

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



Scott Hurley
VP Product Marketing & Strategy, Roambee





Critical Operational Asset Visibility

The missing piece in your supply chain visibility

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





Definition: Supply Chain Reusable Asset

**Supply Chain
Reusable Asset**



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

Game: What is a Reusable Supply Chain Asset?



Let's Play a Game...



Question: Is this a Reusable Supply Chain Asset?



Reusable Packaging Container
(RPC)

✓ Yes

✗ No



Question: Is this a Reusable Supply Chain Asset?



Mason Jar

✓ Yes

✗ No



Question: Is this a Reusable Supply Chain Asset?



Pallet

✓ Yes

✗ No



Question: Is this a Reusable Supply Chain Asset?



Forklift

✓ Yes

✗ No



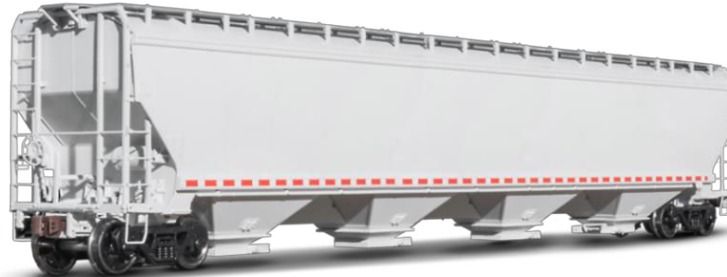
Question: Is this a Reusable Supply Chain Asset?



Rail Cars

✓ Yes

✗ No



Question: Is this a Reusable Supply Chain Asset?



CNC Machine

✓ Yes

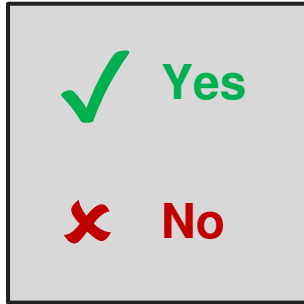
✗ No



Question: Is this a Reusable Supply Chain Asset?



Automotive Part Bin



Question: Is this a Reusable Supply Chain Asset?



Tote Bag



✓ Yes

✗ No

Question: Is this a Reusable Supply Chain Asset?



Radiopharmaceutical Dose
Delivery Case

✓ Yes

✗ No













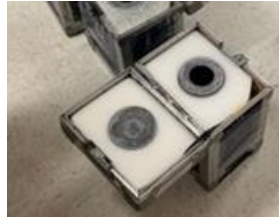
Definition: Supply Chain Reusable Asset

**Supply Chain
Reusable Asset**



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

Results: What is a Reusable Asset?

<p>Reusable Packaging Container</p>  A black, heavy-duty plastic reusable packaging container with a grid-like structure and multiple locking points.	<p>Mason Jar</p>  A clear glass mason jar with a metal lid and a "Ball" brand logo.	<p>Pallet</p>  A black plastic pallet with a grid-like structure and multiple locking points.
<p>Forklift</p>  A red and black counterbalanced forklift with a mast and forks.	<p>Railcar and Railbox</p>  A blue railcar with a "TESCO" logo and the number "45" on its side, carrying a blue railbox.	<p>CNC Machine</p>  A blue and white CNC machine with a control panel and a work area.
<p>Automotive Part Bin</p>  A blue metal frame holding several white automotive part bins.	<p>Tote Bag</p>  An orange tote bag with two handles.	<p>Radiopharma Dose Delivery Case</p>  A white and black radiopharma dose delivery case with a circular opening.

Results: What is a Reusable Asset?

Yes

Reusable Packaging Container



Mason Jar



Pallet



Forklift



Railcar and Railbox



CNC Machine



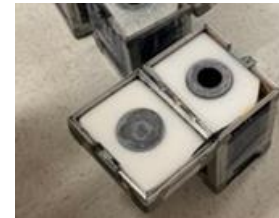
Automotive Part Bin



Tote Bag



Radiopharma Dose Delivery Case



Definition: What is a Critical Operational Asset?











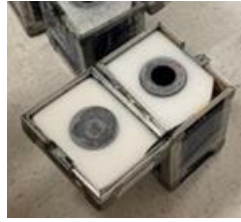
A physical item used to repeatedly hold and/or transport physical goods, transported within and between facilities, without which critical supply chain processes will fail. They must be:

- ✓ (M) Mobile
- ✓ (C) Critical
- ✓ (O) Operational
- ✓ (SC) Supply Chain
- ✓ (R) ~~Reset~~table
- ✓ (R) ~~Reset~~table



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





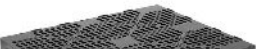




<p>Reusable Packaging Container</p> 	<p>Mason Jar</p> 	<p>Pallet</p> 
<p>Forklift</p> 	<p>Railcar and Railbox</p> 	<p>CNC Machine</p> 
<p>Automotive Part Bin</p> 	<p>Tote Bag</p> 	<p>Radiopharma Dose Delivery Case</p> 

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

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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





Scott Hurley



Scott Hurley
VP of Product
Marketing & Strategy
Chicago, IL

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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



HQ: Santa Clara, CA

Founded: 2014



Global Offices

USA | Switzerland | UK | Germany | UAE | India
Singapore | Indonesia | Japan | Mexico | Brazil

Operating in >150 countries

Customers



Partners



Investors



Industry Recognition

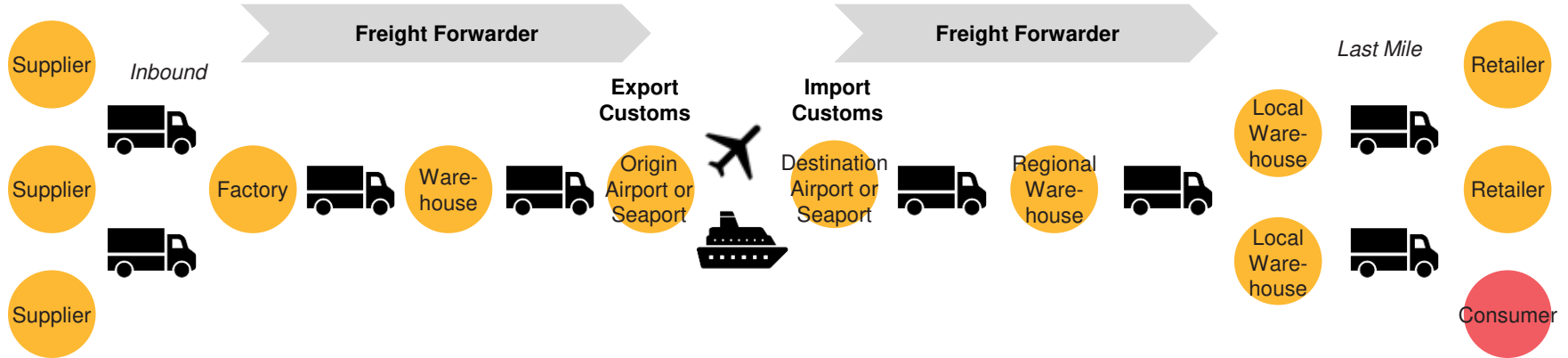


Complete Visibility





Shipment Visibility



End-to-End Visibility of Goods



Medicines



Electronics



Food &
Beverages



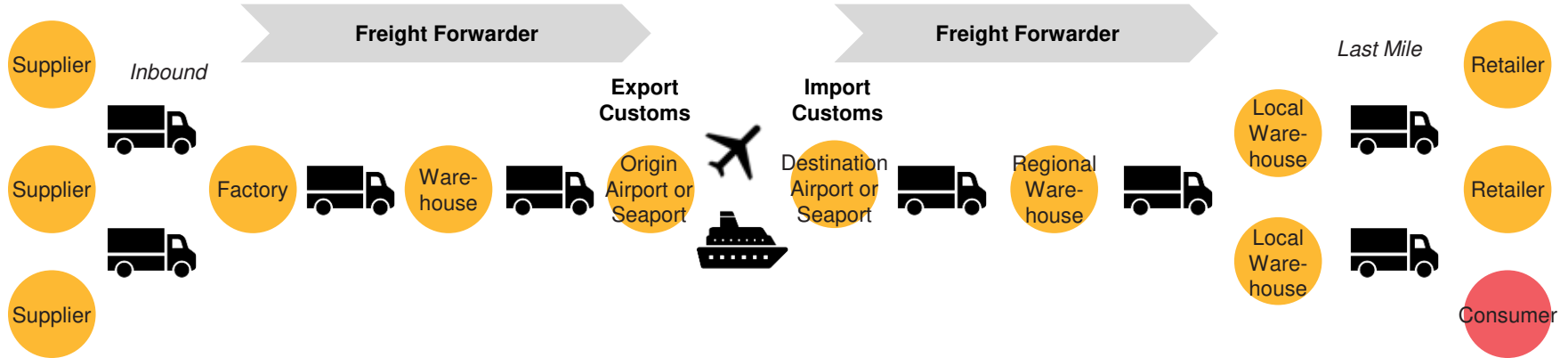
Chemicals



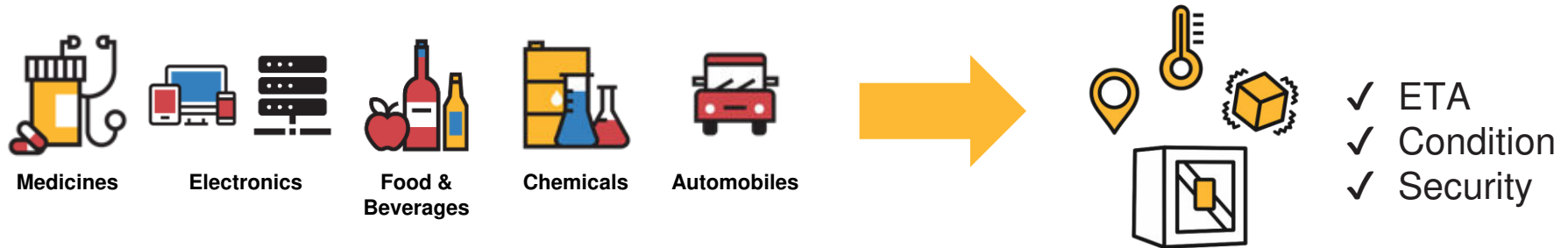
Automobiles



Shipment Visibility



End-to-End Visibility of Goods





Shipment Visibility

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

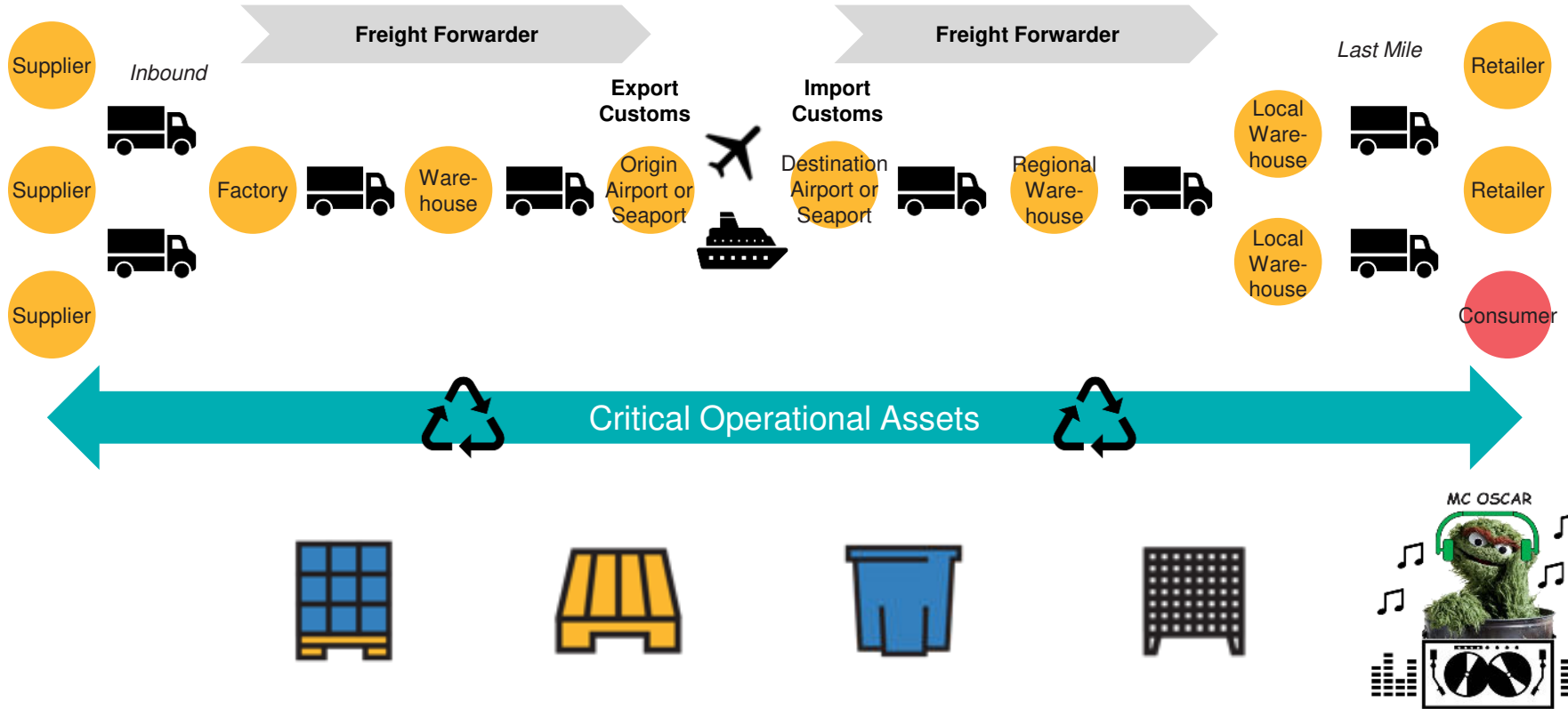
With, we can see much more clearly.



But is there more to see?



What's Missing?



General Use Critical Operational Assets

Intermodal Shipping
Containers



Crates



Pallets



Bins



Chemicals & Solvents



Drums



ISO Tanks



IBC Totes



Rail Cars



Automotive



Bins



Molds and Dies



Industrial
Packaging



Food & Beverages



RPCs



Bag-In-Box Systems



Railboxes



Kegs



Pharmaceutical & Life Sciences



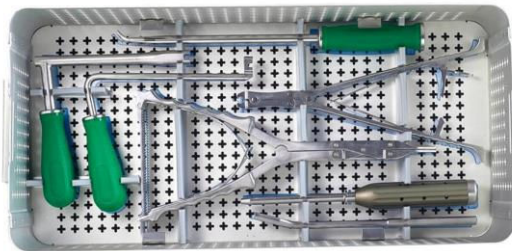
Insulated Pharmaceutical
Packaging



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)



Complete Supply Chain Visibility



Complete Supply Chain Visibility:
Shipments & Critical Operational Assets



Supply Chain Visibility: Shipments

No Supply Chain Visibility

Shipment or Asset?

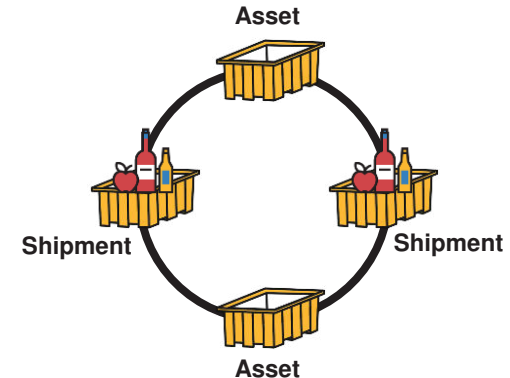
Transitive: Asset to Shipment to Asset



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?

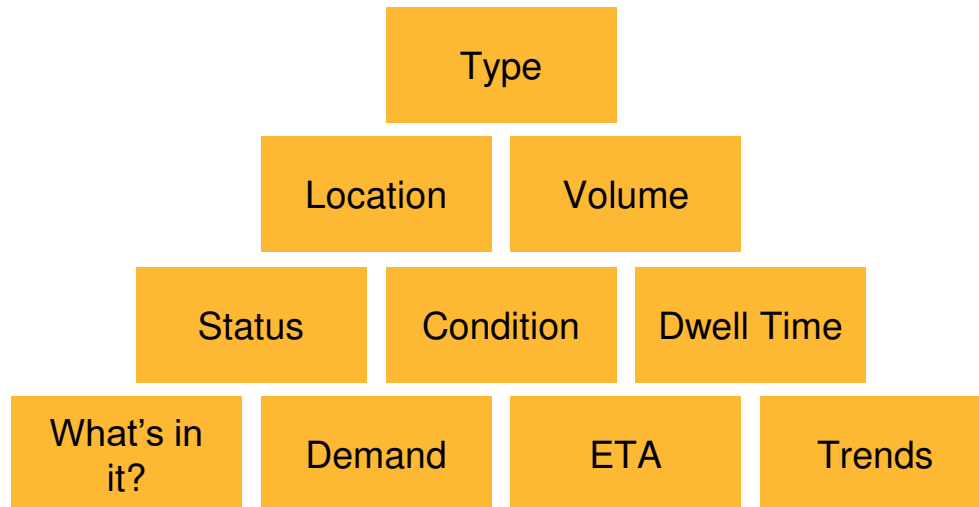
- **Barcodes**
- **RFID**
 - Passive
 - Active
- **LoRaWAN**
- **Bluetooth**
 - Beacons
 - Labels
- **IoT**
 - 4G/5G cellular & GPS
- **Combinations**
 - Barcode and RFID
 - IoT & Bluetooth
 - RFID & IoT

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

What do we need to know?

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





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

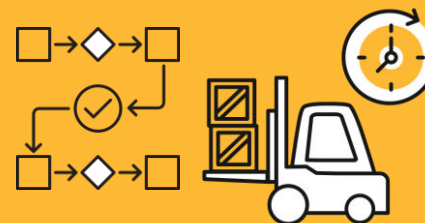
Containers | Tanks | Pallets | Bins | RPCs | Insulated Packaging | Industrial Packaging

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

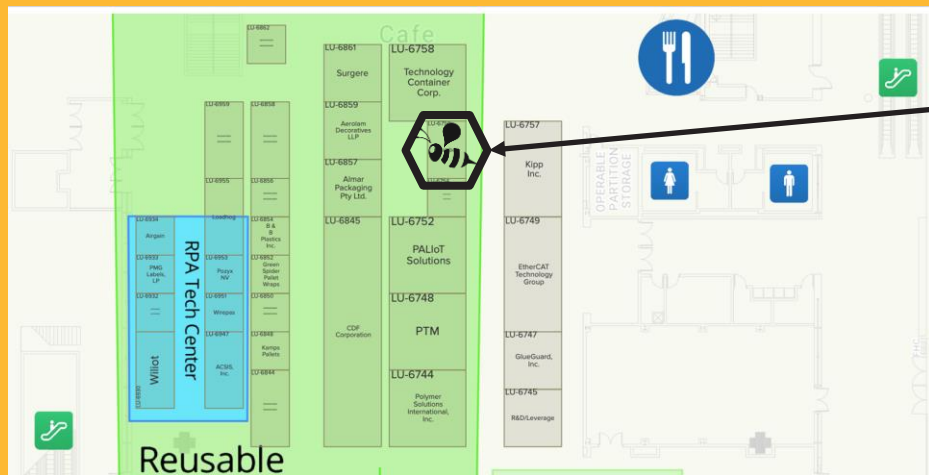
Benefits

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

To learn more, visit us at

www.roambee.com

Booth #6756 in the RPA Pavilion



Upcoming joint webinar with:



Josh Taylor



**Reusable
Packaging
ASSOCIATION**

Tim Debus

Wednesday, November 30th

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



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



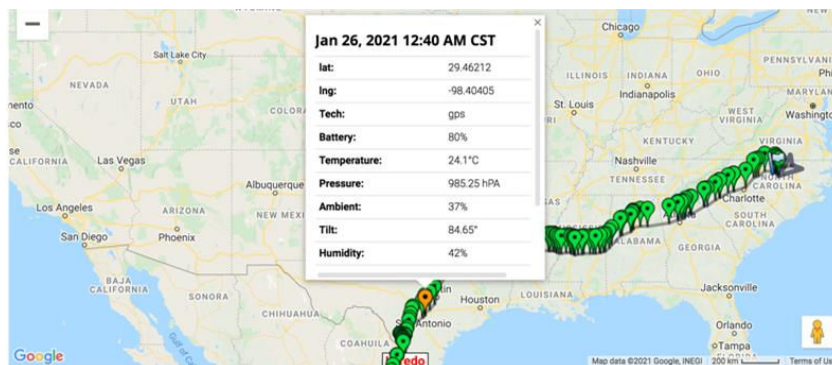
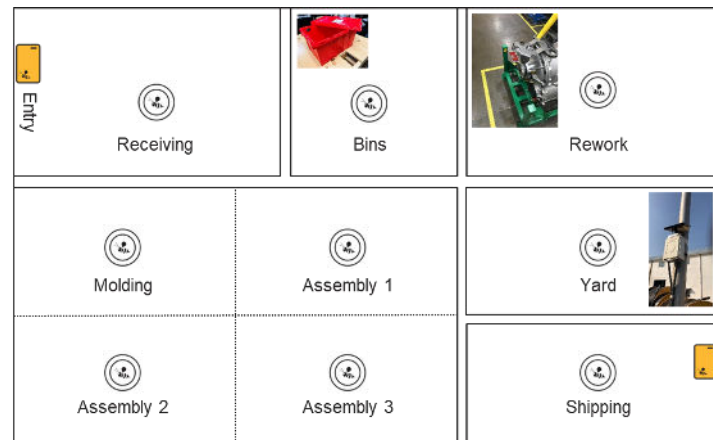
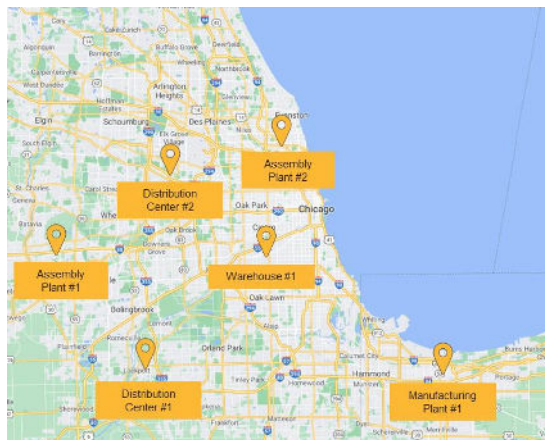
Bin



What do we need to know?



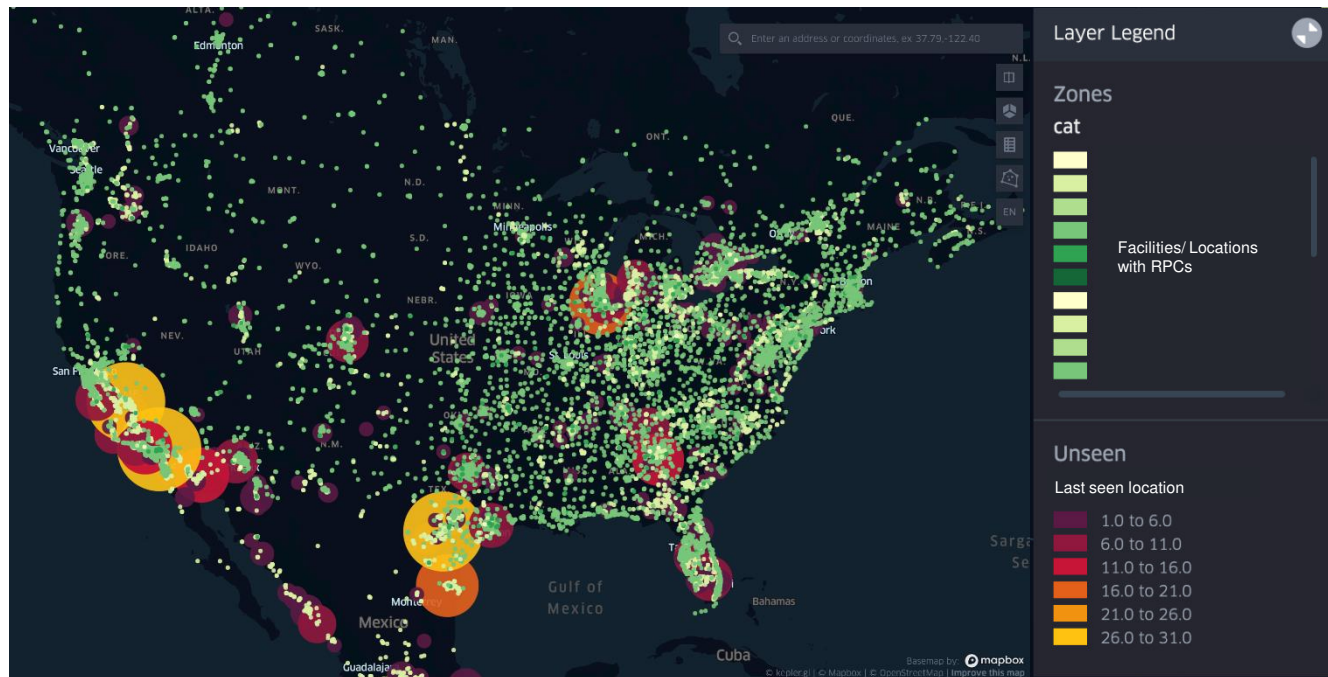
1. Type
2. Location
 - Facility
 - Zone
 - In-Transit



What do we need to know?



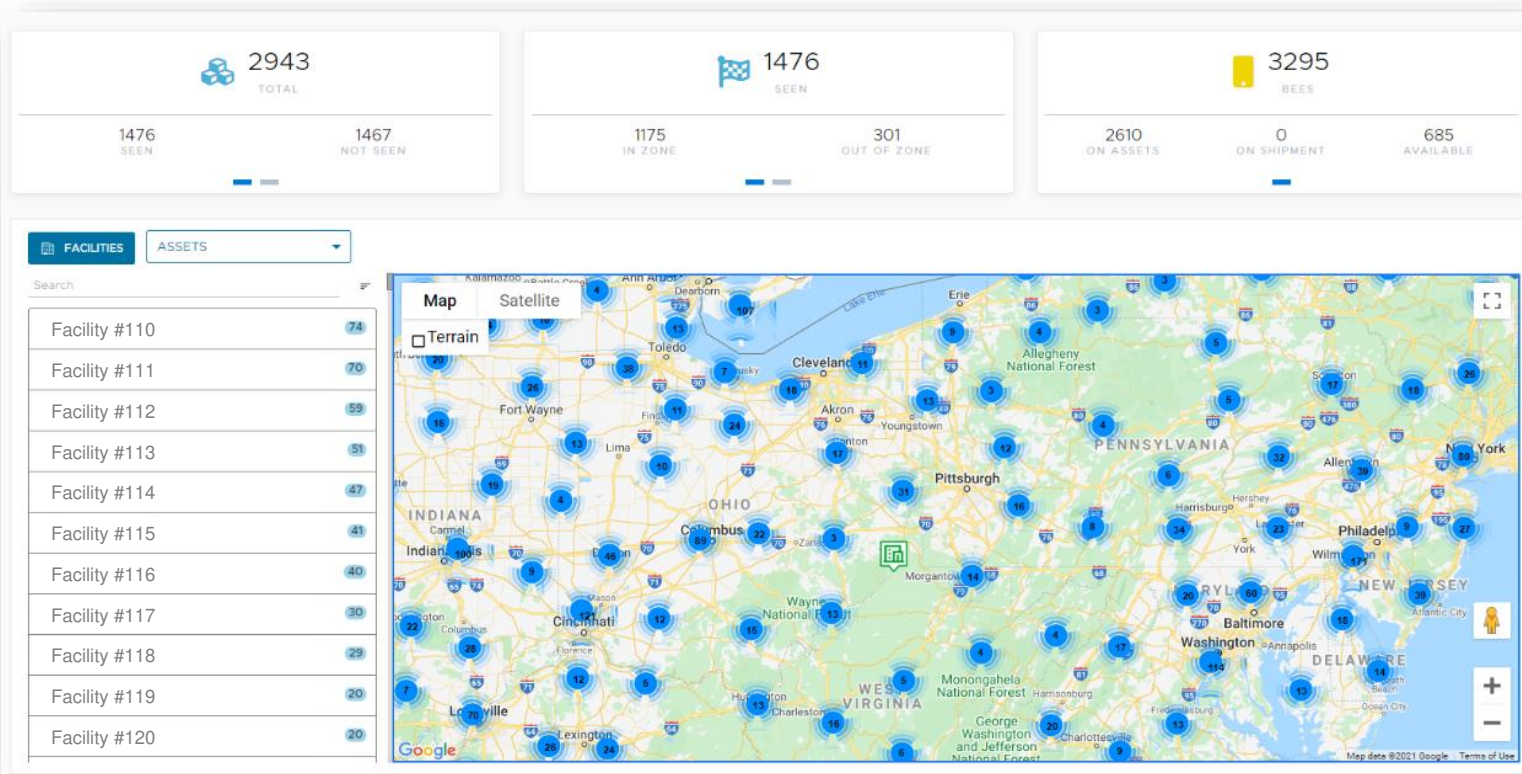
1. Type
2. Location
 - Facility
 - Zone
 - In-Transit
 - In “the field”



What do we need to know?



1. Type
2. Location
3. Volume

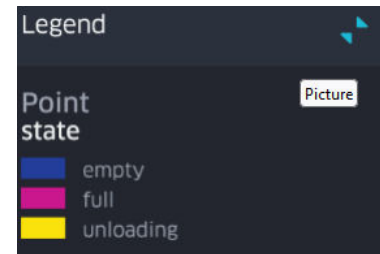


What do we need to know?



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

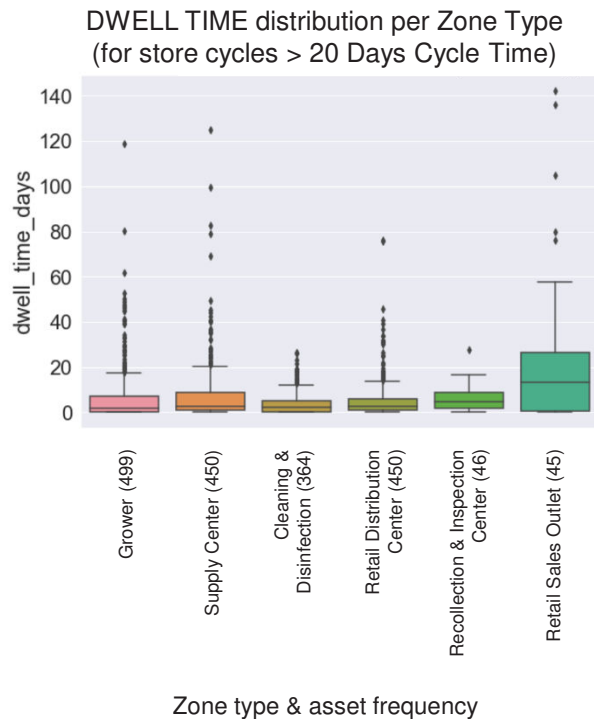
- Available/unavailable
- Empty/full
- Loading/unloading
- Dirty/Clean



What do we need to know?



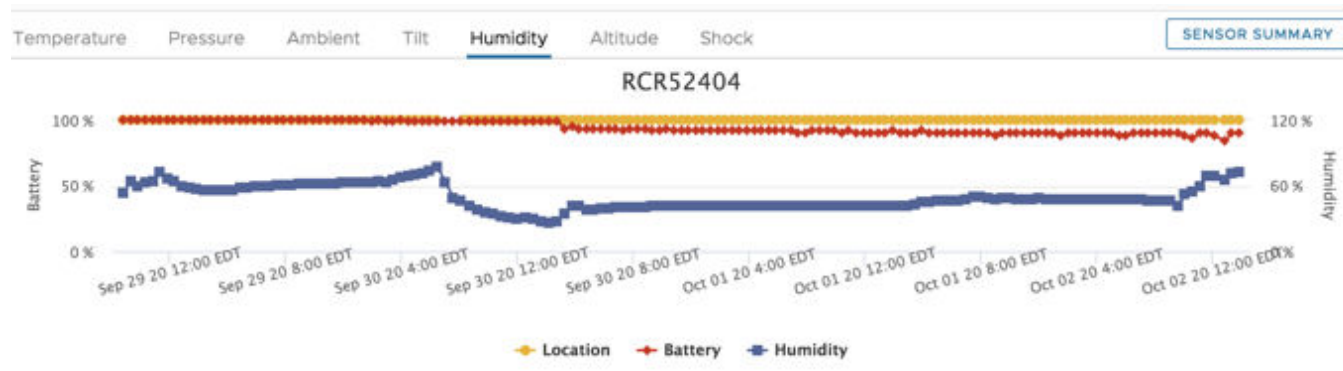
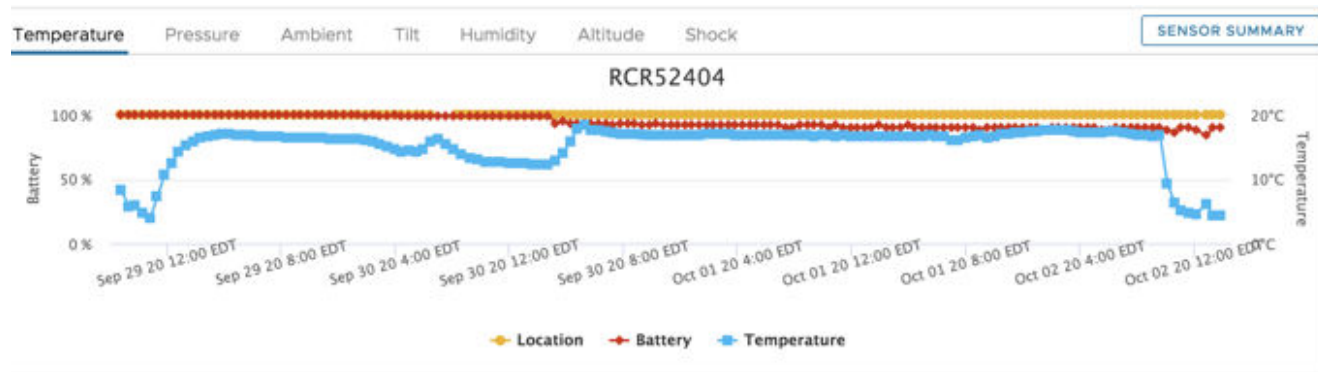
1. Type
2. Location
3. Volume
4. Status
5. **Dwell Time**



What do we need to know?



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



What do we need to know?



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



7. What's in it?

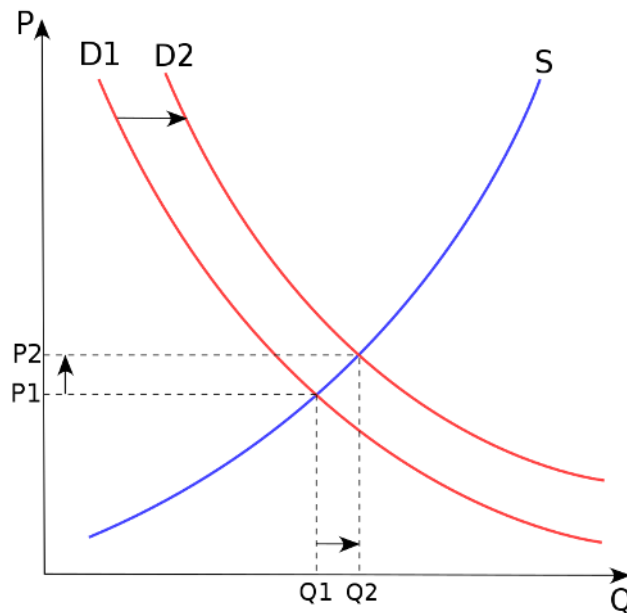
- Product Type
- Product SKU
- Product volume
- Condition thresholds
- Expiry dates
- Potency timelines

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?

What do we need to know?

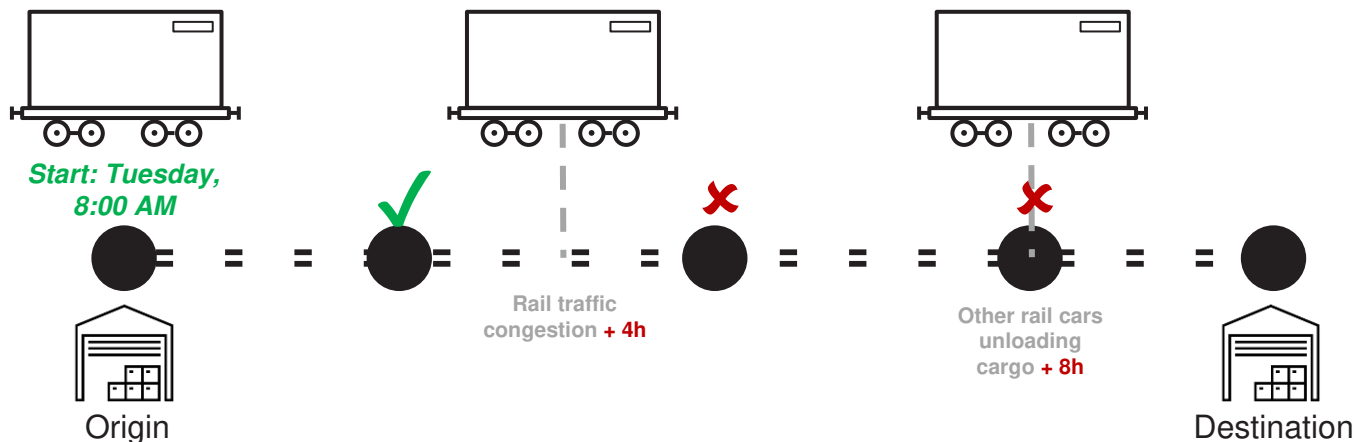


1. Type
2. Location
3. Volume
4. Status
5. Dwell Time
6. Condition
7. What's in it?
8. Demand
9. **ETA**

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

**Empty railcar (10)
return**



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

