FME AI FOR INDUSTRY JAAREVENT

Quality Control

met behulp van Machine Vision en AI

11 december 2024

FME POWERED BY DUTCH TECHNOLOGY

AGENDA

1. Gerben Heinen – Sanovo:
   Egg quality control met behulp van hoge resolutie en hoge data rate vision technologie en deep learning AI modellen
2. Arran Dinsmore – IBM:
   Machine vision demo
3. Vragen & discussie

SANOVO
TECHNOLOGY GROUP

OUR VISION

Being the world’s leading developer and supplier of technological solutions that ensure affordable proteins for a growing world population.

OUR MISSION

Being number one global supplier of complete systems in the industry of technology and products to the egg processing world.

Being preferred supplier within the food and feed segments of technology and equipment for liquid treatment and conversion from liquid to powder.

Our mission is prioritizing sustainability, responsibility and compliance in all aspects of our business.

Facts

FOUNDED IN 1961

The origin of SANOVO TECHNOLOGY GROUP goes back to the 1960s when we were pioneers in egg breaking. Today we have become a successful market leader within our wide range of product categories.

MORE THAN 660 EMPLOYEES

Our team of skilled professionals is the key to mutual success and trust. Gathered from all over the world, they provide know-how and deliver the right service and solutions in close cooperation with you as a customer.

ISO 9001:2015 CERTIFICATION

We want to appear as an attractive and trustworthy partner and ensure that our equipment at any time are perceived as quality products. This is ensured through risk management, corrective and preventive actions plus continuous improvements of our quality system.

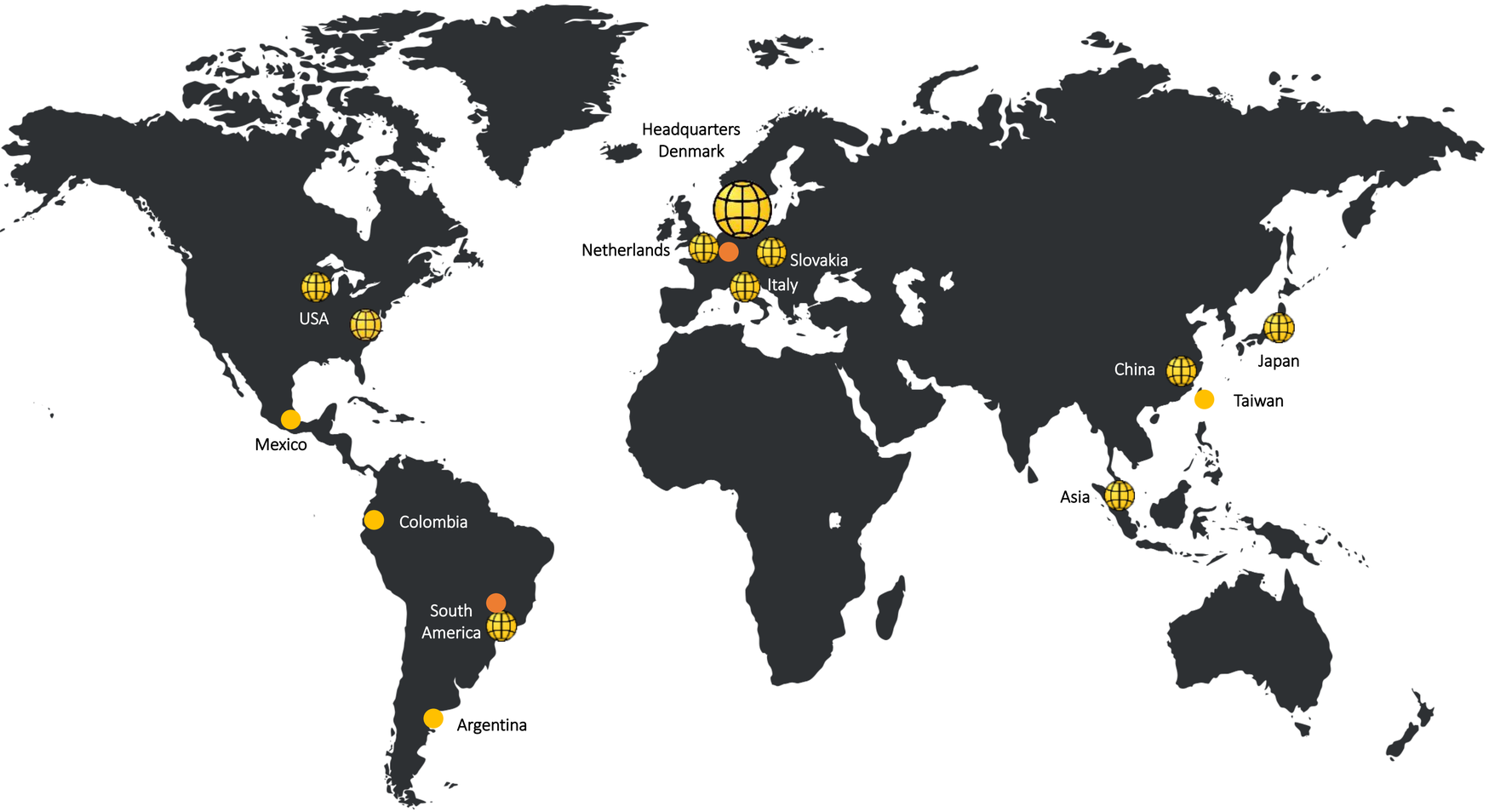
FOOD SAFETY

High quality and food safety standards are reflected in everything we do.

All components in our equipment are in compliance with regulations of food contact materials.

SANOVO TECHNOLOGY GROUP

SANOVO
TECHNOLOGY GROUP



Denmark
Headquarter & production unit egg processing

SANOVO TECHNOLOGY PROCESS
Independent subsidiary for spray drying & pasteurization of industrial applications and SonoSteam.

SANOVO PROCESS SOLUTIONS
Enzymes

USA - RAME-HART
Production unit harvesting and inoculation

Netherlands
Production unit grading & packing

Italy
Production unit pasteurization, CIP, SCADA

SLOVAKIA
Production unit

CHINA
Production unit smaller machines and pasteurization

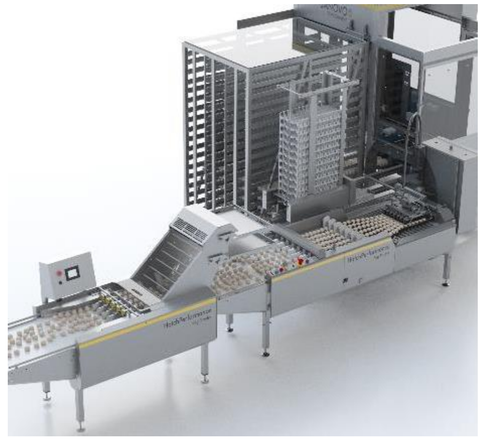
USA – Brazil – Malaysia - Japan
Sales & Service office (Legal entities)

Argentina – Colombia - Mexico - Taiwan
Sales & Service office

Ovotrack and Kletek (Netherlands)

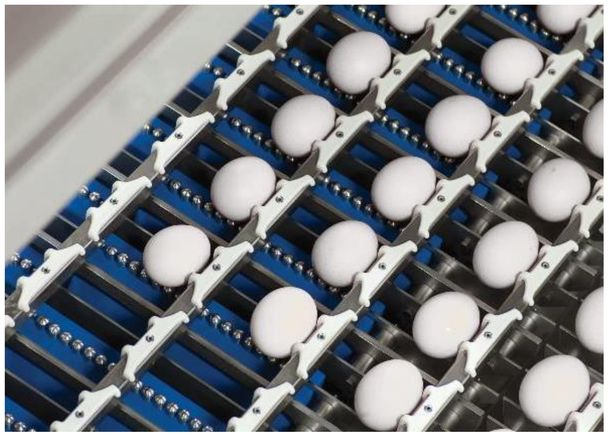
Fornari (Brazil)

Packing



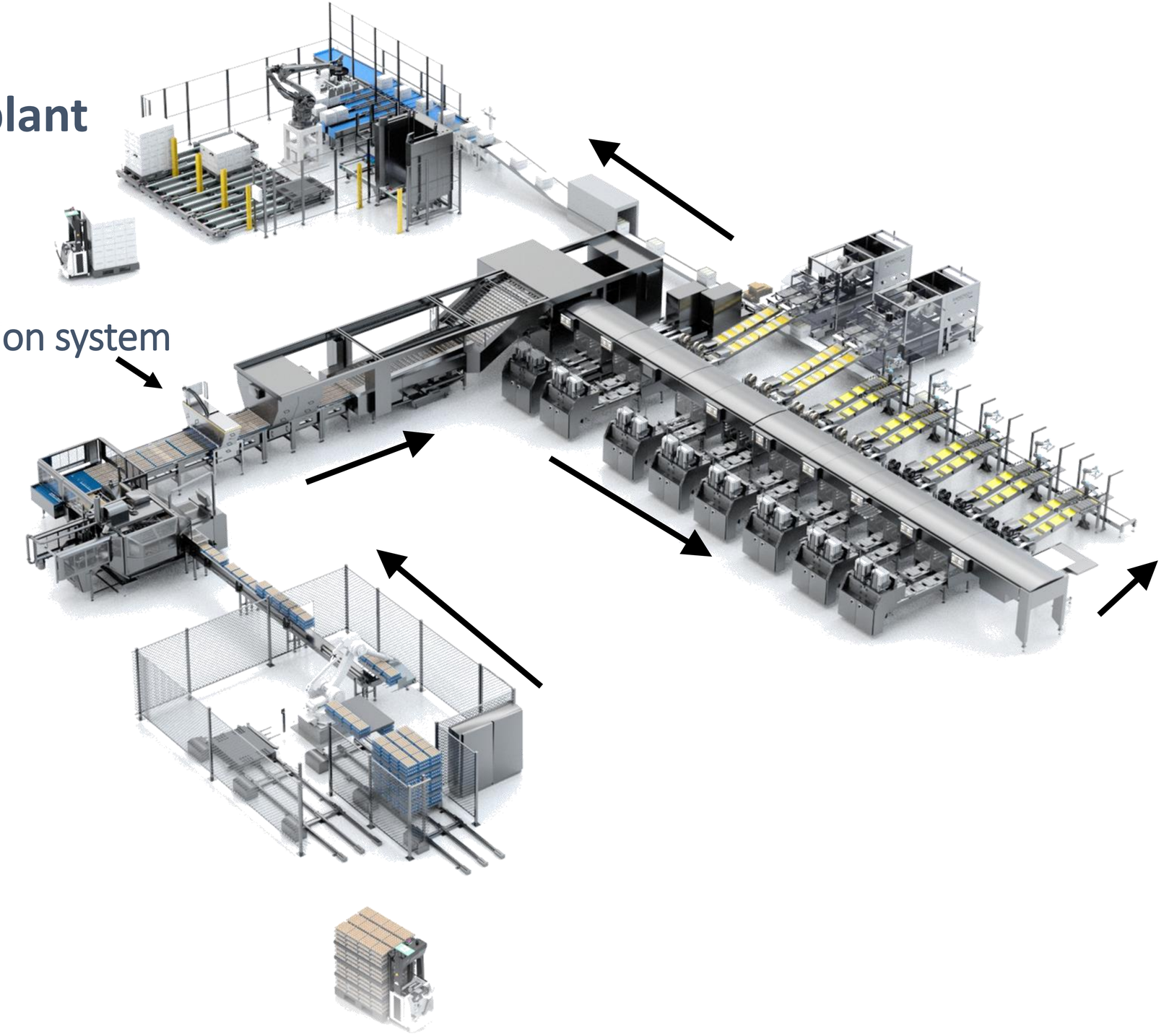
SANOVO TECHNOLOGY GROUP

Grading



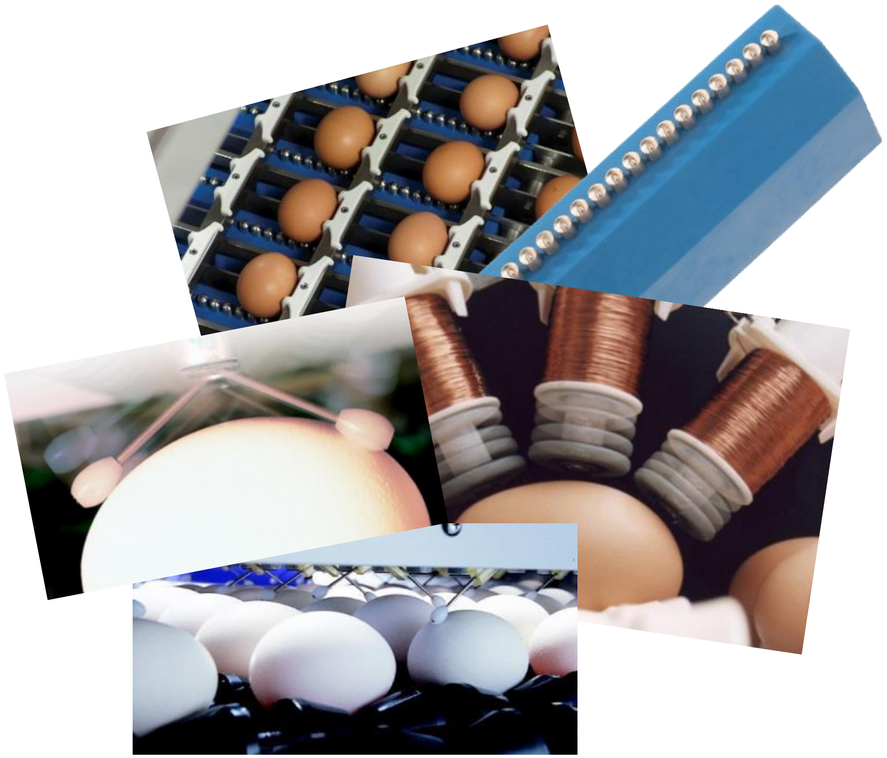
Grading plant

Vision AI inspection system



SANOVO TECHNOLOGY GROUP

Current crack detection methods



Current crack detection technologies

Principle

- Contact based

Concerns

- Maintenance costs
- Cleanability

SANOVO TECHNOLOGY GROUP

Vision AI crack detector

SANOVO TECHNOLOGY GROUP

SANOVO TECHNOLOGY GROUP VisionAI

Vision-based, intelligent egg crack detection

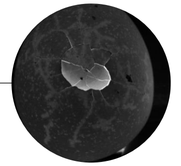
HIGH-POWER COMPUTING

The images are being processed with high-computing power on-site, where the deep learning model analyses potential cracks.

HIGH-RES CAMERA SETUP

VisionAI Crack Detector uses 4 high-resolution monochrome cameras per egg, 1,2Gb per sec, per camera.

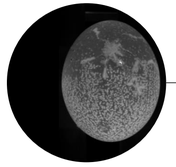
CRACK CATEGORY CLASSIFICATION



Select your crack category settings and make sure eggs with a large crack are sorted out through the whole egg removal.

360° EGG SCAN

Within the cabinet, every individual egg is scanned via 360° Egg Scan to not miss a single spot.
Taking a total of 16 images per egg.



LED LIGHT ILLUMINATION

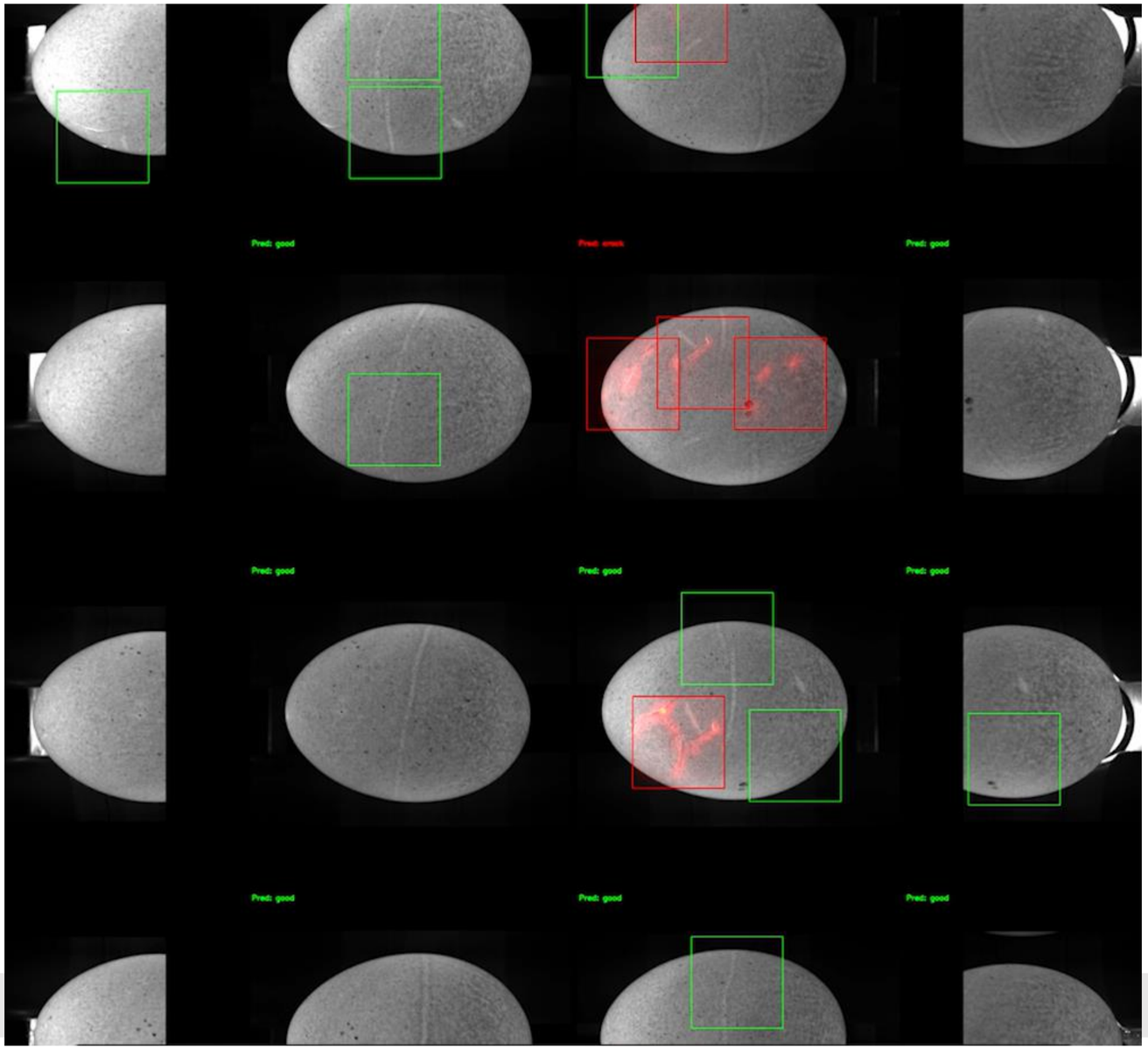
To ensure the highest quality image the vision cabinet is equipped with light modules developed by SANOVO. With this module, each egg, white or brown, will be illuminated in the most optimal way.

SANOVO TECHNOLOGY GROUP

High-Resolution Camera set-up

16 images per egg

1152 images per second



SANOVO TECHNOLOGY GROUP

Learnings

Deep learning is not magic

SANOVO TECHNOLOGY GROUP

Learnings

Take care of collecting and labelling data

Learnings

Powerful tool, but stay in control

Learnings

Solution suppliers were difficult to find

SANOVO TECHNOLOGY GROUP

What is your use-case?

WWW.SANOVOGROUP.COM

BEDANKT VOOR JE AANDACHT!

Meer informatie:

- Gerben Heinen – Sanovo Technology: GHEN@sanovogroup.com
- Arran Dinsmore - IBM: Arran.Dinsmore1@ibm.com

FME Platform AI for Industry:

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

FME AI FOR INDUSTRY JAAREVENT

Bedankt voor je aandacht!

FME POWERED BY DUTCH TECHNOLOGY