



METRIS

DIGITAL IIoT SOLUTIONS

FORESEE DIGITALLY

ANDRITZ

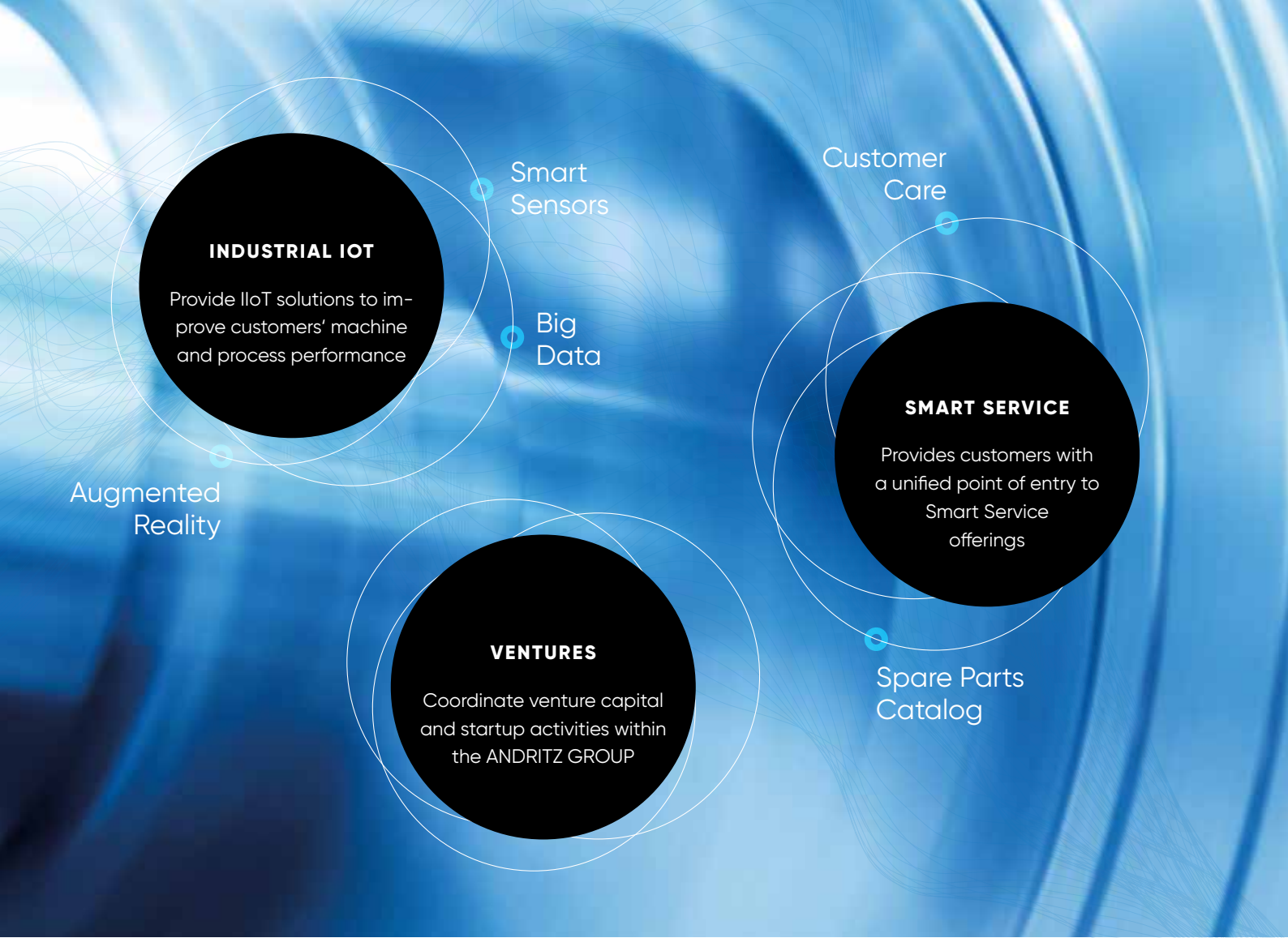
ENGINEERED SUCCESS

Digitalization is changing the industrial world

The terms digitalization, Industrial Internet of Things (IIoT), Industry 4.0, and Smart Service are omnipresent nowadays, and not just in the industrial environment. Companies have high expectations of the greater plant efficiency and increased profitability that can be gained by networking machines and applying such technologies as Smart Sensors, Big Data Analytics, and visualization using Augmented Reality. ANDRITZ has decided, therefore, to pool its many years of experience in the plant business to develop smart, attractive and seamlessly integrated solutions for existing and new plants under the brand Metris.

The brand name is a combination of the words metis – which in Greek mythology stands for practical, complex implicit knowledge – and matrix, i.e. arranging numerical data cybernetically to control and adjust machines. The Metris technology brand covers individually adapted products that generate the IIoT optimum for the customer in precisely defined steps. The technologies used are adapted to the requirements and needs of each individual customer.





Strategic pillars of digitalization for individual solutions

With Metris digital IIoT solutions, customers are preparing for the growing digital challenges in the industrial environment. They are paving the way for digital predictability.

ANDRITZ Metris technologies are aimed at digitalizing and networking machines and plants as well as developing new customer-specific

solutions. Metris products are the very latest state of the art – they can be customized to suit individual customer requirements, and they make a substantial contribution towards helping customers achieve the best possible productivity and efficiency goals.



Metris is built on know-how and expertise

Ten years of experience with Metris OPP
(Optimization of Process Performance)

WHAT DOES METRIS OPP DO?

The intelligent Metris UX platform analyzes available plant data, compares it with data already gathered over decades, assesses the data, and then provides valuable output for business intelligence, big data analytics, quality management, augmented reality applications, and process information. These results play a vital role in increasing the efficiency and performance of existing systems and thus secure competitive advantages on the international market. This is achieved by combining the Metris UX Platform with the expert know-how provided.

Metris OPP service contracts therefore offer a combination of the latest technological insights in digitalization with in-house process experience. The support services

are performed by a network of various experts, for example by process engineers, chemical experts, or mechatronics engineers, available on site as well as remotely, depending on the customer's requirements.

SUCCESS IN THE PULP & PAPER SECTOR

The main advantages of Metris OPP service contracts are a more stable production process, lower energy costs, higher production output, and thus increased plant profitability. In a pulp and paper plant, data volumes of between 5,000 and 125,000 real-time process variables are analyzed and form the basis on which to detect deviations at an early stage and to show and implement possible improvements.

Benefits

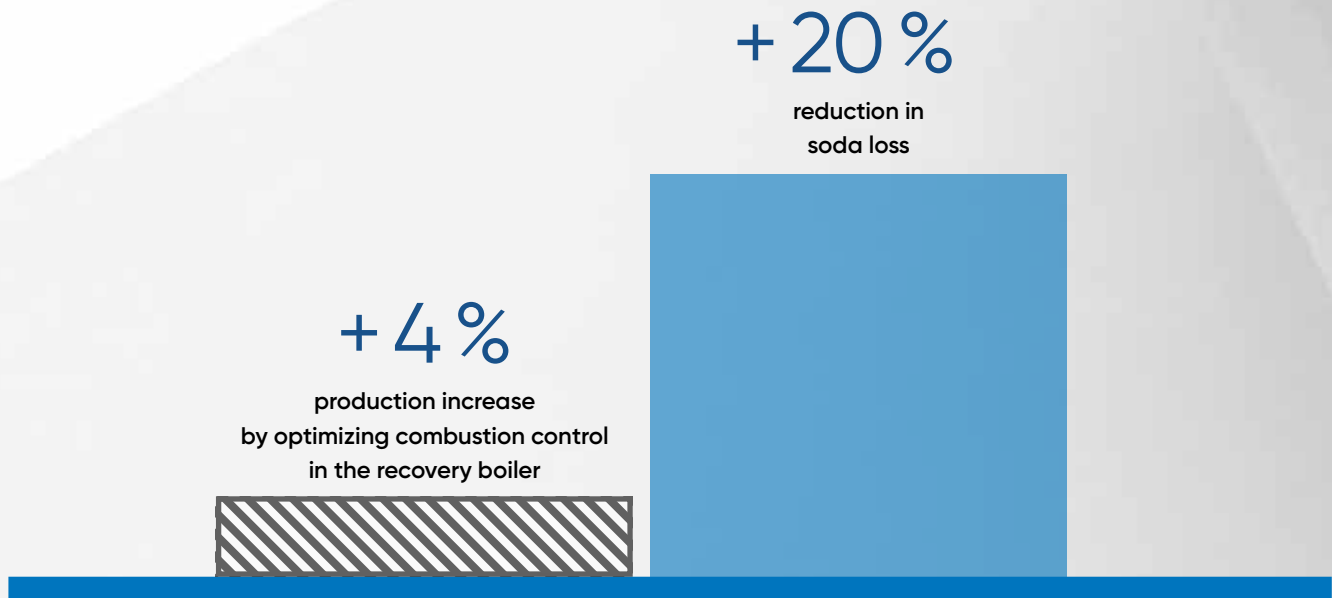
METRIS OPP SERVICE CONTRACT

- No need to install new hardware or equipment
- Full use of equipment – hidden capacity before upgrade
- Continuous measurement of savings
- Ongoing R&D to provide the most state of the art technology
- Field model proven in many different countries

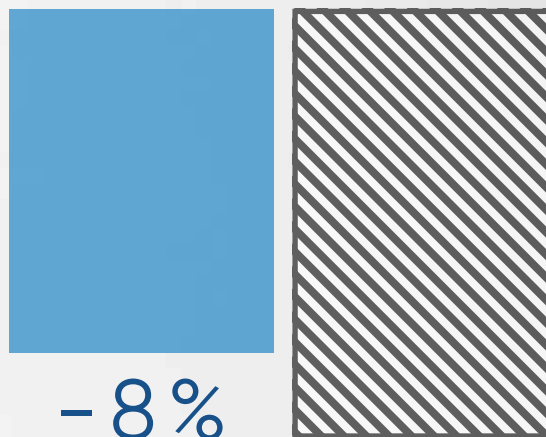


The Metris performance

Measurable improvements for customers



Metris OPP, which has been used successfully on the market for many years now, has increased production substantially at the Aracruz mill of Fibria, Brasil: Productivity was increased, and significant savings were made in resources. As the diagram shows, these improvements are reflected in figures that are tangible and measurable for the customer.



savings in caustic soda due to optimized valve maintainance

- 10 %

savings in chemicals used



Core technologies for customized Internet of Things

IIoT is a core topic in maintaining and enhancing the ability to compete. ANDRITZ has combined its entire Industrial IoT know-how gathered so far and developed a multi-branch solution extending across all business areas.

HOW DOES METRIS WORK?

Following an initial diagnosis and analysis of the basic situation, the resulting common goal is defined together with the customer, and an individually adapted concept is created with a selection of products and services. The overall goal is to increase plant profitability, but also to achieve uniform quality, enhance plant performance, and reduce consumption of energy and resources. After the implementation phase, all activities are accompanied by Metris experts, guaranteeing long-term customer satisfaction

as a result of close cooperation. Optimization concurrent with production enables the customer to operate existing plants with greater profitability for a longer period.

The knowledge gained in recent years with OPP, primarily in the Pulp & Paper business area, is scaled to the other ANDRITZ business areas – Hydro, Metals, and Separation.

Benefits

INDUSTRIAL IIOT

- IIoT solutions across business segments
- Combined know-how from ten years' experience with Metris OPP
- Using the latest smart sensor technologies
- Big data analysis with tried-and-tested models for deviation analysis
- Providing information locally with augmented reality
- Extensive solution and process engineering knowledge
- Cybersecurity solution to safeguard data on the network





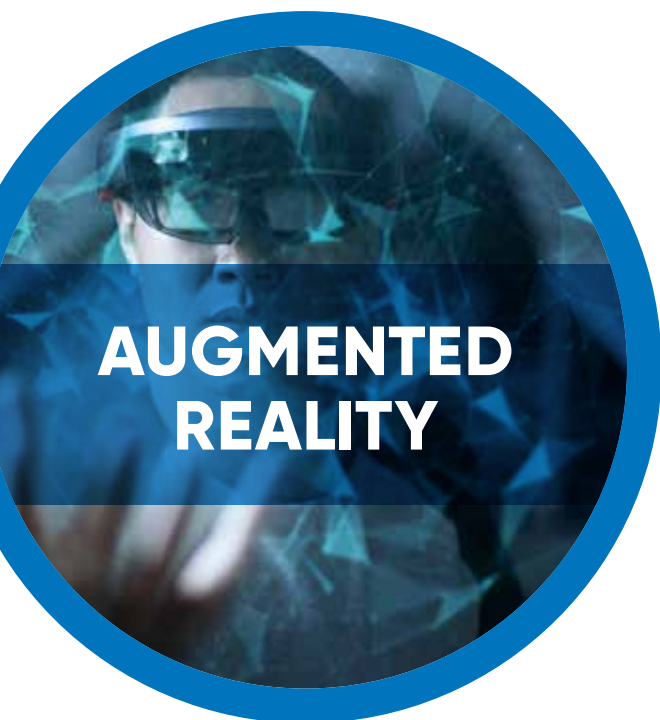
SMART SENSORS

The use of sensor equipment in mechanical and plant engineering, with measurement of variables, evaluation of signals, and communication via interfaces to higher-level systems, has been a standard procedure for some time now. In addition to conventional sensor equipment, ANDRITZ also uses micro and wireless sensors for Metris. These sensors can be used to collect even more detailed machine and plant data from pre-defined areas that are relevant in optimizing operations.

With the aid of big data analyses, deviations are predicted using the data obtained, based on historical material collected, comparison models, and process engineering know-how. For this purpose, the data is analyzed automatically and in real time, and also provides a rapid overview of the plant operating status. Necessary control measures can be initiated based on the knowledge of possible effects in order to avoid plant shutdowns, for example, or reduce the use of consumables.



BIG DATA ANALYSES



AUGMENTED REALITY

By using augmented reality, information can be made visible exactly where it is needed – at the machine or plant. This technology focuses on showing the information in context, which can be quite difficult for complex mechanical parts and thus very useful. The information can be displayed very easily at the machine or plant with a mobile device such as a tablet PC or smartglasses. Operating the machinery and systems with these resources makes things much easier for the operating personnel, and the necessary activities can be initiated much faster.



Metris Smart Service optimizes business processes

Metris Smart Service covers all ANDRITZ digital services for customer interaction on the basis of connected, intelligent software solutions supporting various business processes.

Metris Smart Service delivers customized and future-oriented tools by using data from various sources. This data is analyzed to improve efficiency and also simplify and optimize business processes in order to reduce their duration and cost.

The Metris Spare Parts Catalog is an important part of the Smart Service initiative and helps to order spare and wear parts efficiently. The customers can see their plants and machines, including documentation such as machine data and operating instructions. By using 2D drawings and 3D models, the correct spare and wear parts can be identified and placed in the

shopping cart, which guarantees that only the correct spare parts are requested and a quote is issued within a very short time. With a dedicated focus on usability and simplicity, the Metris Spare Parts Catalog provides greater efficiency for customers.

The Metris Spare Parts Catalog and other tools can be found in the future Metris Customer Care portal that will become the ANDRITZ collaboration platform for customers. Serving as the single point of entry for all ANDRITZ digital services, customers will find their current activities with ANDRITZ at a glance, from detailed plant information, machine lists, current requests

and reminders for upcoming tasks, to relevant news and e-learning. Moreover, Metris Customer Care enables customers to reach the right expert by phone, e-mail or chat.

Other Smart Service modules will provide support in future with data recording and analyses during service assignments, site installation and remote maintenance work .



INTERFACES TO IIOT AND METRIS OPP

The data made available through IIoT provides the basis for several Smart Service solutions, including Metris Customer Care and ANDRITZ Field Service Management. Predictive maintenance uses intelligent algorithms and draws on the sensor equipment used and the data analysis. Thus, the need for service measures can be identified at an early stage using this data and without running the risk of plant downtime as a result. With Metris Customer Care, the customer can use all of the ANDRITZ digital services— at a central point for all areas. All parameters are recorded instead of the basic data being

lost, even if knowledge carriers are not available. The operator receives the data analyses that show what steps must be taken when needed. In this way, more is achieved with less effort by taking targeted action. As from the proof of concept phase, ANDRITZ offers its customers training as an introduction to using the facilities provided by Metris Smart Service.

Benefits

SMART SERVICE

- Traditional ANDRITZ technology and quality experience paired with digital competence
- Extensive know-how in various industrial sectors
- All customer- and machine-related information and documents at a glance
- Reduced downtime through optimization of business processes along the value chain
- Solutions that are simple, fast, and user-friendly
- Simplification of collaboration with ANDRITZ
- Plants have greater autonomy, especially in shift operations





ANDRITZ Ventures – a source of innovative technologies for Metris

Benefits

ANDRITZ Ventures combines the venture capital and start-up investment activities within the ANDRITZ GROUP. We consider ourselves as a sparring partner for young companies working on technological innovations and driven by the aspiration to stay at the forefront in the sphere of Industrial IoT. Moreover, we are in a position to offer in-depth industry know-how as well as a global set-up in order to support market-changing products and their development side-by-side with highly motivated, tech-savvy startups.

In order to offer market-leading business models and products for our customers, it is key for ANDRITZ not just to keep pace with market developments, but also to stay ahead of them in terms of technology, service, and customer experience with the products we offer.

METRIS VENTURES

- Big Data Analytics (artificial intelligence, advanced analytics, deep learning)
- Augmented reality as an assisted tool for industrial service/optimization
- Autonomous systems – simulation software for our systems
- Cybersecurity for industrial applications
- Smart Sensor Technologies
- Predictive maintenance solutions
- Additive manufacturing with metal powders
- Smart Laser Technologies



What our customers say

Wide satisfaction with Metris OPP

“The benefits of Metris OPP to improve the performance of the plant are remarkable.”

We have been using OPP from ANDRITZ since 2013 and are very happy with the results enabled through the possibilities of digitalization and the connectivity of products and components. First successes, like energy savings, a stable production process, and higher output, were achieved after a short period of time.



GÜNTER LEITGEB

Manager of Smurfit Kappa pulp and paper mill, Nettingsdorf, Austria

THE METRIS COMPETENCE

ANDRITZ offers a broad and constantly growing range of innovative products and services in the industrial digitalization sector under the brand name Metris, helping customers to

- Enhance plant efficiency and profitability
- Optimize the use of resources
- Achieve constant and highest product quality
- Avoid production downtime
- Maximize user-friendliness

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ANDRITZ

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