

WCO IT/TI

Conference & Exhibition  
12-14 June 2019  
Baku, Azerbaijan



with connected devices

leveraging ***Internet of Things***

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# Microsoft IoT Viewpoint





**...IoT** enables an **eCustoms**  
and **eTrade business revolution**,  
enabled by technology

# Waves of Innovation

## Cloud

Globally available, unlimited compute resources

## IoT

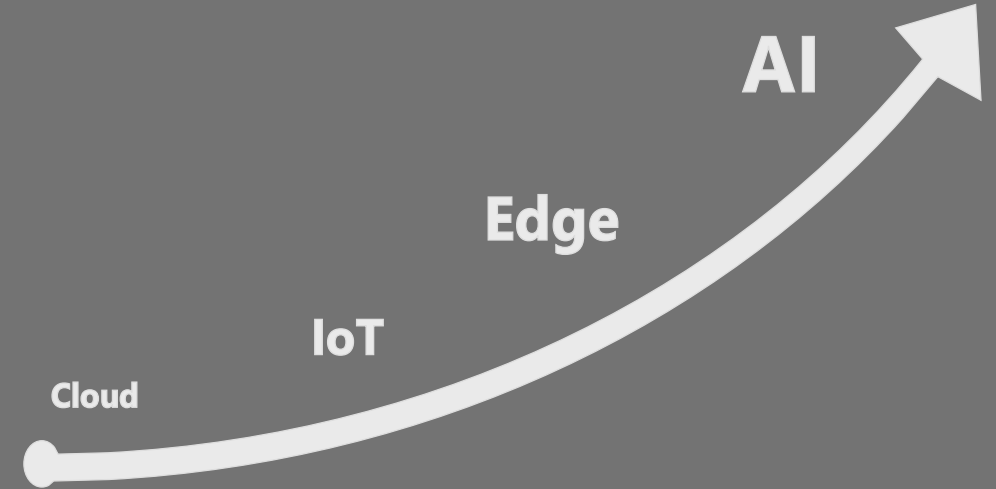
Harnessing signals from sensors and devices, managed centrally by the cloud

## Edge

Intelligence offloaded from the cloud to IoT devices

## AI

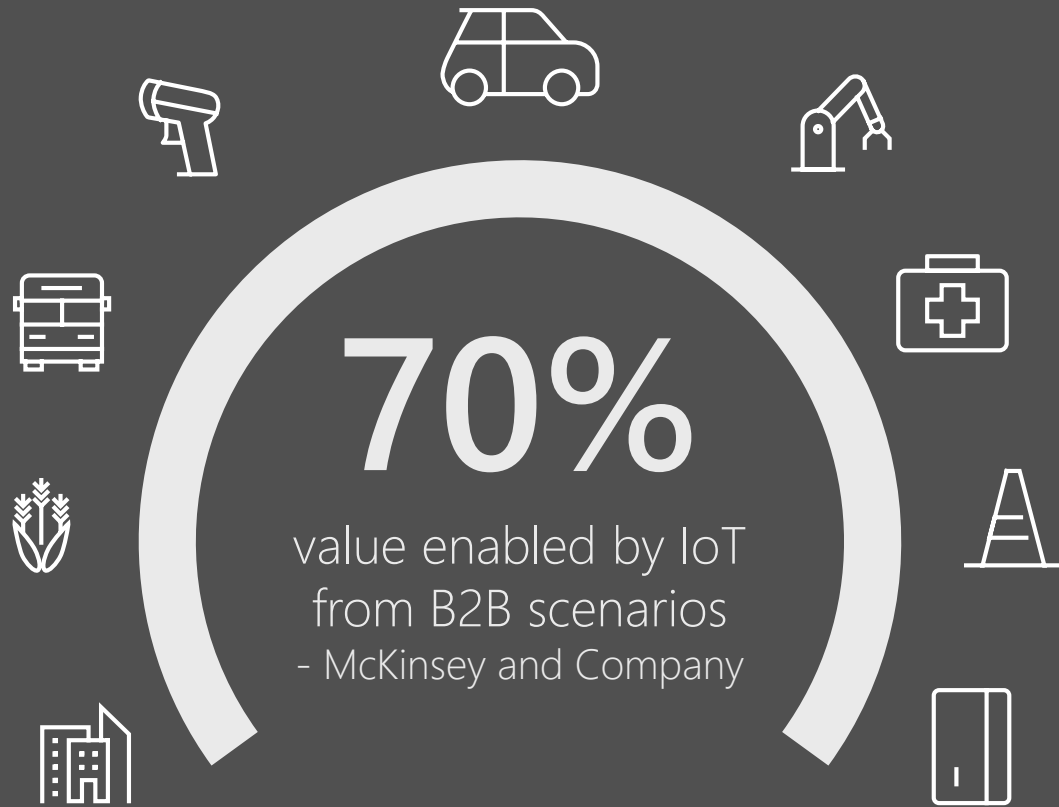
Breakthrough intelligence capabilities, in the cloud and at the edge



# Internet of Things is everywhere



# Internet of Things is big



**80 billion**

connected "things" by 2025 - IDC

**180 zettabytes**

digital data by 2025 - IDC

**\$457 billion**

global IoT market by 2020 - Gartner

# A Simple View of an IoT Solution



# A More Realistic View...



... and why IoT needs simplifying

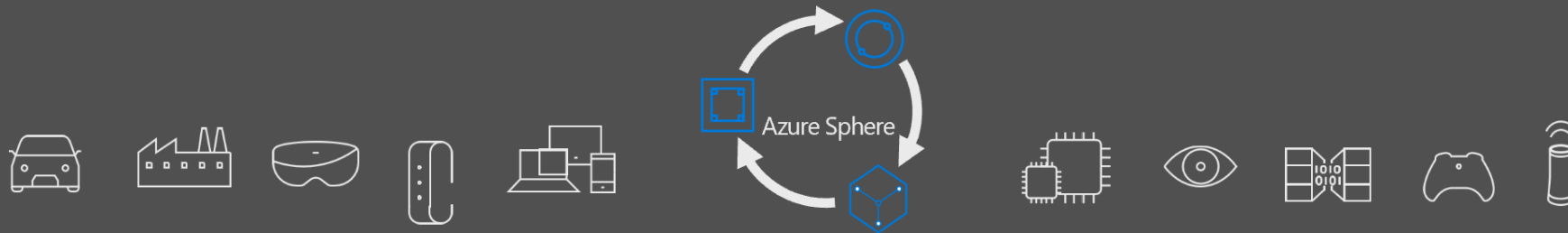




Intelligent Cloud

Intelligent Edge

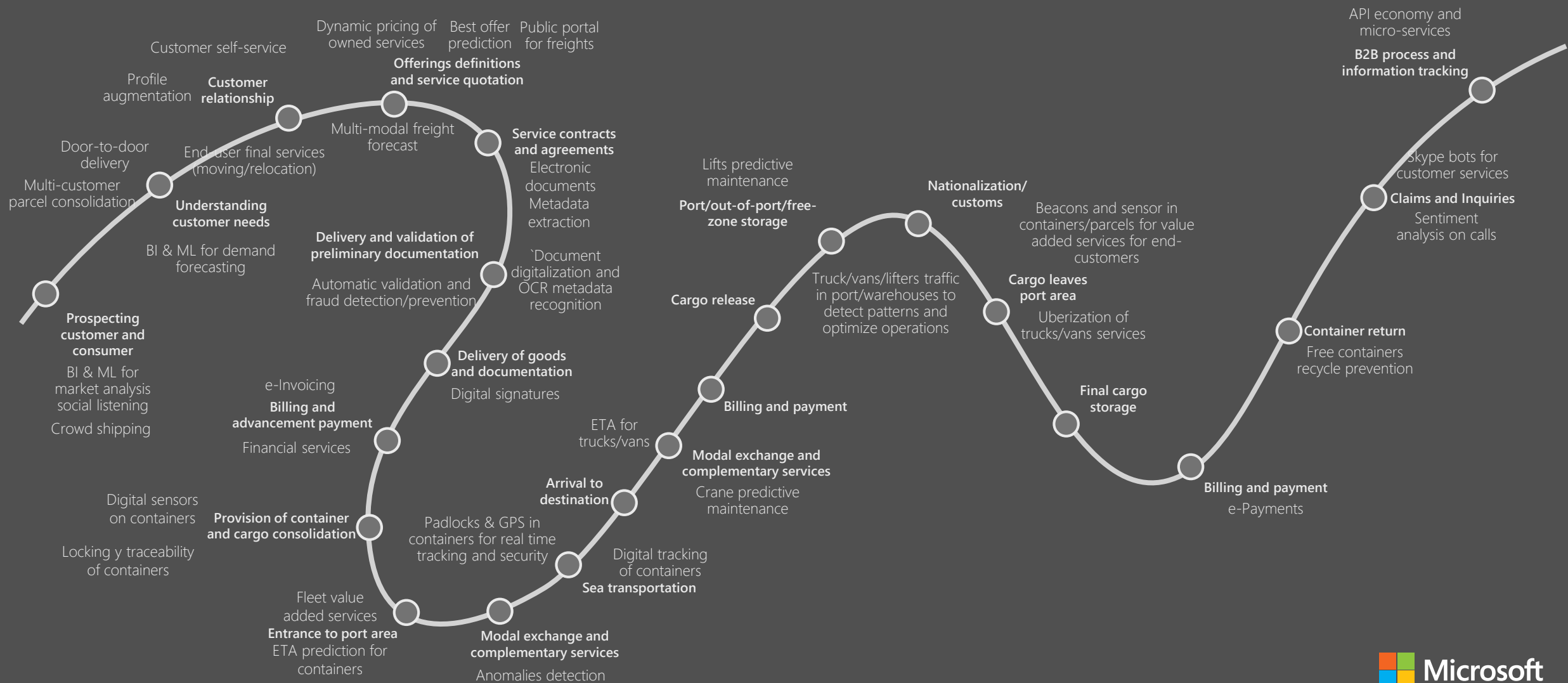
Azure  
IoT PaaS & SaaS  
IoT solutions and services  
Data & AI Platform



Azure IoT Edge



# IoT in every phase of the eCustoms & eTrade Experience Journey







Freight



Airplanes



Buses

Cargo tracking  
 Fleet monitoring  
 Predictive maintenance  
 Arrival predictions  
 Transport conditions  
 Location Intelligence for Transportation  
 Smart seals  
 Digital Twins



Shipping



Trucks



Trains



Location



Traffic Systems



Engines



Communications



Pets



Livestock



Vaccinations

Livestock & Pets  
 Origin Tracking  
 Health & Vaccines  
 Tracking of  
 timber/lumber



Public Safety



Surveillance



Security



Augmented  
reality



Drones



Equipment



Warehouse



Worker Safety



Wearables

# Internet of Things for eCustoms



Smart Seals



Factories



Multilayer  
QR – RFID

Traceability from producer to Buyer  
 Food Safety  
 Origin Tracking - Quality attestation  
 Counterfeit & Fraud detection  
 Multilayer QR & RFID  
 Smart seals



Agriculture



Port Cranes



Buyer

Identify and monitor threats  
 Site Security and Surveillance  
 Car plate – Container identification  
 People traceability– Site access control  
 Movement Pattern detection  
 MFA and Smart Badging  
 100% Scanning  
 Warehouse Stocking conditions  
 Augmented Reality  
 Digital Twins



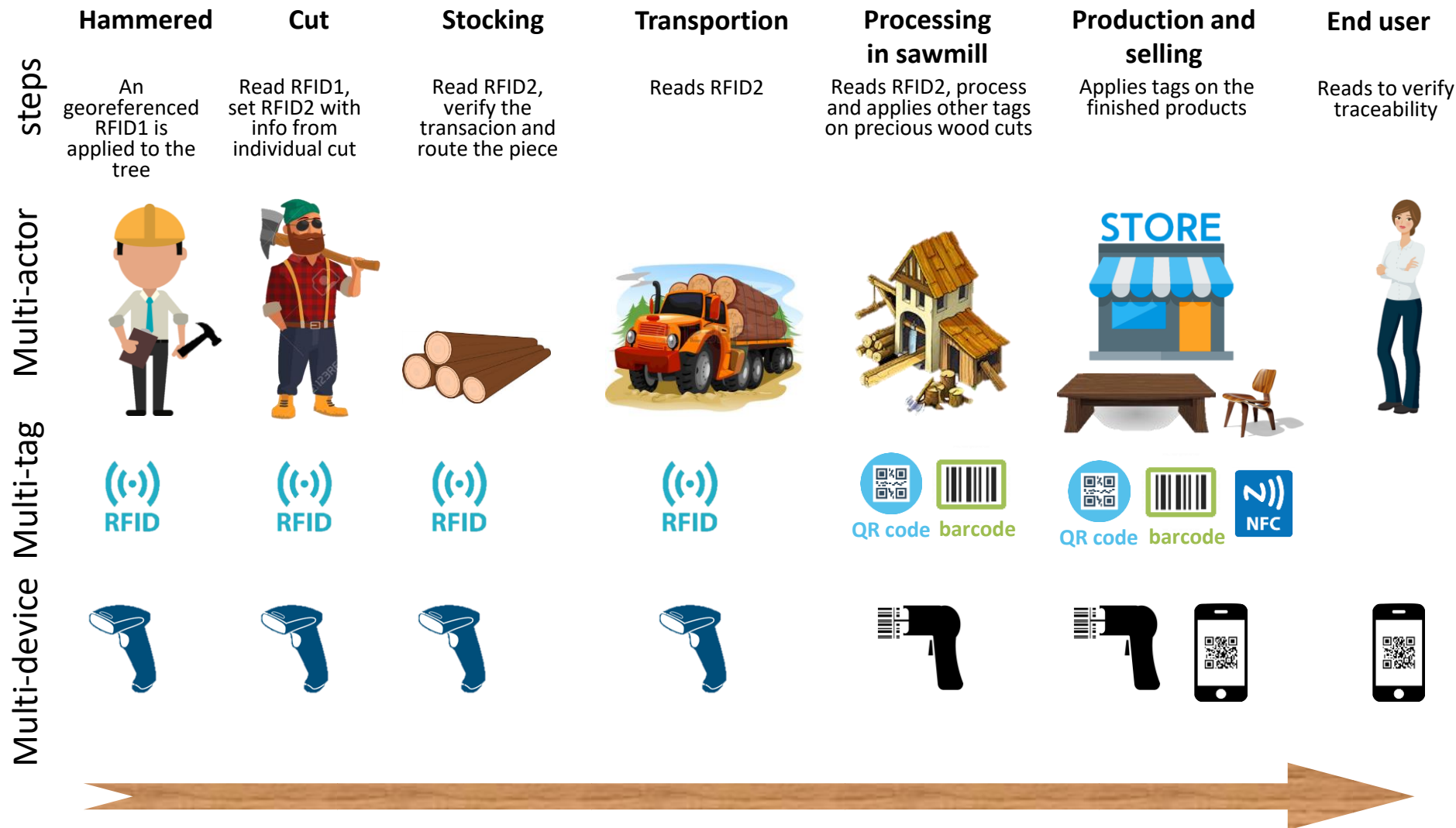


# Internet of Things for eCustoms



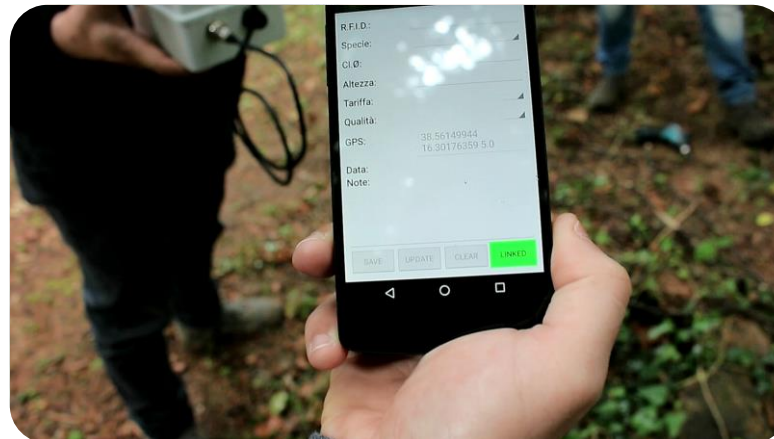


# Traceability of wood



# How it is done in the field

Uses RFID TAGS to identify the tree and the individual cuts  
RFID reader sync. via bluetooth with smartphone  
App that lets reference the biometric characteristics of the plant and georeferencing it and the individual cuts







# Fleet Management

California Logistics Supervisor



Home



Alerts



Assets



Staff



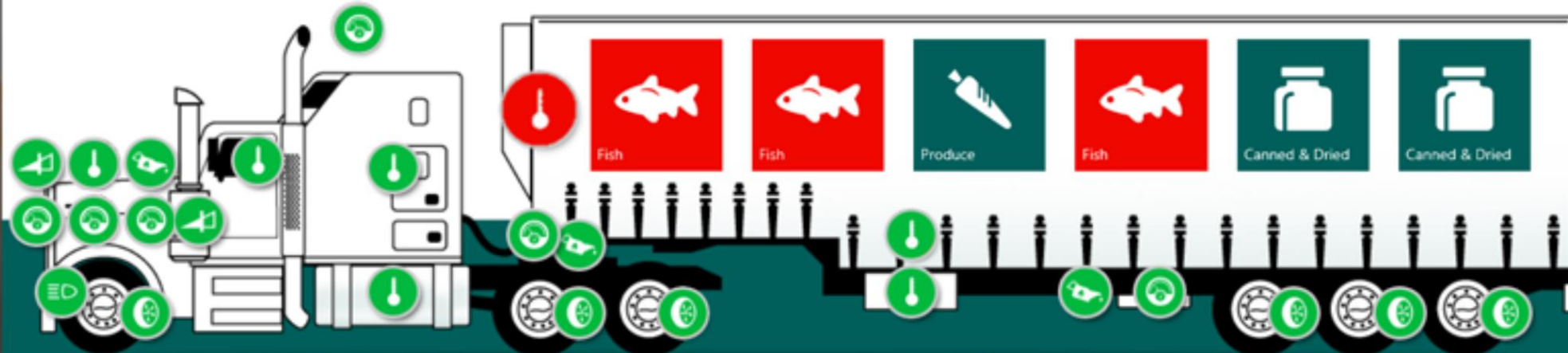
Admin

## Truck Overview



Truck #23904

Trailer #45-LAU-976



### Cab

Make: Contoso Heavy Hauler  
Model: 2u5-6724  
Odo: 1,112,039 miles  
Vin: 1MCBC33W8Q8122158  
Plate#: WA A4Z-4781  
Engine: 9.8l Contoso V12

### Maintenance

Company: Contoso Repairs  
Contact: Jim Hance  
Last: 12/06/2014  
Scheduled: 09/12/2015

### Trailer

Make: Refrigeration Trailer Unit  
Model: YU-231-PIW  
Plate#: CA AM3-1182  
Length: 48'  
Capacity: 3,489 cu ft  
TARE: 13,500 lbs  
Airflow: 2,500 - 3,500 cfm

### Maintenance

Company: Contoso Repairs  
Contact: Jim Hance  
Last: 10/15/2014  
Scheduled: 10/15/2015

Det

Driv



Time  
Estim

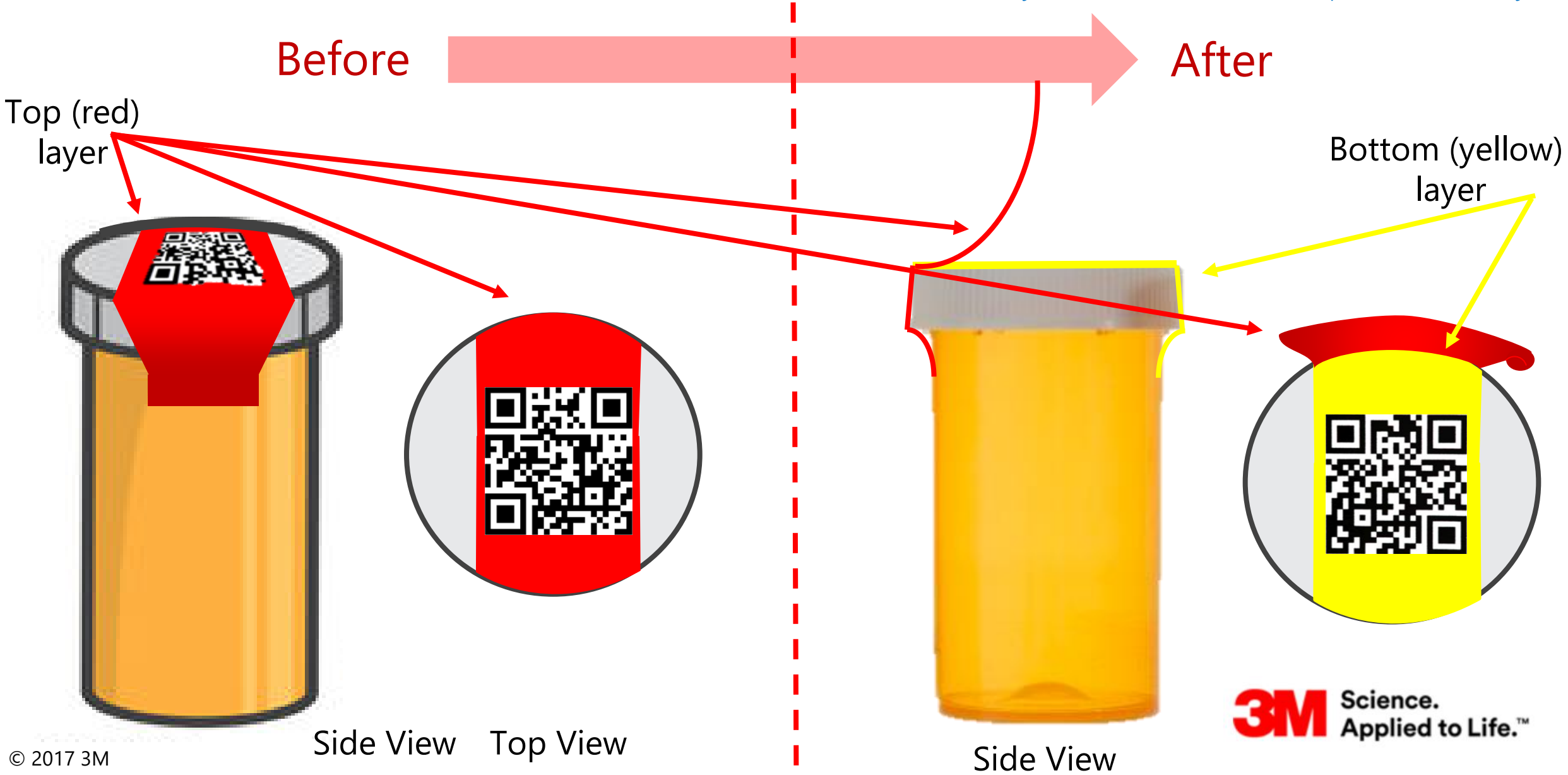
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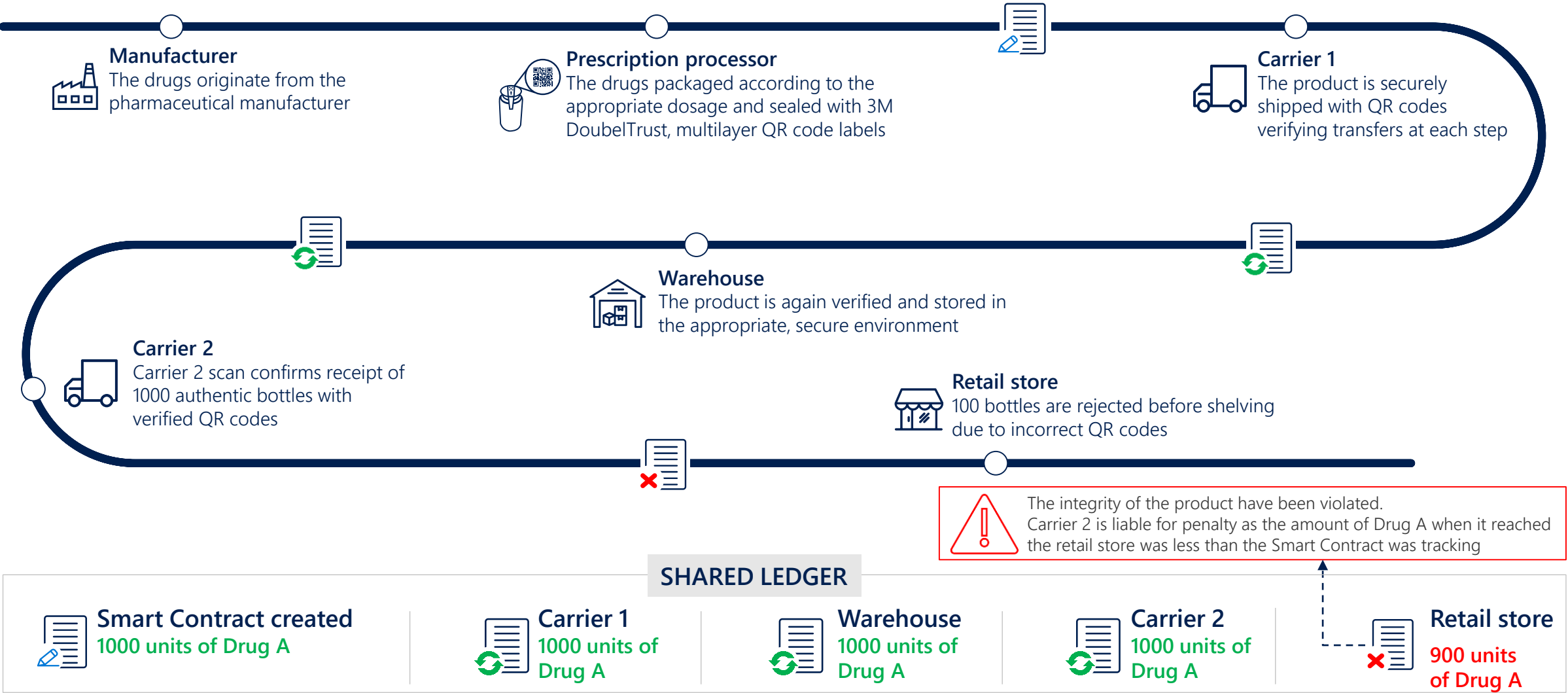
# Validate your product's authenticity

# DoubleTrust

A multi-layer QR Code label with special chemistry

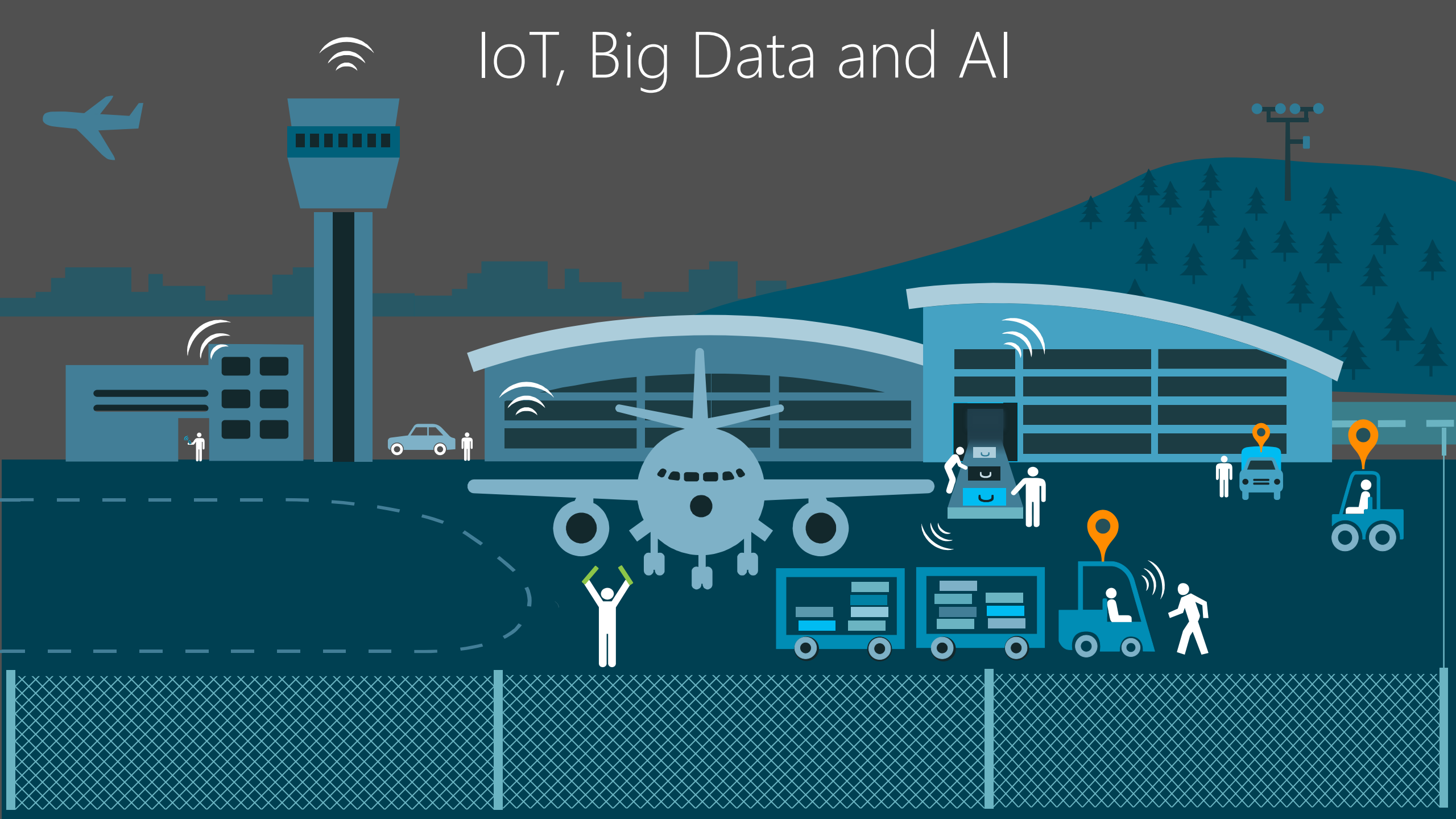


# IoT & Blockchain in Action | Pharmaceutical authenticity



At various points in the journey, the IoT device scans the QR codes and records the unique serial numbers which are updated on the blockchain

# IoT, Big Data and AI



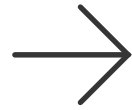


Machine Learning finds patterns in data  
then uses those patterns  
to predict the future

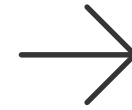
# Microsoft's approach to AI deployment



**Prepare data**



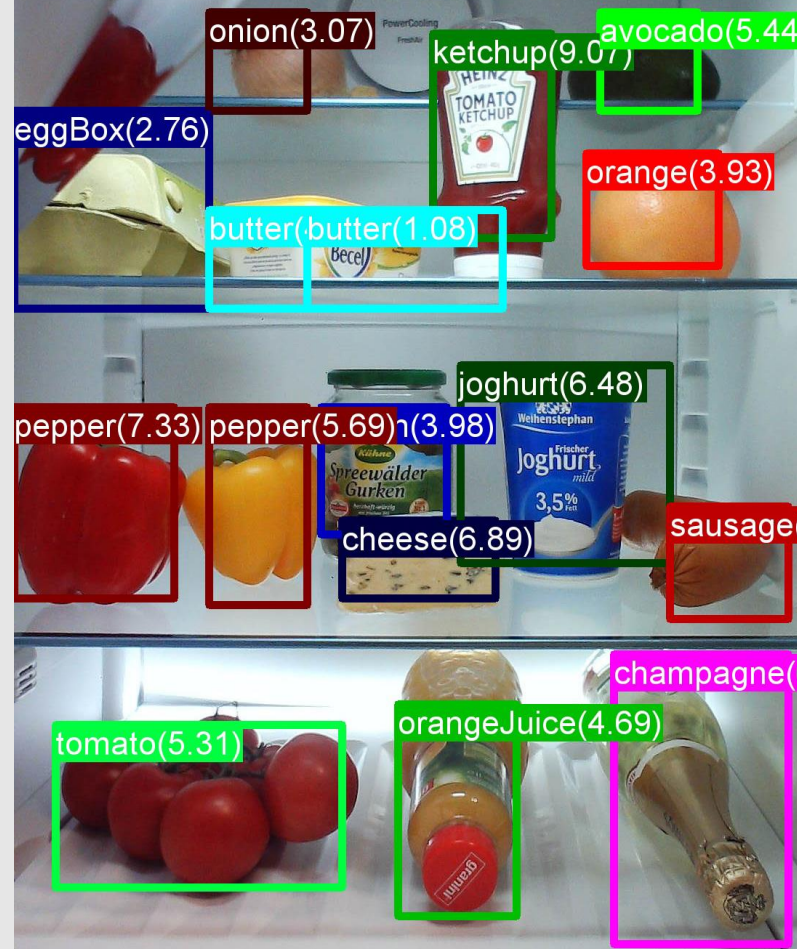
**Build & train**



**Deploy**

# Technology can perceive the world





# Azure IoT Edge

Vision AI Developer Kit



QUALCOMM

## Visual Recognition Intelligent Service

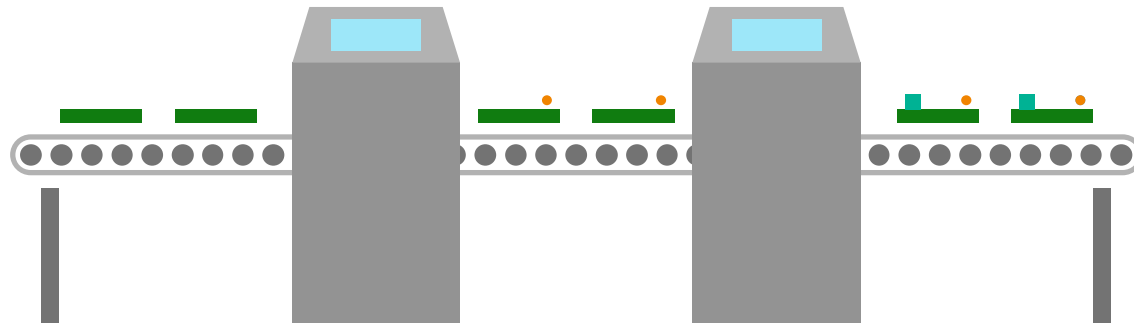
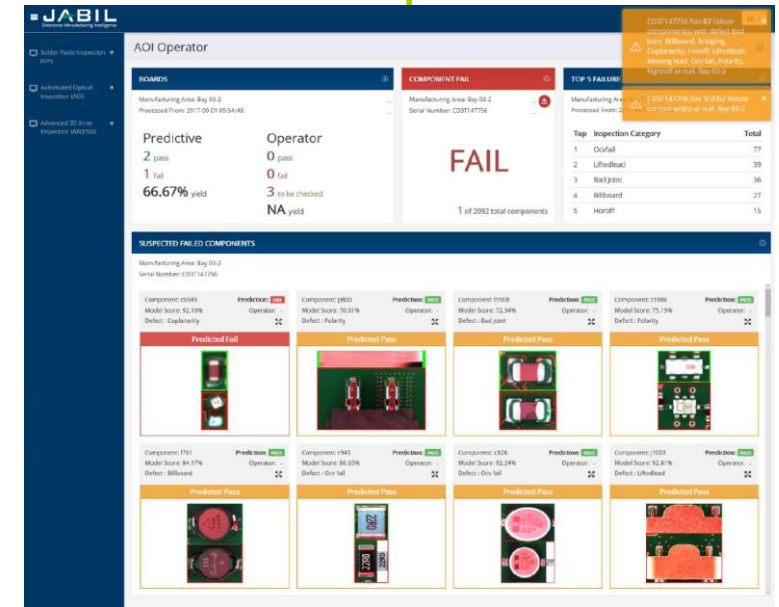
makes it easy to build a custom image classifier. For example:

- Identify whether a photo includes a picture of your product
- Differentiate between genuine versus counterfeit

<https://visionaidevkit.com/>



# JABIL



RKZ123610-1-2017-02-22 ✓

RKZ323220-1-2017-02-22 ✗

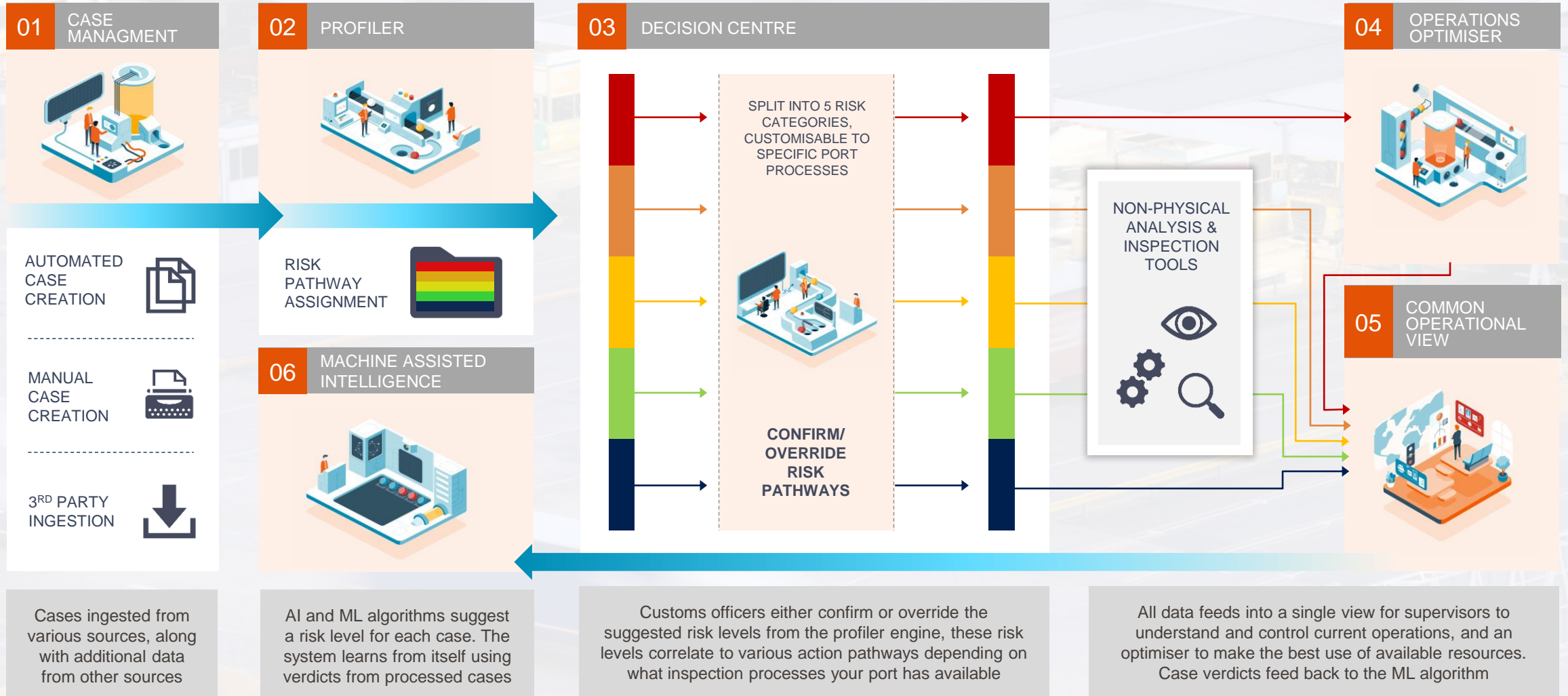
RYN901641-2-2017-04-01 ✓

RKZ123210-1-2017-05-10 ✗

## Optical Image Analysis

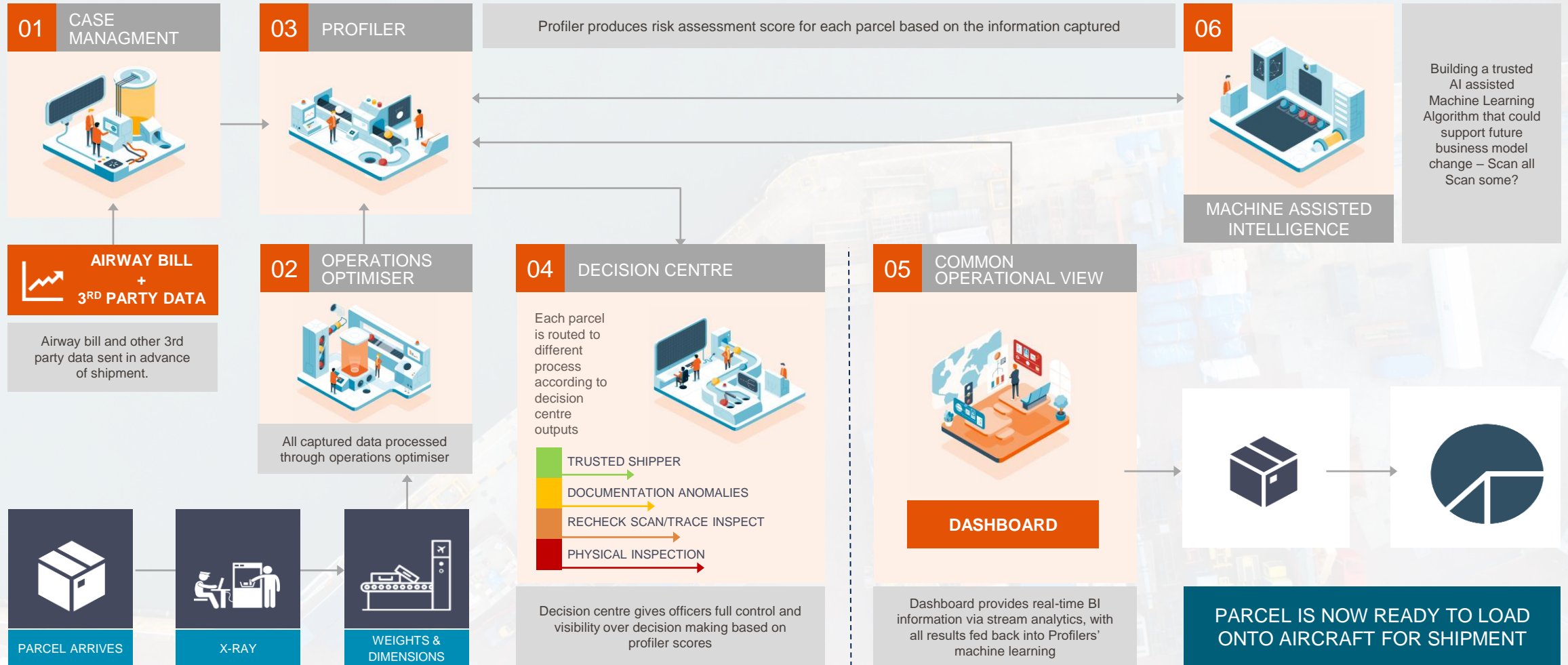


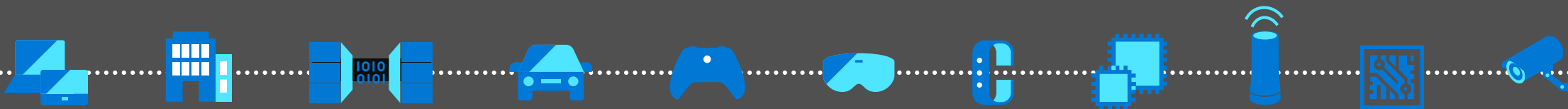
# → THE OVERALL PLATFORM – DIGITALLY ACCELERATING YOUR OPERATIONS





# WHICH CAN ADAPT TO DELIVER NEW AVIATION / AIR CARGO CONOPS

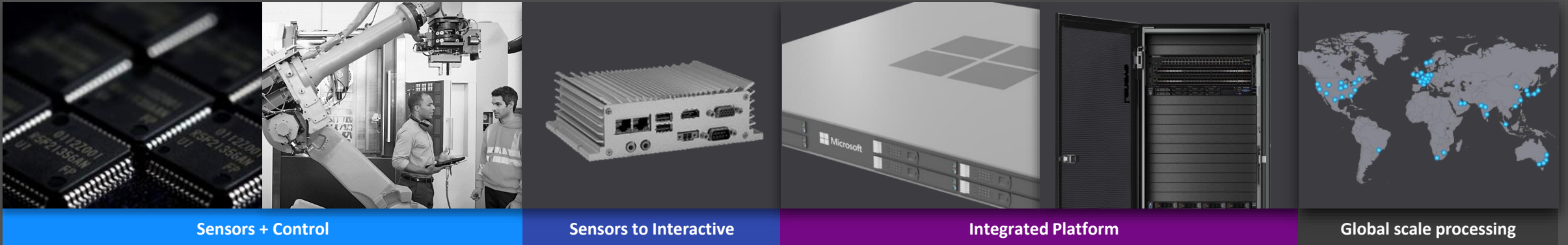




# Intelligent Edge



# Azure Intelligent Edge + broad Intelligent Cloud Taxonomy



## Microcontroller Azure Sphere

- Integrated Circuit designed to govern a specific operation in an embedded system
- Highly-secured, connected MCU
- Azure Sphere Linux OS for modern MCUs
- Included Azure IoT Device SDK

## IoT Devices Azure IoT Device SDK

- Endpoint devices such as appliances, vehicles, or factory machines that connect, interact and exchange data
- 1000+ devices
- 250+ partners
- All certified to work great with Azure IoT Hub

## Edge Devices Azure IoT Edge

- Devices that aggregate, process & provide gateway capabilities for IoT endpoints
- Deploy and manage Azure Services in containers on any IoT device
- AI, AzureML, Azure Stream Analytics and more

## Edge Appliances Azure Data Box Edge

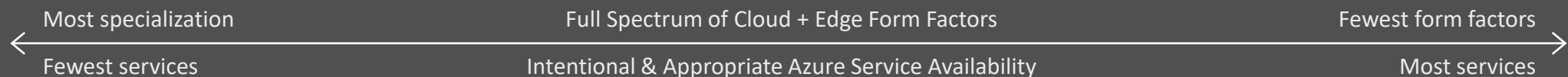
- Integrated appliances that provide a subset of cloud edge roles, such as ML-inferencing
- Data Box Edge: AI-Enabled, Storage and compute Azure Edge appliance
- Data Box: Offline, ruggedized data transport, 100 TB – 1 PB

## Edge Stack Azure Stack

- Scalable solutions that provide a full cloud stack, including IaaS and PaaS capabilities
- Edge and Disconnected Scenarios
- Regulatory Requirements
- Cloud app model on-premises

## Hyperscale Cloud Edge Regions

- First-party cloud regions
- Full Range Hyperscale Cloud Services
- Tiered Service availability: Heroes > Hubs > Satellites
- Open Source Based Services & Tools



# Microsoft has all the pieces to meet Customs and Industry IoT needs



Comprehensive  
portfolio



Open platform with  
industry-leading  
security



Leading  
Insights



Extensive partner  
ecosystem



Large-scale IoT  
experience

Only hyperscale cloud  
vendor to offer SaaS,  
PaaS and hybrid  
solutions for IoT

Any device, OS, data  
source and end-to-  
end security

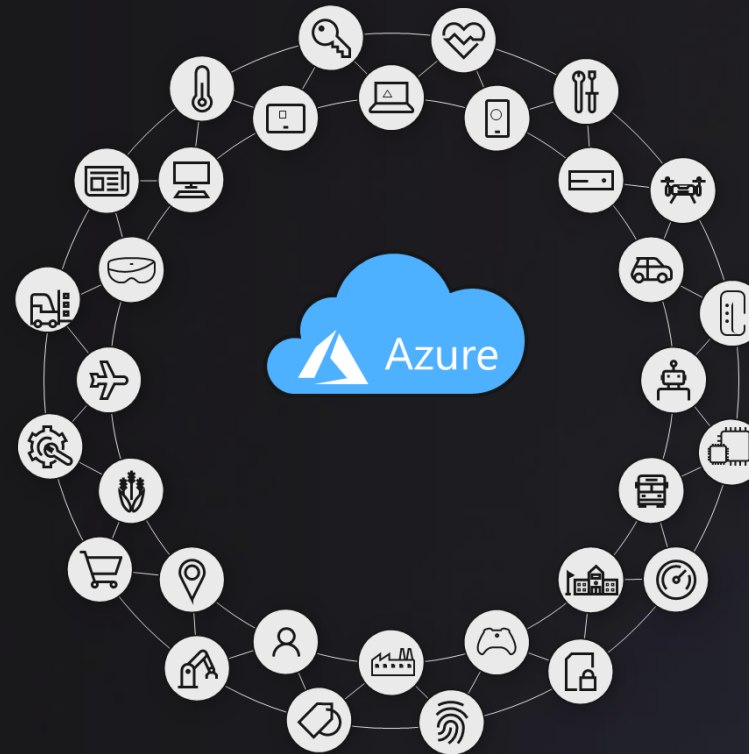
Gartner MQ leader  
BI and Analytics  
Platforms

Unique programs &  
industry leaders ready  
to collaborate with  
your business

Delivering powerful,  
user-friendly  
solutions at scale



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Download the white paper and [learn how to get more value from the Internet of Things](#)

