

MESH SYSTEMS

An IoT Solutions Innovator

Supply Chain Asset Tracking

Optimizing the use of returnable/
reusable shipping assets



Agenda

1. Impact of reusable shipping assets not being returned
2. Challenge of getting customers to return reusable shipping assets
3. Introducing Mesh Systems Supply Chain Asset Tracking
4. Ensuring on-time delivery of sensitive chemicals
5. Creating an end-to-end tracking platform with Azure IoT Central

Impact of having to replace shipping assets

10-40%

Reusable and returnable shipping assets vanish annually with some organizations regularly losing 25%¹

10-15%

Surplus returnable shipping assets routinely ordered by OEM to account for loss and shrinkage over time²

85%

Quantifiable savings are attributed to lower expenses by using >1.5 million reusable containers at John Deere factories³

Difficulty of boosting the return of reusable assets

Inability to track assets in real-time

Challenge of determining in real-time the location and condition of potentially thousands of returnable shipping assets, which could be in-transit, at warehouses and distribution centers, at end-customers' sites or in inventory, waiting to be filled.

Misplaced, stolen or damaged assets

There's a sizable market for reusable containers, with unscrupulous resellers, recyclers, and "pallet pirates," profiting from companies that don't monitor their returnable assets. Additionally, customer might not realize assets are returnable so they might damage the assets or use them for other purposes.

Reliance on manual recordkeeping

While aspects of companies' supply chains are usually digitized, there may be gaps in visibility across shipping and receiving providers, intermediaries, and end-customers who continue to use manual recordkeeping, tracking, and auditing, such as drivers manually verifying delivery and pick-up of cargo

Mesh Systems Supply Chain Asset Tracking helps expedite the return of reusable shipping assets



Optimizes use of
reusable shipping
assets



Reduces operating
and supply chain
expenses



Increases supply
chain agility and
security



Expedites rapid return and reuse of returnable shipping assets

SIMPLIFIES PROVISIONING

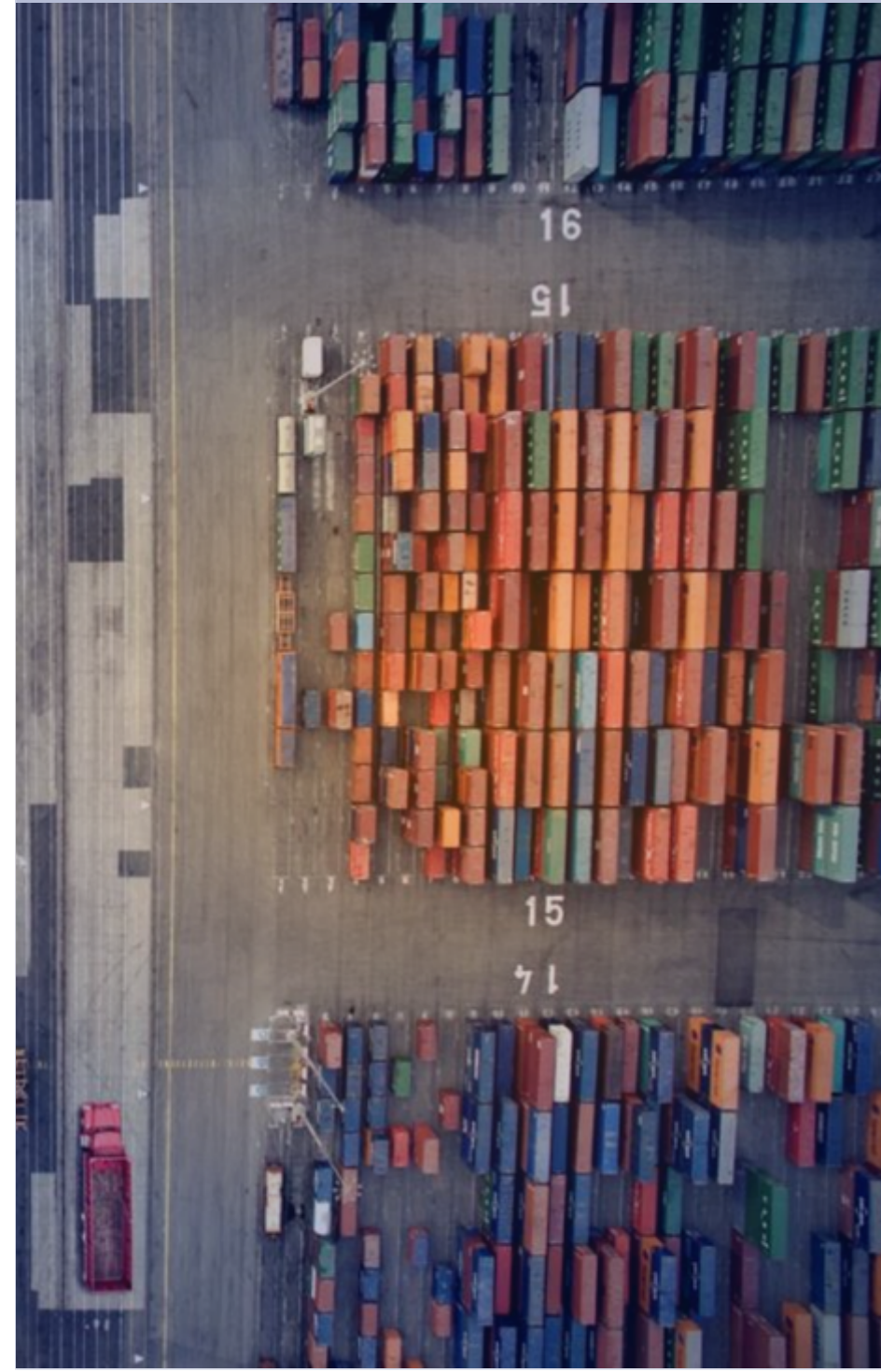
Uses versatile, low power consumption BLE tags, which are quick to install on a breadth of reusable shipping assets: Plastic pallets, totes, containers, racks, and trays

TRACKS INDOORS AND OUTDOORS

Supports tracking and monitoring assets indoors, outdoors, and in-transit from a centralized location or using a mobile app on a smartphone or tablet

GENERATES ALERTS TO ISSUES

Generates alerts and alarms when parameters are exceeded, and provides a customizable dashboard to visualize the flow of returnable assets and real-time status





Reduces expenses by recovering misplaced and stolen assets

SPEEDS UP RETURN OF ASSETS

Tracks thousands of assets, expediting their return so they can immediately be reused, and pinpoints inefficiencies within supply chain by assessing flow of assets

REDUCES SHRINKAGE

Pinpoints location of misplaced, damaged, or stolen assets, and identified when assets are swapped for those of lesser quality or use for non-shipping purposes

USES WIDELY AVAILABLE COMPONENTS

Reduces costs by supporting use of widely available, low-cost commodity asset tags, and powers other components using Power over Ethernet (PoE) or solar panels





Connect your assets
at any scale without
worrying about
infrastructure or security

SIMPLIFIES SCALING OPERATIONS

Makes it easier to track additional assets and types of assets along with conditions within shipping assets by using BLE tags, which are easily provisioned, using a mobile app

INTEGRATES WITH OTHER SYSTEMS

Provides secure APIs for integration of asset data with 3rd-party solutions, such as ERP, asset management systems, and other operational and supply chain processes

PROVIDES HIGH-LEVEL OF SECURITY

Reduces security risk with BLE Mesh security measures that are mandatory and can't be disabled, and offers three types of security keys: DevKey, NetKey, and AppKey



Ensures on-time delivery of sensitive chemicals



Evonik, one of the world's leading specialty chemical companies, needed to ensure the timely delivery of temperature sensitive chemicals. Their products help make tires fuel-efficient, mattresses more elastic, medications more effective, and animal feeds healthier.

Mesh Systems provided a turnkey solution, including hardware, mobile application, cloud software, and web-based portal to track their shipments and the condition of these shipments in real-time.

INCREASED SATISFACTION

Uses Bluetooth environmental sensors to ensure chemicals are kept at the right temperature and delivered when specified

SIMPLIFIED INTEGRATION

Integrates with Evonik's shipment management systems in SAP, and other third-party and propriety systems

SPEED UP RESPONSES TO ISSUES

Monitors location and temperature in real-time, and triggers alerts and alarms when issues are detected

PROVIDED NEED SCALABILITY

Created the foundation for larger Bluetooth-based logistics and supply chain tracking and monitoring

Uses Azure IoT Central for end-to-end tracking

Quickly connect thousands of returnable/reusable shipping assets



Fast and easy
set-up



Build without cloud
development
expertise



Connect assets on
the edge at any
scale



Best-in-class
security and
enterprise-grade
services



Full integration
into business
systems



Start increased the trackability of your reusable shipping assets

- We'll connect you with the Mesh Systems asset tracking team to learn how you can quickly provision tracking tags: sales@mesh-systems.com
- Learn more about the Supply Chain Asset Tracking at mesh-systems.com
- Learn more about Azure IoT Central at AzureIoTCentral.com

MESHSYSTEMS



Microsoft

Supply Chain Asset Tracking

Mesh Systems Reference Architecture

