



# HELMS TECHNOLOGIE GMBH

Innovation for Integrated Quality  
Control

# Innovation for Integrated Quality Control

*For more than 20 years now we have been supporting leading companies with the development and introduction of innovative machinery and equipment for efficient measuring, testing and sorting as well as for integrated quality control.*

*Our interdisciplinary know-how stretches across many segments of engineering, mechatronics and computer technology as well as software development. Therefore we are in the position to offer you complex electromechanical equipment from one source.*

*Via the regular exchange of views and the close collaboration with our customers, we are able to react to changed requirements at an early stage and develop and supply already today technology for tomorrow.*

*An example for our innovation in the field of integrated quality control is the HELMS-INSPEKTOR. This machine has already gained remarkable reputation for its efficiency and functionality at respective companies of the food industry.*

*We prepared the following presentation for your information and look forward to doing business with you in the near future.*

*Dr. Dirk Helms,  
Managing Director*





## ***Challenges, we already solved...***

- *Fully automated sorting and selection of hazelnuts and other oilseeds*
- *Inspection of waffles in the production process using camera systems*
- *Performance test of precision mechanics and electronic components*
- *Development of sensors and measuring methods based on infrared light and ultrasound*
- *Development of high power computers based on digital signal processors (DSP und FPGA) for special applications*
- *Integrated solutions for measurement-, testing- and computer technology*
- *Optical inspection of Flow Pack packaging on a conveyor belt*



# HELMS-INSPEKTOR

Product- and  
Packaging Inspection

## Main Features

- Optical inspection of products transported on a conveyor belt
- Picture recording with high definition line and area cameras
- Control of form, color and size of products
- Removes defect products via different methods e.g. compressed air



# Applications:



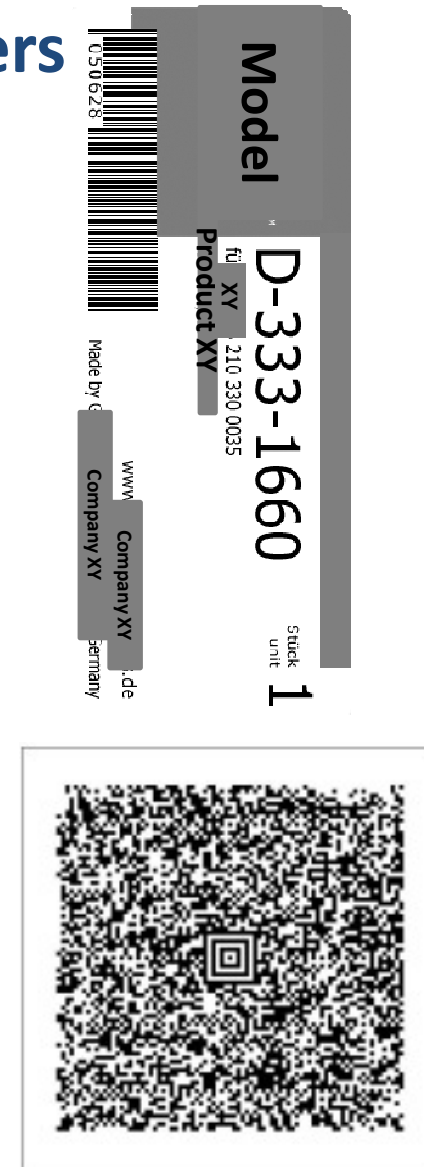
## Packaging Inspection

- For all types of packaging including bottles and tins
- Recognizes welding errors
- Identifies cracks
- Detects impurities
- Finds open and empty packaging
- Checks completeness



## Inspection of Labels, Codes and Numbers

- Recognizes displaced labels
- Checks print quality
- Checks use-by date, batch number and serial number
- Recognizes and reads labels, barcodes and 2D Codes



# Example: Packaging Flow Pack

Good Product



Error  
Print displaced



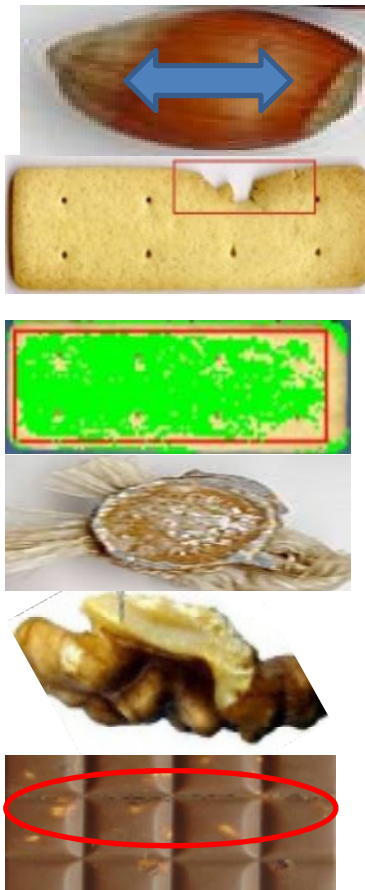
Error  
Packaging is empty



Error  
Two products stick together



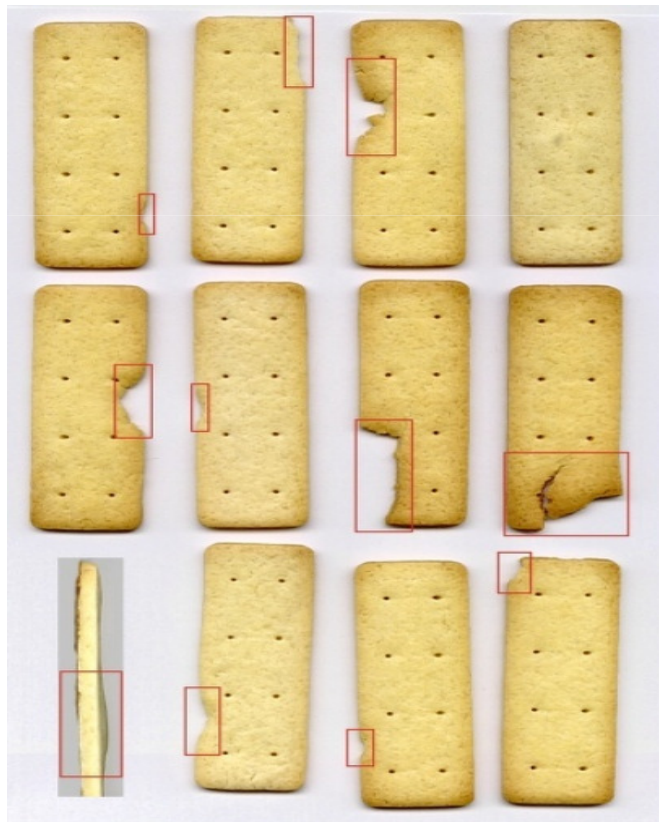
## Inspection of Unpacked Products



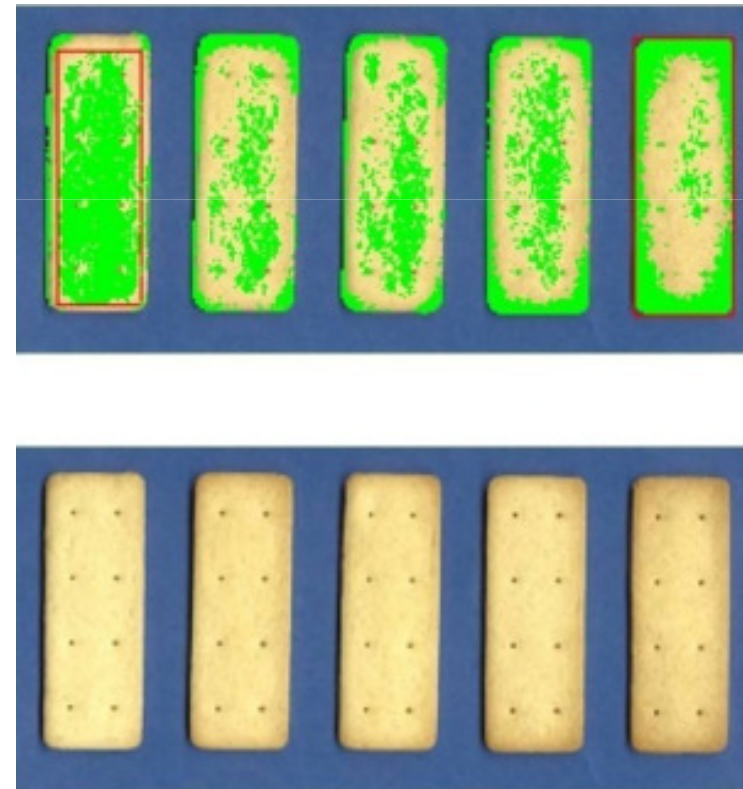
- Measures the Size
- Detects Form and Colour Deviations
- Recognizes Foreign Bodies
- Identifies Fragments
- Identifies Cracks...

# Example: Unpacked Products Biscuits

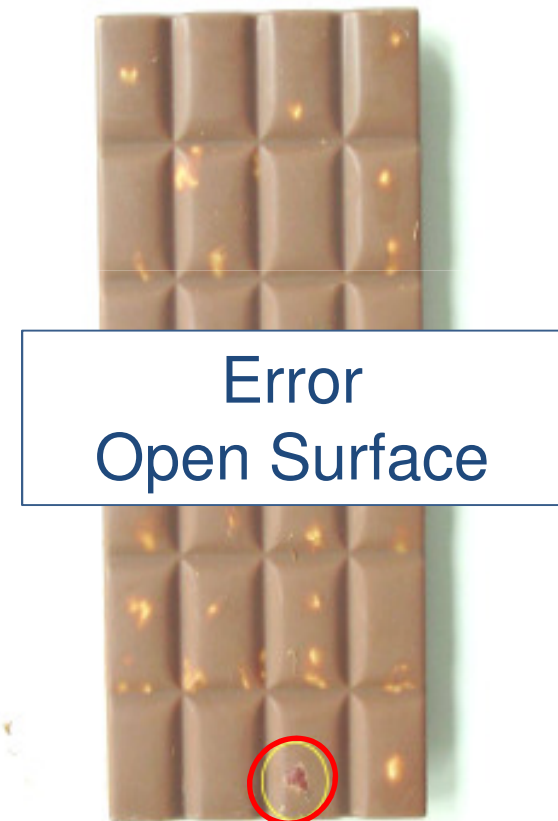
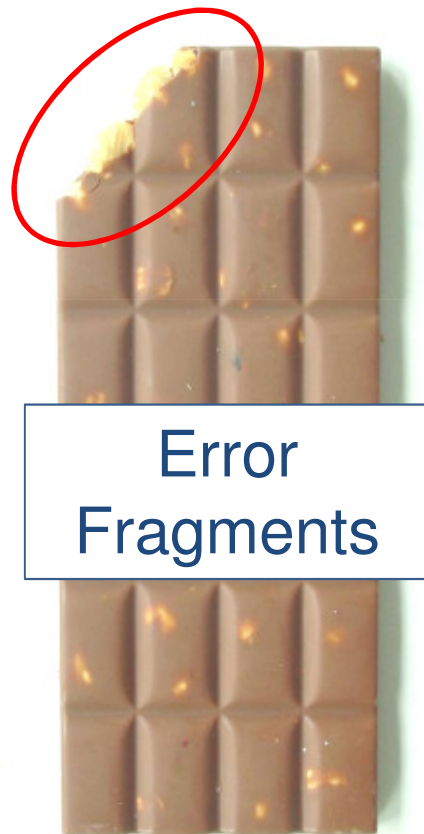
Form Control as Fragments



Control of Browning



## Example: Unpacked Products Chocolate



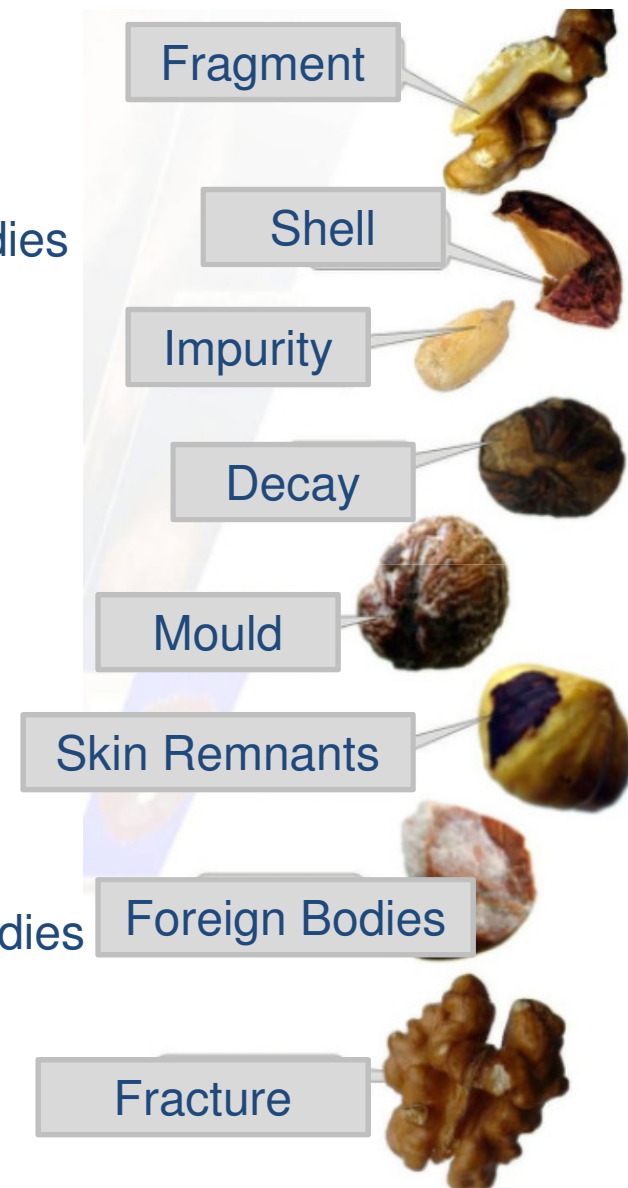
# Example: Control of Raw Materials e.g. Hazelnuts

## Color Evaluation

- Detection of mould
- Recognition of Foreign Bodies
- Analysis of skin remnants
- Finding of rotten products
- Control of impurities
- Identification of insect damage...

## Form and Size evaluation

- Fragment Detection
- Identification of Foreign Bodies
- Sorting by shape
- Sorting by size...



## Strenghts of the HELMS-INSPEKTOR

- Quality optimization
- High speed
- Easy operation
- Easy product change
- Flexibility and modularity
- Easy integration in existing IT infrastructure
- Intelligent software
- Remote diagnostics and maintenance
- Automatic operating documentation
- Robust independent system





Picture recording with high definition line or area cameras  
Colour pictures and LED lighting



Composition of individual picture lines to overall picture



**Technical Main Features**



In case of deviation defect products are removed via different methods e.g. compressed air

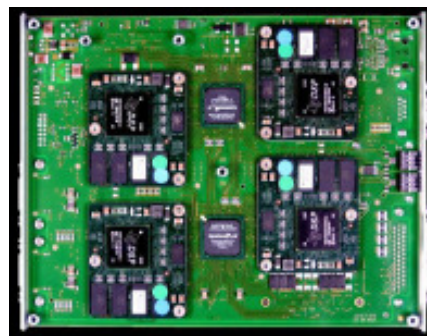


Image evaluation per digital signal processor (DSP)  
Statistical adaptation of limit values

## Cameras and Lighting

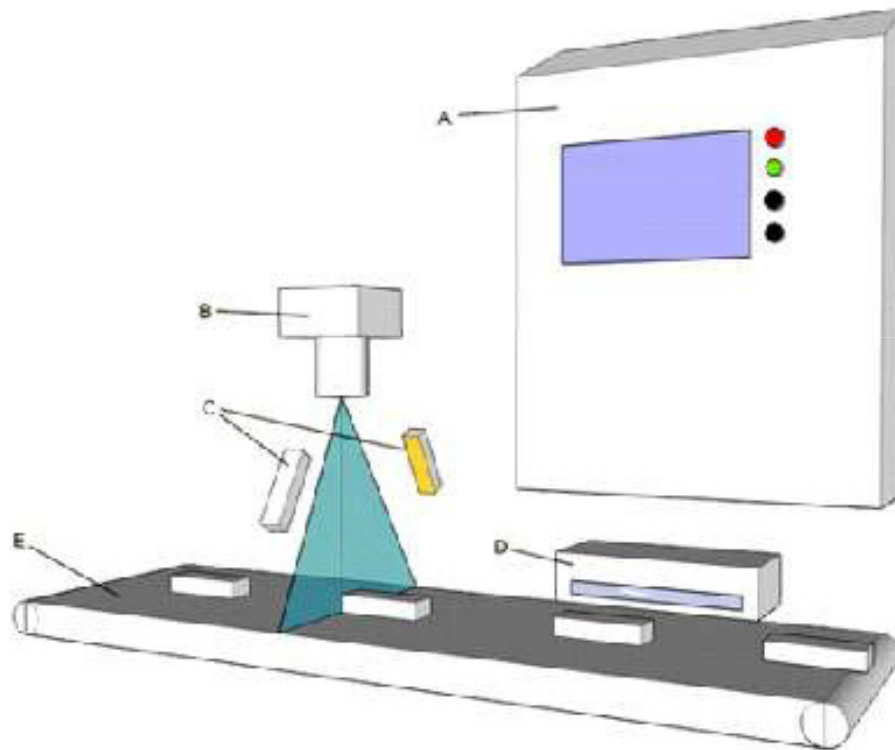
The number, resolution and types of area or line sensor cameras employed are adapted to the respective task on hand.



## Photo Assessment

The evaluation software, which we developed ourselves, is ideally suited for adaptation to the given task on hand.

## Assembly



### A Switch Box

- Power supply,
- Control computer,
- Evaluation Electronics
- Display with Controls

### B Take-up unit

Cameras

### C Lighting modules

High Power LED's

### D Ejection unit

- High-pressure air jets
- Blow-off valves
- Foldable belts
- Actuators

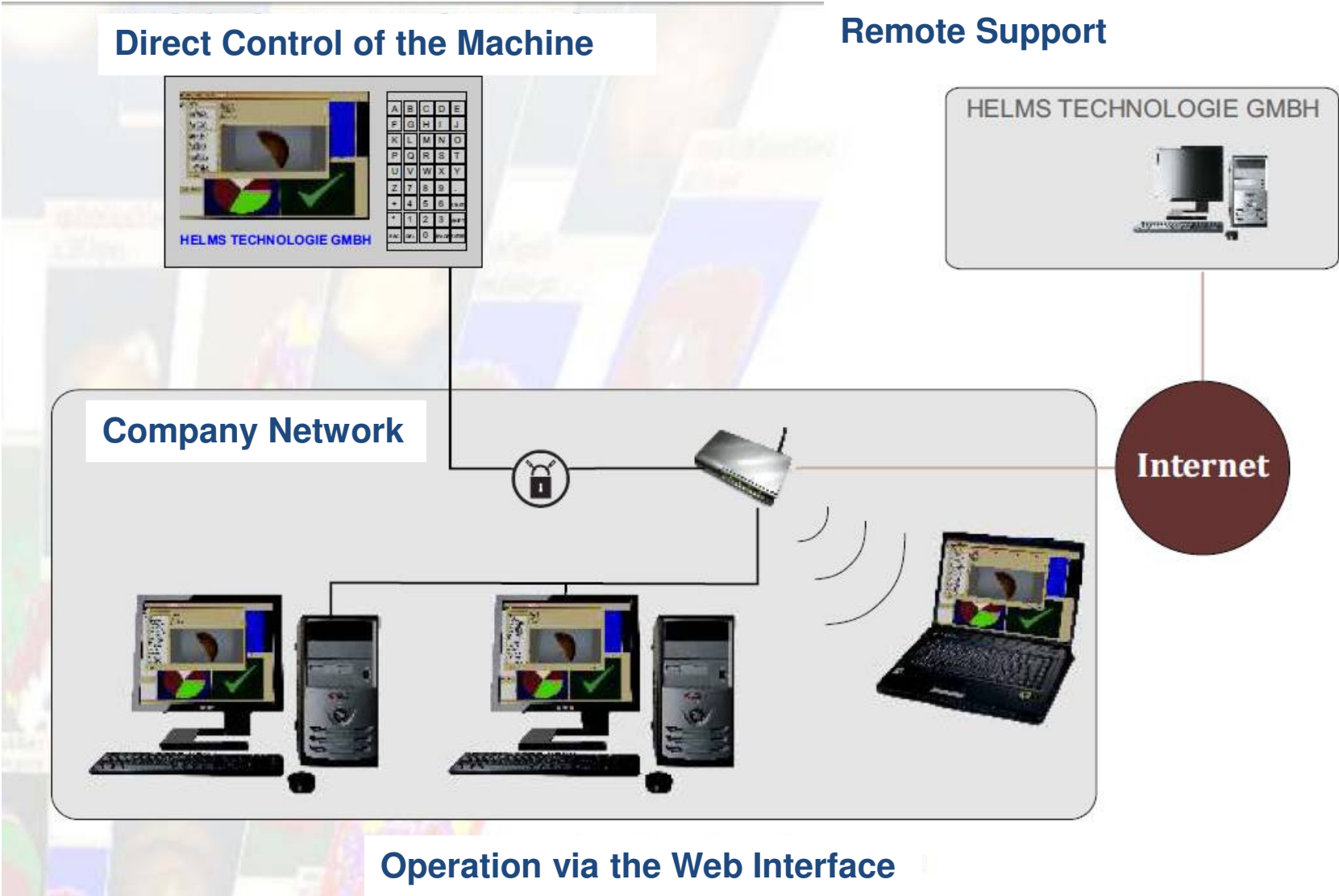
### E Conveyor

Speed sensor

## Our Service

- Product change
- Remote maintenance
- Remote diagnostics
- Service on site

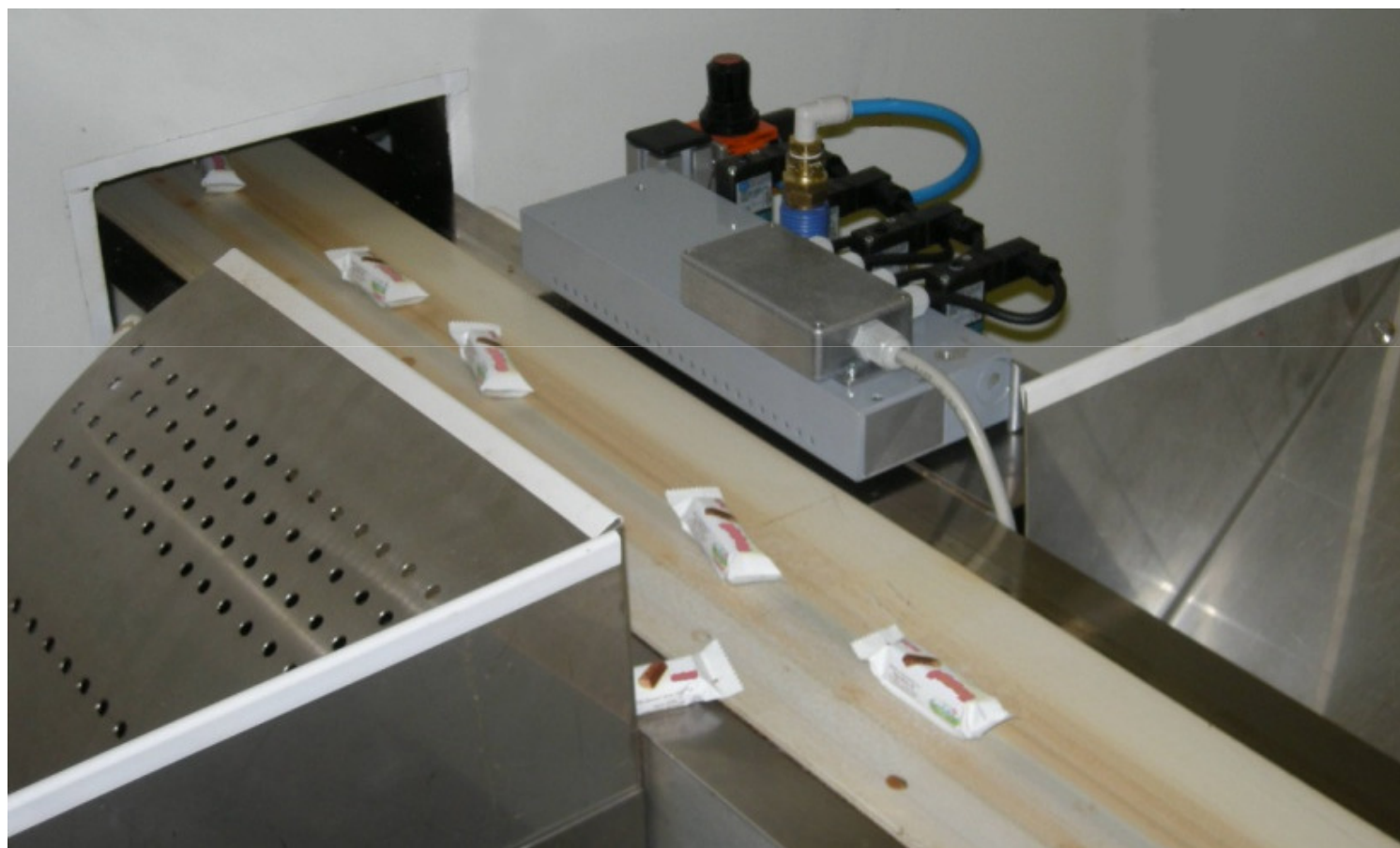




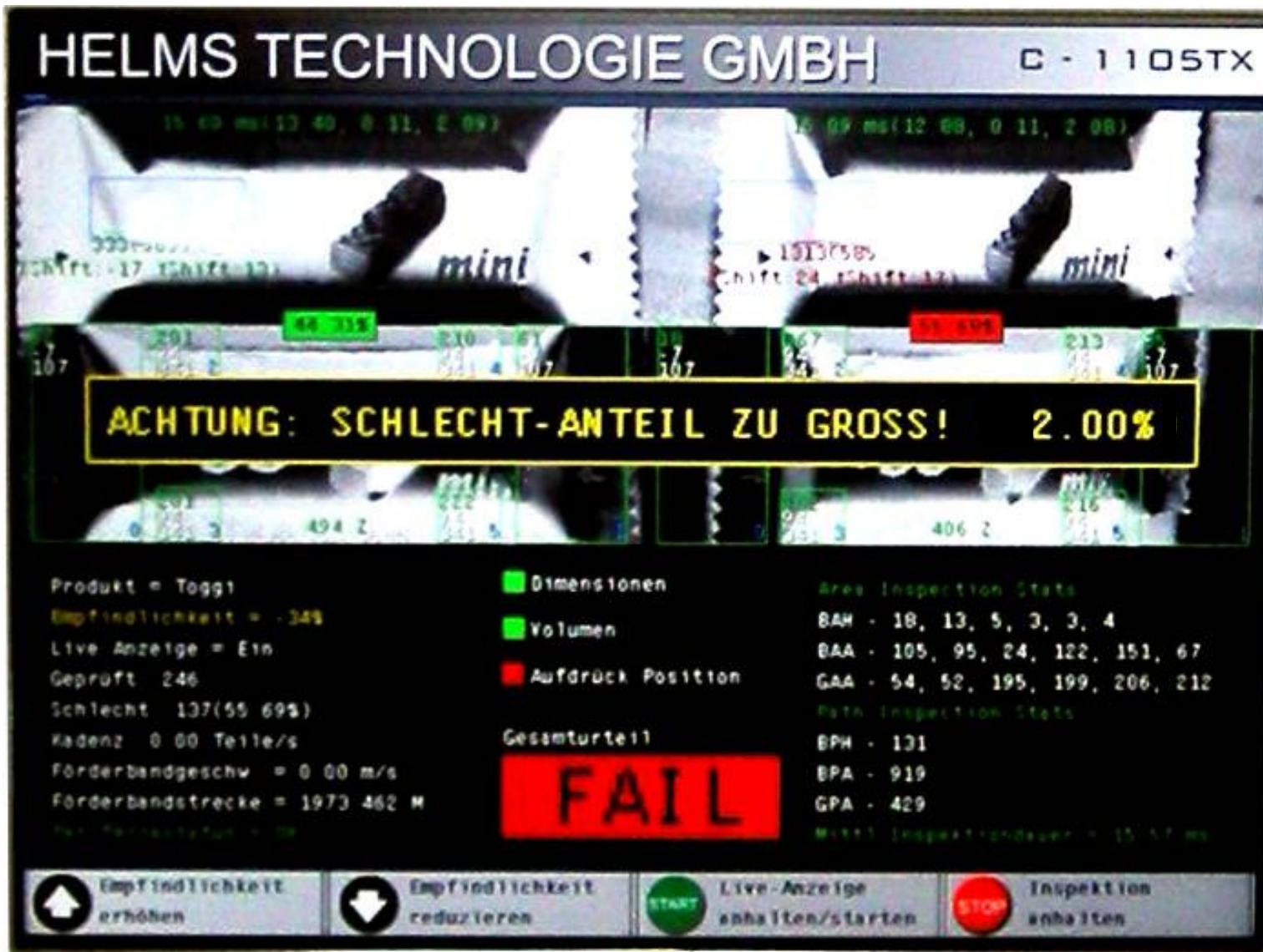


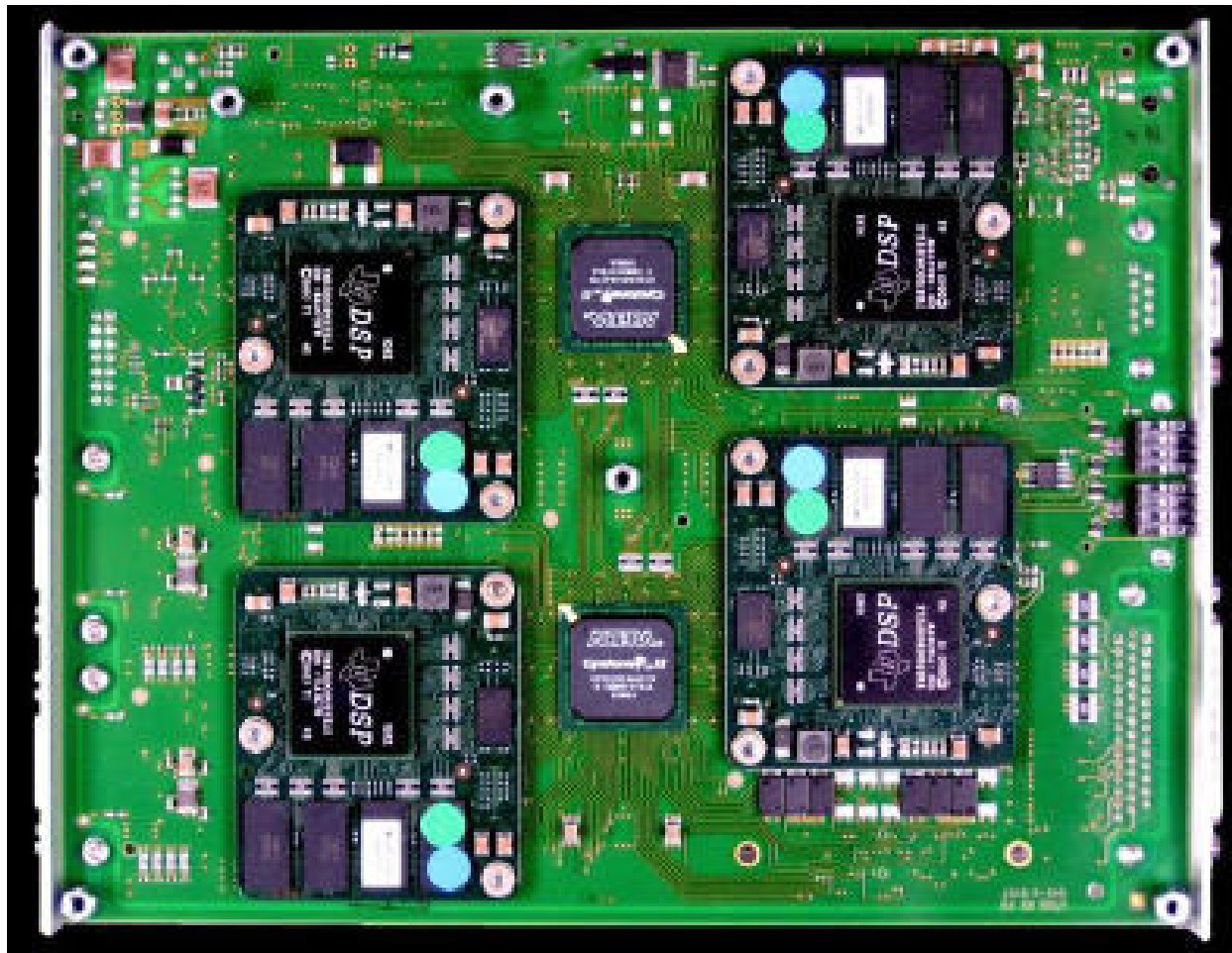
# Foto Documentation HELMS-INSPEKTOR













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