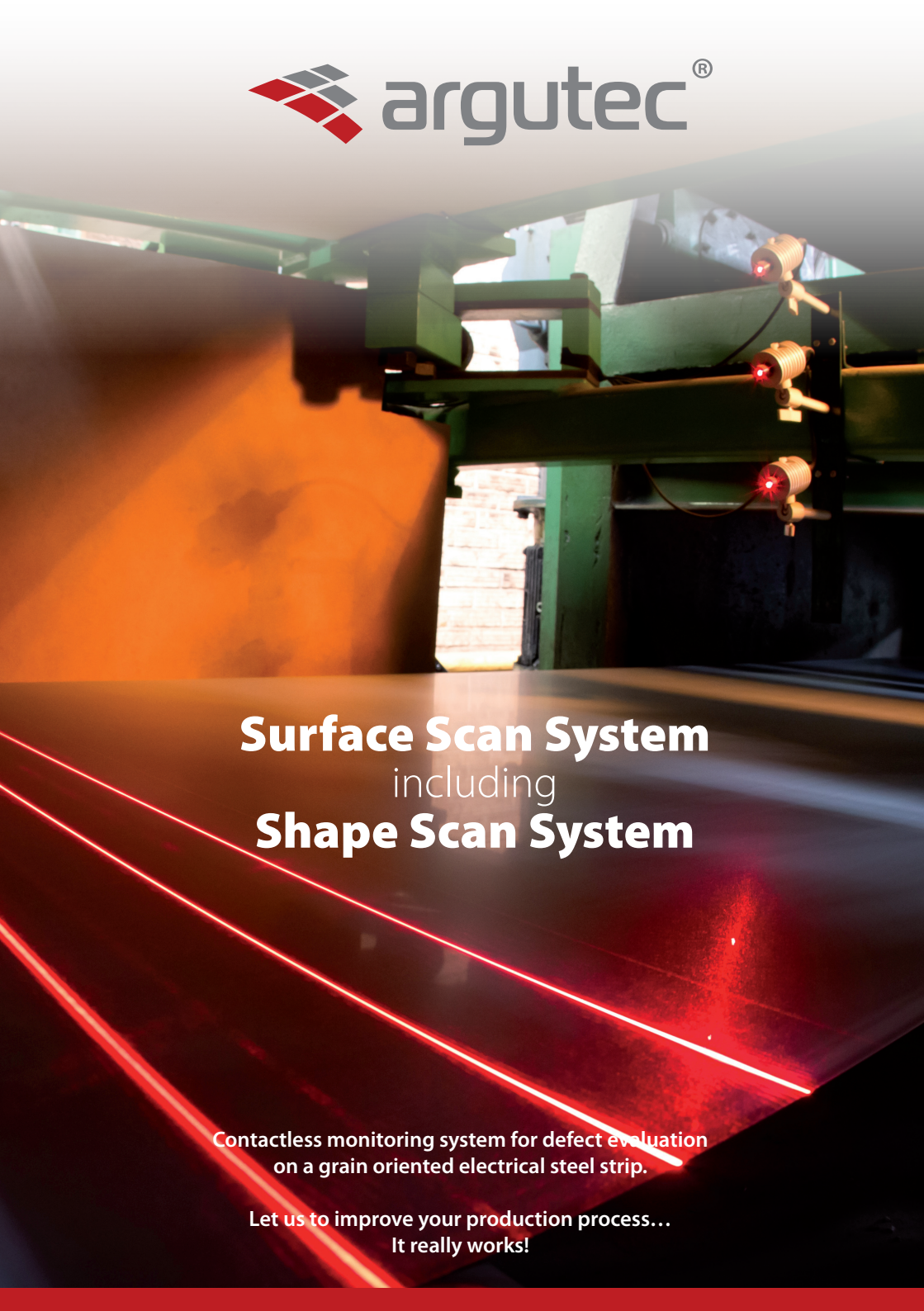
argutec®



Surface Scan System
including
Shape Scan System

Contactless monitoring system for defect evaluation on a grain oriented electrical steel strip.

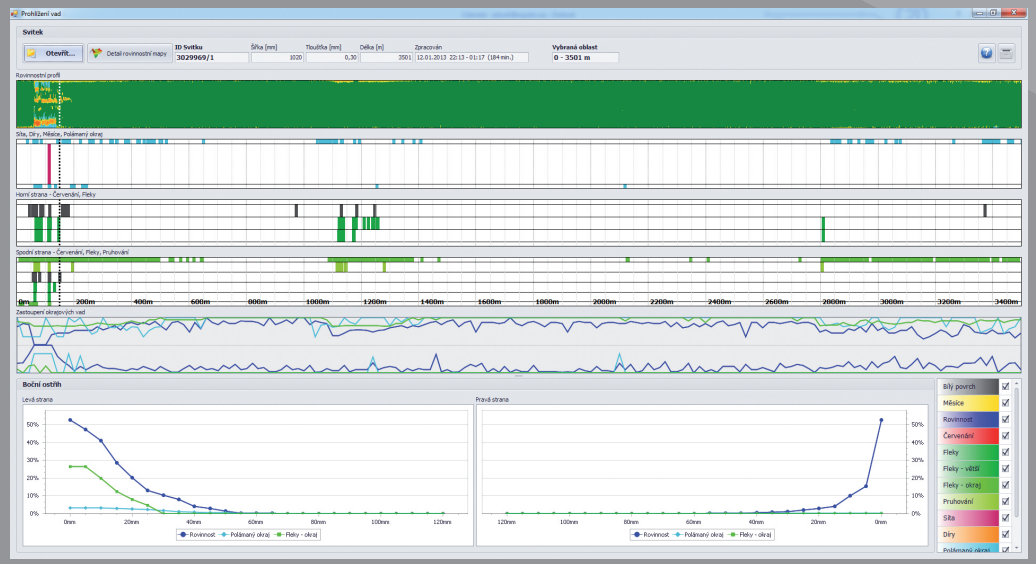
Let us to improve your production process…
It really works!

Description

The Surface Scan System product is contactless monitoring system for defect evaluation on a grain oriented electrical steel strip. The purpose of the system is to monitor manufacturing quality in real-time, to analyze and archive evaluated data.

The Surface Scan System evaluates surface defects on a steel strip and is supplied with the Shape Scan System which allows for flatness evaluation.

Both products are designed on the principle of easy integration into your production process. Client applications are designed ergonomically to match users' needs at individual workplaces.



Benefits of the system

- Precise location of defects on a strip allows leaving maximum of it in the first grade.
- capacity of slitting and cutting lines is increased through the accurate information about the surface defects and depth of boundary defects.

For manufacturers

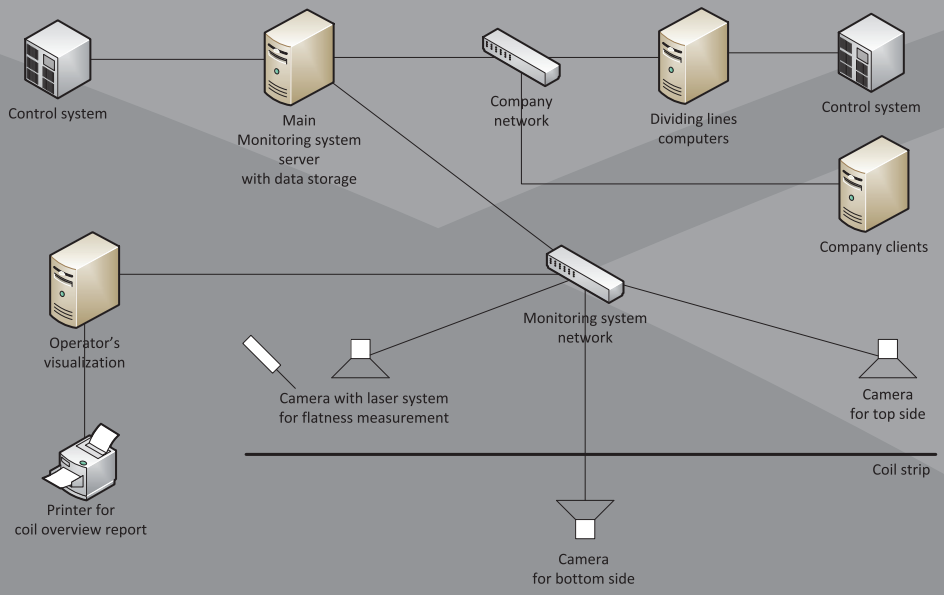
- Elimination of non-conforming product supplied to customer,
- line operators rapid response on occurring defects with a possibility of immediate defect elimination,
- better process control, root cause analysis and subsequent action,
- faster and more accurate impact on warranty claims,
- cost reduction – consumption of materials, energy and labor.

For customers

- Comparison of input material quality delivered from different suppliers,
- complete report of delivered quality of coil to approve warranty claim to your supplier,
- line operators rapid response on occurring defects with possibility to automatically configure the cutting line,
- cost reduction – consumption of materials, energy, labor, prevention of using non-conforming material on following operations.

Technology

The core of the system consists of two line scan cameras and custom tailored Argutec lighting system for surface defect evaluation. Another part of the system is flatness measurement which is evaluated by system of lasers in cooperation with one area scan camera.



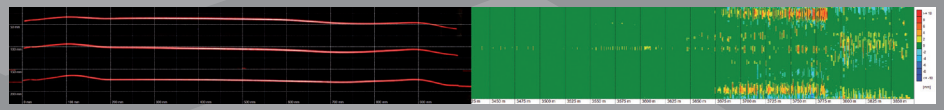
System architecture

Detected defects

In standard configuration system allows to detect following defects:

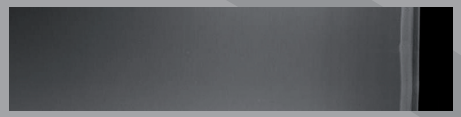
Flatness – map + recommended slitting

Flatness

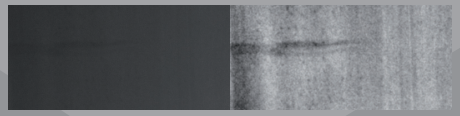


Boundary defects – recommended slitting

Oxidation

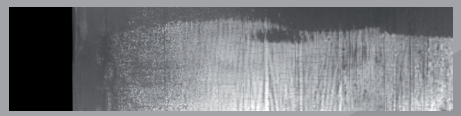


Breaks

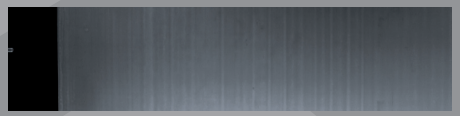


Surface defects – recommended cutting

White surface



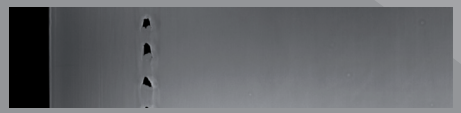
Strips



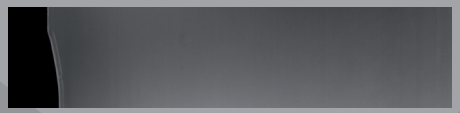
Cracks

Spots

Holes



Cut out half moons



System is flexible, highly customizable and can be modified to your custom needs with addition of more types of defects.

The delivery also includes a server that ensures:

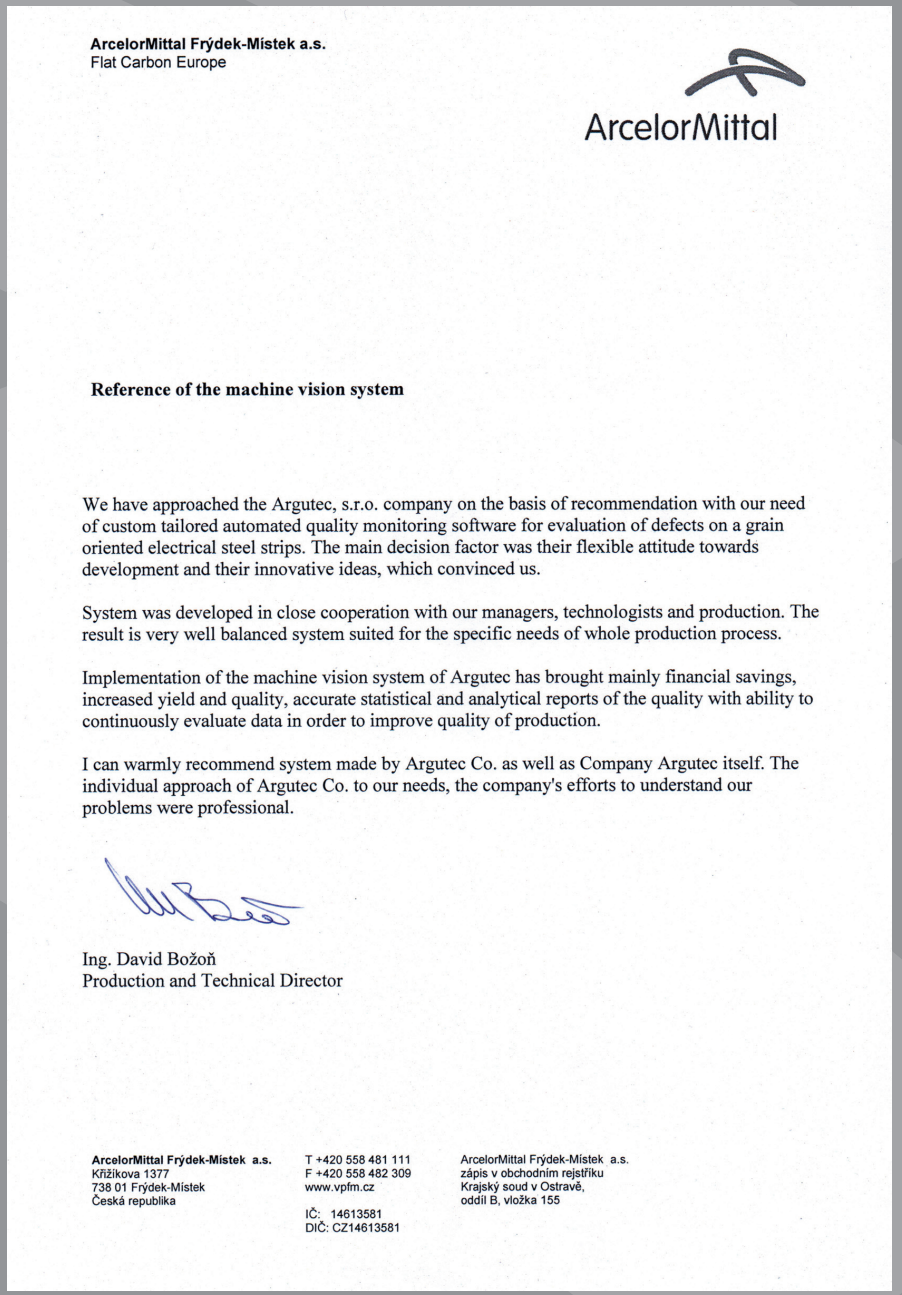
- Real-time defect evaluation and classification,
- data distribution to production line operators, slitting lines, technology department, management, etc.,
- data processing for statistical and analytical evaluation,
- storing complete coil overview including image data.

The system can be extended with more modules according to your needs, i.e. automatic slitting line configuration so that maximum yield can be ensured.

Software

MVSystem	Main application that ensures real-time data evaluation and archiving.
Operator Application	Application for production line operators. Displays information about current defects present on the plate and notifies the operator (visually and/or acoustically) of defects that he is able to eliminate by an immediate service action. ✚ *Immediate operator's action reduces the quantity of plate damaged by removable defect.*
Archive Previewer	Application designed for technology department. Enables the technology engineers to view all of the collected data, browse image data and perform statistical analysis. Thanks to the data analysis it is possible to optimize production process in previous operations. ✚ *Continuous work with archived data and their evaluation leads to production process improvement.*
Slitting Line Application	Application for slitting and cutting lines. Displays detailed data for one coil and recommends optimal: • trim depth, • plate cutting. This application can be extended with module that allows automatic configuration of the slitting line and/or cutting line. ✚ *Working with the cutting information and recommended data increases the line production capacity, reduces the number of additionally required side trimmings and increases quantity of material left in the first grade.*

ArcelorMittal Reference Letter



ArcelorMittal Frýdek-Místek a.s.
Flat Carbon Europe

ArcelorMittal

Reference of the machine vision system

We have approached the Argutec, s.r.o. company on the basis of recommendation with our need of custom tailored automated quality monitoring software for evaluation of defects on a grain oriented electrical steel strips. The main decision factor was their flexible attitude towards development and their innovative ideas, which convinced us.

System was developed in close cooperation with our managers, technologists and production. The result is very well balanced system suited for the specific needs of whole production process.

Implementation of the machine vision system of Argutec has brought mainly financial savings, increased yield and quality, accurate statistical and analytical reports of the quality with ability to continuously evaluate data in order to improve quality of production.

I can warmly recommend system made by Argutec Co. as well as Company Argutec itself. The individual approach of Argutec Co. to our needs, the company's efforts to understand our problems were professional.

Ing. David Božoň
Production and Technical Director

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oddíl B, vložka 155

Argutec, s.r.o.

Argutec Company was founded by specialists involved in development of industrial systems (not only in the field of machine vision) for several years. The main objective of Argutec is to provide your company with solutions with high level of innovation, seamlessly integrated into your production workflow. Image analysis algorithms are custom-tailored to your exact needs, no third party solutions are used – this gives us unlimited possibilities in development and none of your requirements is a problem. Don't adapt yourself to someone else's solutions and let us develop truly your system.

We are proud of our individual approach to our customers and your satisfaction is our ultimate goal. We are fueled with joy to be able to work on interesting, creative projects and we believe in positive influence of this approach on quality of final products.

Experience with complex product development speaks for Argutec, s.r.o. We have vast experience mainly in these fields:

- machine vision systems,
- operator applications,
- applications for data visualizations,
- applications for statistical and analytical data evaluation,
- mathematical models and production workflow optimization,
- communication with production line control systems,
- enhancement of existing systems with sensors, counters and other parts to work with additional software,
- development of control systems based on microcontrollers,
- manufacturing of custom-tailored lighting systems – both line focused and area.

Contact Details

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The Argutec company name has been derived the name of Argus Panoptes, the Giant, from Greek mythology. Argus was a primordial all-seeing giant with one hundred eyes in service of goddess Hera whose main task was to guard priestess Io. For these abilities of ultimate guardian he was selected as a great representative of machine vision principles.