Critical Operational Asset Visibility: The Missing Piece in Your Supply Chain Visibility

Scott Hurley
VP Product Marketing & Strategy, Roambee

Reusable Packaging Association

roambee

PACK EXPO INTERNATIONAL

Critical Operational Asset Visibility

The missing piece in your supply chain visibility

October 23, 2022
2:00 to 2:20 PM

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Definition: Supply Chain Reusable Asset

Supply Chain Reusable Asset

Any physical supply chain asset that can be used more than once.

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Game: What is a Reusable Supply Chain Asset?

Let’s Play a Game…

Question: Is this a Reusable Supply Chain Asset?

✓ Yes

✘ No

Reusable Packaging Container (RPC)

Question: Is this a Reusable Supply Chain Asset?

✓ Yes

✗ No

Mason Jar

Question: Is this a Reusable Supply Chain Asset?

Pallet

✓ Yes

✗ No

Question: Is this a Reusable Supply Chain Asset?

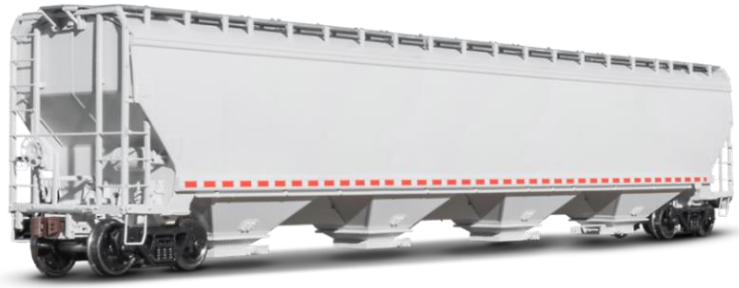
Forklift

✓ Yes

✗ No

Question: Is this a Reusable Supply Chain Asset?

Rail Cars



✓ Yes

✗ No

Question: Is this a Reusable Supply Chain Asset?

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CNC Machine

✓ Yes

✗ No

Question: Is this a Reusable Supply Chain Asset?

✓ Yes

✗ No

Automotive Part Bin

Question: Is this a Reusable Supply Chain Asset?

✓ Yes

✗ No

Tote Bag

Question: Is this a Reusable Supply Chain Asset?

Radiopharmaceutical Dose
Delivery Case

✓ Yes

✗ No

Definition: Supply Chain Reusable Asset

Supply Chain Reusable Asset

Any physical supply chain asset that can be used more than once.

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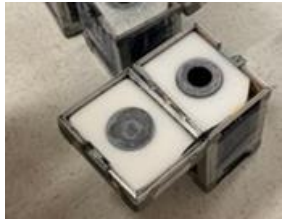
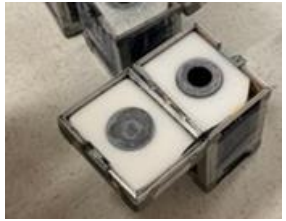
Results: What is a Reusable Asset?

Reusable Packaging Container	Mason Jar	Pallet
Forklift	Railcar and Railbox	CNC Machine
Automotive Part Bin	Tote Bag	Radiopharma Dose Delivery Case 

Results: What is a Reusable Asset?

Yes

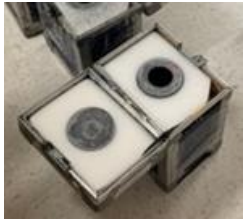
Reusable Packaging Container	Mason Jar	Pallet
Forklift	Railcar and Railbox	CNC Machine
Automotive Part Bin	Tote Bag	Radiopharma Dose Delivery Case 

Definition: What is a Critical Operational Asset?

A physical item used to repeatedly hold and/or transport physical goods, transported within and between facilities, without which critical supply chain processes will fail. They must be:

- ✓ (M) Mobile
- ✓ (C) Critical
- ✓ (O) Operational
- ✓ (SC) Supply Chain
- ✓ (R) Reusable
- ✓ (R) Reusable

Results: What is a critical operational supply chain reusable asset?

Reusable Packaging Container	Mason Jar	Pallet
Forklift	Railcar and Railbox	CNC Machine
Automotive Part Bin	Tote Bag	Radiopharma Dose Delivery Case 

- ✓ (M) Mobile
- ✓ (C) Critical
- ✓ (O) Operational
- ✓ (SC) Supply Chain
- ✓ (R) Reusable
- ✓ (A) Asset

Visit Roambee at Booth #6756 in the RPA Pavilion

Results: What is a critical operational supply chain reusable asset?

✓ Yes	Reusable Packaging Container	Mason Jar	Pallet
✗	✓	✗	✓

- ✓ (M) Mobile
- ✓ (C) Critical
- ✓ (O) Operational
- ✓ (SC) Supply Chain
- ✓ (R) Reusable
- ✓ (A) Asset

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About Roambee

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Scott Hurley

Scott Hurley
VP of Product Marketing & Strategy
Chicago, IL

shurley@roambee.com
M: 312.420.8864

- Joined Roambee in March 2020
- 10+ years building, selling, and marketing B2B SaaS solutions to T&L markets
- Responsible for at Roambee: GTM strategy, positioning and messaging, pricing, market and competitive intelligence, sales enablement, product launches, analyst relations, and pre-sales
- Previously at HERE Technologies for ~10 years, and additional GIS consulting roles
- Member of Reusable Packaging Association, Technology Working Group

About Roambee

Global leader in sensor-driven supply chain visibility

roambee

HQ: Santa Clara, CA

Founded: 2014

RPA REUSABLE PACKAGING ASSOCIATION www.reusables.org

Global Offices

USA | Switzerland | UK | Germany | UAE | India

Singapore | Indonesia | Japan | Mexico | Brazil

Operating in >150 countries

Customers

DHL, UPS, WD, SIEMENS Healthineers, Nestlé, UN WFP

Partners

SAP, BlueYonder, TRANSPOREON

Investors

Qualcomm, REEFKNOT, ANCHOR, MDI Metra Digital Innovation by Telkom Indonesia, T

Industry Recognition

Gartner, ABIresearch technology market intelligence, CBINSIGHTS

Complete Visibility

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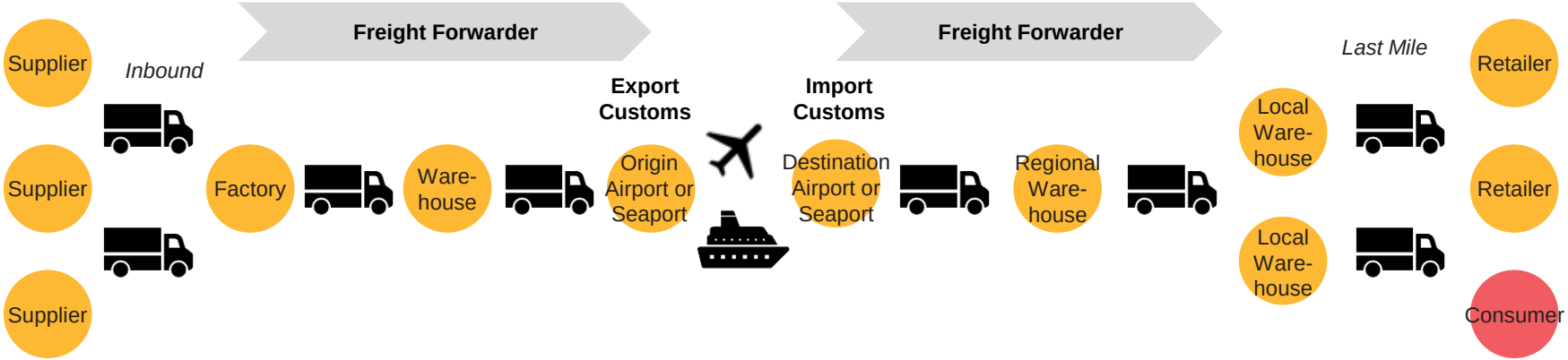
Shipment Visibility



End-to-End Visibility of Goods

Medicines

Electronics

Food & Beverages

Chemicals

Automobiles

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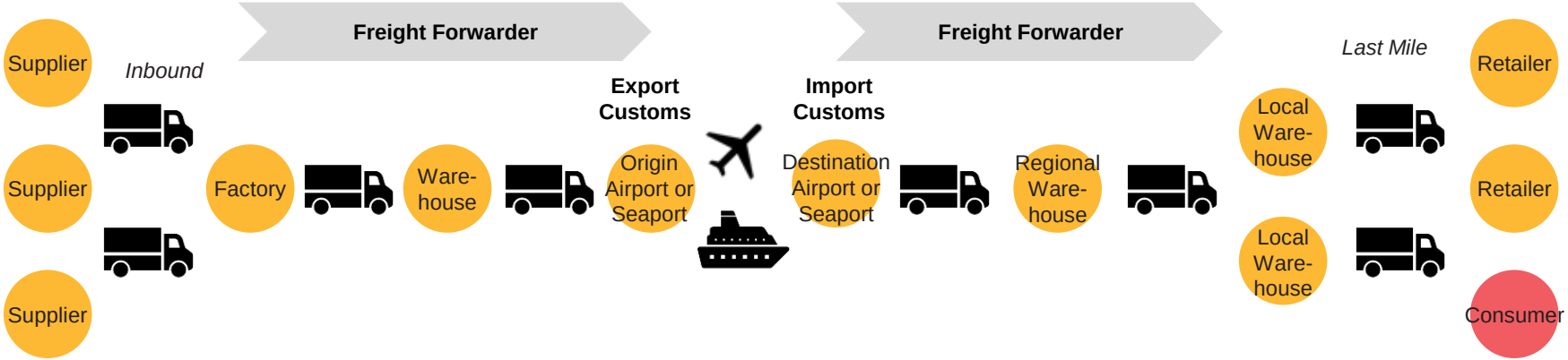
Shipment Visibility



End-to-End Visibility of Goods

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Shipment Visibility

Without shipment visibility, we can't see much….

With, we can see much more clearly.

But is there more to see?

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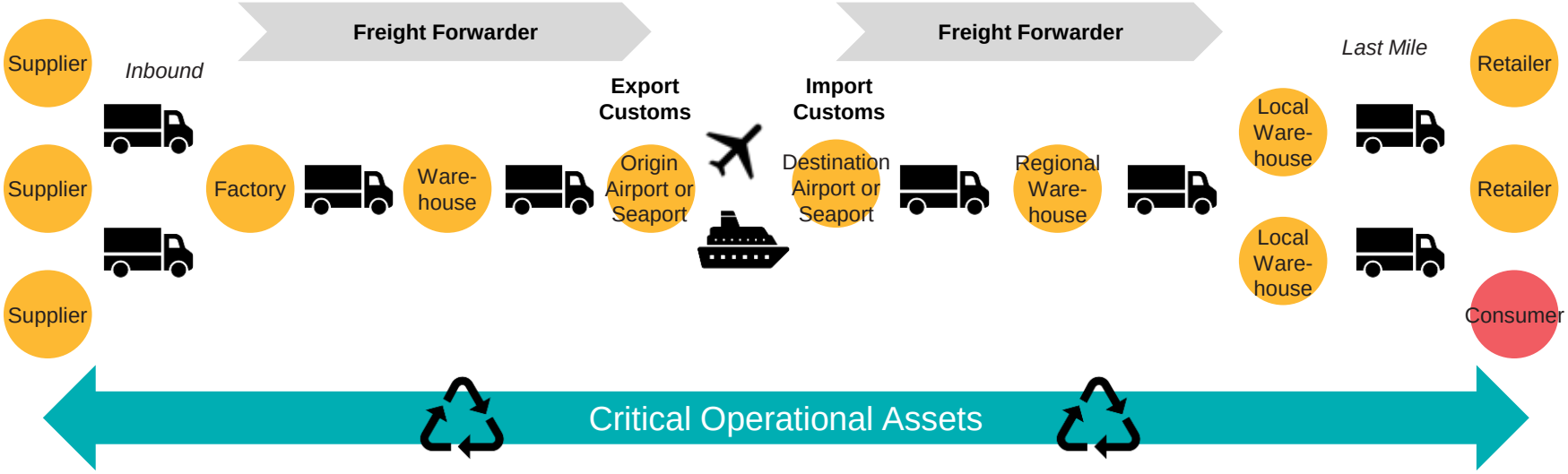
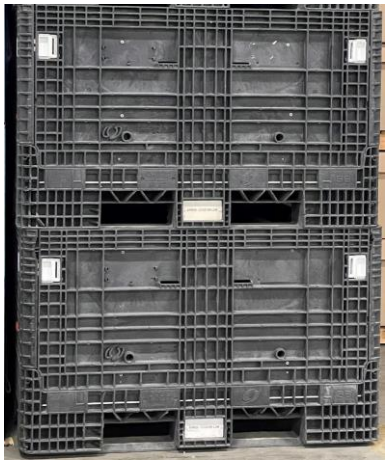
What's Missing?



General Use Critical Operational Assets

Intermodal Shipping Containers

Crates



Pallets

Bins

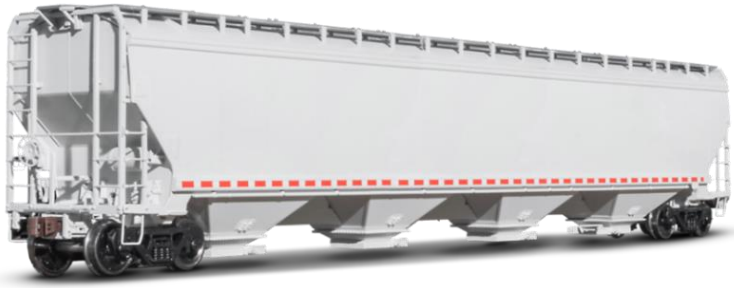
Chemicals & Solvents

Drums

ISO Tanks

IBC Totes

Rail Cars



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Automotive

Bins

Molds and Dies

Industrial Packaging

Food & Beverages

RPCs

Bag-In-Box Systems

Railboxes

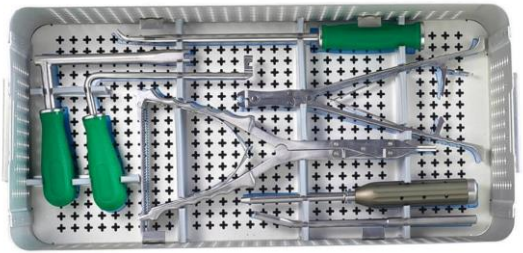
Kegs

Pharmaceutical & Life Sciences

Insulated Pharmaceutical Packaging

Cryogenic Tanks

Custom Surgical Kits



Radiopharmaceutical Dose Delivery Cases

What is increased visibility solving for?

1. Reducing asset loss
2. Increasing Turn-Around-Time (TAT)/velocity – Increase TOP-LINE revenues
3. Increasing asset utilization
4. Labor efficiency gains, e.g., automating inventory count
5. Stopping revenue leakage
6. Reducing demurrage and detention fees
7. Retail value of product waste (e.g., food waste)
8. Sustainability factors (vs. one-time use assets)

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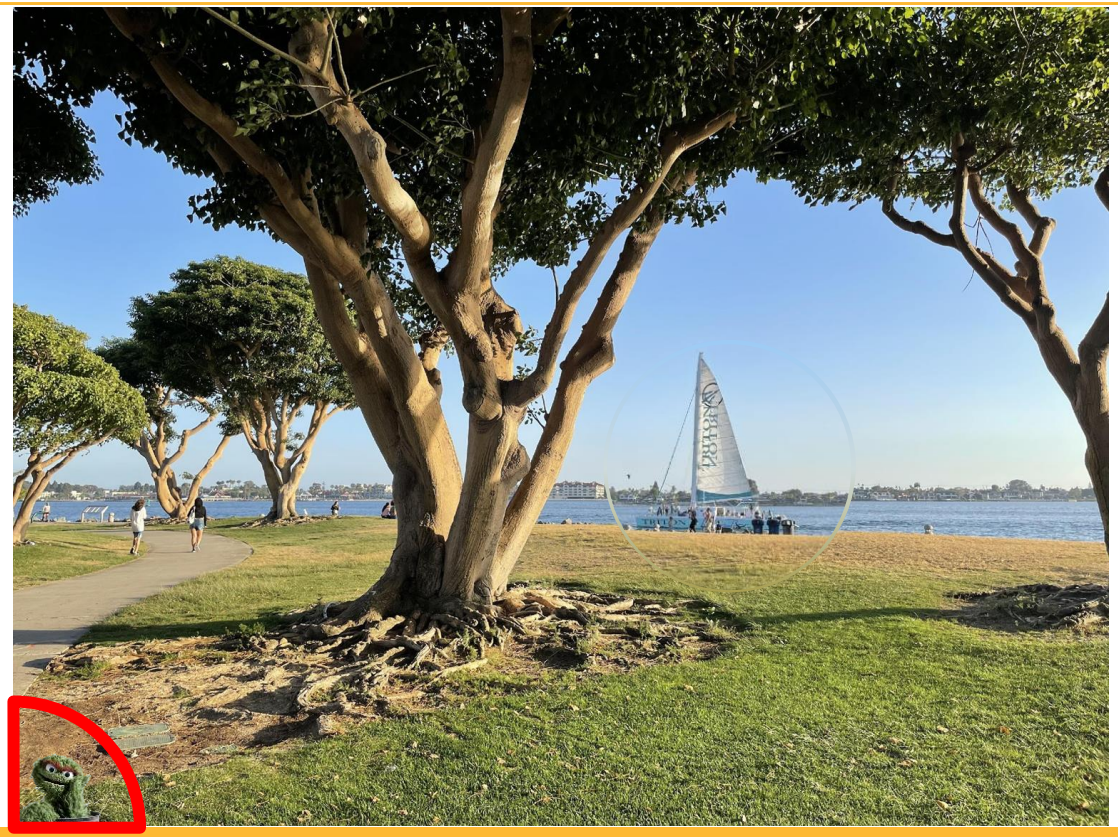
Complete Supply Chain Visibility



Complete Supply Chain Visibility: Shipments & Critical Operational Assets

Supply Chain Visibility: Shipments

No Supply Chain Visibility

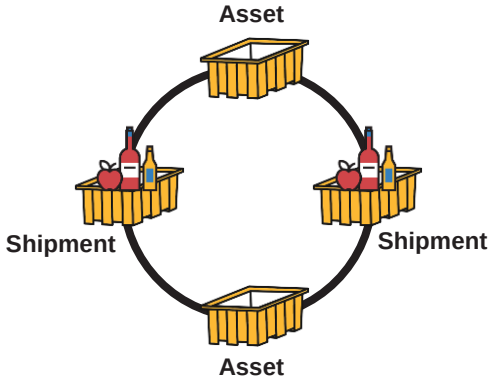
Shipment or Asset?

Transitive: Asset to Shipment to Asset

What do you care about?

- The goods being shipped?
- The assets holding the goods?
- Both?

Can your supply chain visibility solution handle both?



How do we achieve critical operational asset visibility?

- **Barcodes**
- **RFID**
  - Passive
  - Active
- **LoRaWAN**
- **Bluetooth**
  - Beacons
  - Labels
- **IoT**
  - 4G/5G cellular & GPS
- **Combinations**
  - Barcode and RFID
  - IoT & Bluetooth
  - RFID & IoT

How do we achieve critical operational asset visibility?

- **Barcodes**
- **RFID**
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- **Combinations**
  - Barcode and RFID
  - IoT & Bluetooth
  - RFID & IoT

Considerations

- Use case
  - Require location, status, and condition only WITHIN select facilities
  - Require location, status, and condition when outside of select facilities
  - Both
- Value of the asset
- Value of the goods the asset holds
- Volume of assets
- Asset size and form factor
- Owned or leased assets?
- Operating environments & space
- Cycle time
- Deployment processes
- Battery-life/replacement processes
- Exposure to the sun
- Security
- Budget
- Training considerations
- Asset cleaning considerations
- Safety considerations

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What do we need to know?

What is necessary to know about our critical operational assets to achieve visibility?

- Type
- Location
- Volume
- Status
- Condition
- Dwell Time
- What's in it?
- Demand
- ETA
- Trends

Roambee Components

BeeCentral

Live Shipment Monitoring & Response

APIs & Webhooks

Visibility Applications

- **Shipment Visibility**
- **Asset Visibility**
- **HIVE Controls**
- **Mobile Apps**

Analytics

Swarm Intelligence

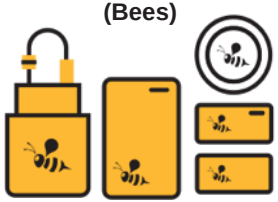
Snapshots | Reveal | Resolve

Honeycomb Platform

AI for transforming real-time inputs into actionable signals

Roambee Sensors

(Bees)



Non-Roambee Sensors

- IoT
- Data Loggers
- RFID
- BLE

Roambee Curated Data Streams

- Traffic
- Weather
- Cargo IQ
- Ocean IQ
- More…

Your Data

- Enterprise Data
- Freight Forwarder Data
- Existing Visibility Data Streams

Complete Supply Chain Visibility

Visibility on Shipments

End-to-end tracking & monitoring of goods from origin to destination

Multimodal Shipment Monitoring
Truck | Rail | Ocean | Air

Condition Monitoring
Pharmaceutical Cold Chain | Spoilage | Damage

Security & Compliance Monitoring
Access | Chain of Custody | Chain of Control

Examples

Electronics & Machinery | Food & Bevs | Medicines, Vaccines, Biologics, Medical Kits

Benefits

Improve ETAs | > OTIF Compliance | Faster Order-to-Cash | Reduce Spoilage & Damage | Reduce Theft & Adulteration

Visibility on Returnable/ Reusable Assets

Circular tracking & monitoring of reusable assets used to transport goods between facilities

Assets used to hold and move goods

Examples

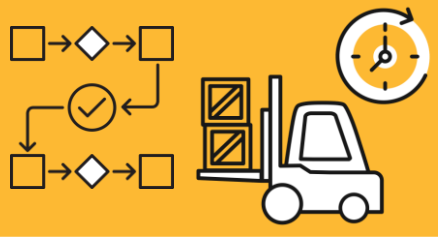
Containers | Tanks | Pallets | Bins | RPCs | Insulated Packaging | Industrial Packaging

Benefits

Reduce Asset Loss & Detention Fees | Increase Utilization & Velocity | Automate Inventory Count

Visibility on In-Facility Assets

Zone-level tracking & monitoring of mobile operational assets w/in facilities, indoors & out, during manufacturing and assembly Work-In-Process



Examples

Parts | Bins | Equipment | Mobile Machinery

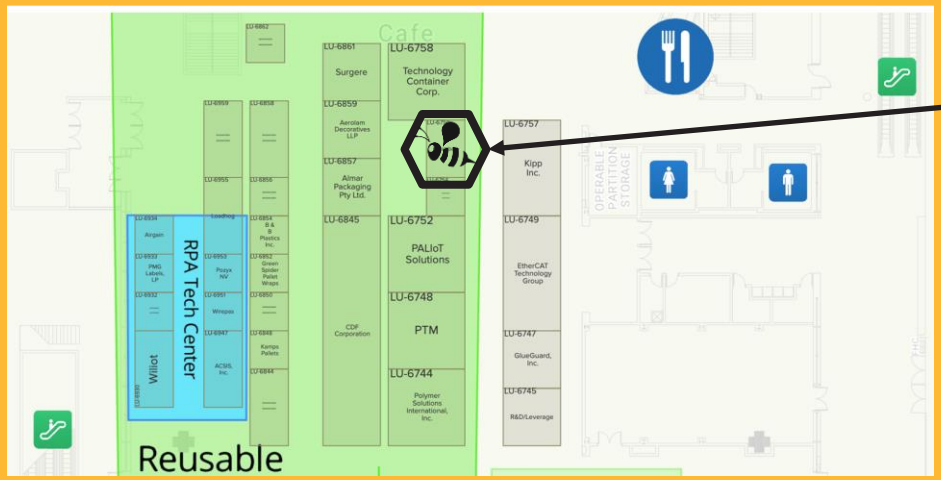
Benefits

Reduce Asset Loss | Increase Utilization & Velocity | Automate Inventory Count

To learn more, visit us at

www.roambee.com

Booth #6756 in the RPA Pavilion



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Upcoming joint webinar with:

IFCO — Josh Taylor

Reusable Packaging Association — Tim Debus

Wednesday, November 30th

3:00 PM to 4:00 PM Central Time (USA)

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Backup

What do we need to know?

1. Type
2. Location
3. Volume
4. Status
5. Dwell Time
6. Condition
7. What's in it?
8. Demand
9. ETA
10. Trends/Patterns

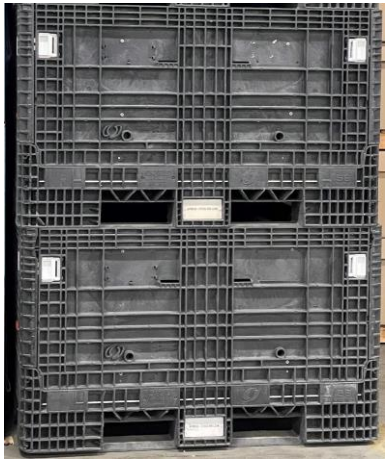
What is necessary to know about our critical operational assets to achieve visibility?

What do we need to know?

1. Type

- Asset type
- Designation (only used for certain goods?)
- Capacity (how much can it hold?)
- Material type

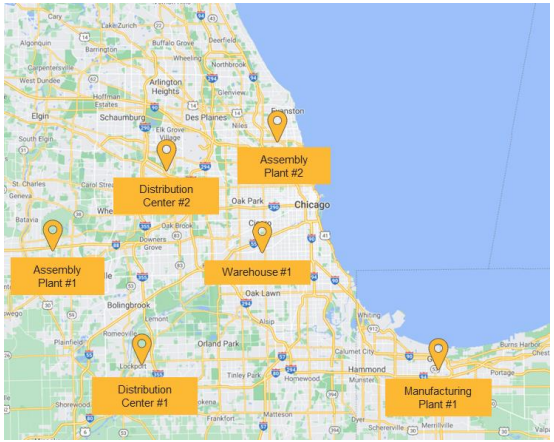
Crate

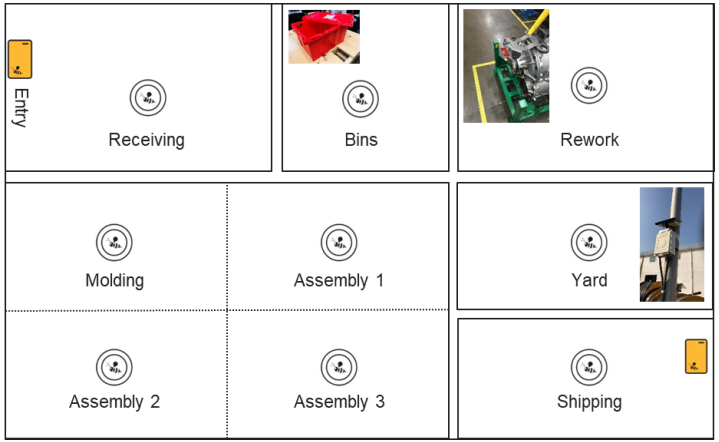


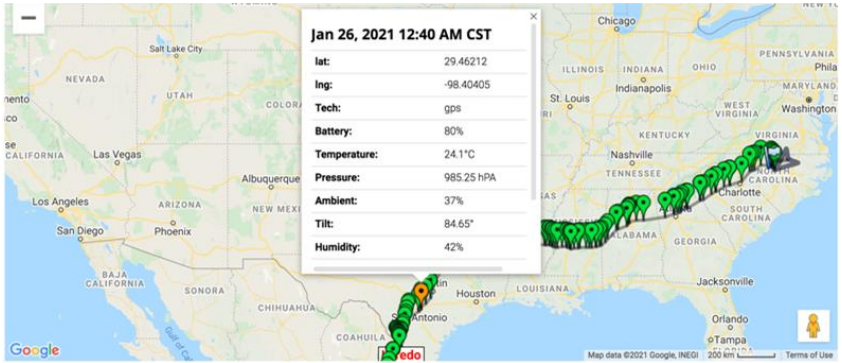
Bin

What do we need to know?

1. Type
2. **Location**
   - **Facility**
   - **Zone**
   - **In-Transit**

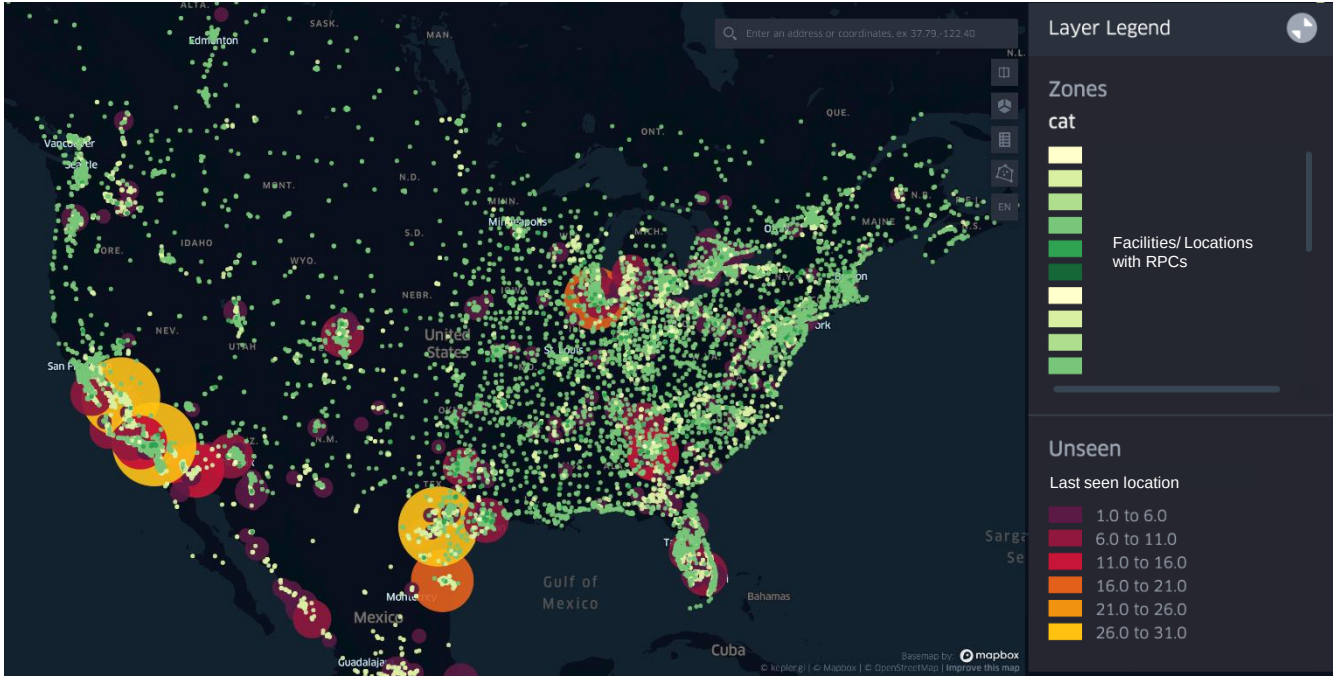






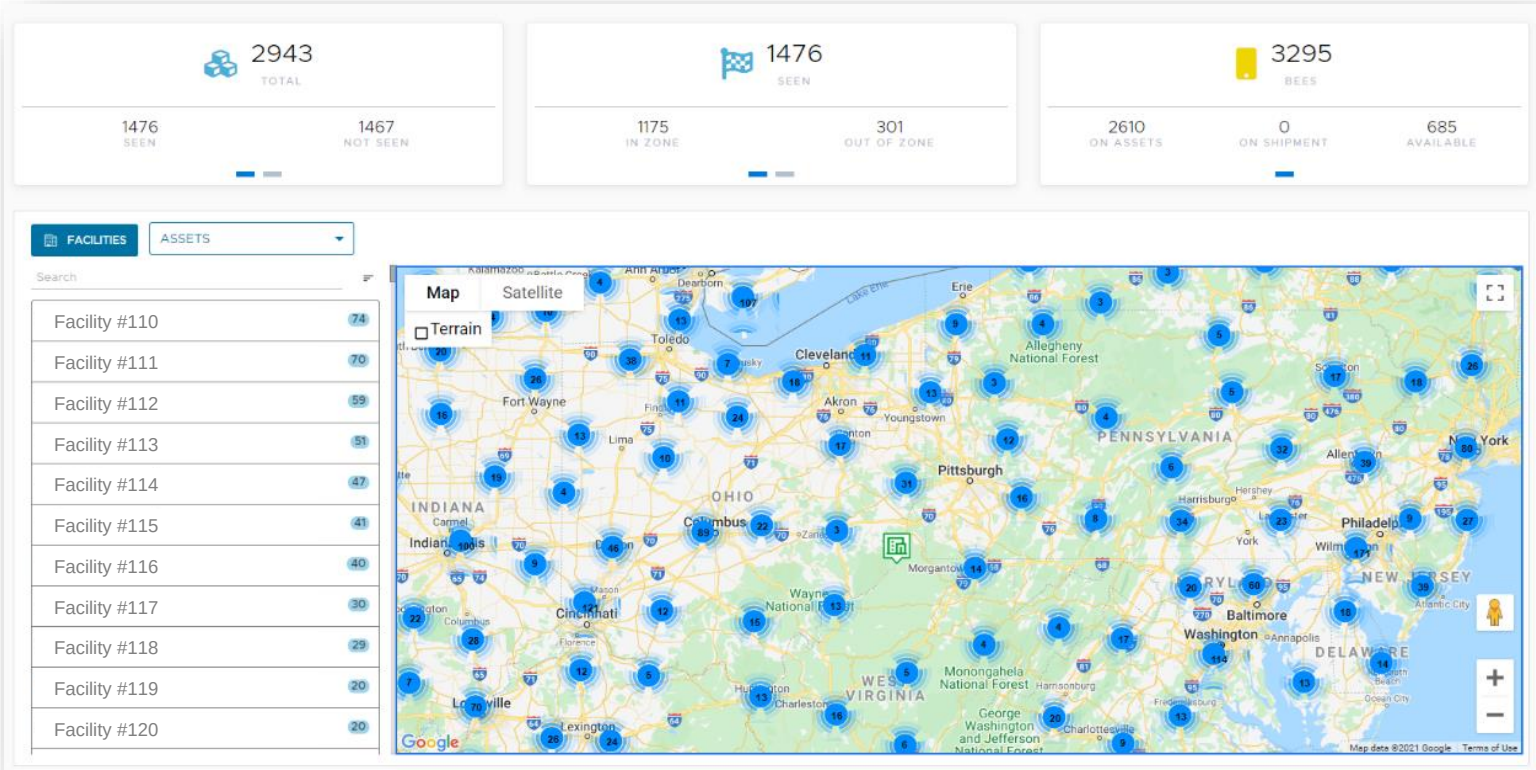
What do we need to know?

1. Type
2. **Location**
   - **Facility**
   - **Zone**
   - **In-Transit**
   - **In “the field”**



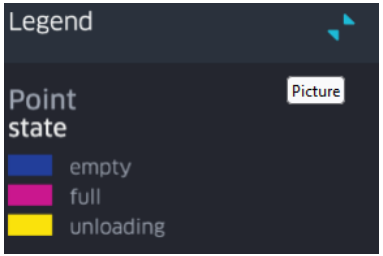
What do we need to know?

1. Type
2. Location
3. **Volume**



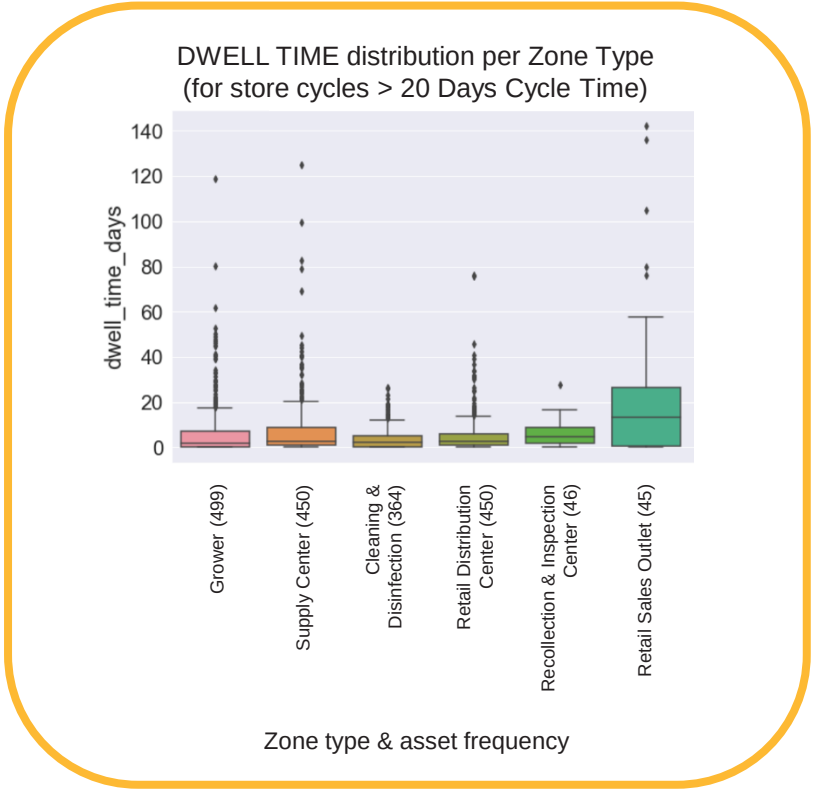
What do we need to know?

1. Type
2. Location
3. Volume
4. **Status**
    - Available/unavailable
    - Empty/full
    - Loading/unloading
    - Dirty/Clean



What do we need to know?

1. Type
2. Location
3. Volume
4. Status
5. **Dwell Time**



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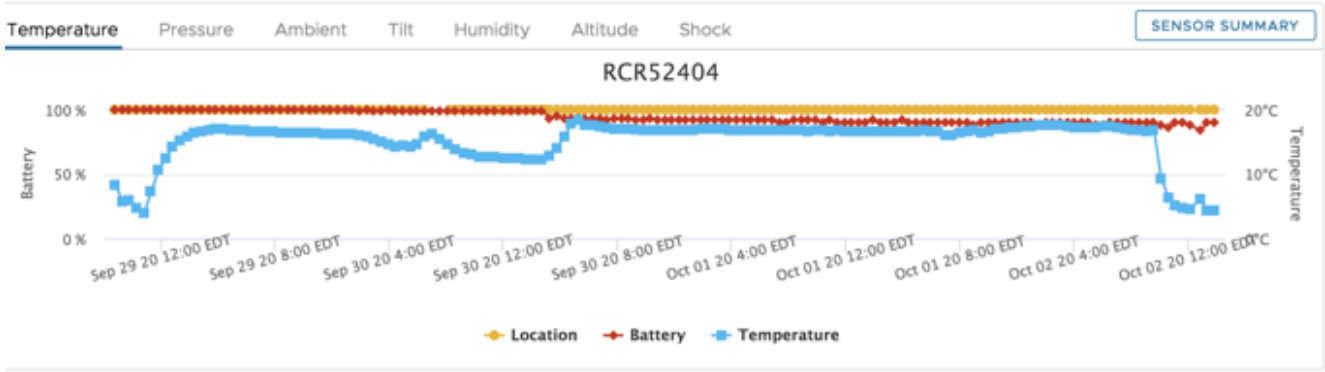
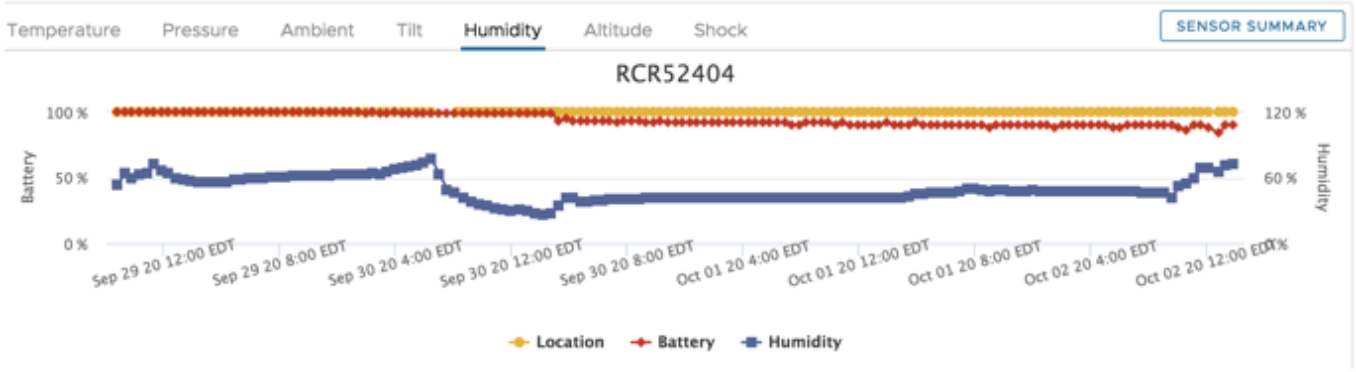
What do we need to know?

1. Type
2. Location
3. Volume
4. Status
5. Dwell Time
6. **Condition**





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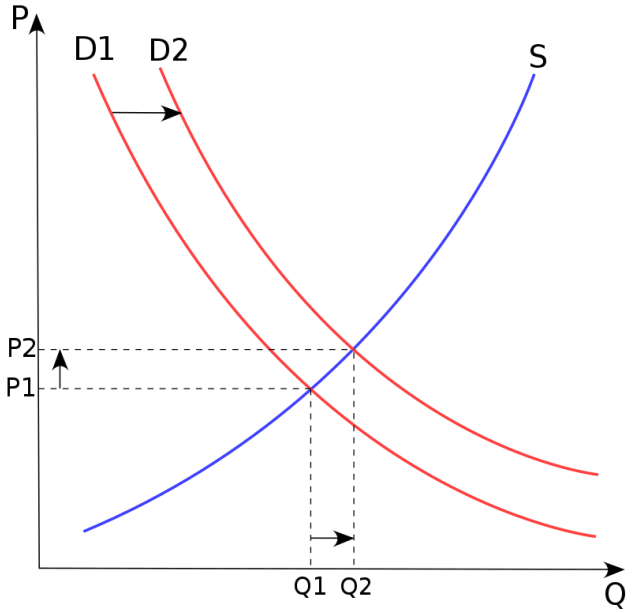
What do we need to know?

1. Type
2. Location
3. Volume
4. Status
5. Dwell Time
6. Condition
7. **What's in it?**
   - Product Type
   - Product SKU
   - Product volume
   - Condition thresholds
   - Expiry dates
   - Potency timelines

Can derive from scanning, integrations, analytical inferences, etc.

What do we need to know?

1. Type
2. Location
3. Volume
4. Status
5. Dwell Time
6. Condition
7. What's in it?
8. **Demand**



What type and volume of assets are needed where, in order to hold and move the necessary quantity of goods when they need to be transported?

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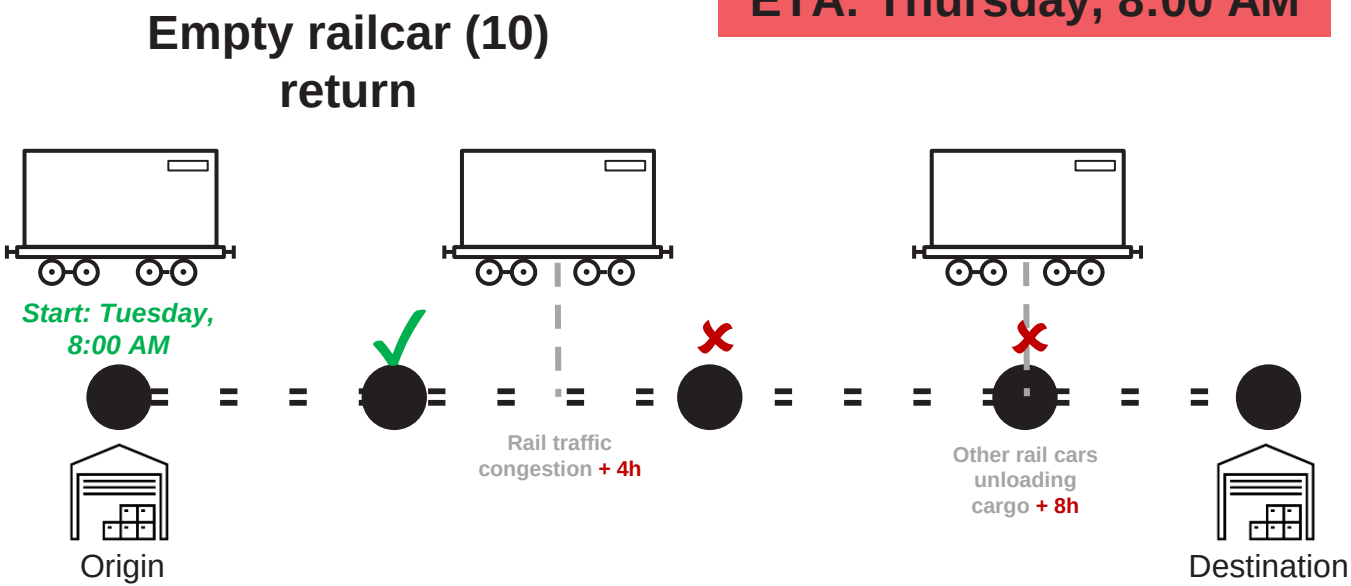
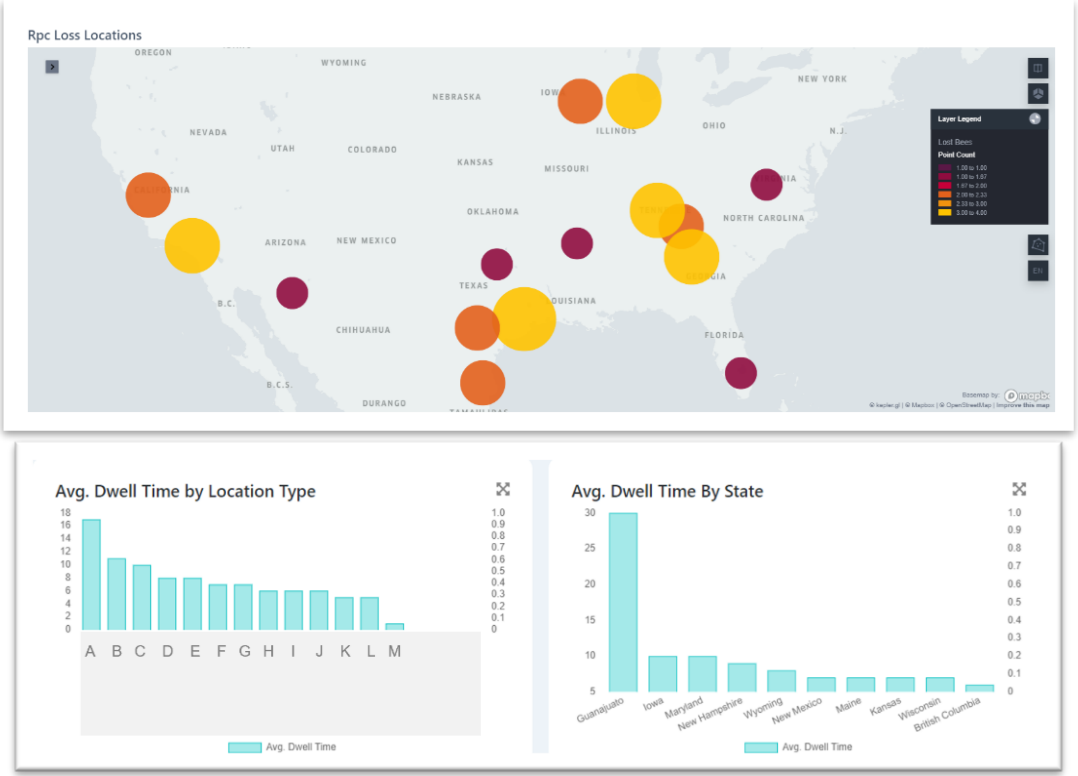
What do we need to know?

1. Type
2. Location
3. Volume
4. Status
5. Dwell Time
6. Condition
7. What's in it?
8. Demand
9. **ETA**

If you don't have the necessary volume of assets at the needed location, how long will it take before they will arrive?

ETA: Thursday, 8:00 AM



What do we need to know?

1. Type
2. Location
3. Volume
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7. What's in it?
8. Demand
9. ETA
10. **Trends/Patterns**