ISRA **VISION** SYSTEMS

More than a cardboard hero:

Complete inspection solution for increased productivity in paper manufacturing

The ready to use SMASH Advanced Paper Inspection System ensures 100% inline surface inspection in the international paper industry. However, the fastest paper inspection system in the world offers much more than just image processing: together with optional software modules, it noticeably optimizes the production process with comprehensive quality information.

330 million metric tons of paper are manufactured worldwide per year – and the trend is increasing. In Germany alone, per person usage is at 224 kg per year, making up a total volume of 19 million metric tons. With the current rising paper prices, primarily due to increasing energy costs, it is important to ensure high quality and throughput in paper production while keeping losses due to production halts and scrap production at an absolute minimum. Image processing systems play an important role in maintaining quality levels through paper inspection. As a longtime partner of the paper industry with broad know-how in all areas related to industrial image processing, ISRA VISION is proud to present the ready to use SMASH Advanced Paper Inspection System.

The SMASH system is composed of high resolution CCD-line-scan cameras, custom lighting technology for the various applications and industrial computer systems. The heart of the system is the SMASH WEB PROCESSOR: a digital frame grabber with a data bandwidth of up to 320 MHz. It can simultaneously process the surface image data from multiple line-scan cameras in real-time. The line-scan

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cameras themselves feature protective casing with optional external cooling for use in even the harshest conditions.

A particular highlight is the modular, intensity-controllable Ultra High Intensity LED lighting system with an extremely long operating life. What's more, any sheet width can be illuminated by building a matrix of these modules. Through the use of white LEDs, even reddish-brown defects (oil, for example) can be detected.

The modular structure of the system and the industry specific process knowledge of ISRA's specialists allows for customer specific adjustment to any requirement and the system can be implemented in very short time. The absolute show-stopper of the system are the optional modules, with which the performance of the SMASH system can be increased even further to bring the production process to perfection.

Simple system operation for the papermakers is of particular importance to us. The results are presented clearly. All displays can be tailored to the requirements of the individual paper manufacturer. Due to the high resolution of the system, the machine operator can view cristal clear images of the paper defects, even at the highest conveyor speeds. Due to the high quality of the images, the plant operator receives valuable information on his production processes.

The QUICKTEACH Classifier module facilitates intelligent defect classification: defects detected by the SMASH system can be uniquely classified. Defects such as oil, water spots, holes or black marks are uniquely and automatically classified using parameters such as size, circumference and contrast. The specific defect types are shown and labeled on a defect chart. Furthermore, trends can be generated with signaling and alarms, set up in advance. The process

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is structured in such a way that the system does not "overtrain" itself, guaranteeing unique defect classification every time. A further plus: "teaching" new defects does not require inspection to be stopped, so that the plant operator can intuitively create new defect types in a very short time, supported by QUICKTEACH.

The SMASH Inspection System's Data Mining software is an important extension to improve internal process efficiency and quality. The software module collects the production and defect data for further analysis and makes it possible to transfer it to an arbitrary database. In doing so, statistical data from multiple machines in various locations can be combined. The individual reels can thus be assigned with quality passes. The operator can carry out analyses by date or time, batch, type of paper defect, product type or shift using the provided data, generating valuable feedback for production optimization.

With the Re-Wind Manager, the operator can define the defects of his choice for removal from the inspected paper or tissue reels, or for which the process speed should be reduced. These defects, whose parameters are transferred by the inspection system, can be marked with signal colors. The Re-Wind Manager reads and interprets the imprinted lane markings – a type of "tape measure" – and stops at the positions defined by the defects, making it possible for the operator to examine, repair or eliminate the defect. Often, it is enough to simply reduce the production rate, for example whenever longitudinal cutting is done in the rewinder with corresponding wind length synchronization, to be able to smoothly continue the production process. In this way, the Re-Wind Manager ensures high production throughput, reduces plant downtime and prevents paper tears.

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PRESS *News*

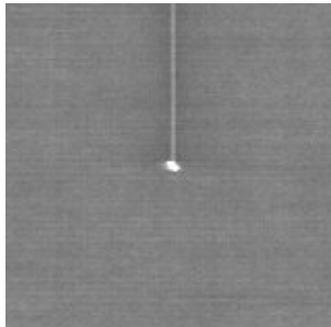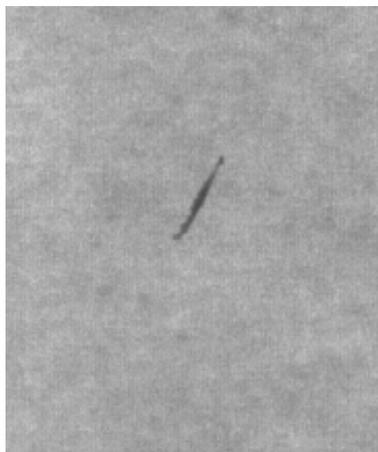| Release:	No. 86, 22.12.2005
Contact:	Walter Meyer
E-Mail:	wmeyer@isravision.com
Phone:	++49 (6151) 948-172

Furthermore, an optional module for remote maintenance is available. With this module, software updates can now also be installed remotely. The SMASH System and the powerful optional modules make it possible for ISRA VISION to provide tuned solutions tailored to the specific application.

Images

Hole and streak
(Image 1.jpg)

Contamination
(Image 2.jpg)

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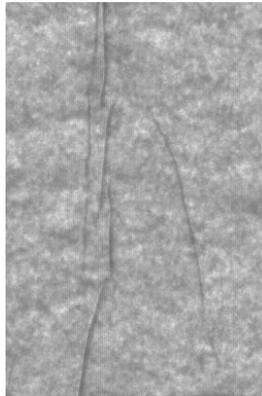
Defect wrinkles
(Image 3.jpg)
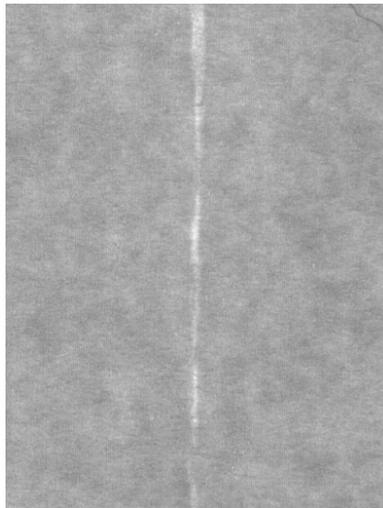
Defect water streak
(Image 4.jpg)

ISRA VISION SYSTEMS AG

Industriestraße 14
D-64297 Darmstadt
Tel: +49 (6151) 948-0
Fax: +49 (6151) 948-140
info@isravision.com

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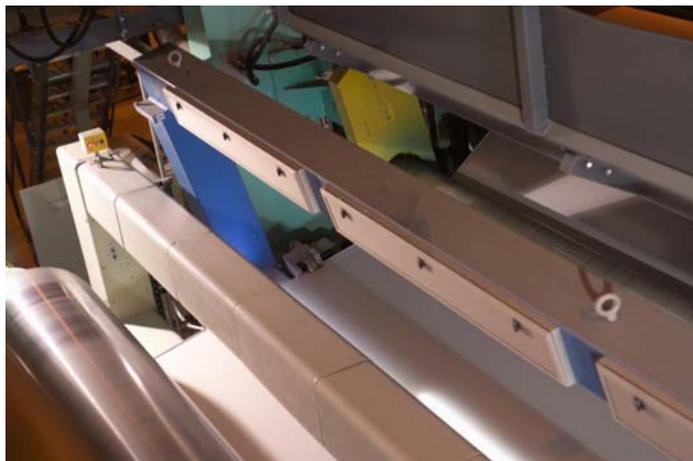| Release:	No. 86, 22.12.2005
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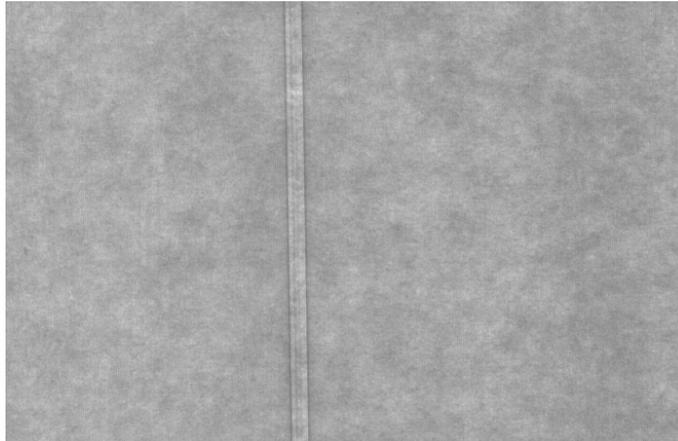
Streak
(Image 5.jpg)

**SMASH Advanced Paper Inspection:
Integration can be done even under significant
space restraints at all relevant process stages**
(Image 6.jpg)

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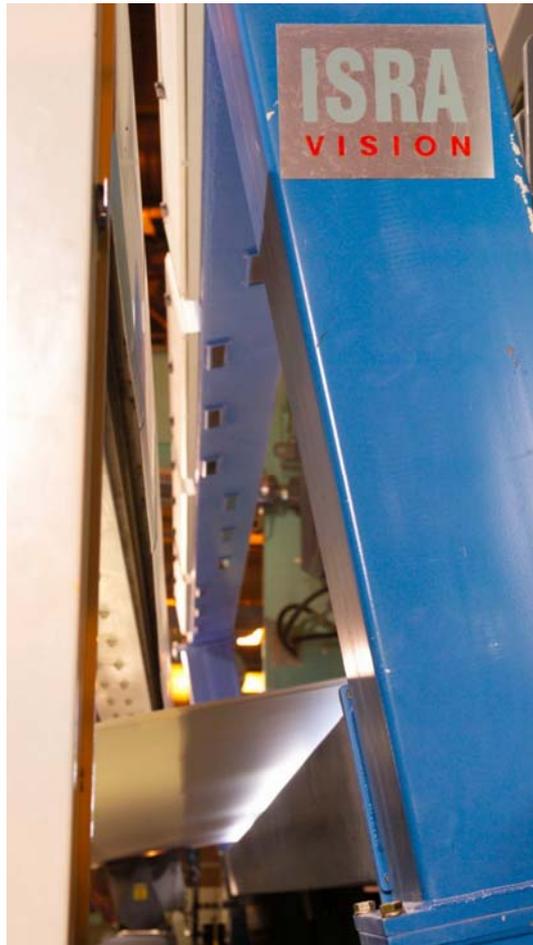
SMASH:
The ground-breaking All-in-One solution for defect detection, quality improvement and data analysis in paper production
(Image 7.jpg)

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Re-Wind Manager – red marks:
User selected defects for special subsequent
processing
(Image 8.jpg)

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D-64297 Darmstadt
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info@isravision.com

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