Maximo Visual Inspection (MVI)







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Maximo Application Suite Best of class capabilities provide an integrated approach to optimizing assets



Maximo Application Suite

Analysis

Decision /

Instruction

Best of class capabilities provide an integrated approach to optimizing assets



Autonomous actors at the edge

Partnerships



verizon





Maximo Application Suite

Pursuit of Zero D





Detect & Correct

Al 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

Hours

Install



Collect



Inspect



Alert



- 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 <u>here</u>.





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





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



- Follow for more information: <u>Maximo Academy</u>
- Stay tuned for product updates: <u>ibm.com/products/maximo</u>



Maximo Visual Inspection Questions?

