

FME AI FOR INDUSTRY JAAREVENT



**Quality Control met
behulp van Machine
Vision en AI**

20 november 2025

Agenda

1. Daan van Nieuwenhuizen – AWL
AI Lasinspectie
2. Hubert Blach – VBTI AI Inspection Systems
AI Quality Inspection for Industry
3. Vragen en discussie





YOUR AI
INNOVATION
PARTNER

AI Quality Inspection for Industry

Hubert Błach

19-11-2025

A short introduction

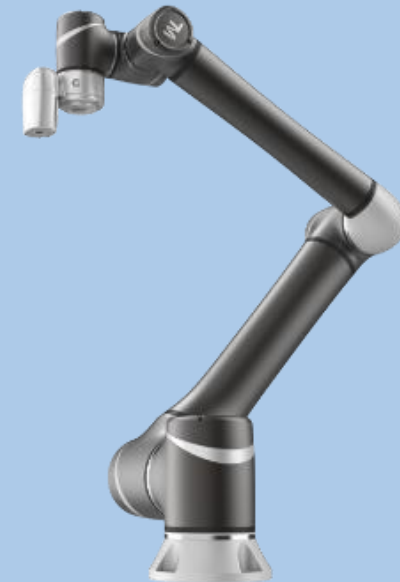


Hubert Błach

AI Engineer

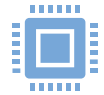


OneDL



VBTI

VBTI is an AI engineering company that develops **Deep Learning solutions** for companies in areas such as agriculture and manufacturing.



AI Consultancy & Engineering

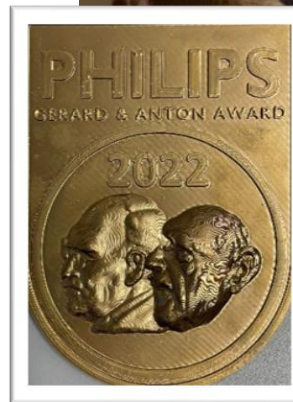


DL Masterclasses



OneDL

VBTI Team



VDL Groep en VBTI: samenwerken rond 'slimme, zelflerende' technologie

4 oktober 2022

Industrieel familiebedrijf VDL Groep zet een belangrijke stap op het gebied van kunstmatige intelligentie (Artificial Intelligence, AI). Door te gaan samenwerken met het Eindhovense VBTI gaat VDL deep learning-technologie nadrukkelijker inzetten in processen, systemen en in de productie. VDL Groep neemt een minderheidsbelang in de AI-specialist.

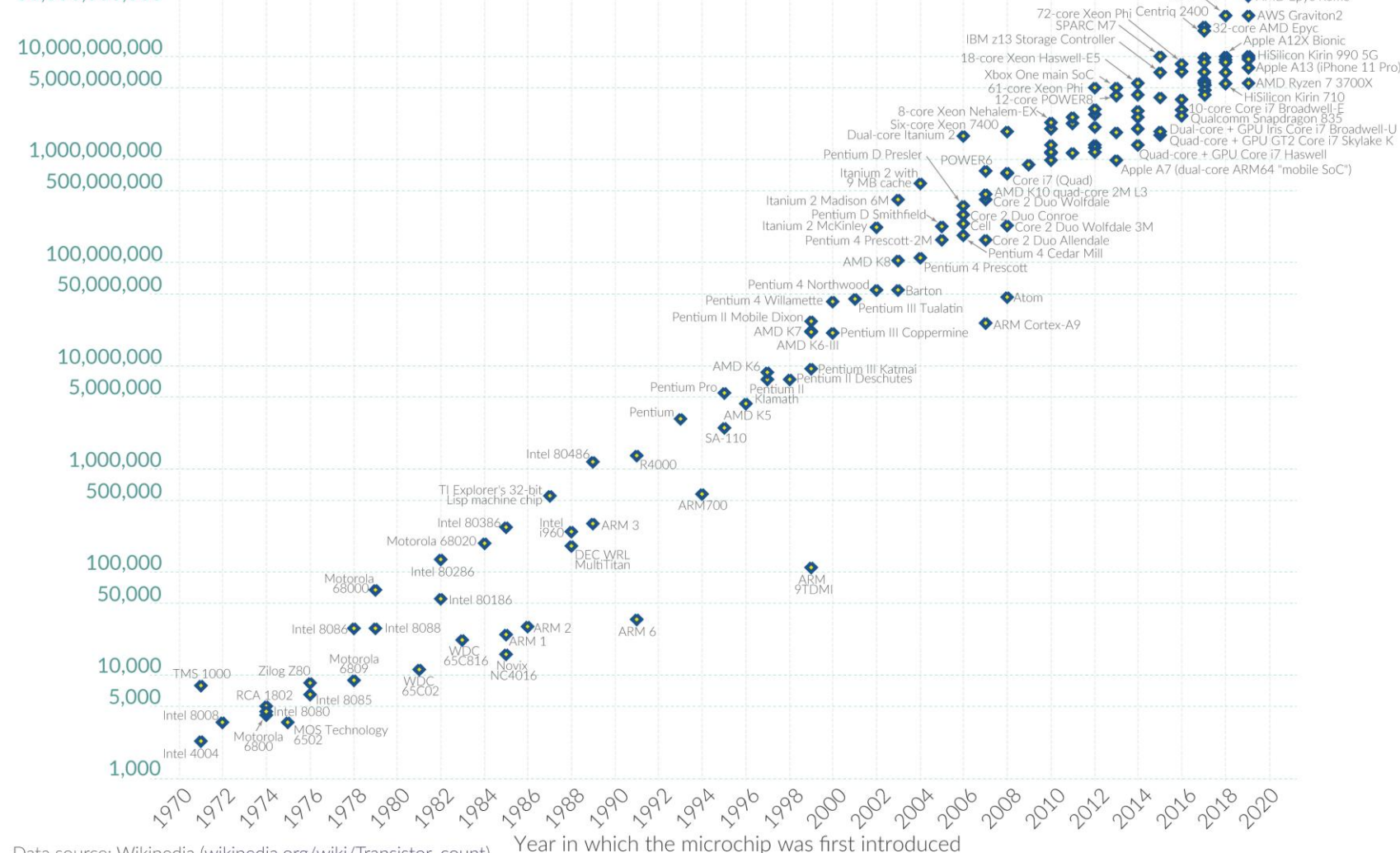
Two ways to stay on track:

- Shrink transistor sizes
- Reduce production costs

Our World
in Data

Moore's law describes the empirical regularity that the number of transistors on integrated circuits doubles approximately every two years. This advancement is important for other aspects of technological progress in computing – such as processing speed or the price of computers.

50,000,000,000



Data source: Wikipedia (wikipedia.org/wiki/Transistor_count)

OurWorldinData.org – Research and data to make progress against the world's largest problems.

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Why should we talk about quality inspection?

With better, more frequent and cheaper quality inspection we can:

- Catch errors early in the process → **avoid delays!**
- Prevent shipping products with defects → **prevent downtime!**
- Reduce costs of the inspection process → **reduce production cost!**

So, what's the state-of-the-practice?

What we learned from company visits



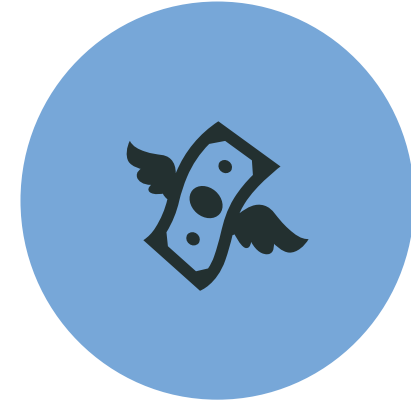
Humans make errors

Especially on Monday mornings and Friday afternoons.



Rules are subjective

There is no clear objective rule. Different inspectors have different opinions. Second opinions result in more rejects.



Manual work is costly

Inspection is still done with the human eye at many companies.



Vision

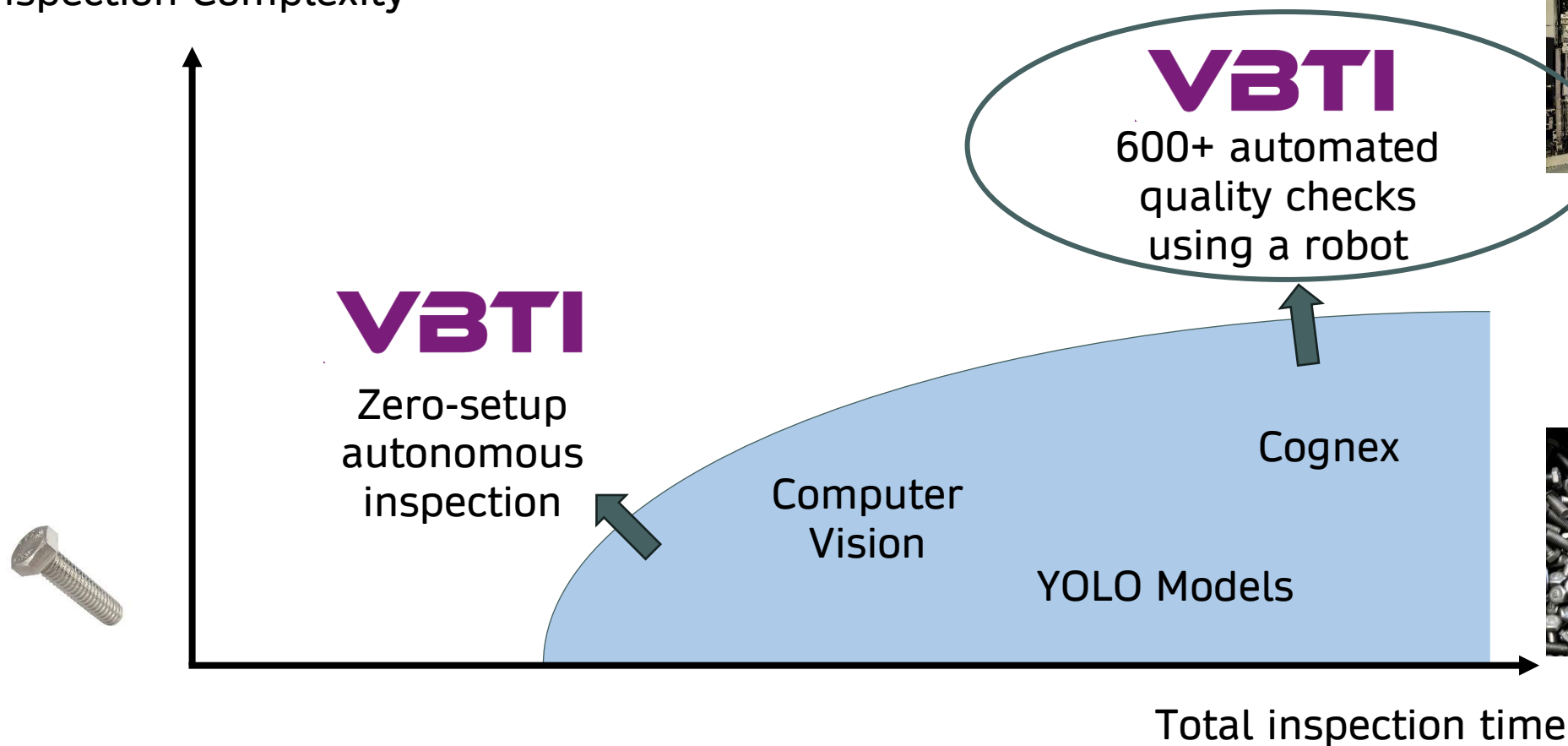
**Zero Defects, Zero Delays: Accelerating
Innovation, Minimizing Costs, Maximizing
Market Impact**

imec Asia

et Room

The inspection market

Inspection Complexity



Off the shelf
solutions



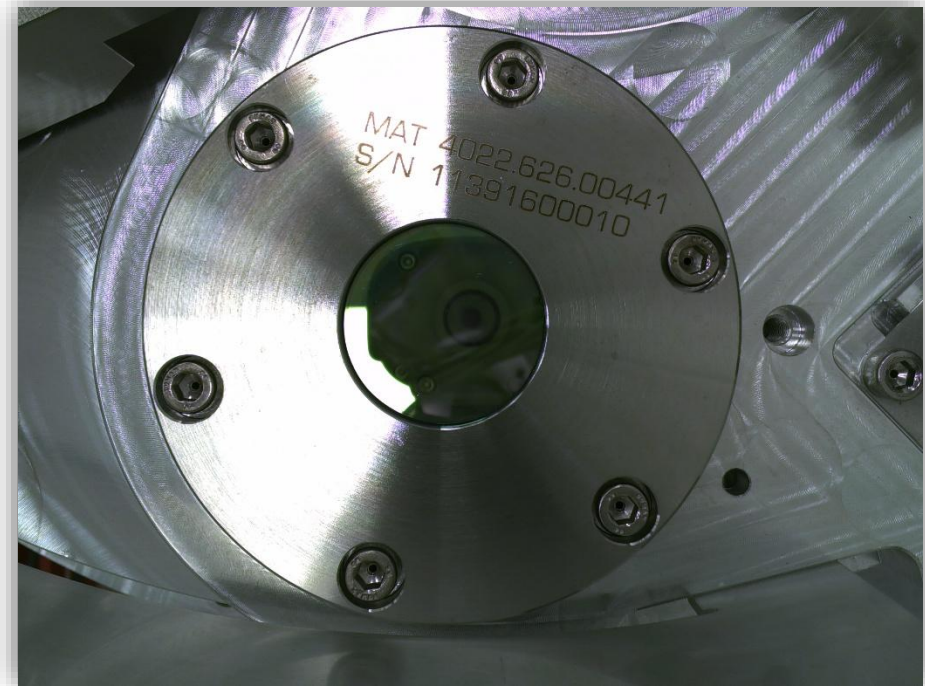
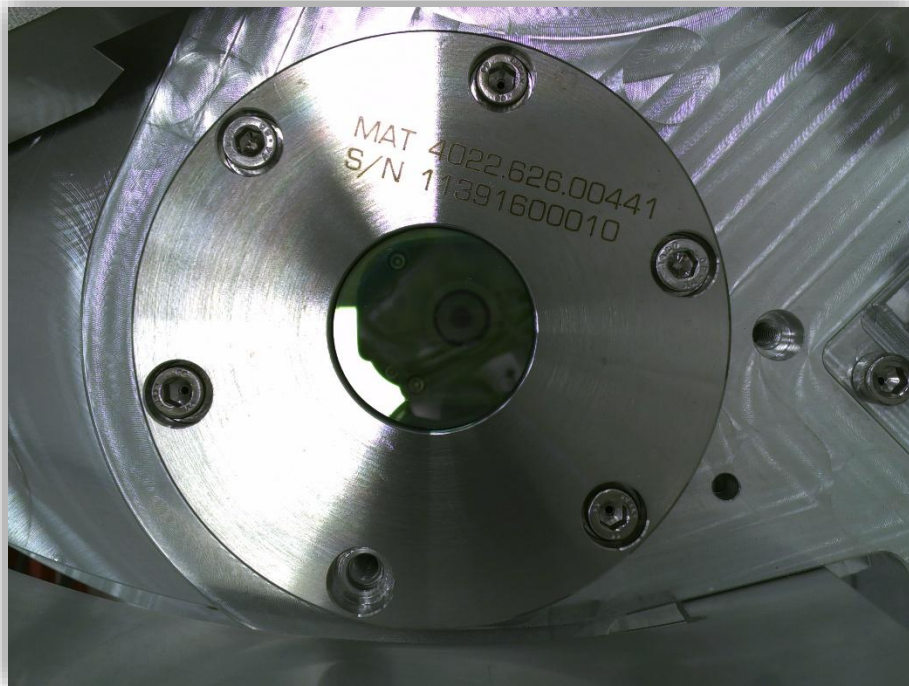
Case Study

Quality inspection for VDL ETG Eindhoven

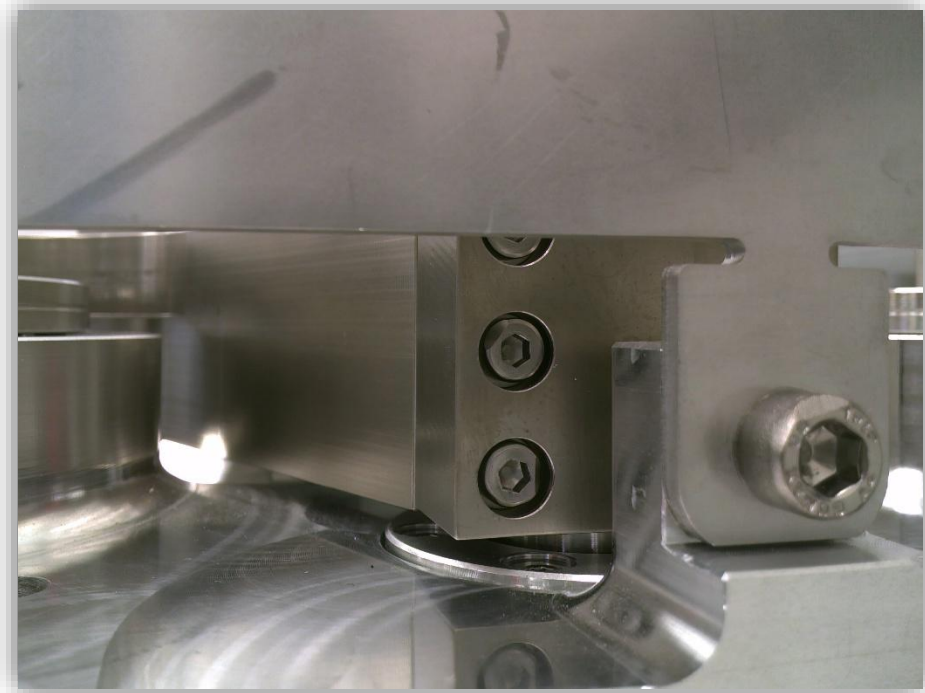
600+ automated quality checks using a robot



Small defects can have big impact



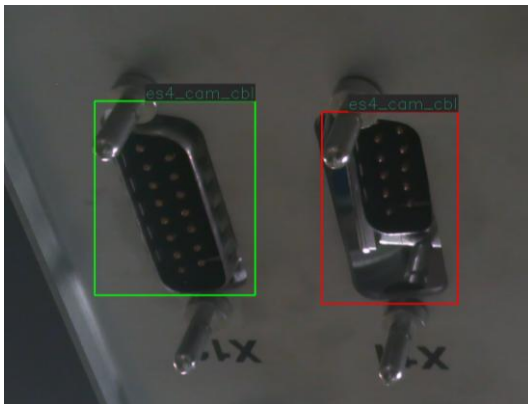
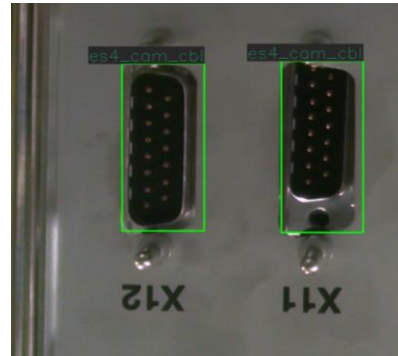
Small defects can have big impact



The challenge

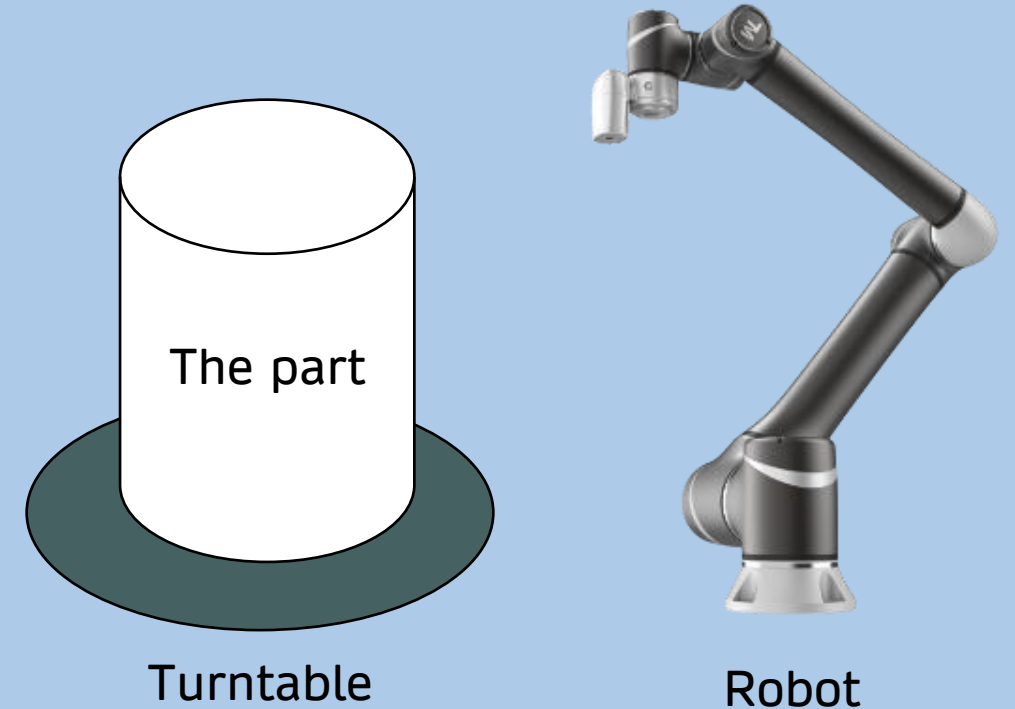
- Perform multiple inspection checks across 600+ positions

Difficult to judge situation from this perspective.



Clear to judge situation from this perspective.

The concept



AI Server

Inspection Tasks

- **Scratch / dent detection**
Find scratches and dents across the surfaces
- **Label check**
Check presence and content of BID Labels, Warning Stickers, etc.
- **Missing Parts**
Bolts / cables / connectors are present.
Correct bolt / cable is used.
- **Stain detection**
Find stains using UV-lamps



How to get data?

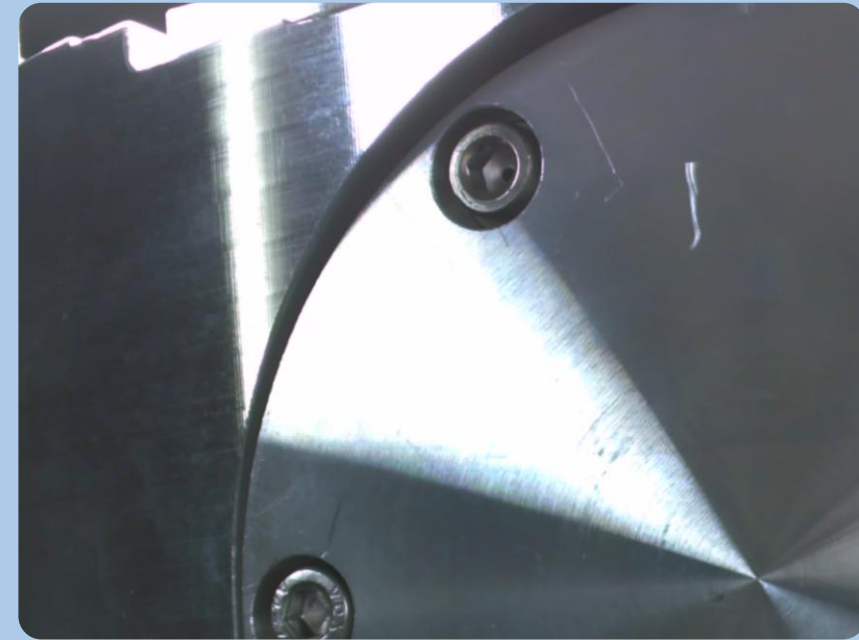
Real data is limited and expensive to obtain

Solutions

- Augmenting real data with synthetic effects
- Generate 100% synthetic data

Benefits

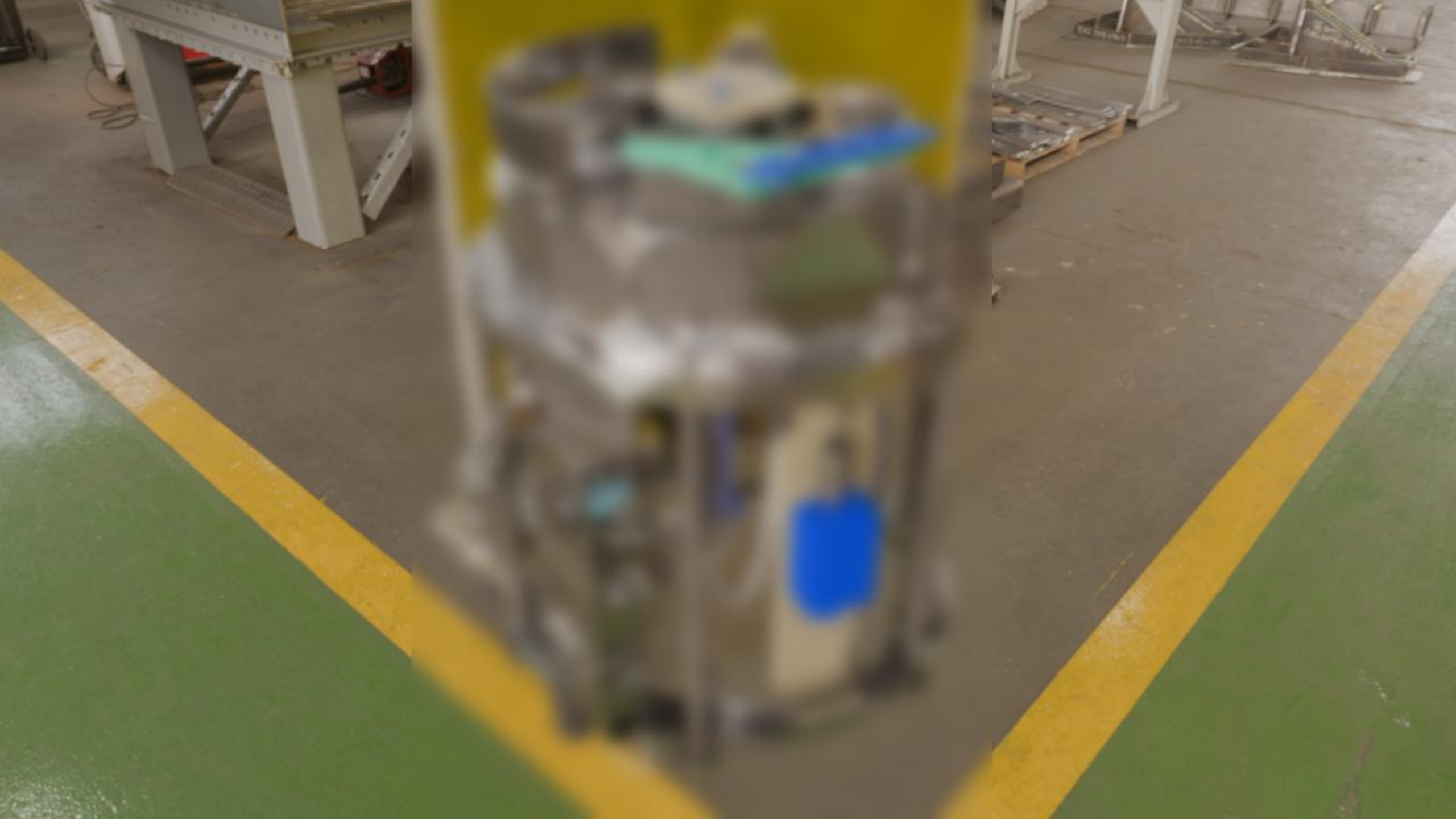
- Unlimited data after initial investment
- Free annotations!

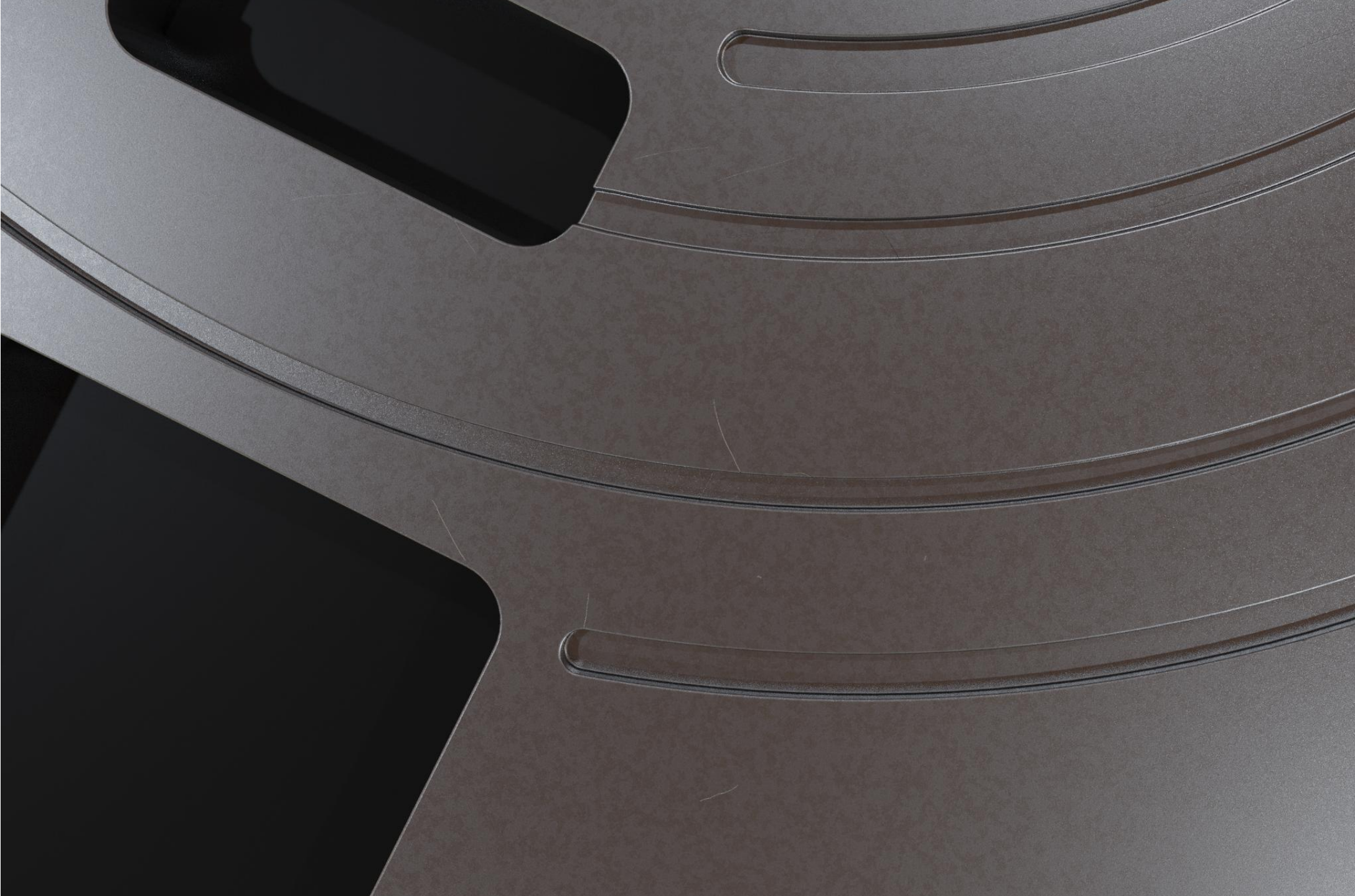


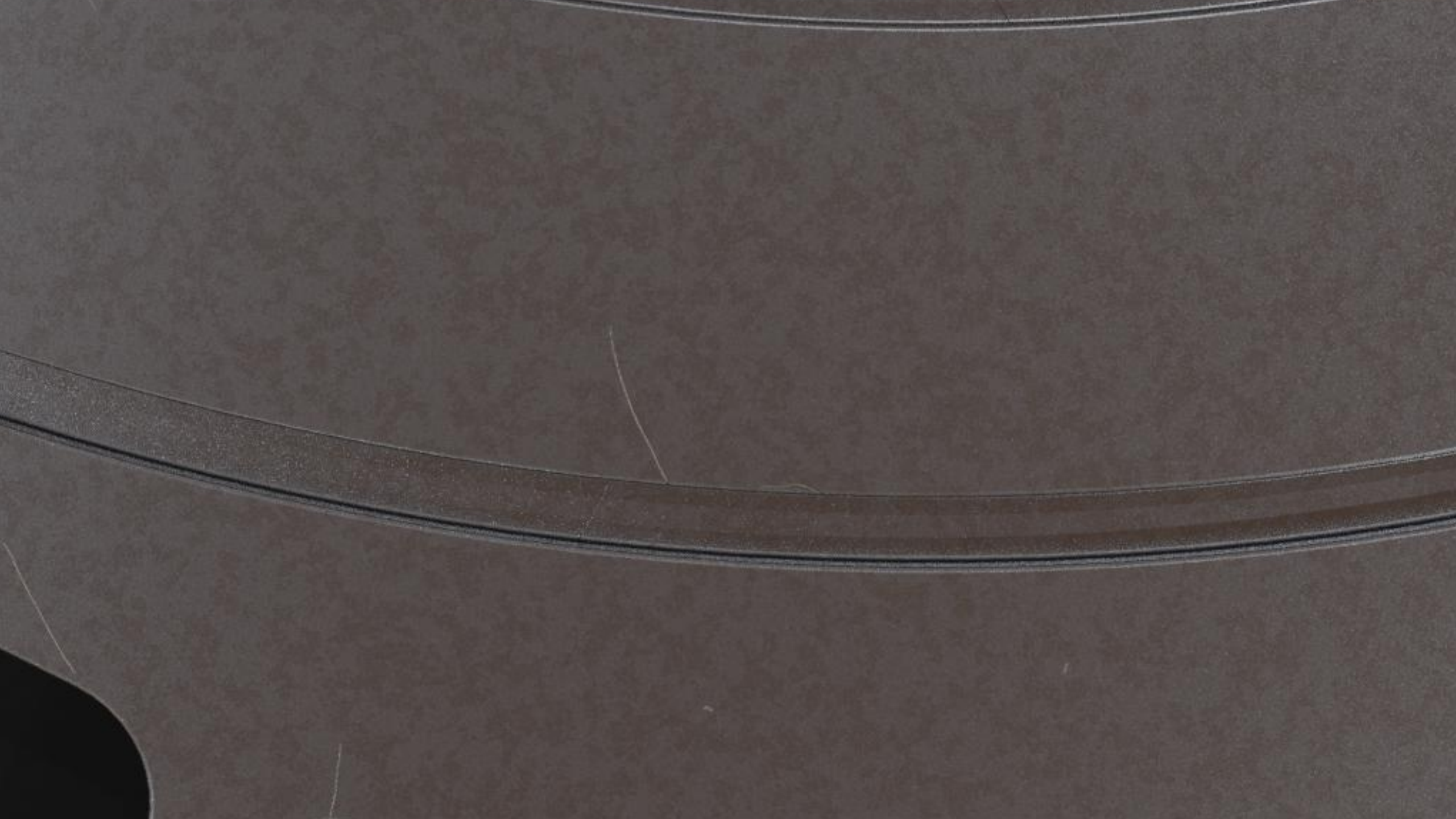
Real data



Synthetic
scratch on
real data







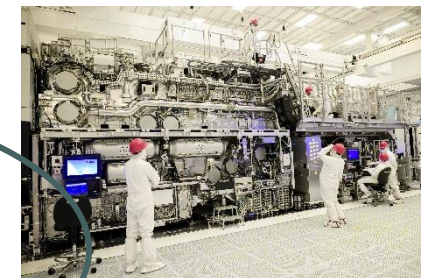
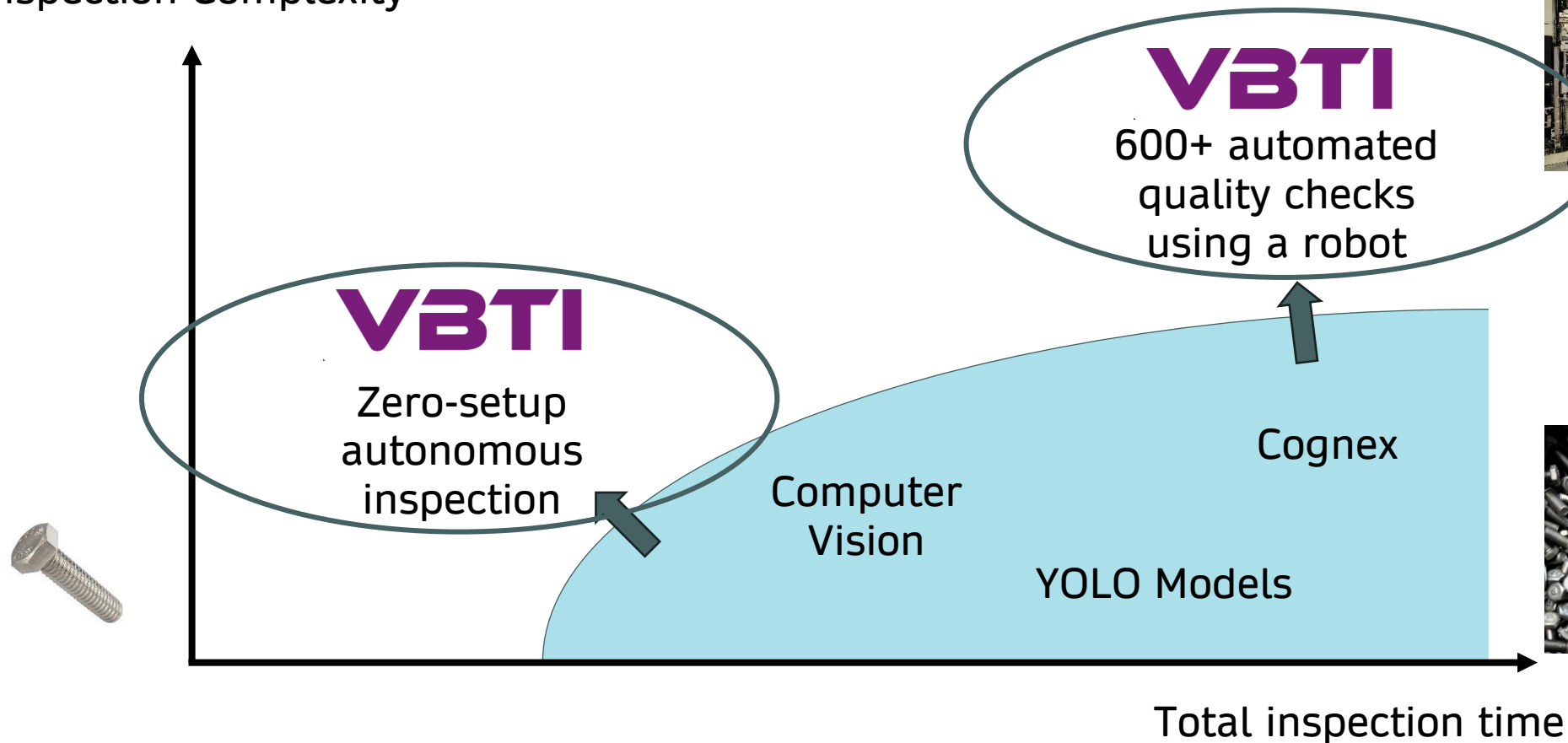
How did it go?

- We used a combination of synthetic and real-world data to train models
- Close collaboration with the VDL team was key to success
- The system is deployed in the VDL ETG cleanroom



The inspection market

Inspection Complexity

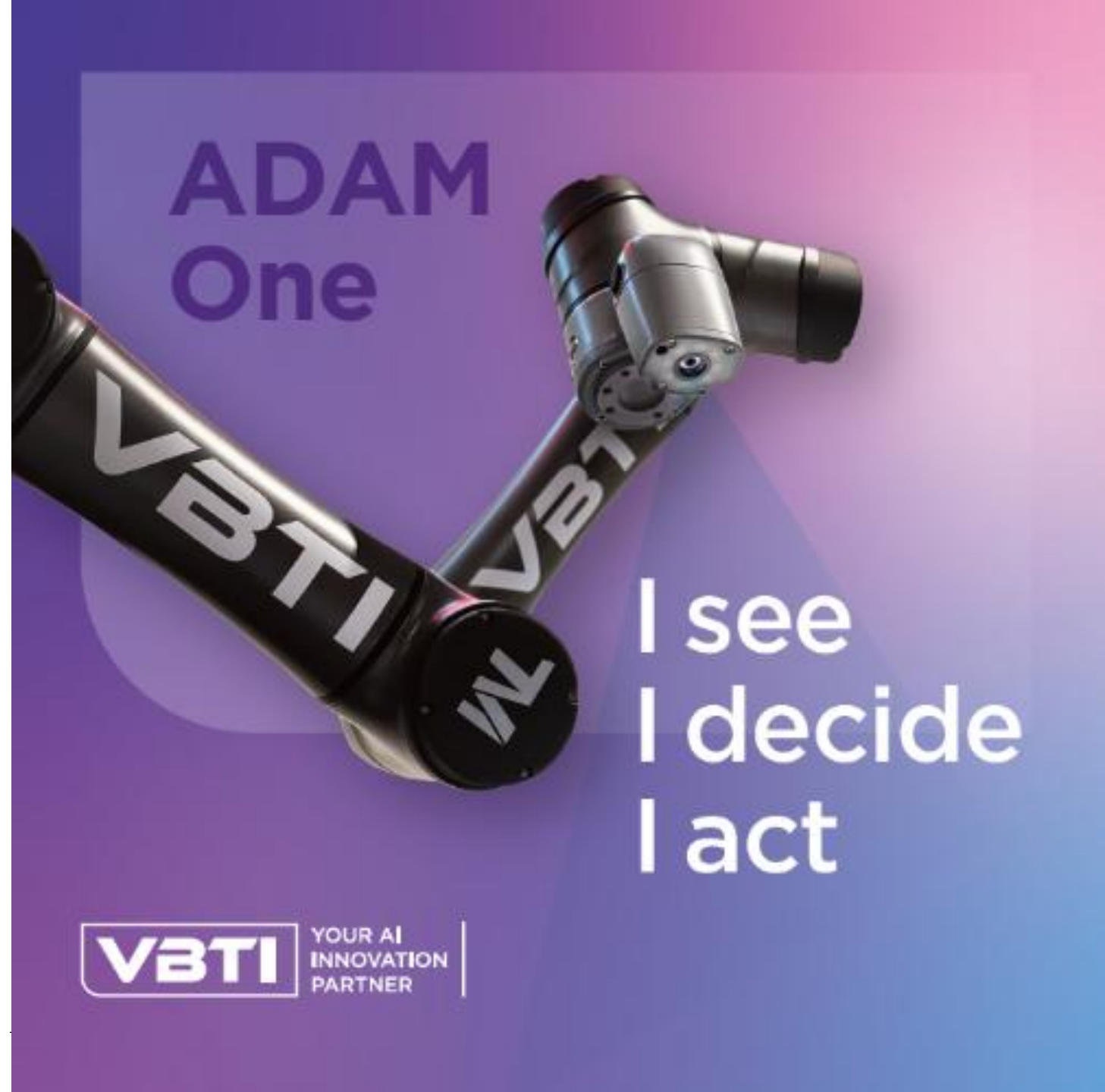


Off the shelf solutions



Zero-setup

Autonomous
Inspection



**ADAM
One**

**I see
I decide
I act**

Zero-setup inspection

In one button press..

inspect any part and get:

- A complete photo report of a part
- An overview of all surface defects
- Reliable AI quality judgement: OK / NOK

Don't hesitate to contact for demo!





YOUR AI
INNOVATION
PARTNER

Bedankt voor je aandacht!

Meer informatie:

- Daan van Nieuwenhuizen – AWL – d.vannieuwenhuizen@awl.nl
- Hubert Blach – VBTI AI Inspection Systems – hubert.blach@vbt.nl

FME Platform AI for Industry:

- Patrick Blommerde – FME – patrick.blommerde@fme.nl



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**Bedankt voor
je aandacht!**

