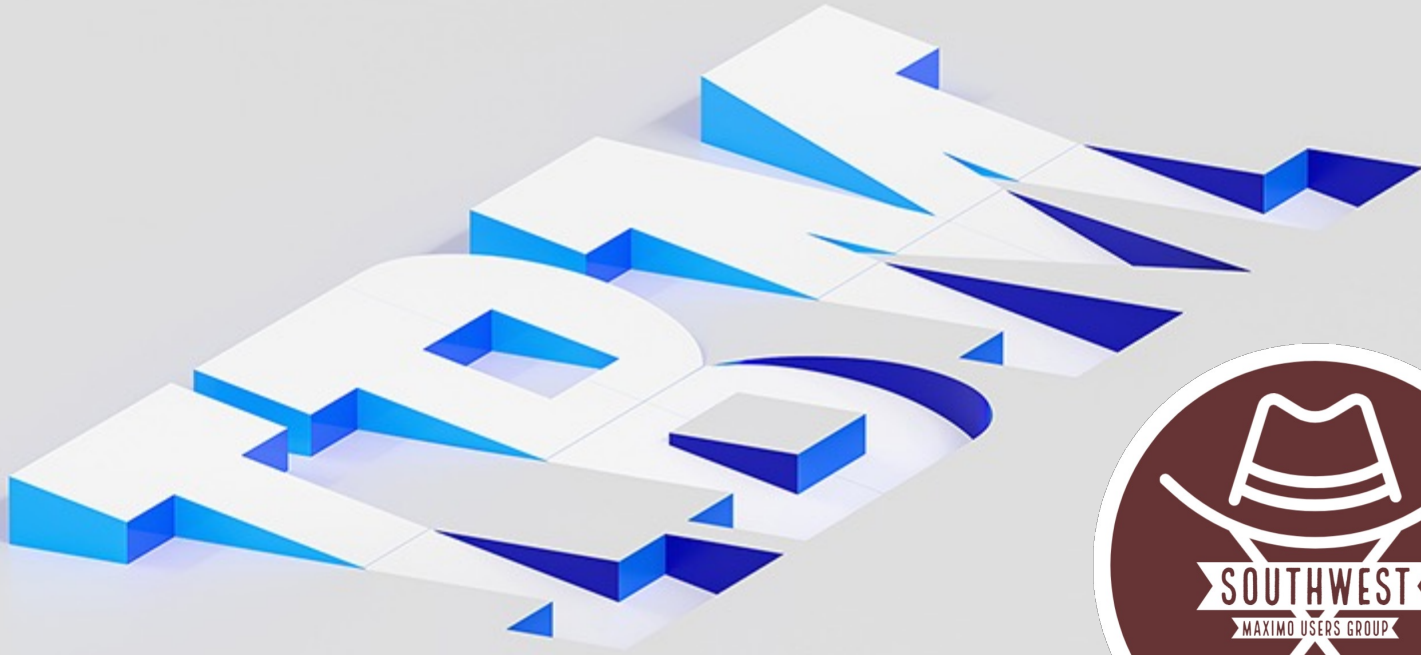


# Maximo Visual Inspection (MVI)





Rishab Nambiar  
Solutions Engineer | Sustainability Software



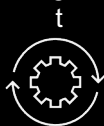
Rick Hatheway  
Solutions Engineer | Sustainability Software

# Maximo Application Suite

Best of class capabilities provide an integrated approach to optimizing assets

## Manage

Intelligent  
Asset  
Managemen  
t



## Monitor

Monitor and  
Detect  
Anomalies

## Health

360 View of  
Assets



## Predict

Predictive  
Failures



## Visual Inspection

AI-Powered  
Insights



## Schedule

Schedule  
Work and  
Resources



## Mobile

Technician  
Work  
Execution



## Assist

Prescriptive  
Assistance



## Safety

Actionable  
Insights for  
Worker  
Safety



IBM Cloud Pak for Data | IBM Watson Studio | IBM Watson ML

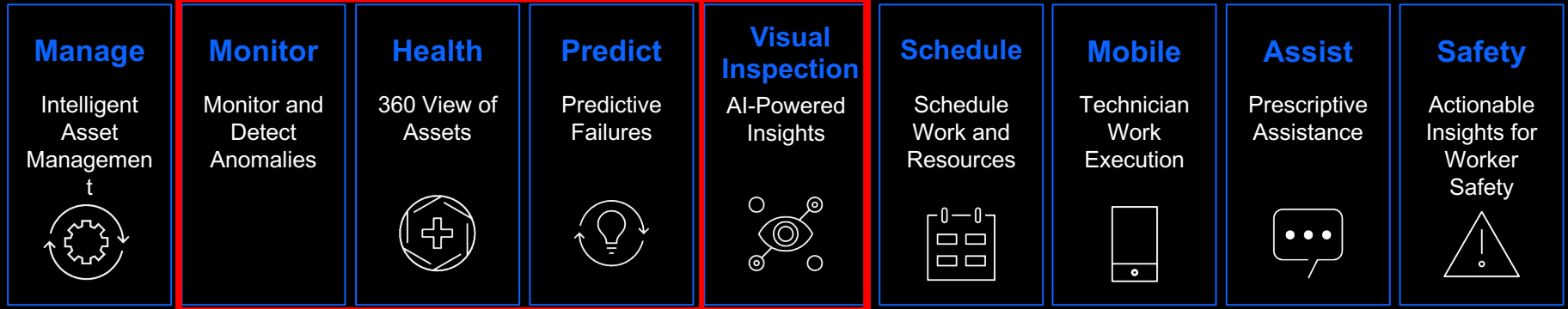


Infrastructure Independent  
Common Operating Environment

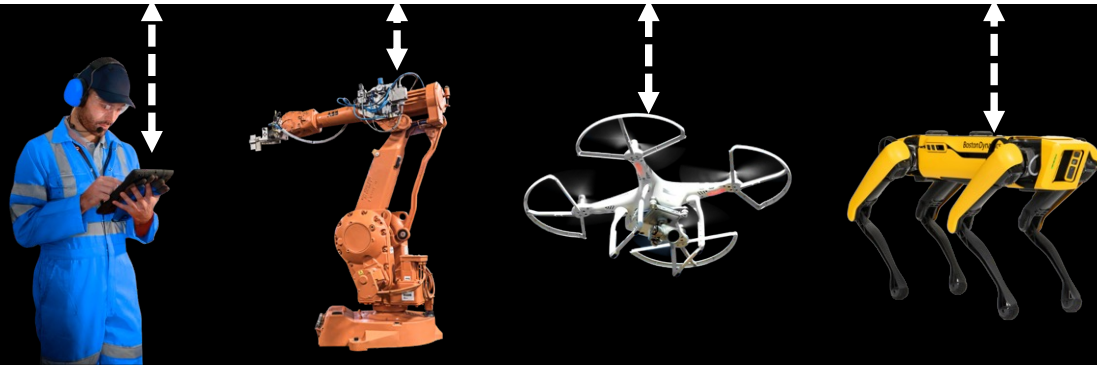
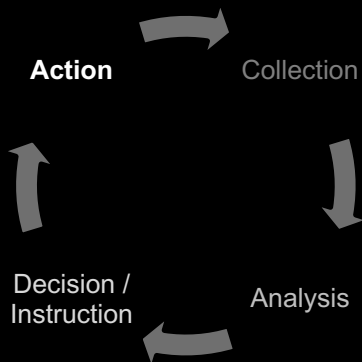


# Maximo Application Suite

Best of class capabilities provide an integrated approach to optimizing assets

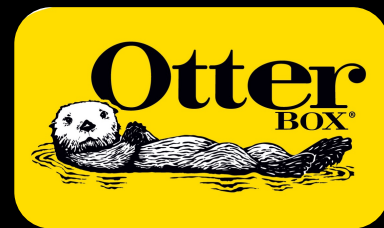
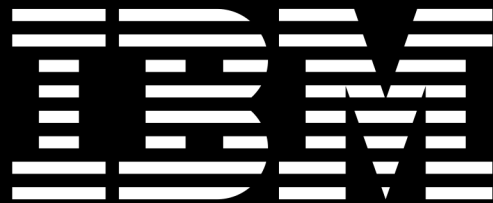


cross-integration and connectivity



Autonomous actors at the edge

# Partnerships



# Maximo Application Suite

## Pursuit of Zero D

### *Zero Defects*



### **Detect & Correct**

**AI Computer Vision Models** catch defects before they become expensive

**High bandwidth network and multi-access edge computing** enable easy configuration and scalability at any number of locations

### *Zero Downtime*

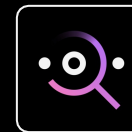


### **Predict and Correct**

**AI Machine Learning Models** predict asset failures in the future, allowing for preventative maintenance, before an expensive failure

**Private network and multi-access edge computing** supports streaming of data from an array of sensor types

# IBM Maximo Visual Inspection: Game Changing Capability

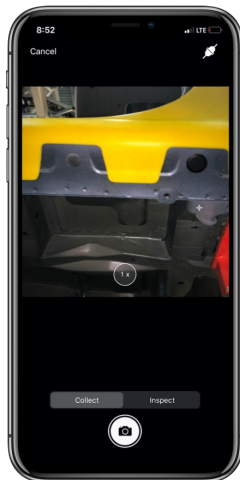


**Quick response** to process issues using off the shelf Visual Inspection technology

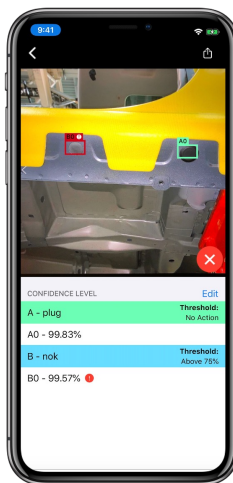
**Install**



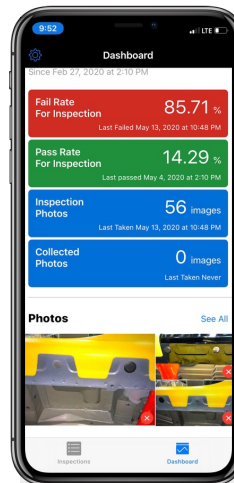
**Collect**



**Inspect**



**Alert**

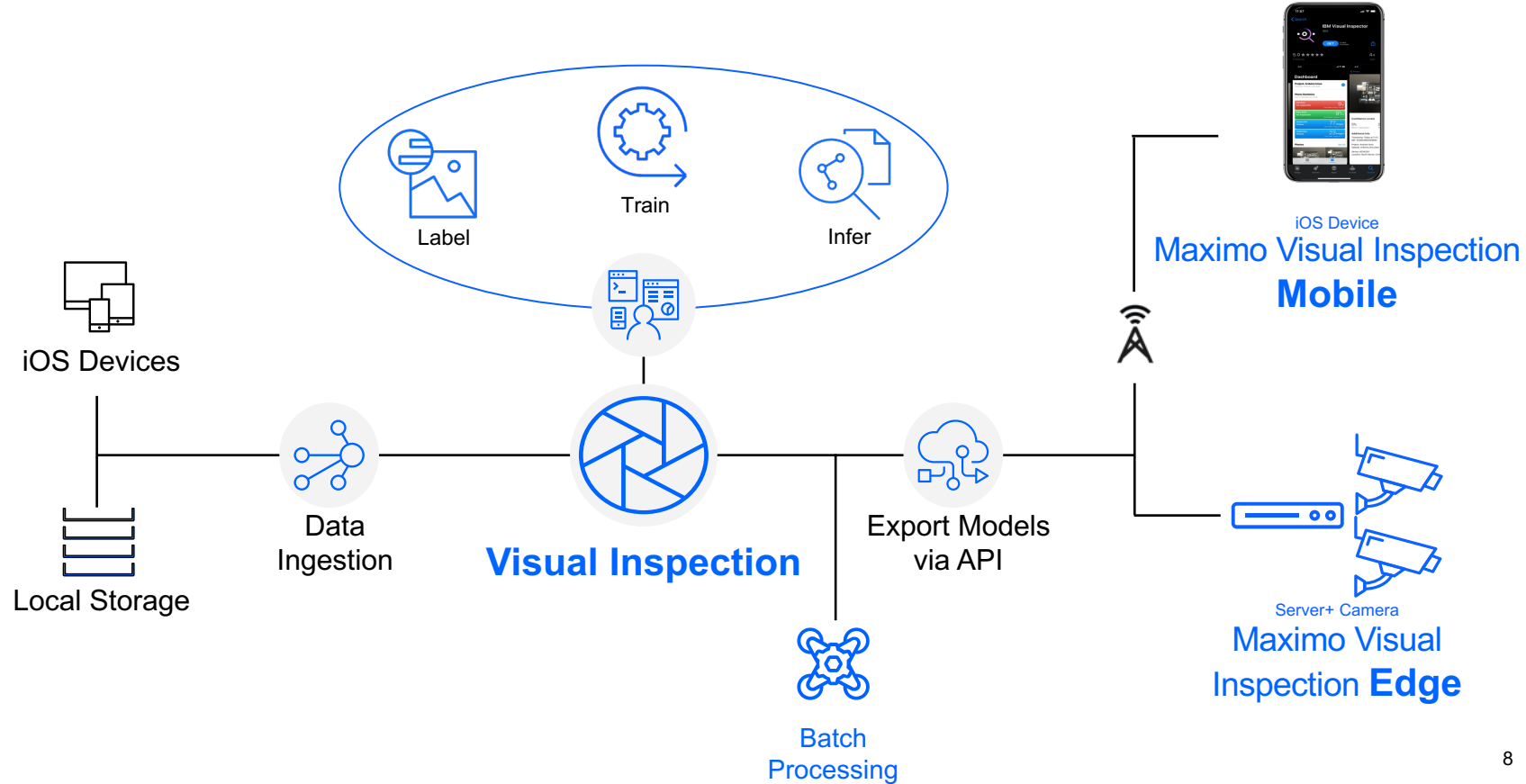


Hours

- Improves **inspection, failure detection and error-proofing processes** with machine learning, acoustic modeling, and visual recognition.
- To be used in **handheld devices or fixed mounts**.
- **Instant diagnosis** – object detection and defect detection & classification.
- **Automotive specific triggers** – timestamp, VIN, broadcast codes.
- Easy to deploy by using **everyday technology**.
- Dashboard with **trending analytics**.
- **Respond to process issues in hours**, not days or weeks

# Maximo Visual Inspection-Workflow

## Label, Train, & Deploy





# Maximo Visual Inspection Use Cases

# Pilot Project for Electric and Gas Utility, National Grid

Boston Dynamics and IBM Join Forces to Bring Mobile Edge Analytics to Industrial Operations

October 26, 2021





# Case Study

## Large Automotive Company

### Business problem

- **Rework cost/time in manufacturing** has a serious impact on their business and production
- Required consistency in inspecting defects to effectively produce new models of automotive.

### Solution

Maximo Visual Inspection with Maximo Visual Inspection Mobile

- **Fast and easy AI model creation**
- Seamless connectivity between MVI and Mobile device
- Quick response from inspecting objects wirelessly

### Business Value Delivered

- Avoiding over 200 defects a day - ~ **\$1.8M a month savings**
- Ability to **detect a defect at the point of installation**
- 32 vehicle mis-builds avoided in first month - ~ \$10K a month savings.
- AI algorithms eliminate the need for a data scientist
- Use of iOS device helps client realize wireless connection



# IBM Maximo Visual Inspection: Common use cases

What the human eye can see, but even better (in most cases)

## Popular use cases for Visual Inspection in vehicle assembly

**Assembly**, especially for a new vehicle launch, is ideal.

- Electrical connections (seated, soft seat, unconnected)
- Missing parts (bolts, clamps, hoses, under hood)
- Incorrect part installation (alignment, tightness, clips, color)
- Part damage (scratches, dents, wrinkles)
- Labels (wrong label, damage)

## Body Shop

- Sealant application
- Stud welds
- Panel damage
- MIG Welds

## Sub Assembly

- Engine (parts, hoses, electrical)
- Seats (parts, damage, wrinkles)
- Axles (parts, alignment, damage)

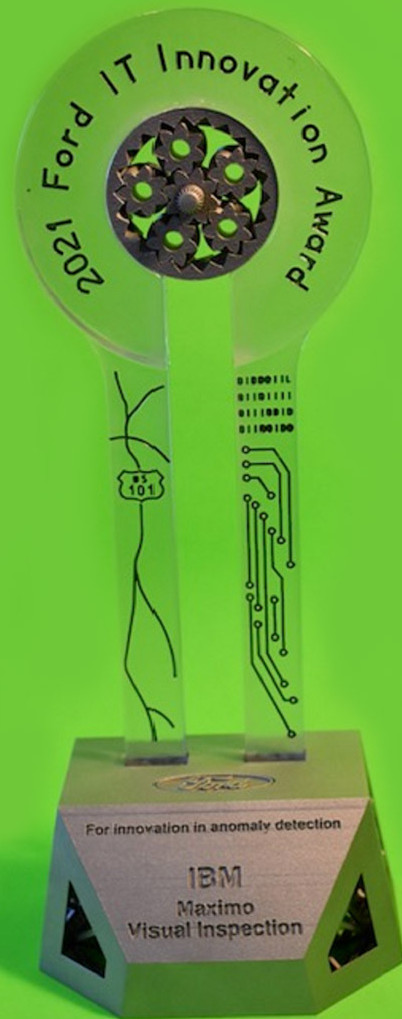


# IBM Maximo Visual Inspection wins 2021 Ford IT Innovation Award

*“By bringing the power of IBM’s deep AI capabilities, deployable on cost-effective edge infrastructure, and into the cloud to share across our plants, Maximo Visual Inspection has enabled higher quality for our vehicles and our customers. We are expanding in 2022 to additional plants and use cases, including our new electric vehicle plants.”*

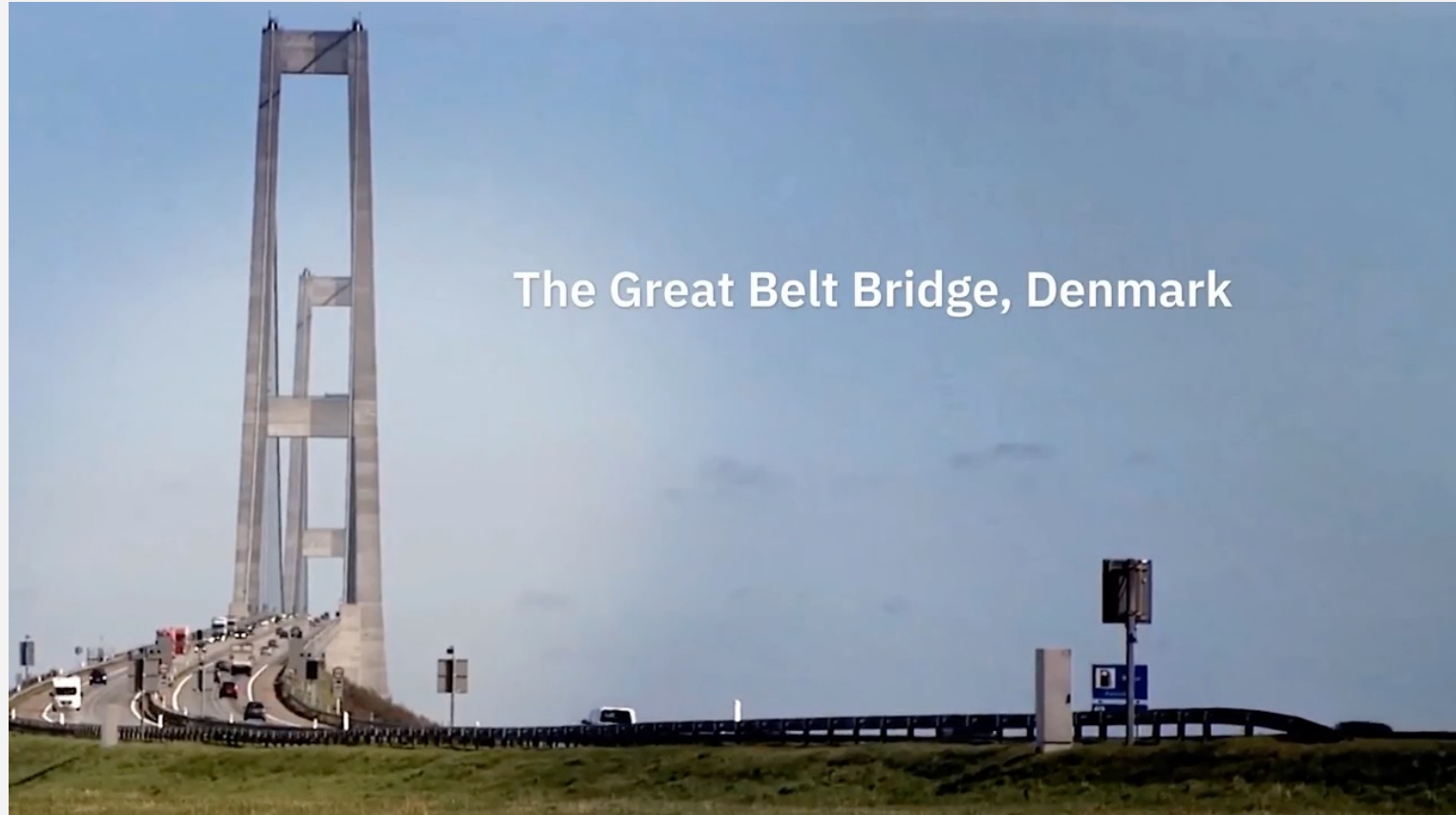
Scott King, Manager, NA Manufacturing IT at Ford Motor Company.

Read more about it [here](#).





# **S&B:** Maximo for Civil Infrastructure



# Case Study

## Sund & Bælt

### Business challenge

- Manual inspections of mile long bridges are costly and dangerous (lifts and ropes)
- Technicians register work orders on paper and are hard to document
- Some challenges include traffic, weather, slow soluble

### Solution

Maximo Civil Infrastructure and Maximo Visual Inspection

- Build AI models for high resolution images to detect cracks and rust, with the ability to measure and gauge the severity of the defect.
- Full awareness of all assets and better control of contractors

### Business Value Delivered

- Costs of operation and maintenance (O&M) to decrease 2% year over year until 2025. Cumulatively over a 7 year period this is forecasted to be more than \$50 million decrease in cost of O&M
- Expected lifetime of bridge increased from 100 to 200 years resulting in 750.000 tons reduction in CO2 emission



# Case Study

## IBM Systems assembly line

### Business challenge

- As electronics components have become more complex and systems gotten denser, **manual inspection is more difficult.**
- Technicians working at a station can become fatigued inspecting complex assemblies. This can lead to defects being missed or caught at later stages when repair costs are higher.

### Solution

Maximo Visual Inspection

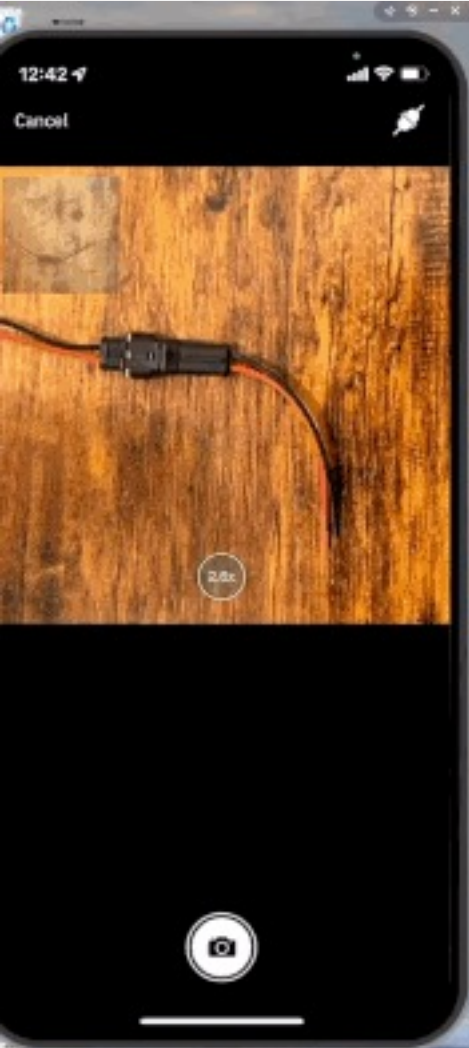
- Manufacturing engineers and technicians can **train models without help from AI experts** or data scientists.

### Business Value Delivered

- Identify & filter out defective components before shipping
- Vastly improving efficiency of processes and quality **consistency of products**



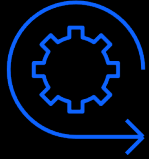




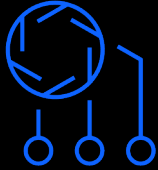
# MVI Demo

# Key benefits of IBM Maximo Visual Inspection

*Fast, easy, accurate*



Point-and-click AI model building – in just a few hours



Process automation



AI-powered insights at scale



Real-time quality assurance – ”error proofing”



Improve efficiency & performance of assets - Maximo integration

# Moving forward



Identify key use cases



Get started



Deploy at scale

- Follow for more information: [Maximo Academy](https://maximo.ibm.com/academy)
- Stay tuned for product updates: [ibm.com/products/maximo](https://ibm.com/products/maximo)



# Maximo Visual Inspection Questions?

