



COMPANY PRESENTATION

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Mekitec Group provides food manufacturers with compact, easy-to-use, X-ray inspection systems that provide excellent performance and the best value in the industry

MEKI™



MEKITEC – A LEADER IN FOOD X-RAY

Background: X-Ray Imaging Sensors for Medical, Security and Science Applications

1991 – 1997

Developing and producing X-ray detection technology science sensors



1997 – 2005

X-ray cameras for medical and security industry

2005

Focus on Food Safety – **Mekitec Oy**

2008

Developed smallest food X-ray camera – AQU detector

2011

Launch of the first MEKI X-ray inspection system for food safety



Present

MEKI product family installations in over 40 countries



X-ray inspection for safe food globally.



BAKERY | CONFECTIONERY | DAIRY | DRY BULK & POWDER | FROZEN FOOD | FRUITS & VEGETABLES
HEALTH & NUTRITION | LIQUIDS | MEAT & SEAFOOD | PET FOOD | READY-TO-EAT | SNACK



Mekitec Headquarters



Mekitec Distribution Center



Assembly Factory



Partners

Food Safety – an Ongoing Challenge



BAKERY | CONFECTIONERY | DAIRY | DRY BULK & POWDER | FROZEN FOOD | FRUITS & VEGETABLES
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FOOD SAFETY – AN ONGOING CHALLENGE

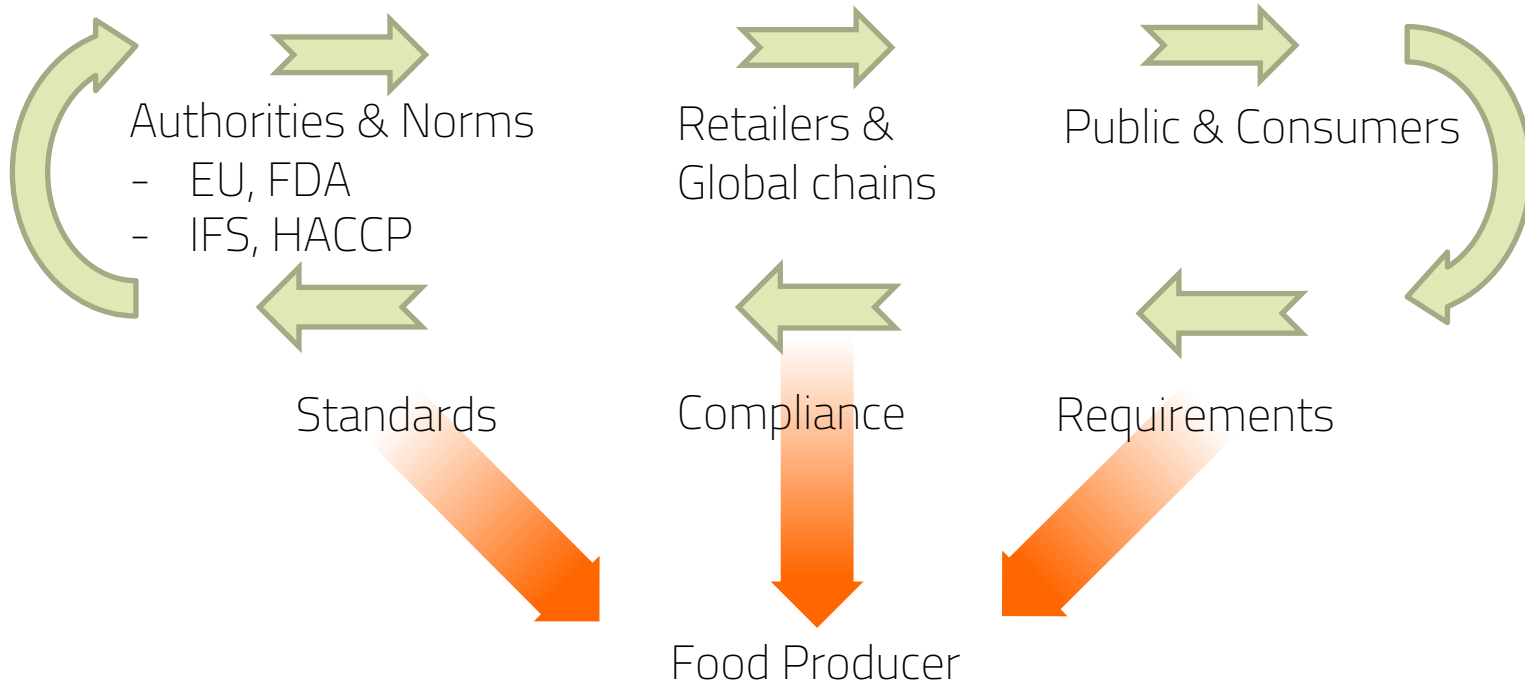
SAFETY REQUIREMENTS AND REPUTATION

MEKITEC IS IN QUALITY ASSURANCE AND PROTECTION BUSINESS



FOOD SAFETY – AN ONGOING CHALLENGE

Pressure Towards Safer Food



FOOD SAFETY – AN ONGOING CHALLENGE

What is a Control Point?

According to the Food and Drug Administration's HACCP Principles and Application Guidelines:

"...Any step at which biological, chemical or physical factors can be controlled."

And a Critical Control Point?

"...A step at which control can be applied and is essential to prevent or eliminate a food safety hazard or reduce it to an acceptable level."

→ Metal detectors, **especially X-ray systems** can be seen as Critical Control Points in the food manufacturing process **controlling physical factors**, and **eliminating** physical food safety hazards, or **reducing** them to an acceptable level

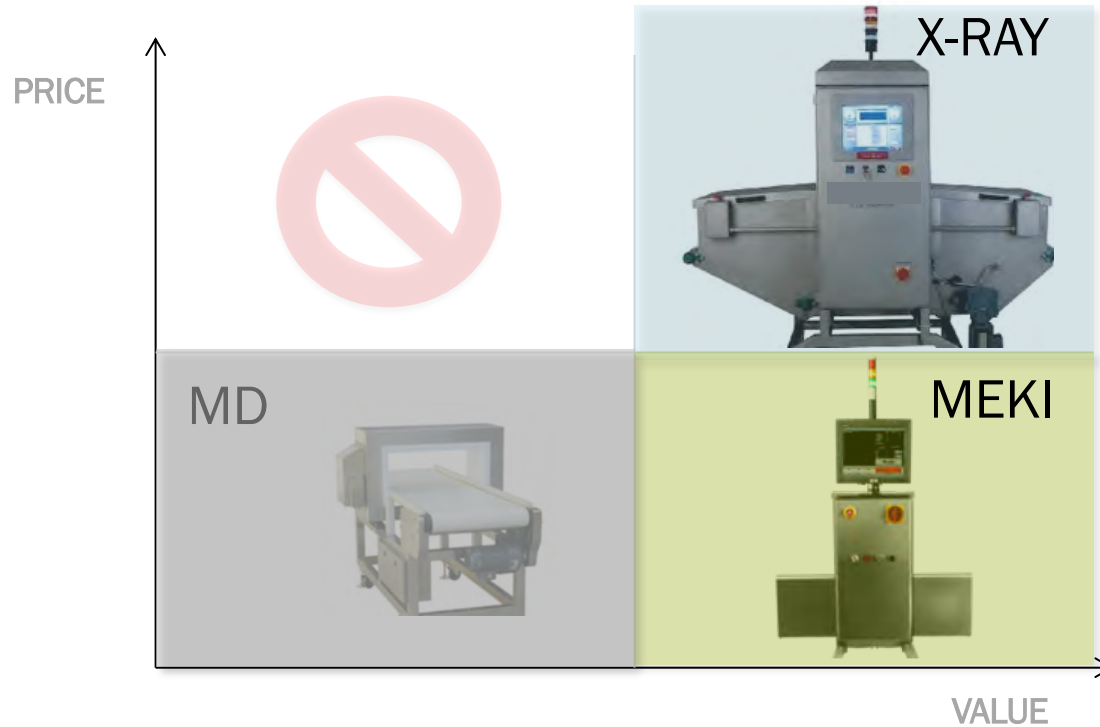
MEKI – Product Offering



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MEKI

Where our idea started from



Trends

1. The importance of Food Safety Inspection is growing

- Also smaller companies are now investing in protecting their brand image
- Large global companies extend their brand protection requirements to their vendors
- Retail stores set requirements for their vendors' production

2. Automated and more intelligent Food Safety Inspection is increasing

- New standards and requirements (e.g. BRC) drive higher level of control in production
- 'Rejection confirmation' –type of added security becoming a standard feature
- Automation, intelligence and data exchange with Industry 4.0 and AI are being introduced to the food industry

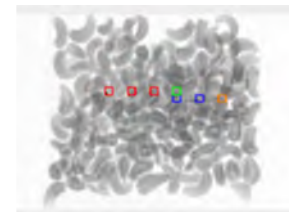
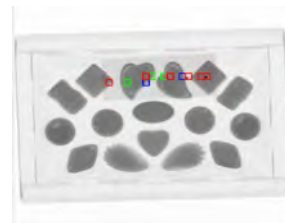
3. Global Food Industry is said to grow at 4,5% Compound Annual Growth Rate

- Food Inspection with X-ray systems is growing significantly faster than the industry in general as X-ray is more and more used to replace or augment the metal detectors

An example of a detection range:

- ✓ Metal pieces 0.6 – 1mm e.g. FDA HACCP guideline 7mm
- ✓ Glass splitters 1.5 – 4mm e.g. FDA HACCP guideline 7mm
- ✓ Ceramic (Stone) 1.5 – 4mm e.g. FDA HACCP guideline 7mm
- ✓ Other contamination e.g. PVC, Teflon etc.

Application tests are always done with actual customer products to define the exact detection accuracy of MEKI!



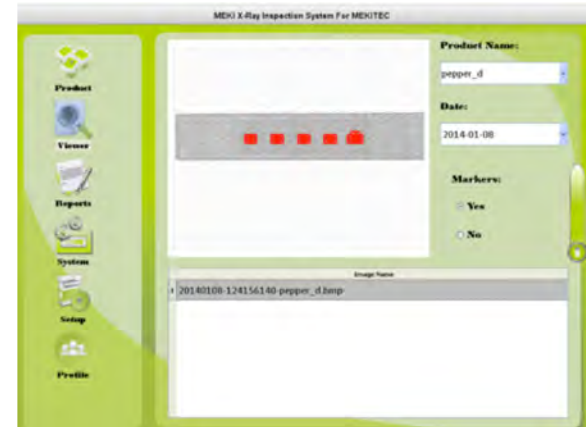
MEKI INSPECTION SOFTWARE

Foreign object detection:

- By comparing different levels of density also non-metallic foreign objects can be detected

Additional value:

- Masking of edges and clips
- Broken product detection
- Closing clip detection
- Missing object / filling detection
- Check-weigher integration
- Automatic learning
- Advanced production reports
- Easy usability



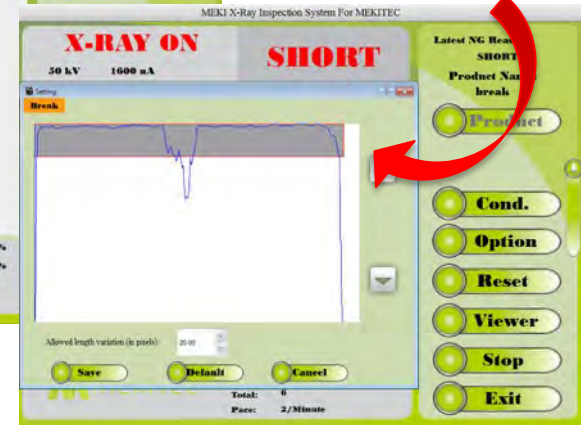
BROKEN PRODUCT DETECTION

- The function is used for detecting too short or broken products, for example broken candy bars
- The gap in the product must be visible in the X-ray image for the function to work

OK product

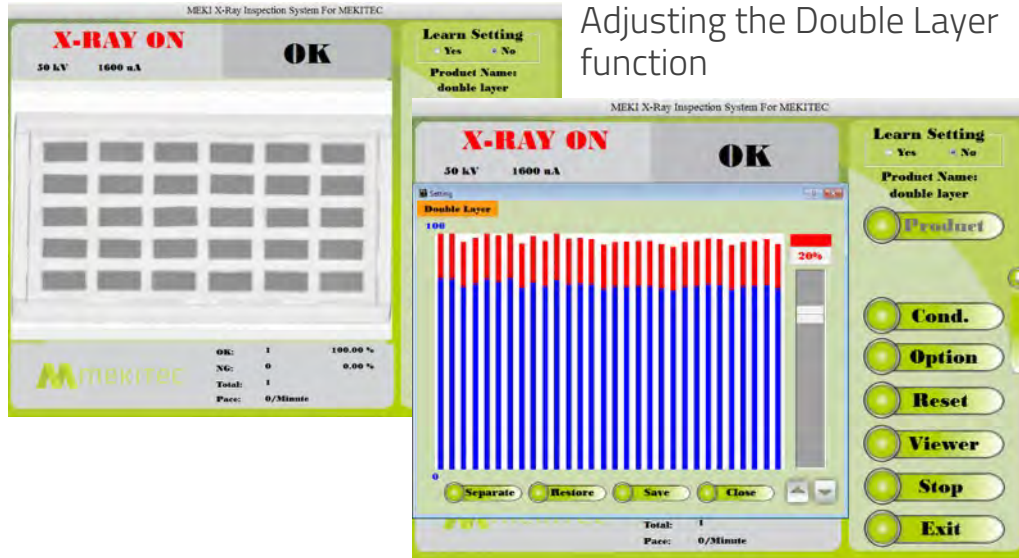


Broken product detected

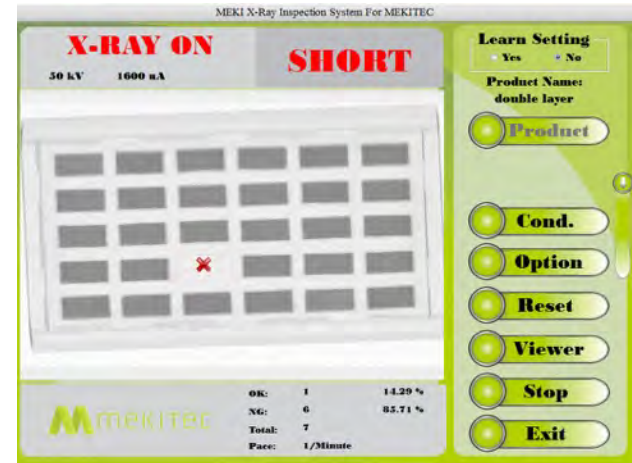


MISSING PRODUCT IN DOUBLE LAYER

- This function is used to detect missing candies from e.g. confectionary boxes
- Function can be adjusted separately for each candy inside the package, and even in multiple layers



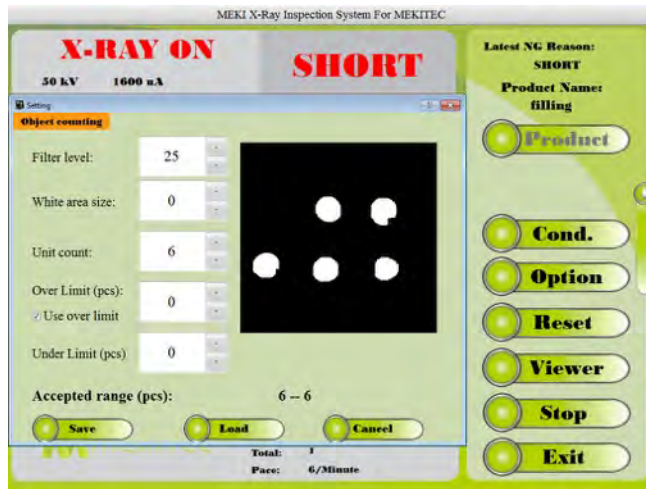
Rejections are shown as SHORT



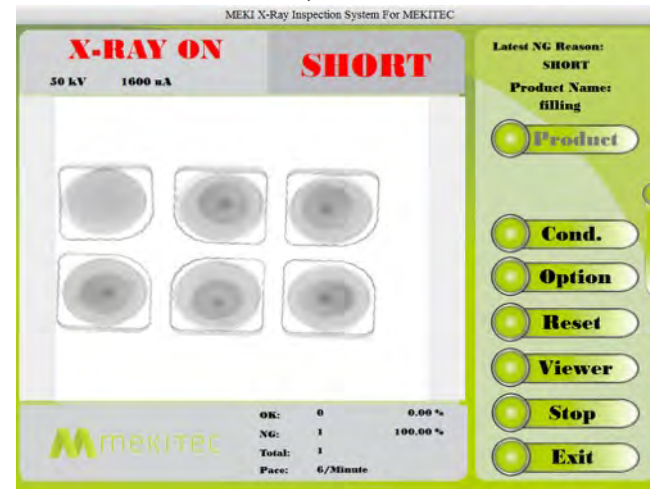
FILLING DETECTION

- Function can be used to detect if the filling is missing inside the product, for example jam inside a doughnut
- if OK product consists of three cakes in a box, a box with two products would be rejected

Adjusting the Filling function



Rejection



MEKI PRODUCT FAMILY



MEKI

Technology:	AQU 256 / 100 W
Software:	Meki SW
Detection Area:	250 x 110
Conv. Length:	800 / 1200
Weight:	75 kg
Line speed(max):	1.3 m/s (1.6m/s option)

For small packaged food products



COMBIMEKI

X-ray system:	MEKI or MIDMEKI
Conveyor length:	430 / 530
Conveyor width:	250

Combination of X-ray and CW in the same compact system

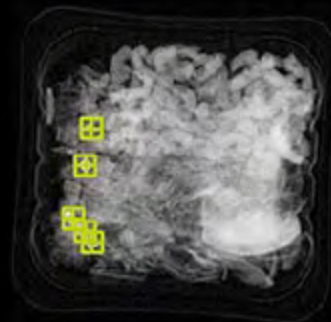
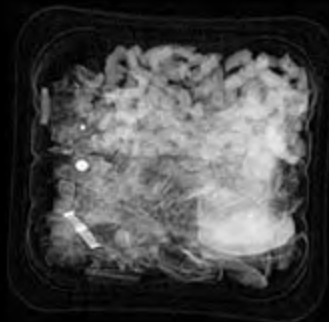


MIDMEKI

Technology:	AQU 410 / 200W
Software:	Meki SW
Detection Area:	400 x 200
Conv. Length:	1000 / 1400
Weight:	200kg
Line speed(max):	1.0m/s

For medium-sized packaged food products

THANK YOU!



Questions?

