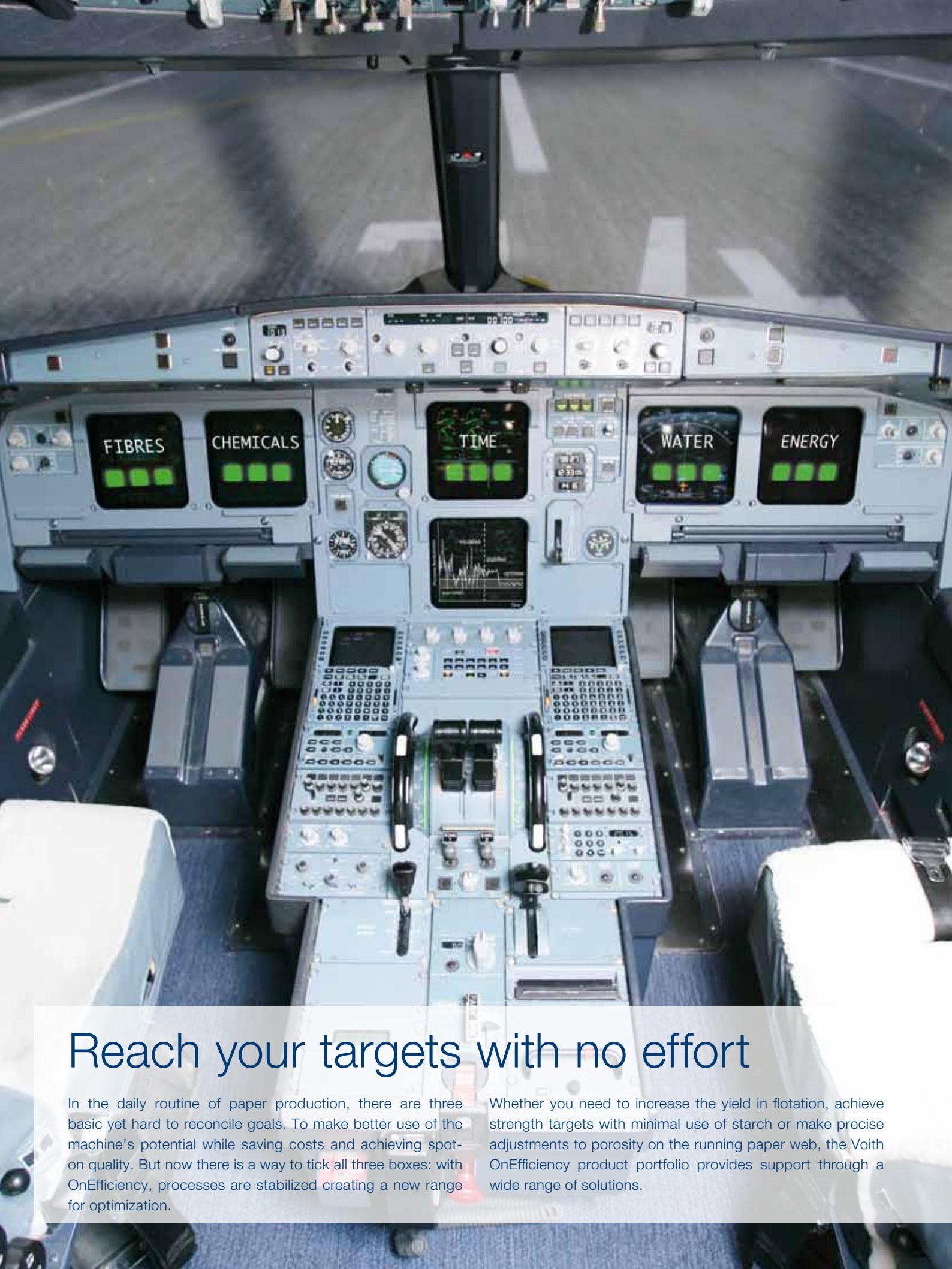


OnEfficiency

Always keeping on track!





Reach your targets with no effort

In the daily routine of paper production, there are three basic yet hard to reconcile goals. To make better use of the machine's potential while saving costs and achieving spot-on quality. But now there is a way to tick all three boxes: with OnEfficiency, processes are stabilized creating a new range for optimization.

Whether you need to increase the yield in flotation, achieve strength targets with minimal use of starch or make precise adjustments to porosity on the running paper web, the Voith OnEfficiency product portfolio provides support through a wide range of solutions.

OnEfficiency Cockpit

Know your processes

On Efficiency Cockpit is the gateway to a clear overview of papermaking processes, allowing you to navigate safely and reliably through any situation.

Papermaking is a complex operation, as a lot of processes have to integrate smoothly with one another. It calls for a high level of technical expertise and long-standing experience. Often, the overview of the current process situation is incomplete, because laboratory test results and key data are not available until afterwards.

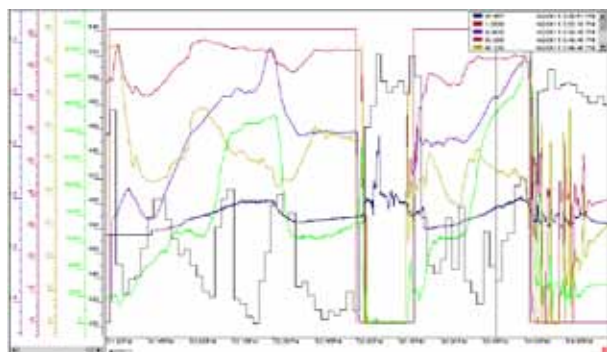
But now there is an answer to these familiar scenarios! OnEfficiency Cockpit, an instrument from Voith, designed to visualize complex processes and to give a technologically sound overall picture. This sets the basis for efficient decisions.

Operating mode OnEfficiency Cockpit

The Voith ComCore system platform running in the background continuously collects individual data from sensors, chemical analyzers, the machine control system, quality control system and the laboratory. The OnEfficiency Cockpit uses this data to produce a comprehensive overview of the production processes, that focuses on the essentials and suggests options for further actions.

Typical display

Trends quickly become hard to discern



Benefits of OnEfficiency Cockpit:

- Visualization of the process situation: in real-time, the preceding and upcoming four hours
- Well-structured and complete selection of parameters according to technological relevance
- Key indices for evaluating the efficiency of individual processes
- Real-time prediction of offline measurements such as laboratory test results
- Corridor display of the ideal process path
- Historical trend analysis throughout long periods

The OnEfficiency cockpit provides all the basic elements for a spot-on and lively navigation. For example, the system makes it a simple matter to add process chemicals according to demand. The modular software structure supports simple application upgrades, allowing permanent stabilization by controls, even at a later date. With its Basic, Comfort and Premium service packages Voith offers value-driven solutions, from the maintenance of individual sensors to complete system support.

OnEfficiency Cockpit

Clearly "Actual" status 20 parameters evaluated, compared





1



2

OnEfficiency Forming

Better sheet creation in three ways

A strong sheet is formed through flocculation, retention and dewatering of the paper web. For the first time, OnEfficiency Forming achieves simultaneous coordination with the mechanical system in the wire section.

Dewatering, retention and flocculation are not necessarily predictable. This is why sheet formation represents quite a challenge for the operating personnel. Speed and grade changes, fluctuations in stock quality and white water recirculation processes disturb the delicate balance and necessitate manual interventions in the stock feeding and dewatering mechanisms.

With OnEfficiency Forming, dewatering, retention and flocculation are stabilized and at the same time coordinated. The resulting improved consistency in the process instantly saves raw materials, chemicals and energy and reduces the variation in quality values.

This is achieved through a combination of sensors for analyzing the processes in the former, software for the real-time prediction of laboratory test results and control modules for the sheet forming processes.

OnEfficiency Cockpit combines all individual components to create a user-friendly application. Our expert Technology Service ensures that you meet your targets.

Benefits of OnEfficiency Forming

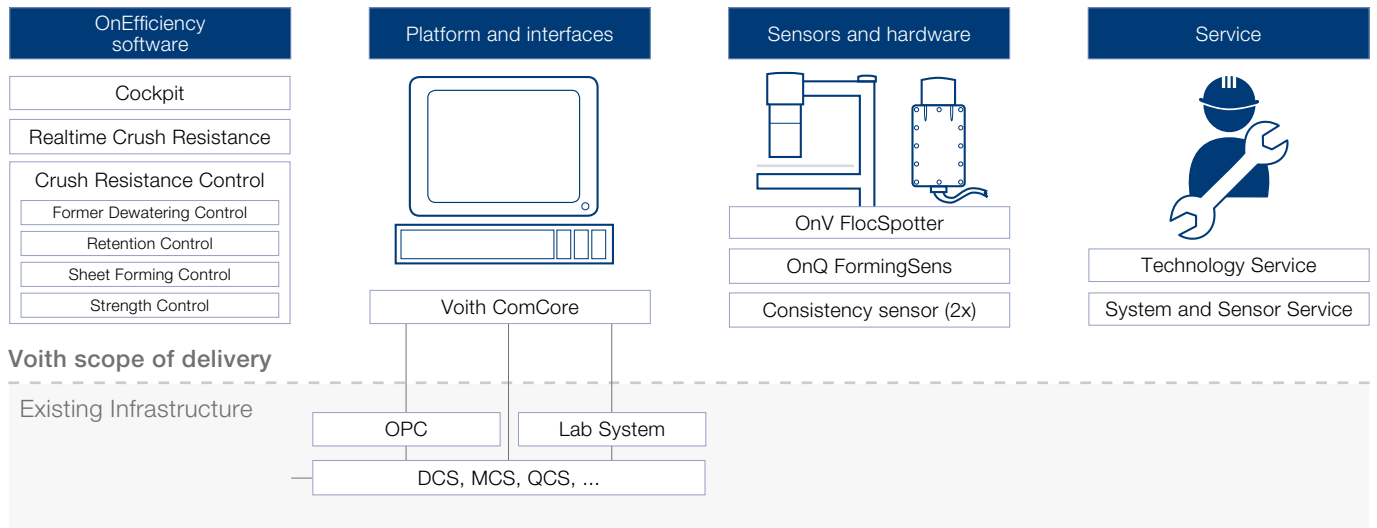
- Fewer fluctuations in paper quality, e.g. formation, porosity and opacity
- Fewer strength fluctuations
- Less strength-related web breaks
- Efficient use of retention agents
- Energy savings (drives, stock and vacuum pumps)
- Reduced wear on forming wire
- Reduced usage of raw materials (fibers, starch) for reaching paper strength targets



3

1-3 OnEfficiency Forming stabilizes and coordinates dewatering, retention and flocculation.

OnEfficiency is an add-on product Example scope of supply OnEfficiency WEP for testliner application





OnEfficiency DIP increases the profit in your production process

Due to increasing price pressure in the deinking process, the focus nowadays is on reducing operating costs. Thanks to its development of OnEfficiency DIP, Voith now offers an advanced solution for the efficient and controlled use of resources such as raw materials, chemicals and energy in the production process.

Identify and control quality fluctuations

The accurate management of the deinking process is impeded by the fluctuating quality of the raw material. Generally, these variations are reflected in the final stock. A manual correction is complex and always comes too late. This means that both the yield and the use of bleaching chemicals are not tailored ideally to the prevailing conditions.

Thanks to OnEfficiency DIP, process fluctuations are determined in real time. The downstream flotation and bleaching processes are adjusted proactively. By retrofitting actuators as well as precise radiometric ash sensors, and using the OnEfficiency control strategy, the process parameters are continuously checked and the relevant correcting variables adjusted. The quality fluctuations in the deinking process are balanced out by the real-time adjustment of flotation and bleaching chemical dosing.

Improved efficiency in the manufacturing process

The OnEfficiency DIP system leads to a reduction in the use of recovered paper, energy and chemicals. The quality of the final stock is stabilized, improving the efficiency of the paper machine as a result. Thanks to the control strategy, grade changes are simplified and accelerated.

OnEfficiency DIP is characterized by its well-conceived and user-friendly interface. Transparent process control and monitoring make it easy to assess the performance of the line. Operation is standardized through the automation function. Random influences are eliminated and the process becomes more stable, since goals that are achieved can be reproduced with high accuracy. Even deploying individual automation modules will produce positive results, but for maximum benefit all control modules should be used.



- 1 Monitor right: After commissioning of OnEfficiency DIP less primary filler is required. The input is constant. Monitor left: Strong fluctuations of primary filler input in the paper machine due to fluctuating DIP ash content.
- 2 OnEfficiency DIP stabilizes and optimizes the DIP process.

Modular structure meets your needs

DIP Yield Control: improved yield in flotation

The DIP Yield Control Module controls the yield by adjusting the flotation technology. Depending on the quality of the raw material, the flotation losses are optimized to achieve ash content and brightness targets.

DIP Bleach Control: consistent brightness after bleaching

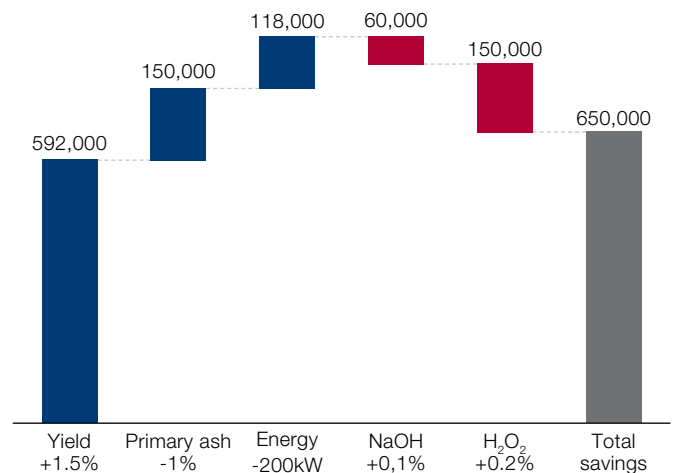
By automatically adjusting the amount of bleaching chemicals, the DIP Bleach Control Module maintains the brightness on target for the bleaching stages.

DIP Cost Control: optimizing operating costs

The DIP Cost Control Module defines optimized set points for the DIP Yield and DIP Bleach Control Module, based on minimizing operating costs for flotation and bleaching. The cost model takes account of relevant cost parameters such as energy, raw material and chemicals.

Annual savings of approx. EUR 650,000 per year

Case study (150,000 t/a, newsprint, values in EUR/a)



Headquarters

Voith Paper Holding GmbH & Co. KG
St. Poeltener Str. 43
89522 Heidenheim, Germany

Further Information

paper@voith.com
www.voith.com/paper

Regional Contacts

Asia

Voith Paper in Kunshan, China
Tel: +86 512 5799 3600

Europe

Voith Paper in Heidenheim, Germany
Tel: +49 7321 37 3000

North America

Voith Paper in Appleton, USA
Tel: +1 920 731 7724

South America

Voith Paper in São Paulo, Brazil
Tel: +55 11 3944 4029

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Engineered Reliability