

The Mahindra logo is displayed in white, bold, sans-serif font on a red rectangular background in the top right corner of the image.

Mahindra

A long-exposure photograph of a multi-lane highway at night. The road is filled with light trails from cars, with white and yellow trails on the left side and red trails on the right side. In the background, a city skyline is visible with several tall buildings illuminated against a dark blue sky. The foreground shows a grassy embankment and a street lamp.

Improving Cycle Time in Vehicle
Assembly and Fulfillment Using IoT

SPEAKER PROFILE



Brian Ehricke

Director – Supply Chain & Operations
Mahindra North America

MAHINDRA PROFILE

- Mahindra NA is linked to a strong global brand and origins.
- The Mahindra Group founded in 1945 as a steel trading company in Mumbai, India.
- Expanded into many sectors from Automobiles & Tractors to I.T. & Financial Services
- Today: \$19 B Revenue, 100+ Countries, 10 Sectors, 200,000 Employees



MAHINDRA NORTH AMERICA

In 1994, Mahindra USA was formed in Tomball, Texas, expanding M&M's global reach to a key market:

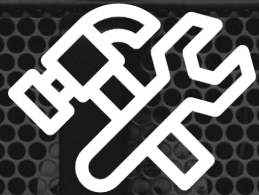
- World's #1 selling tractor in 2010
- #3 in market share in 0<120 PTO HP in US
- Side-by-side utility vehicles launched 2015
- Serves the market with 8 Distribution Centers in US, Canada, Mexico



BUSINESS CHALLENGES



Visibility into
Inventory
within &
between
facilities



Bottlenecks in
Supply Chain
due to Delays
in each phase



High
Operational
Costs
affecting
Bottom lines



Footprint &
Campus
layout for
storage and
serialization



Material
Requirement
Planning

INCUBATING ANTIFRAGILE SUPPLY CHAINS WITH BRISTLECONE



Decision Science



Internet of Things



Blockchain



Conversational UI



Intelligent Automation

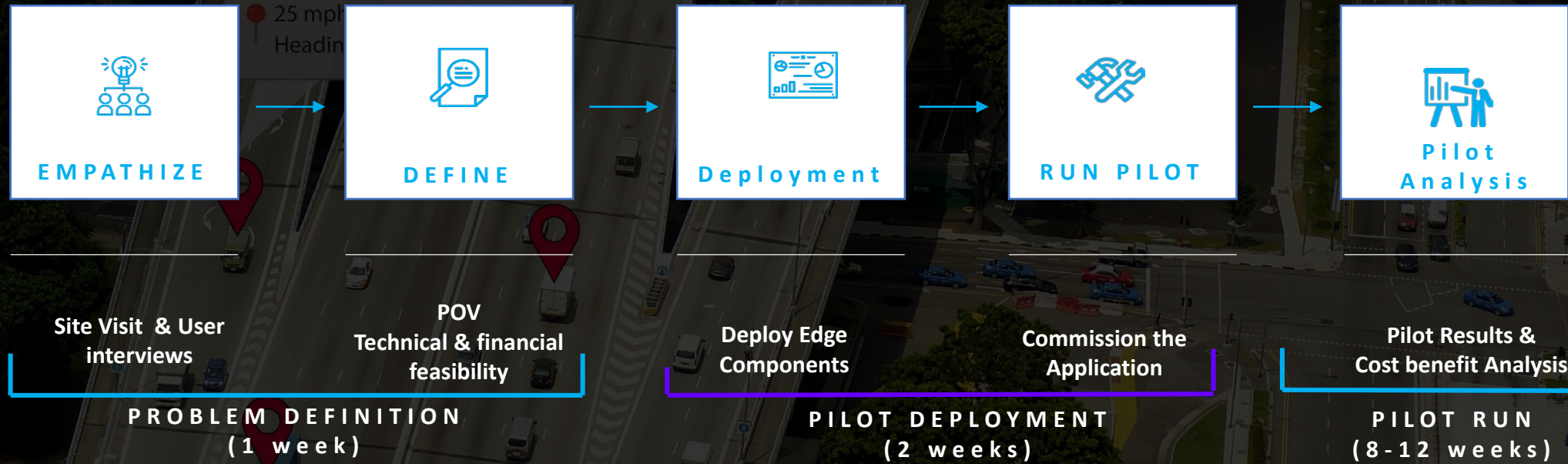


OUR APPROACH

Where are my Assets?

One of the prime imperatives of any supply chain is to be able to track and trace the assets across the supply chain. Complex Joins in your supply network with globalization mean that you need to be able to locate every assets in real time. You need to have transparency at your supplier location, within your manufacturing or distribution network.

5 STEP DESIGN THINKING APPROACH

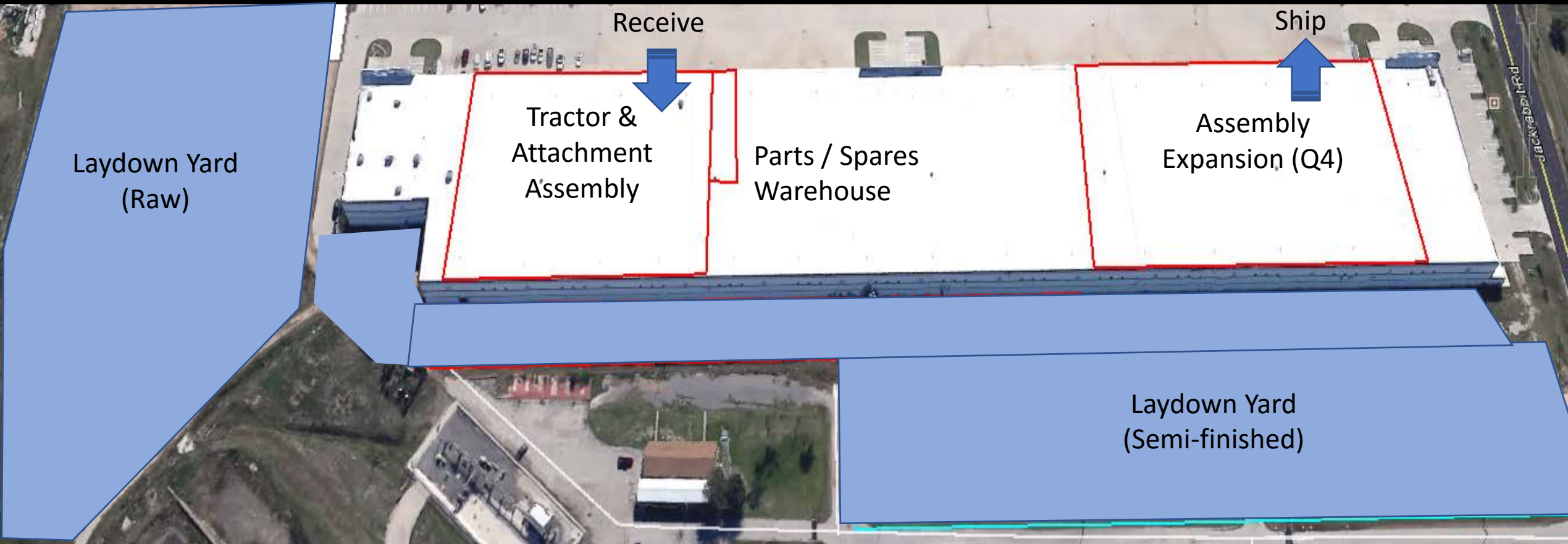


Mahindra

BRISTLECONE
DISRUPT • DIGITIZE • SYNERGIZE

SAP

MAHINDRA HOUSTON CAMPUS LAYOUT



Our present layout and the process at Houston campus





CONNECTED ASSETS

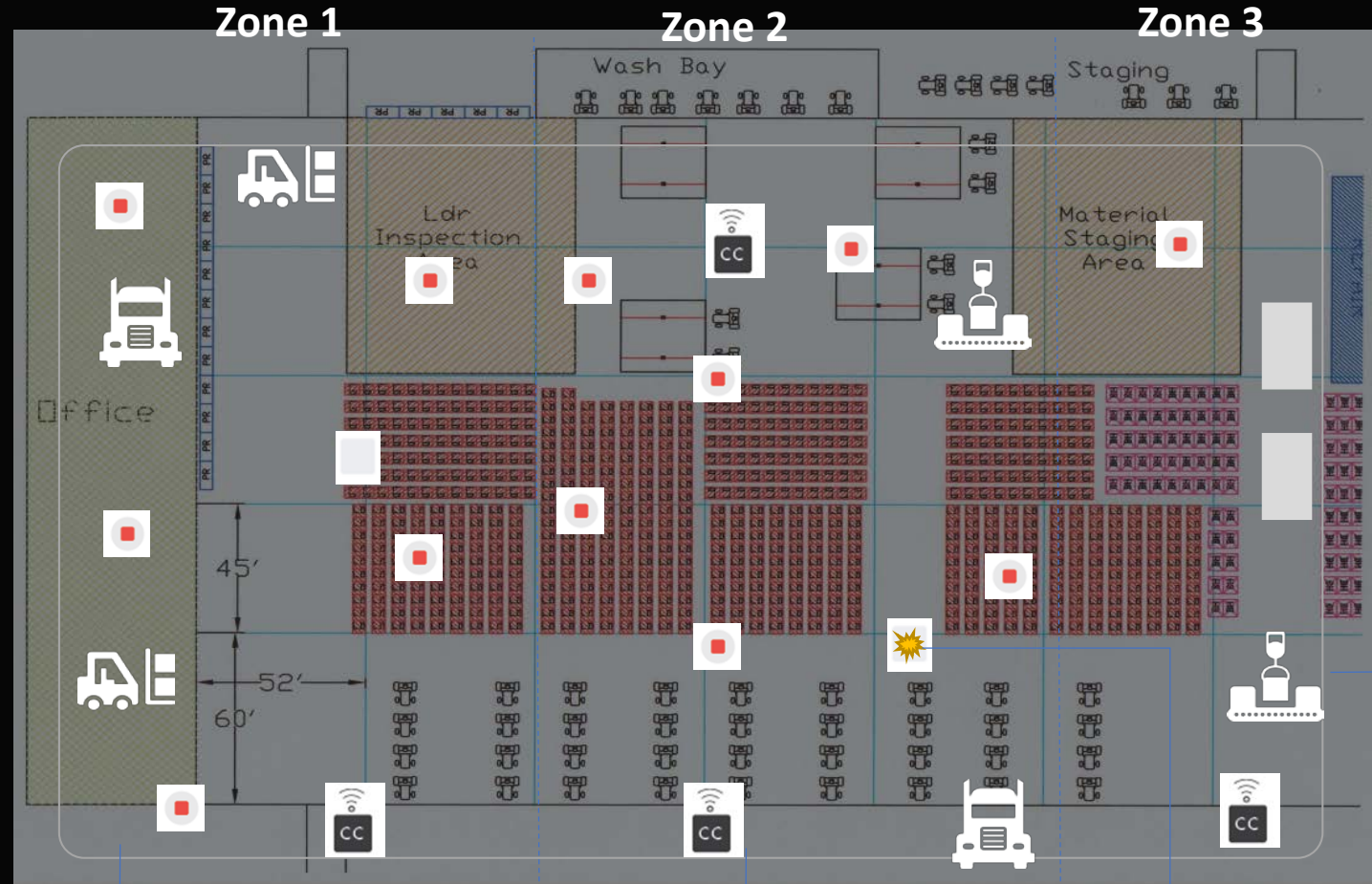
USE CASE

Visibility of High-value asset movements on shop floor like engines, tractors and attachments (loaders, backhoes, mowers)

PROBLEM TO SOLVE

Inventory/Part visibility issue in the warehouse at the assembly line plant

-  Cloud Connector
-  Point of Interest
-  GPS Tracking
-  BLE Sensor on Pallet



Docking Station



Position sensor at dock tracks pallet through shipment. sensor tags on pallet is bound to barcode shipping label on part.

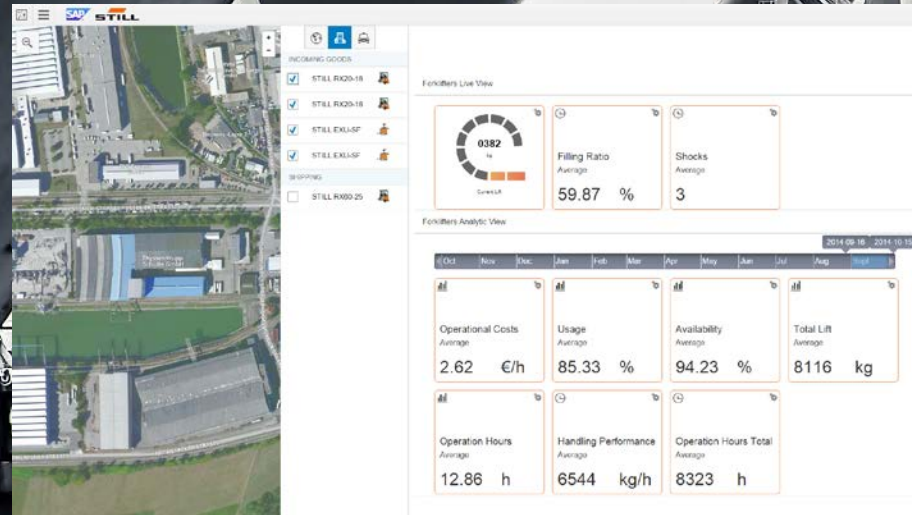
Strategically positioned Sensors with fixed location coordinates to triangulate the position of Pallet with tag sensor

IoT Gateways with defined Zones to collect data from a set of Sensors and Tags and upload it to cloud

Visual/audio aid to identify the part when message is initiated from Mobile phone

VALUE

Internet of Things enabled in weeks, reduce your IoE adoption cycle from months to days!



100% visibility & insights on inventory counts, product mix and incident reporting

John Williams

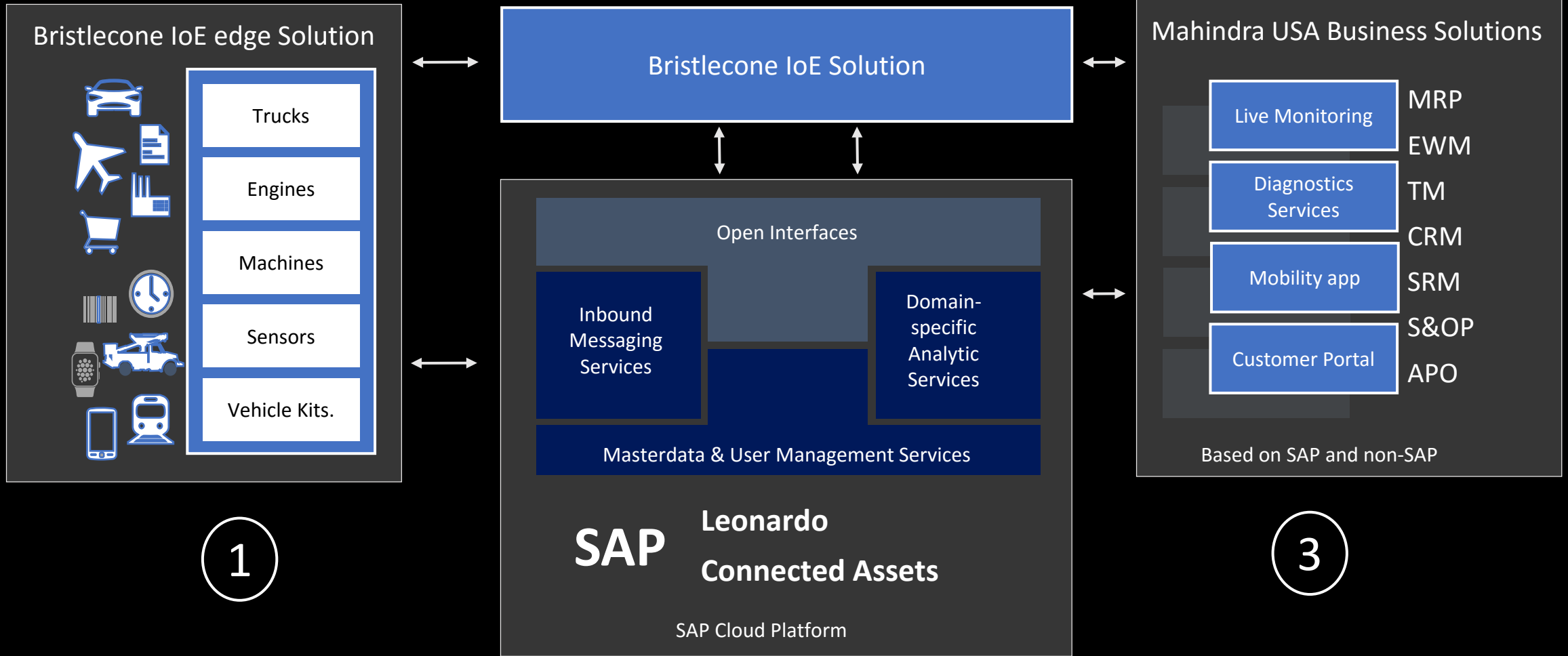
Seat Pallets at Main Factory > Loading Dock

NAME	Location	Temperature	Movement	Subassets
SP00001	Loading Dock	80.5 °F	Still	18 Items
SP00002				
SP00003				
SP00004				
SP00005				
SP00006				
SP00008				
SP00009				
SP00010				
SP00011				

OEM	Location	ENTER	EXIT	DWELL TIME
Main Factory		06/08/2016 - 06:19:08		02:53:15
In Transit		06/08/2016 - 06:19:08	06/08/2016 - 06:19:08	02:53:15
Supplier 1		06/08/2016 - 06:19:08	06/08/2016 - 06:19:08	02:53:15
In Transit		06/08/2016 - 06:19:08	06/08/2016 - 06:19:08	02:53:15
Supplier 2		06/08/2016 - 06:19:08	06/08/2016 - 06:19:08	02:53:15

Completely scalable solution to our B2B network, which shall be integrated with S&OP for inventory tracking across distribution network

ROAD AHEAD



ANY

QUESTIONS

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