DARWIN AI

Build AI you can Trust

June 2021

DARWIN AI

Trusted by F500s for AI in Manufacturing

25+
employees

60%
PhD &
Masters

$9M+
invested from
top VC's

arXiv
500+
combined
publications

25+
combined
patents

NIPS
20+
research
awards

Audi

HYUNDAI

BMW

LOCKHEED MARTIN

Honeywell

Continental
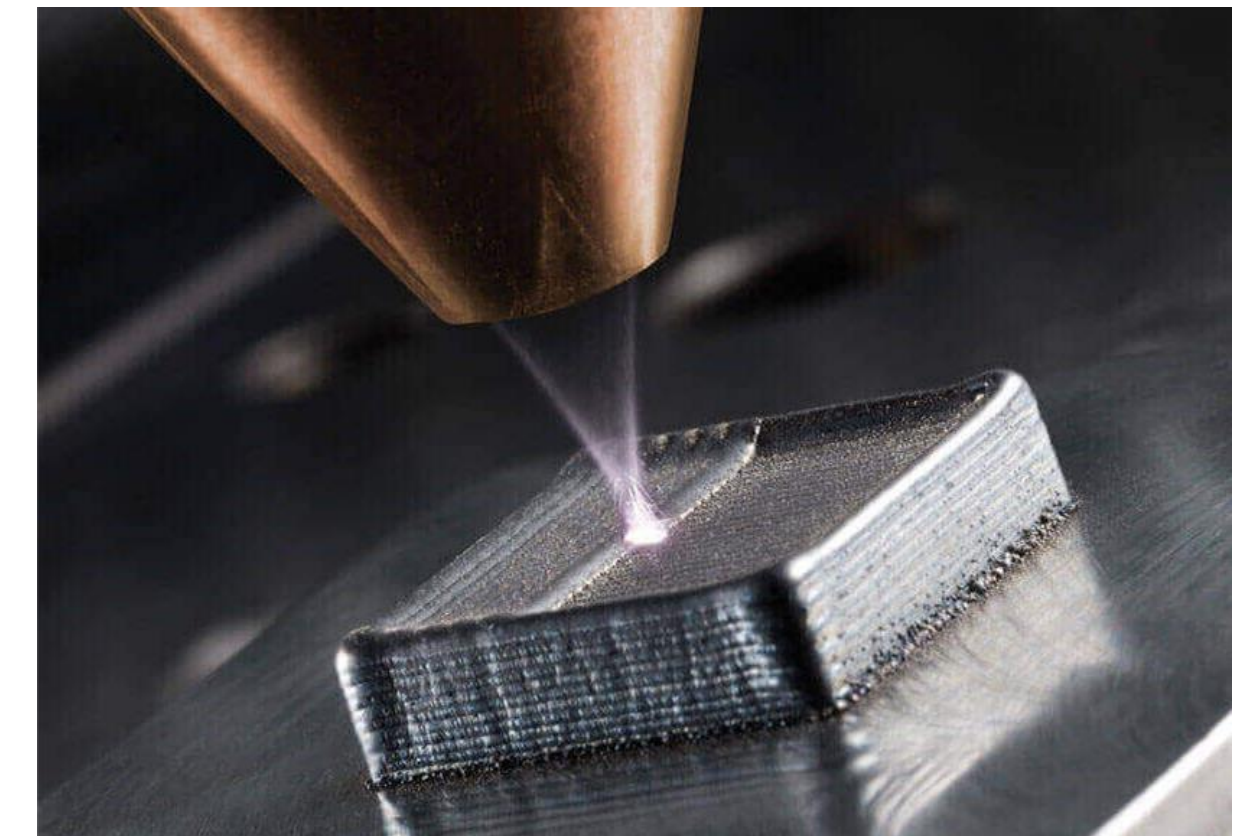
intel

BOSCH

arm

NVIDIA

DARWIN AI

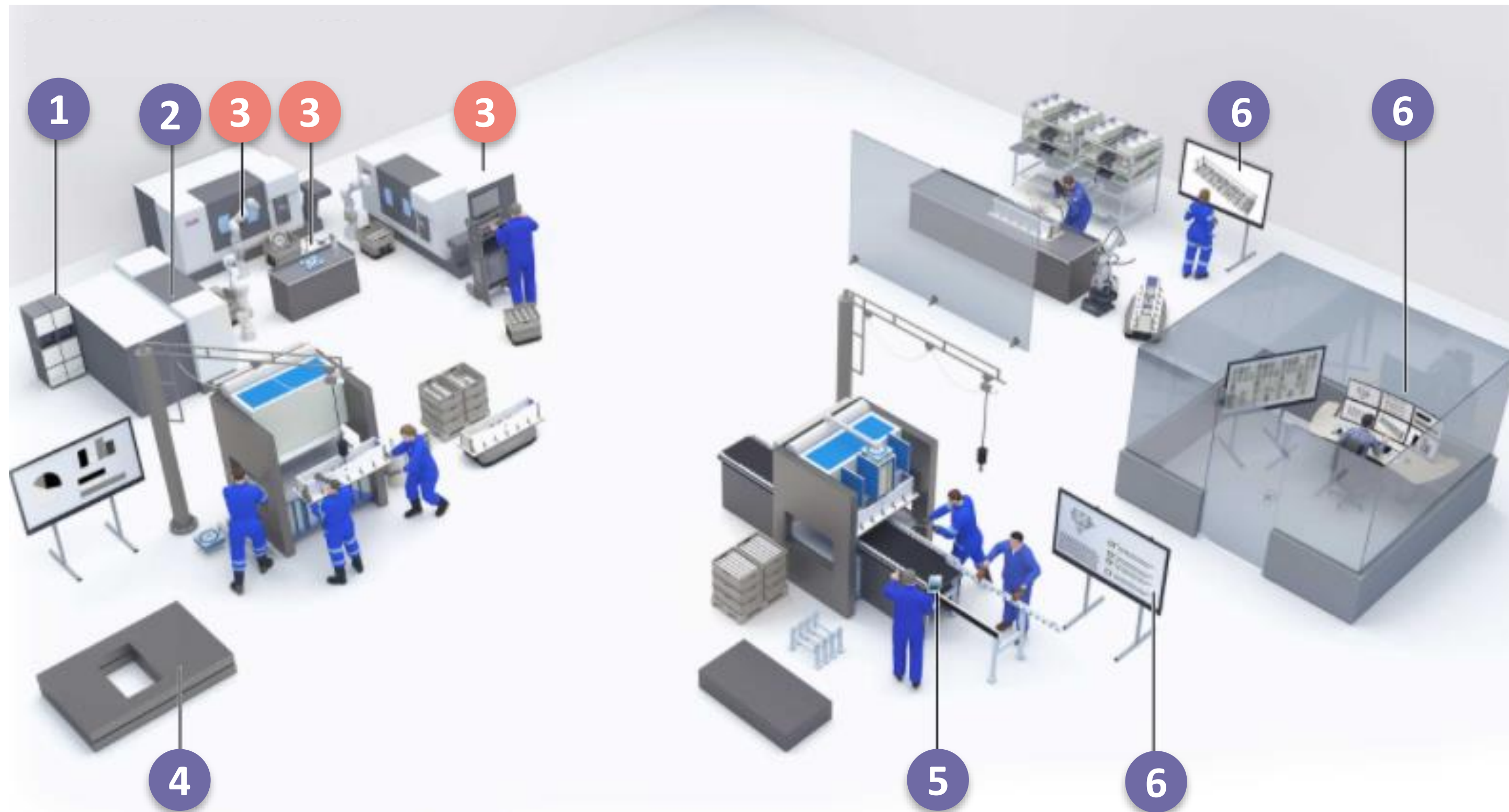# Where our technology can be applied

Heavy Manufacturing

Light Manufacturing

Additive Manufacturing

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Factory of the future, starting with AI-Based parts inspection

1 Manufacturing IT Integration for digital management

2 Automated machine set up and feeding

3 Camera-based detection of defects (parts inspection)

4 AI-supported robotic assembly

5 AI-supported load balancing

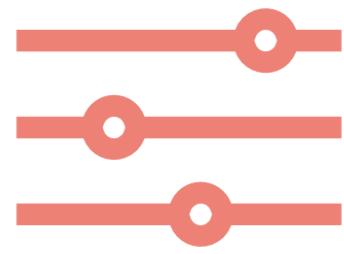**6** Performance management, testing and optimization

Source: McKinsey
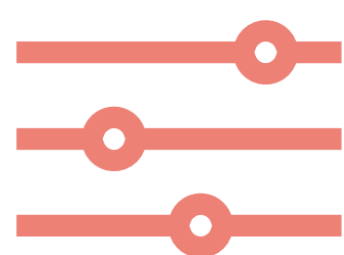
Benefits of AI quality inspection
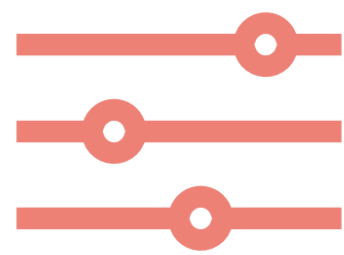
Decrease lead time

Catch defects earlier so there are fewer turn-backs between manufacturing and inspection
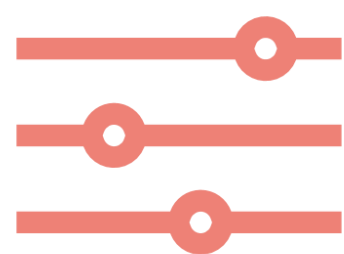
Reduce scrap

Address defects in the moment instead of wasting entire batches at the end

Increase labour utilization

Learn with the AI-assisted approach, resulting in a more productivity and requiring less training

Lay the foundation for autonomy

Enable multiple applications with the same infrastructure – for multiple products and factories

Automated defect detection

Challenge
- Missed defects
- More lead time
- High rework costs

Solution
- Localize defect
- Continuous AI re-learning

Target Business Outcomes

$200k+ less rework per plant

$100k+ labor savings per plant

$10M+ savings across factories

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How it works – Explainable AI is our Differentiation
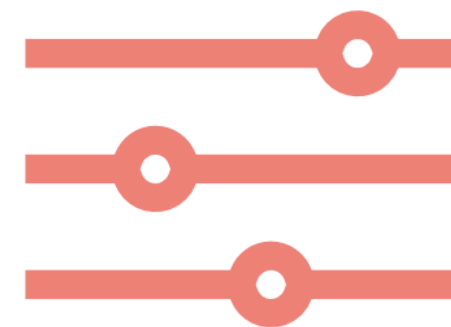
Collect and
audit data

Calibrate AI to custom
dataset with XAI

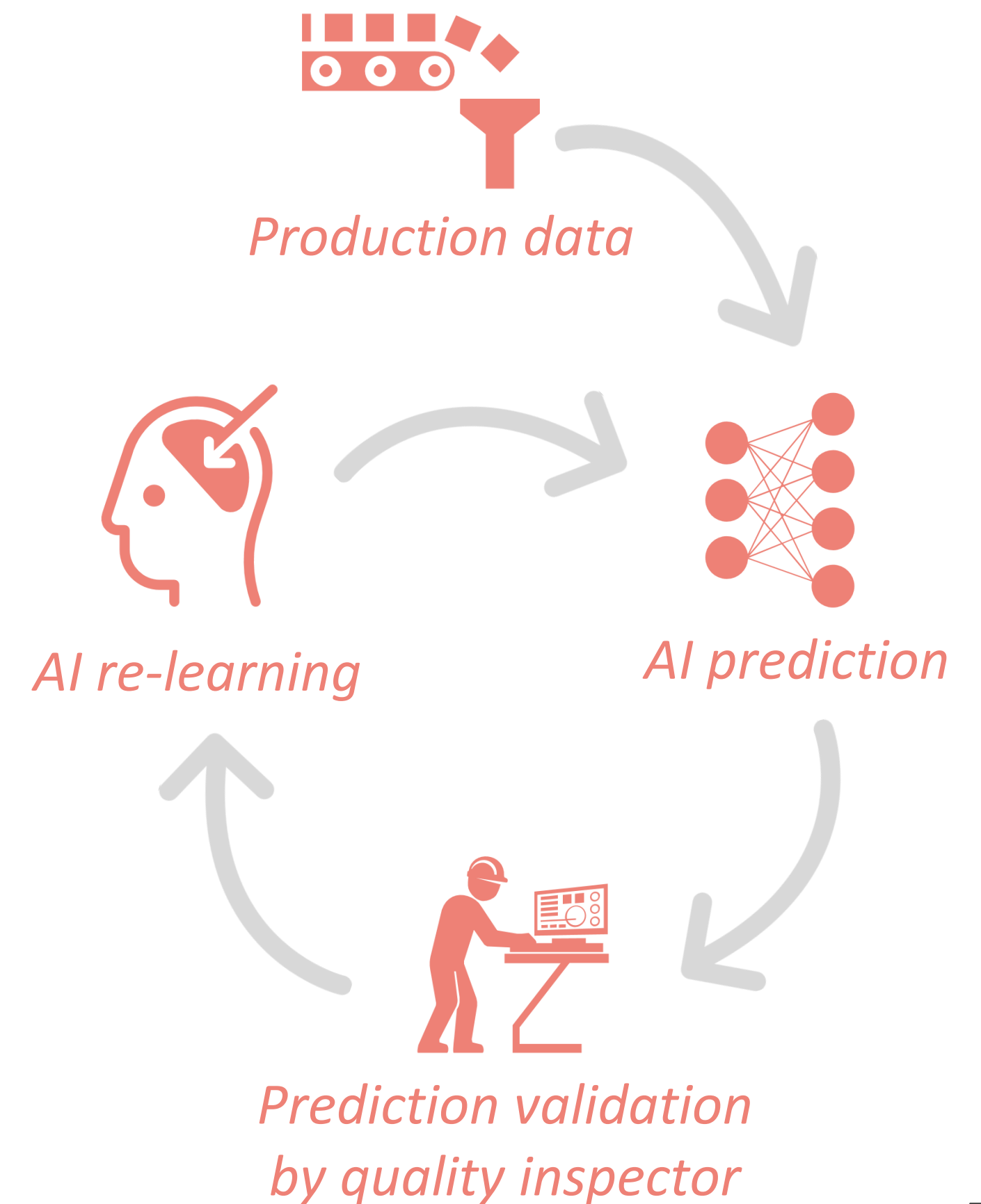Continuous AI learning
in production with XAI

Production data

AI re-learning

AI prediction

Cloud or on-premise
Minimal data samples

Correct data errors
Reduce false positives
Reduce false negatives

Prediction validation
by quality inspector

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Working with DarwinAI

Rapid Prototype

~2 weeks **(free)**

Pilot

2-3 months

Licensing

Annual subscription

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How we work with customers

Stage	Deep dive	*Don't have cameras or images?* Camera setup	Prototype	Pilot
Description	Darwin learns about your inspection workflow and what part/defect you want to inspect with AI	We can discuss how to procure cameras and set up a data collection process	Build the initial AI system so you can evaluate its performance, before piloting	Deploy and run the AI system in your plant
Who's involved	Inspection team	Inspection team IT	Inspection team	Inspection team IT
Time commitment	60 minutes	2~4 weeks	4~8 weeks depending on needs	~2 weeks

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Sample use cases

- Identify surface defects, including being able to distinguish between cracks, dents, etc.

- Inspect coating quality of materials

- Inspect grain size for metal alloys

- Melt pool inspection for additive manufacturing

- Measure surface density and weld quality from laser scans during LPBF-based AM

- Inspect solder joints for worker and non-worker defects

- Non-destructive testing with CT scans

- Distinguish between debris vs. damage on tiny, high volume parts, to inform rework decisions

- Monitor machine health to predict when it may cause product variability

THANK YOU