail



NON-PROFIT STATUS

Operate the core services of the company as a non-profit for the **benefit of all rail industry participants**



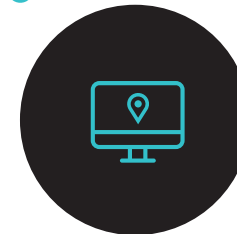
TECHNOLOGY ADOPTION

Allow rail industry to adopt the same technology that our **competitors have already adopted**



CUSTOMER EXPERIENCE

Transform the customer experience by combining 21st century real-time, highly accurate, and comprehensive data with leading edge analytics



RAIL SUPPLY CHAIN TELEMATICS FLOW



Equipment Owner

Generation

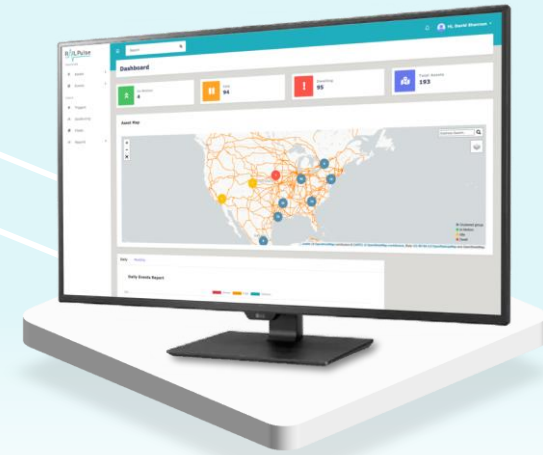
Raw data is generated by sensors and GPS about the railcar's location, condition and health.



RailPulse™

Enriching & Serving

Telemetry data is sent to the cloud to be aggregated, enriched, securely stored, & served to users



Interface Provider

Delivery

RailPulse and other web applications generate insights that help users make better, more informed decisions.

RAILPULSE WILL ACCOMMODATE 3 MAJOR FUNCTIONAL AREAS:



LOCATION

**Track-level GPS
Lat-Long location of
the car, both moving
and stopped**



CONDITION

Status of the car:

- Loaded/Unloaded
- Doors Open/Closed
- Hatches Open/Closed
- Temperature
- Moisture
- Impact
- And more!

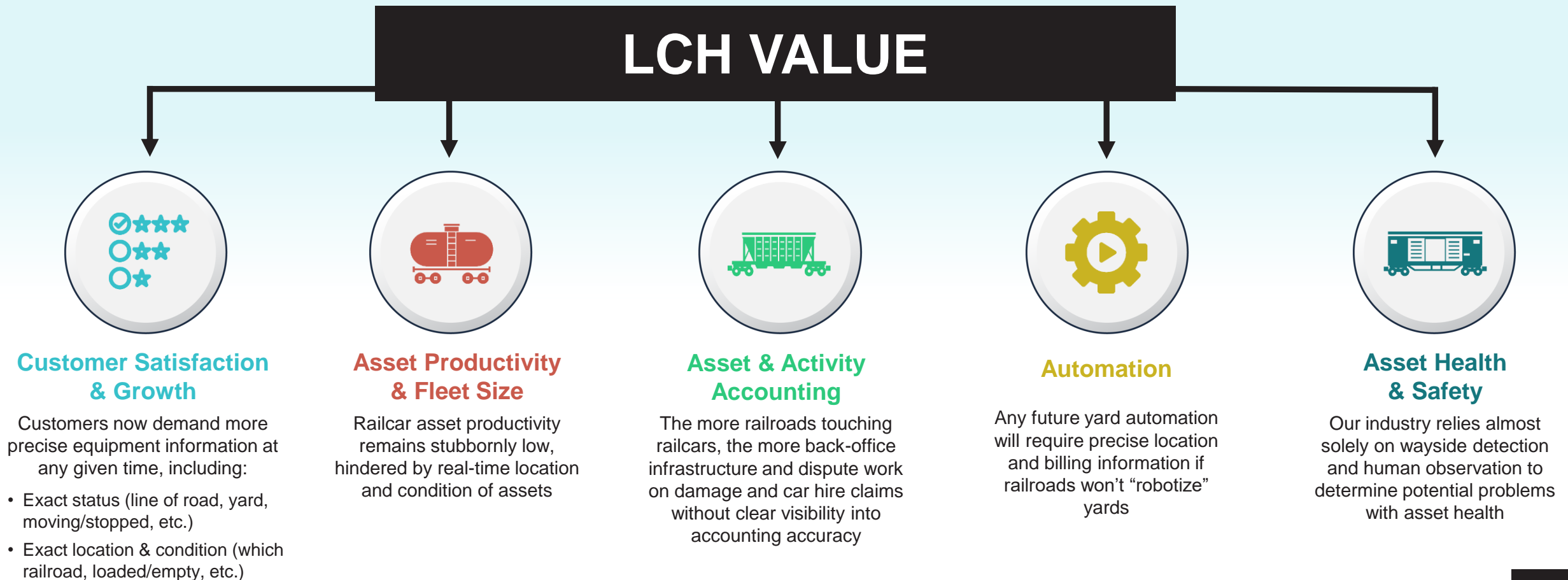


HEALTH

Mechanical health of the car including:

Bearings, Bolsters, Air,
Couplers, and any other
equipment health
componentry with sensor
capabilities

Value from LCH (Location, Condition, & Health) Monitoring



SHIPPER VALUE CREATION



Shipment Visibility

Real-time, highly accurate shipment visibility for inventory management & customer service



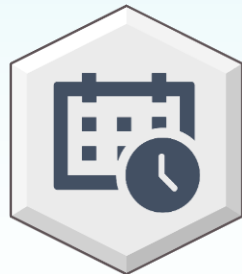
Fleet Status

Fleet visibility, status, and alerts to support real-time billing as commodity is delivered



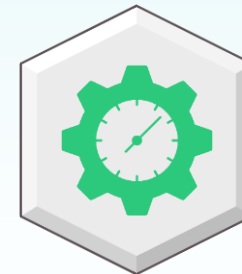
GPS Tracking

GPS time stamps will help drive out demurrage, storage & claims disputes, equipment & lading damage disputes, and more



Estimated Time of Arrivals

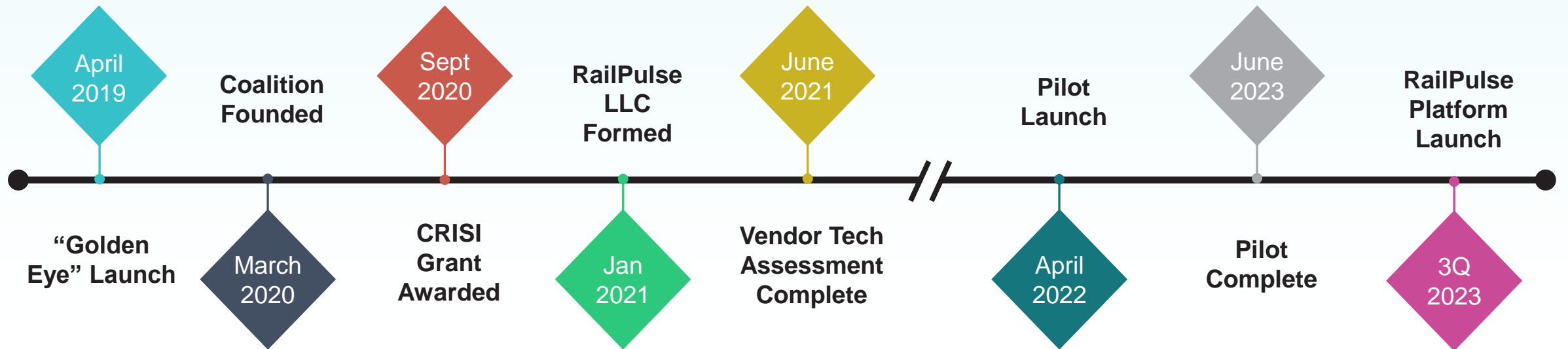
Higher quality, end-to-end ETAs to support production and load planning



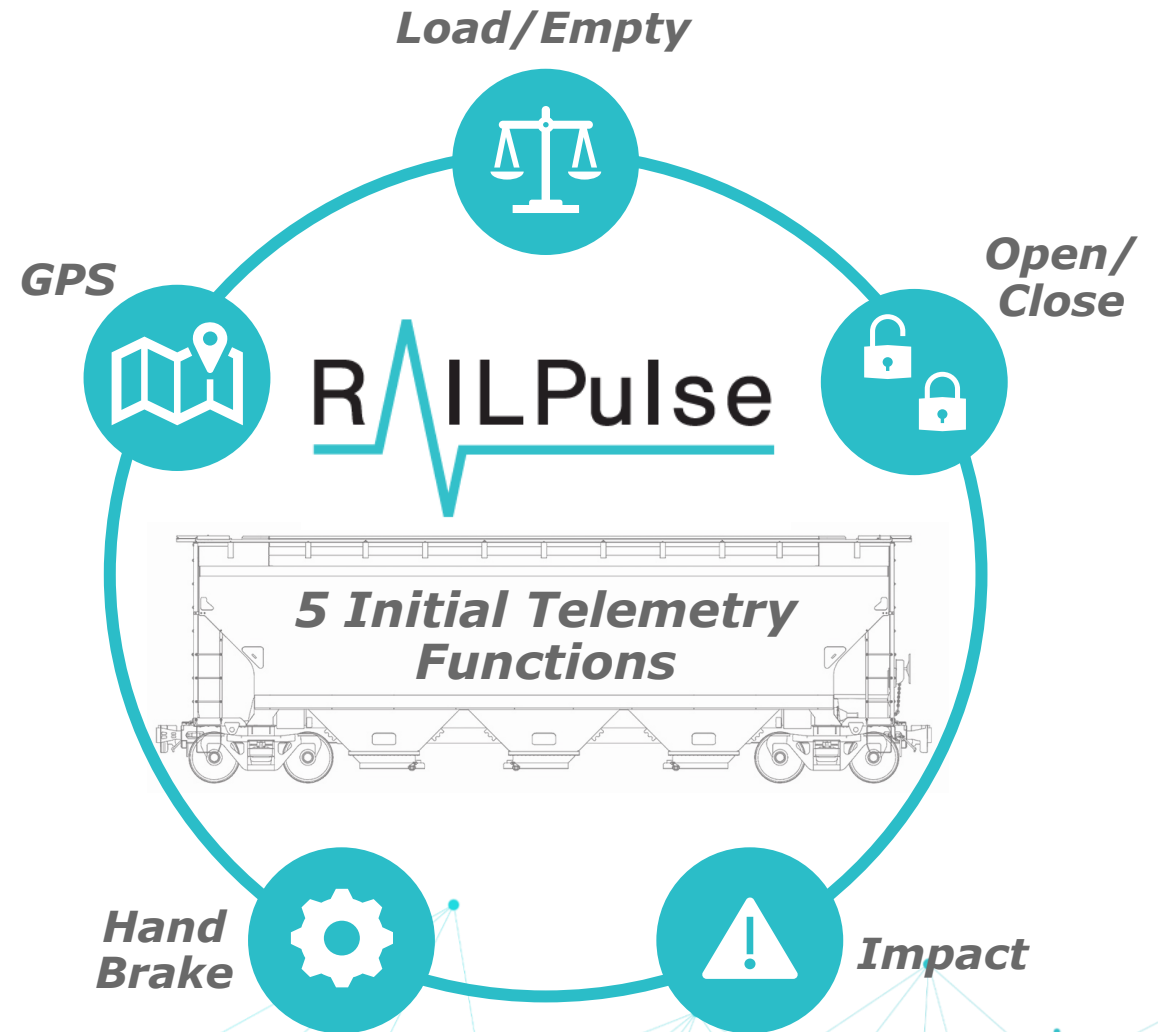
Shipment Information

Real-time shipment information supports TMS and ERP systems through API or other data distribution capabilities

RAILPULSE CURRENT STATE



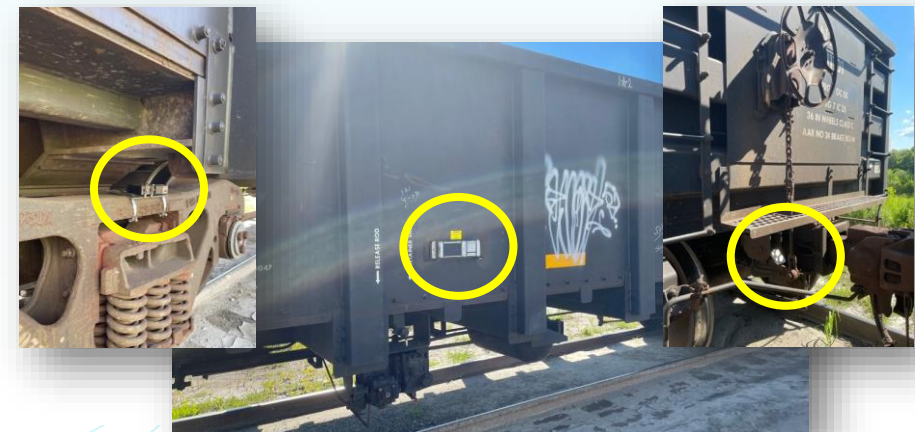
- More than just GPS location
 - 5 Sensor suite on all cars
 - “off-the-shelf” minimal modifications
- Multiple car types
 - Gondolas, Boxcars, Tank cars, Covered hoppers, Autoracks
- Integrated software platform
 - Telemetry data
 - Waybill, CLM, Umler
 - Secure
 - Standards based



- Cycle 1: Completed – June 2022
 - ✓ Device test & validation on multiple car types
- Cycle 2: Ongoing – Fall 2022
 - ✓ Prove deployment & function of sensors & gateways at scale
- Cycle 3: Target – Early 2023
 - RailPulse system testing
 - Shipper use case development
 - Vendor and subscriber onboarding process development

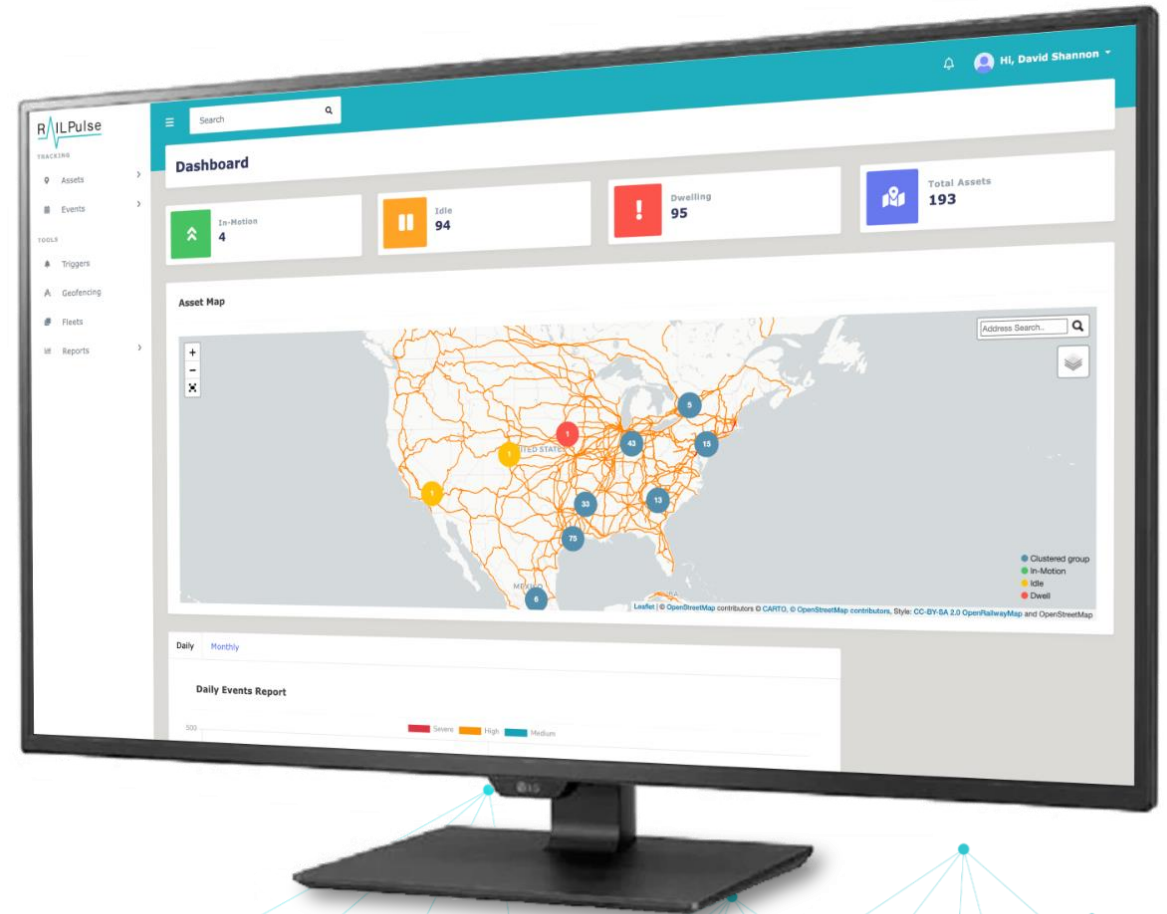


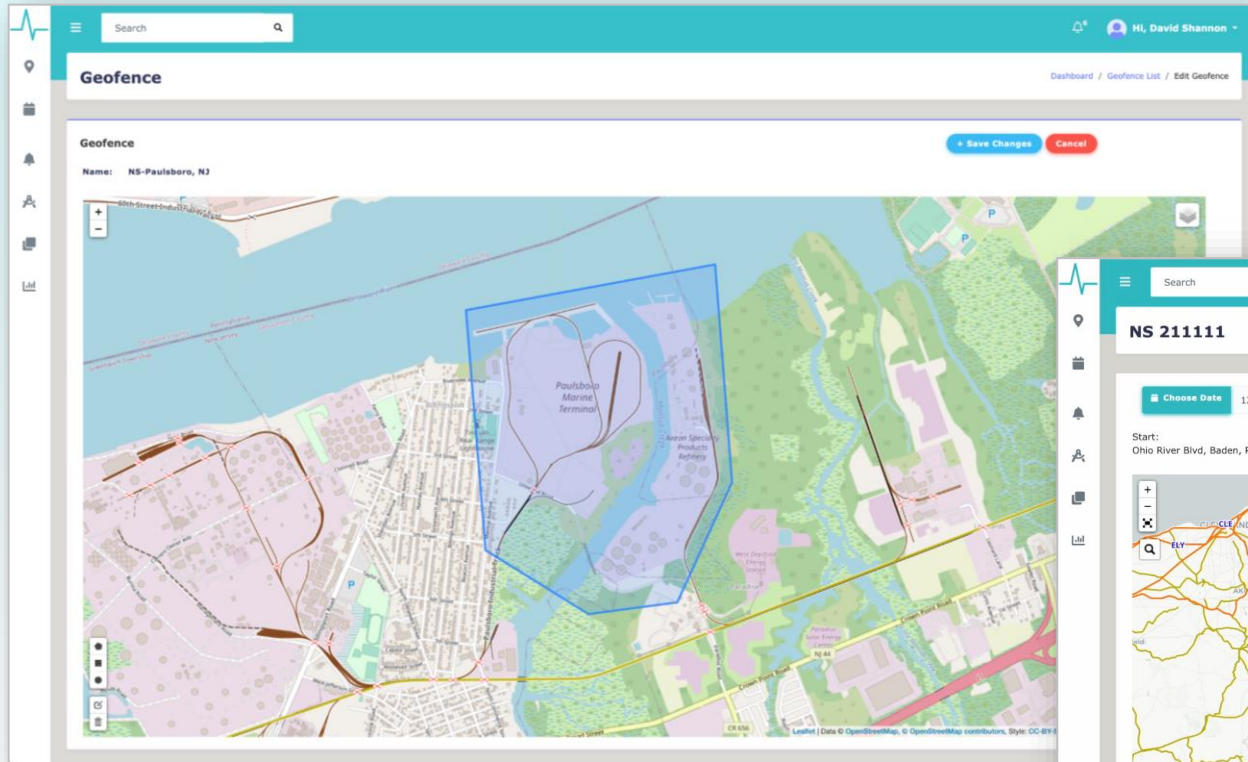
Cycle 1 Impact Sensor Validation



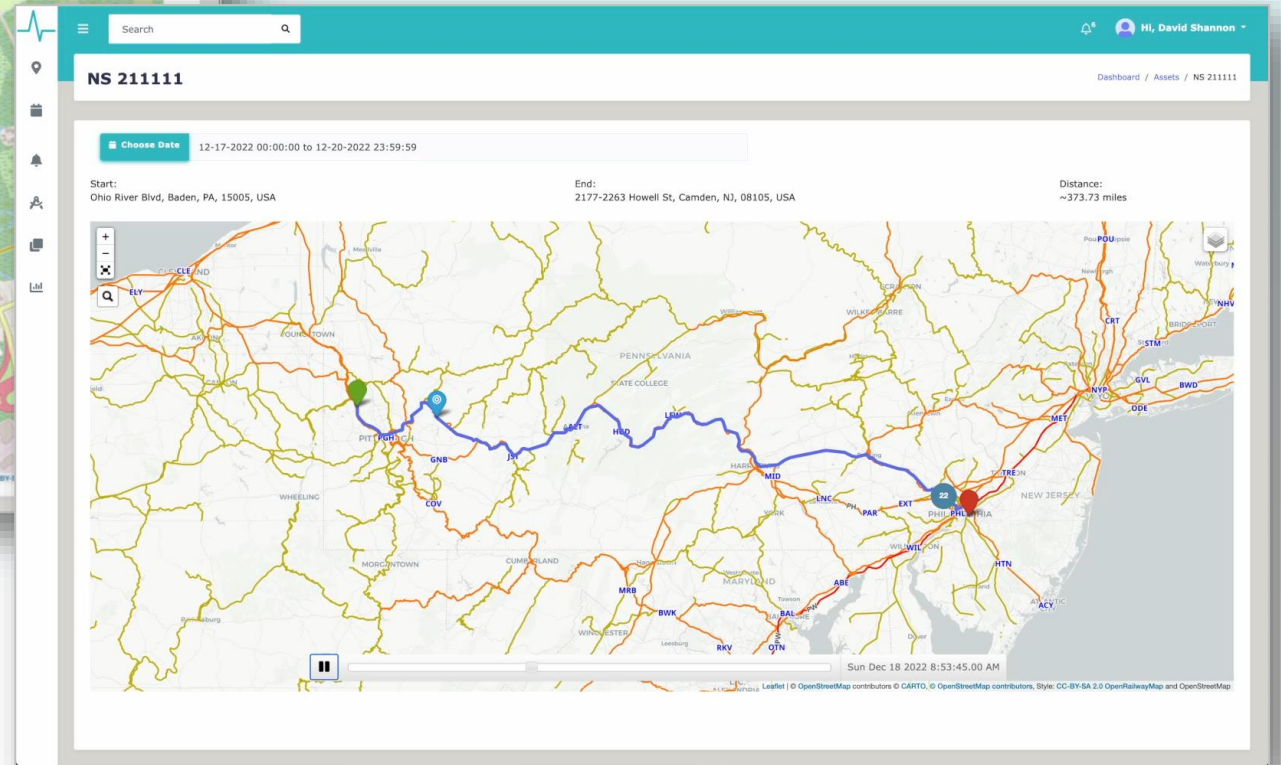
Cycle 2 Installation on Mill Gondola

- Real time location & journey play back
- Railcar condition monitoring
- Safety events
- Enriched with Waybill & CLM data
- Fleet reporting
- Real Time exception alarms
- Dynamic ETA Calculation
- Shared stakeholder access
- Extensible for additional sensors





Real-time geofence activated alerts



Real-time, detailed movement information with playback

Exhibit 2 - Current Pain Points Across the Rail Value Chain



Shippers

- Unexpected delays
- Lack of accurate tracking
- Unreliable ETAs
- Uncertain payload conditions
- Inaccurate dwell-time reporting
- Slow railcar use cycles
- Inability to synchronize the supply chain



Railroads and terminals

- Lack of real-time visibility to inbound pipeline at loading and unloading points
- Slow handoffs
- Congested railyards and tracks
- High cost of trackside infrastructure



Railcar owners

- Delayed maintenance and safety-issue reporting
- Reactive fleet management
- Lack of targeted maintenance
- Extended car-cycle times and slack capacity due to uncertainty and delays

Source: BCG research.

Note: ETA = estimated time of arrival.

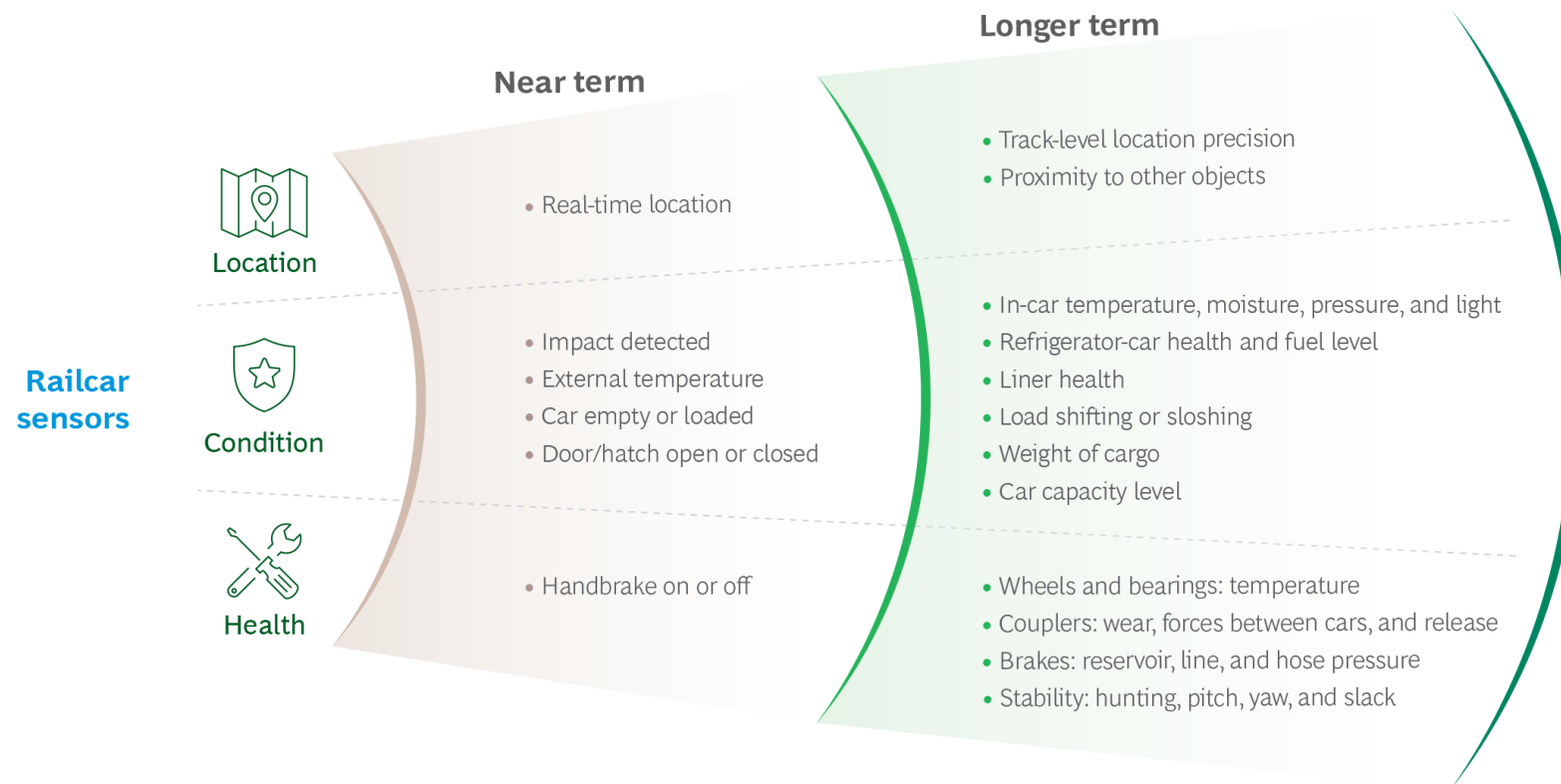
Exhibit 3 - Data Drives Benefits Across the Rail-Freight Ecosystem

	Location	Condition	Health
 Shippers, forwarders	<ul style="list-style-type: none"> • Improved ETAs • Greater predictability • Peace of mind 	<ul style="list-style-type: none"> • Assurance of required payload conditions (for example, refrigeration) • Capacity utilization data 	<ul style="list-style-type: none"> • Greater safety and reliability from improved car-maintenance outcomes
 Carriers, operators	<ul style="list-style-type: none"> • Improved planning (for example, inbound queue) • Faster handoffs • Reduced congestion 	<ul style="list-style-type: none"> • Assurance of required payload conditions throughout processing 	<ul style="list-style-type: none"> • Greater reliability • Improved failure prediction • Reduced need for trackside infrastructure
 Railcar owners	<ul style="list-style-type: none"> • Improved fleet management and planning • Less slack capacity required 	<ul style="list-style-type: none"> • Notification of any incorrect or potentially dangerous conditions (for example, handbrake on) 	<ul style="list-style-type: none"> • More efficient maintenance • Targeted maintenance • Improved failure prediction • Higher utilization
 Broader society	<p>Greener freight mix</p> <ul style="list-style-type: none"> • Breaking traditional tradeoffs that favor truck transport • Growing rail's share of freight transport 	<p>Fewer adverse incidents</p> <ul style="list-style-type: none"> • Constant monitoring of volatile or dangerous payloads • Predictive maintenance prevents equipment failures that could cause derailments 	

Source: BCG research.

Note: ETA = estimated time of arrival.

Sidebar - Current and Future Telematic Data from Railcar Sensors



Sources: RailPulse; BCG research.