

Edge-enabled optical inspections

Manufacturers are streamlining quality processes by replacing sampling with continuous optical inspections powered by edge computing—helping ensure immediate action on quality issues and minimizing rework, scrap and defective products.



How optical inspection works

- 1 High-speed 3D cameras continuously take images of in-process inventory (e.g., units on a conveyor)
- 2 Images are sent to edge servers for parametrization and AI/ML analysis to identify quality defects fast
- 3 Results of analysis are displayed on site, where an operator can take action to remove defective products or stop the production line
- 4 Quality data is periodically transmitted to the public cloud for model training and improvement

Potential benefits

Increasing throughput based on reduced cycle time by

▶ **5-10%**¹

Reducing process rework by an estimated

▶ **20-30%**¹

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¹McKinsey manufacturing expert interviews, January 2022

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