



NONWOVEN
LEVEL UP WITH
ANDRITZ
DIGITAL SOLUTIONS

FOR YEARS TO COME

ANDRITZ

ENGINEERED SUCCESS



"ANDRITZ Nonwoven Services offers Metris Digital Solutions to enhance efficiency, reliability, and reduce environmental impact for nonwoven manufacturers through a full range of digitalization solutions including optimization of production, reduction of downtime, energy cost controlling and expert support. This All-in-one platform is the game changer enabling a profitable and sustained ROI for all nonwoven processes."

Ettore Paolini, Vice President Services



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Foresee digitally with Metris

Industrial Internet of Things (IIoT), Industry 4.0, digitalization – buzzwords that industries use when seeking to improve their performance and equip themselves for the future of nonwoven industry.

ANDRITZ – DIGITAL SOLUTIONS

As a technology leader in non-woven with extensive, long-term experience in supplying industrial measurement, control, and optimization solutions for all nonwoven industries, ANDRITZ is combining process and equipment expertise with the latest digital enhancements. This powerful combination results in the Metris solution portfolio.

A GROWING PORTFOLIO

The depth and effectiveness of the Metris portfolio continues to improve thanks to ongoing R&D and collaboration with key customers. The main technological advancements integrated into individual Metris products are derived from big data analytics, smart sensors based on Artificial Intelligence (AI) technologies, and augmented reality solutions.

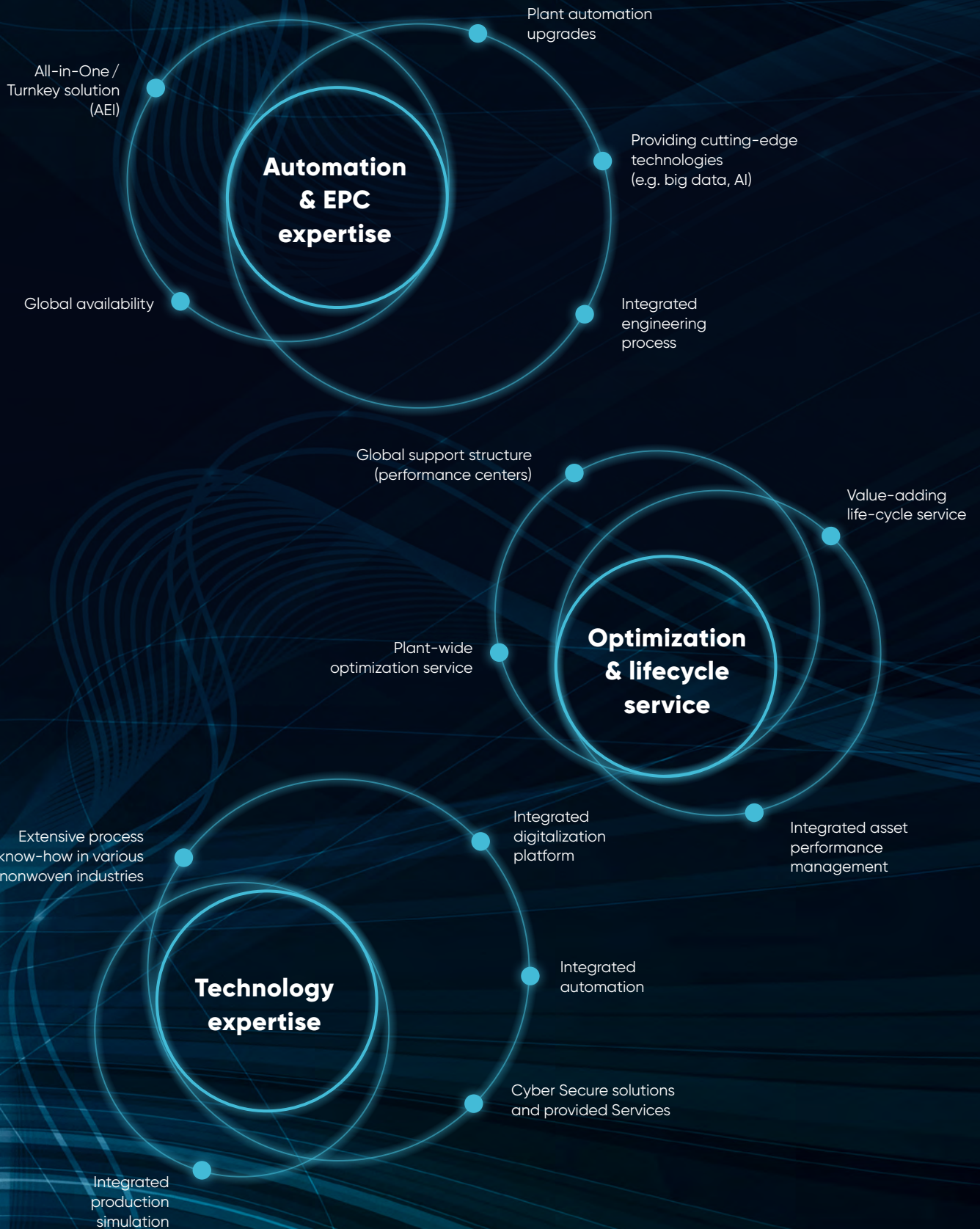
Metris All-in-one platform providing full support throughout the entire lifecycle of a plant is the most recent of our IoT developments. With Metris solutions, customers enjoy digital forecasting thanks to the continuously improved portfolio. ANDRITZ provides tailored and fully integrated digital solutions from a single source for the complete life cycle of your plant.



YOUR BENEFITS

- Big data analysis with test-proof models for deviation analysis
- Enhance plant efficiency and profitability
- Optimize the use of resources
- Constantly achieve the highest product quality
- Reduce unplanned downtime
- Providing information from your nonwoven machines locally with augmented reality solutions
- Cyber security solution to safeguard data for additional product information
- Provide information remotely, regardless of your location

Digitalization landscape united under Metris

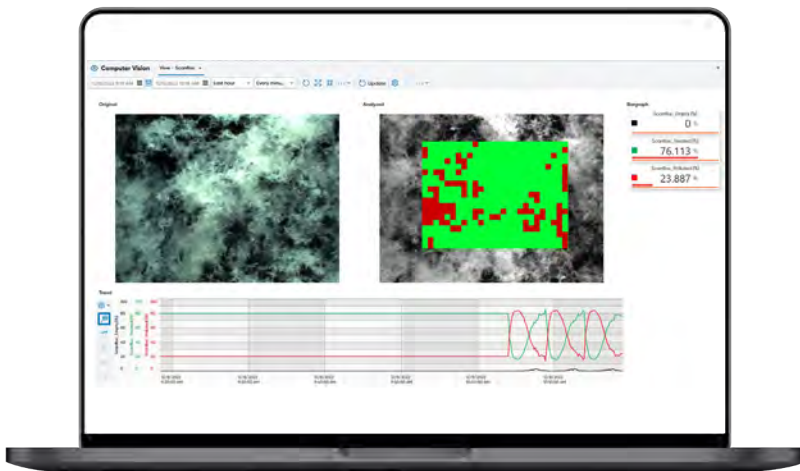


Process control & monitoring

Process analytics and production information are methods of analysis and information aggregation that support production activities and gather the relevant information required to increase nonwoven line efficiency.



Process stability by learning from data



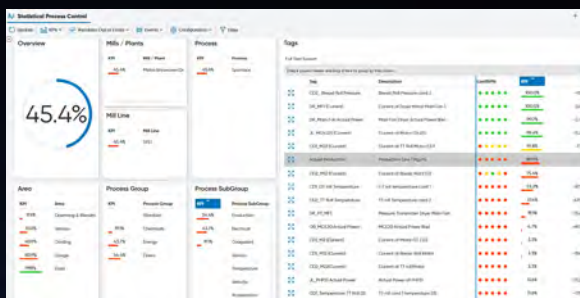
Calculate different features from automatic image AI

Metris Statistical Process Control (SPC), Control Performance Assessment (CPA) and Advanced Visual Analysis (AVA) are three methodologies developed to help businesses eliminate sources of variation that are not meaningful and to guide users in the direction

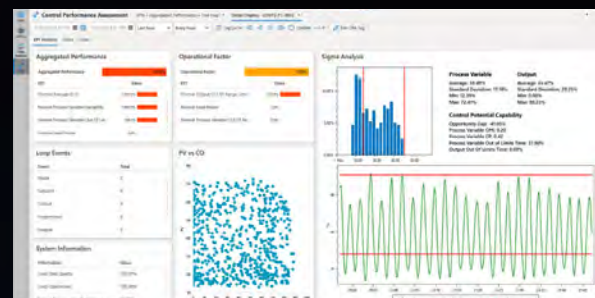
of valuable data. These strategies can also be used to uncover unknown and hidden process disruptions, prioritize savings opportunities, and support users in making practical and cost-effective decisions.

YOUR BENEFITS

- Reduce OPEX
- Additional insights
- Increase safety



Facilitates interpretation of process behavior performance



Monitors control performance and diagnostics over time

Production cost management



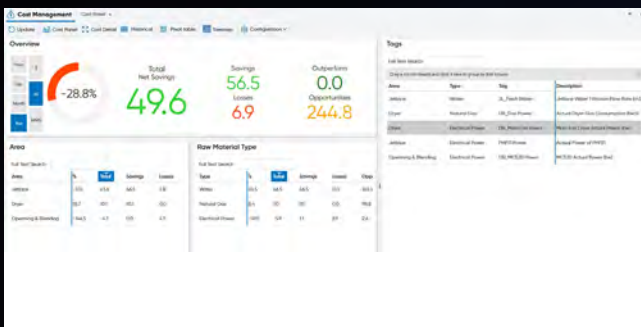
ANDRITZ neXline wetlace CP line

Metris cost management interprets process data into behaviors that can pinpoint where potential opportunities are located in the midst of a large number of scenarios. The clarifying indicators provided

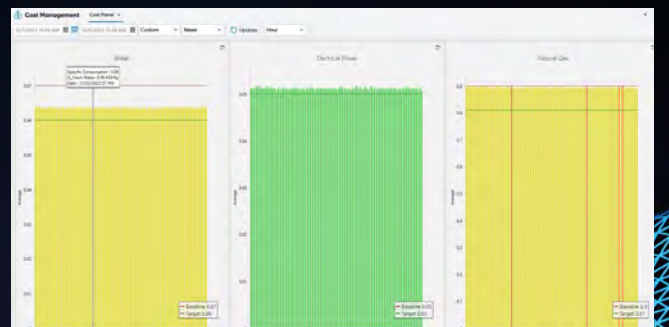
by this application enable deep diagnoses in order to dynamically investigate raw material losses and energy savings that are grouped by various process areas and other categories.

YOUR BENEFITS

- Reduce OPEX
- Reduce emissions
- Sustainable solutions & products



Discover hidden, economically significant disruptions



Planning subsequent process adjustments and repairs

Data analytics & production traceability

The Metris All-in-One platform provides solutions that can be used to analyze data from a set of variables. It offers countless visualization capabilities to transform data into actionable insights, supporting analysis and decision-making. Histograms and box plots can be used to compare the behavior of process parameters over different time periods or

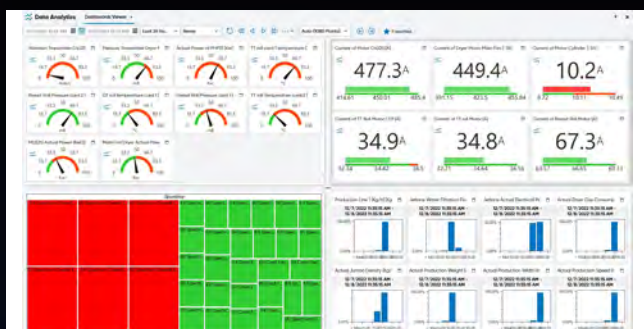
batches, while the time shift feature for individual variables allows for comparing actions within the same interval. Additionally, we can integrate the batch reference and jumbo number with associated information from the customer database (such as lab measurements and fiber references) for full 360° process traceability.



Reveal opportunities and enable users to make more practical, cost-effective decisions

YOUR BENEFITS

- Increase productivity
- Additional data to gain process insights
- Increase stability
- Increase traceability and product quality



Metris customizable dashboard



Tag List option makes data access fast, secure, and easy

HMI/SCADA integration



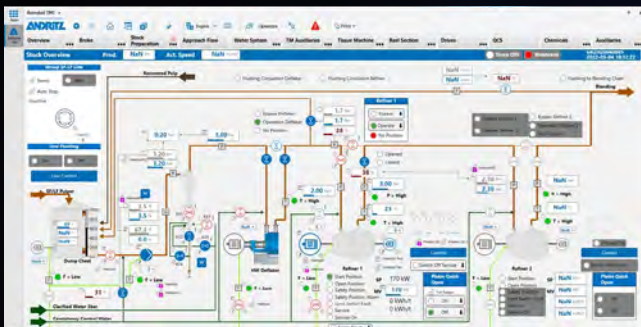
ANDRITZ neXline air lay line

With the display studio app from Metris, you can easily and professionally develop an integrated visualization, that makes it simple and professional for machine operator displays (HMI – Human Machine Interface), process

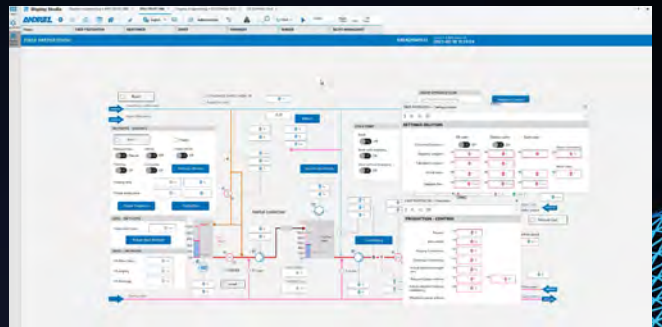
information displays (PIMs) or custom dashboards. It can also be used as a SCADA system (Supervisory Control and Data Acquisition) to manage complete production line control.

YOUR BENEFITS

- Reduce OPEX
- Increase safety
- Increase productivity
- Simple dashboard for a complete plant overview & control



Complete production receipts management and multi-user support, management, and access control



Nonwoven SCADA view

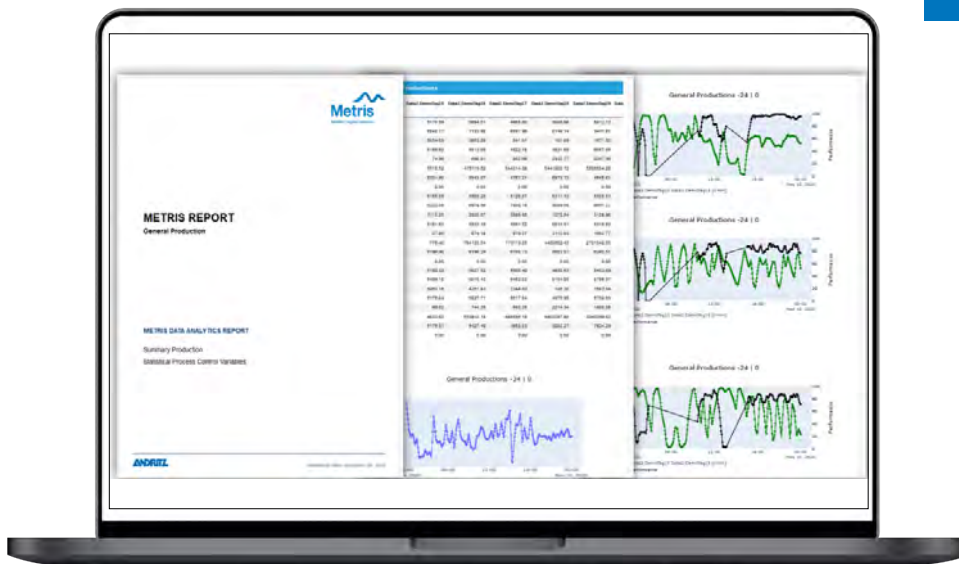
Metris Plant Insights

Get the most relevant information to bring value to your business! Building upon the Metris All-in-one platform, ANDRITZ has developed the Metris Plant Insights suite of applications, where storage is one

of the numerous features of the platform and the most important thing is to transform data into valuable insights in an intelligent and fast manner.

YOUR BENEFITS

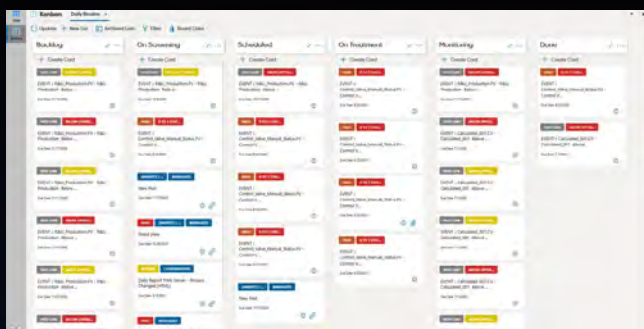
- Additional data
- Increase safety
- Reduce OPEX
- Gaining valuable insights from data
- Complete plant reporting



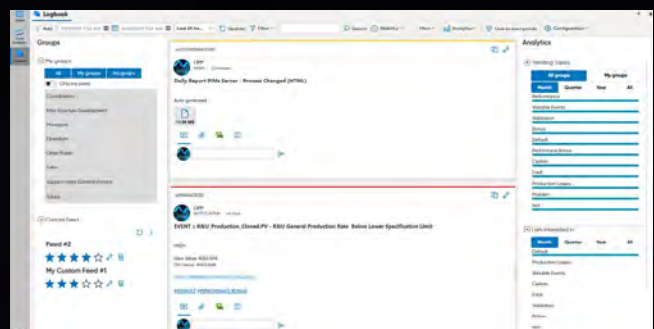
Automatic and dynamic reports



New Metris PIMs Video



Kanban view of work orders



Integrated logbook for shift transmissions

Predictive maintenance & service

To avoid unplanned plant shutdowns, it is important to know at an early stage when vital components need to be replaced or maintained. Condition monitoring enables operators to work proactively and keep shutdown time to a minimum.





Full range of value-added services



Value-adding life-cycle services



Integrated asset risk and performance management



Global support organization (Performance Centers)



Cyber security solution and services



ANDRITZ neXline spunlace line

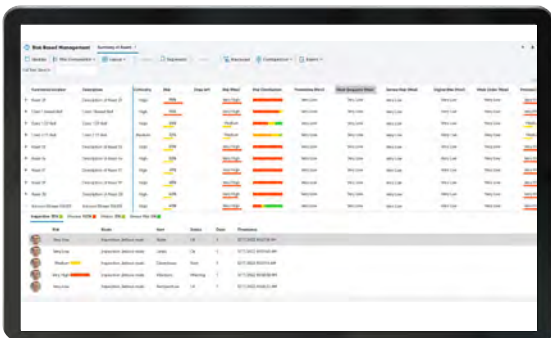
Metris Risk-Based Management (RBM)

Metris Risk-Based Management (RBM) is an application within the Metris All-in-one platform that not only monitors individual pieces of equipment, but also protects the entire factory against unidentified production downtime risks. It combines digital and cyber risk indicators to create an overall risk

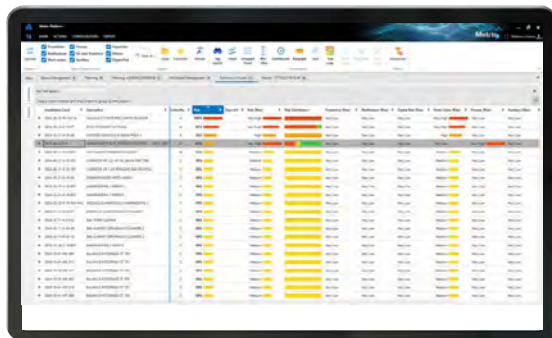
assessment of each operational process in the industrial network. By adding a digital risk factor to Metris RBM, operating teams are able to prioritize their maintenance tasks more accurately and efficiently according to the risk level and criticality of each asset.

YOUR BENEFITS

- Reduce OPEX
- Increase safety
- Increase availability
- Reduce unplanned downtime
- Improve spare parts planning
- Optimize maintenance HR management



Clear risk evaluation dashboard



Summary of assets



An integrated, plant-wide approach to analyze, calculate, and display all potential risk factors upfront in a single graphic overview



Metris Risk-Based Management video

Metris Vibe and condition monitoring app

Metris Vibe is a wireless vibration and temperature sensor used to periodically monitor the health status of mechanical equipment. It transmits data via Bluetooth Low Energy (BLE) to either a mobile device or an industrial gateway that is connected to the Metris All-in-one platform. This platform combines a range of features for professional production management, simulation, and optimization. The Metris Vibe sensors provide data including raw signal, overall vibration, and the FFT analysis, as well as allowing users to configure their own spectral bands to monitor issues such as misalignment, unbalancing, bad lubrication, bearing-related issues, etc.

FUNCTIONALITIES

- Monitoring the condition/status of machines and systems
- Vibration is one of the first indications that some form of damage is developing
- Detection in advance can predict potential damage and outages
- Send warnings/alarms to the operator
- Means of increasing reliability and customer productivity, as well as decreasing unplanned downtime
- Schedule a more effective maintenance plan, including planned stoppages

YOUR BENEFITS

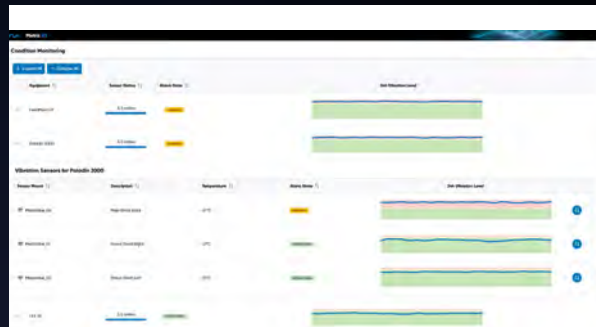
- Increase safety
- Increase productivity
- Reduce downtime
- Cost-efficient wireless device



[Metris Vibe technical documentation](#)



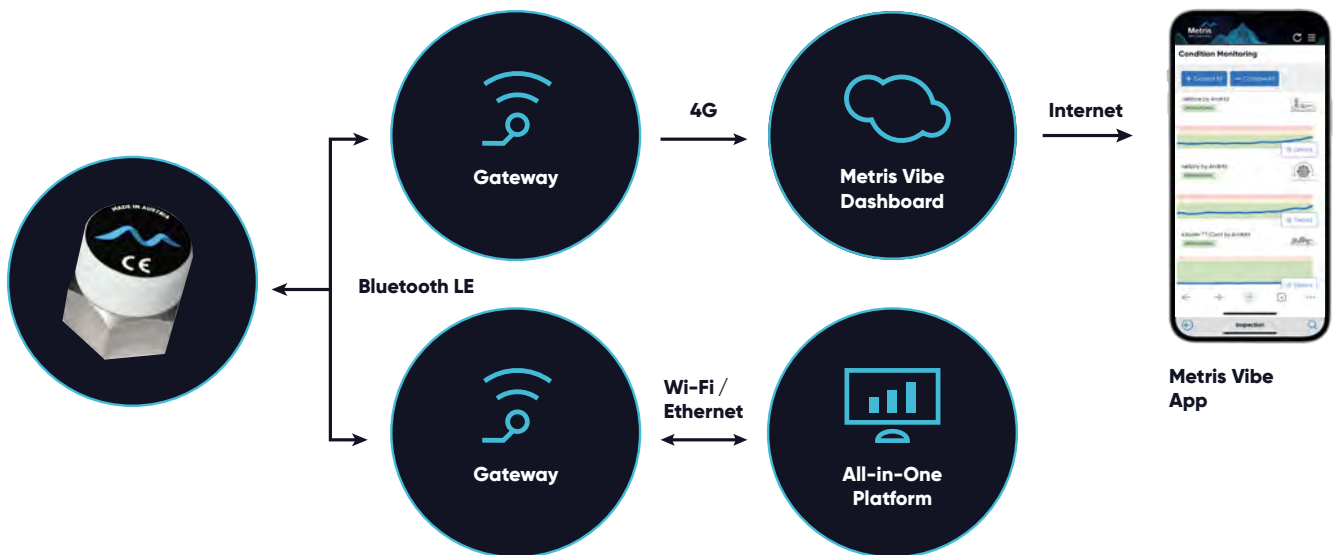
Vibration analysis display



Metris Vibe dashboard



Metris Vibe sensor on Needlepunch line



With energy-saving Bluetooth technology, the data gathered is transferred via gateway to the Metris server, where different analyses are carried out.

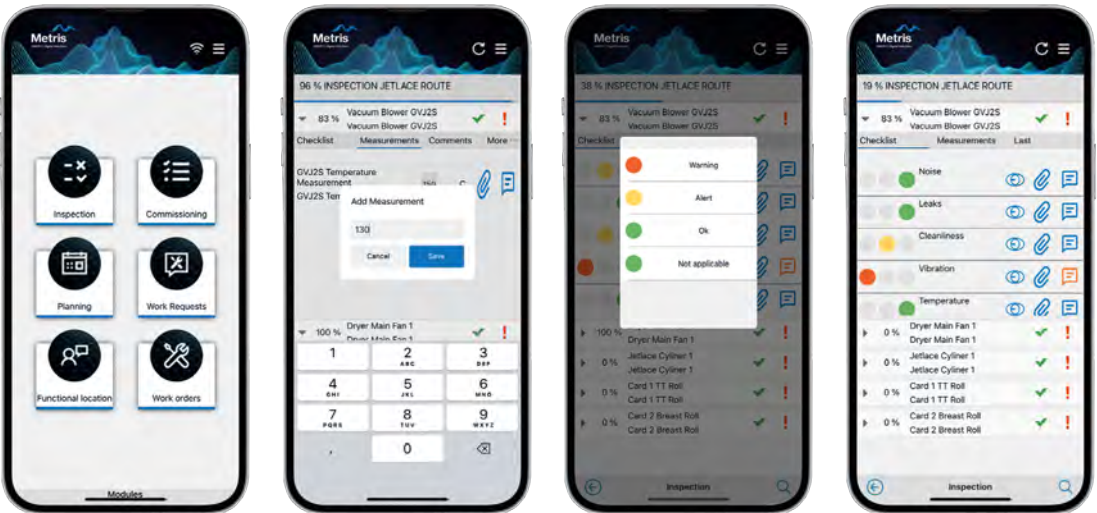
Inspection routes

Metris Checklist is an app that helps businesses create checklists for operation and maintenance inspection routes. It allows users to use mobile phones or tablets to perform the routes, track measurement points, and improve the

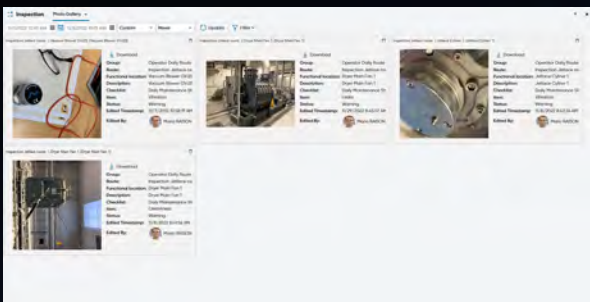
connection between the “boots-on-the-ground” team and the “backstage” team. This app helps reduce paperwork for maintenance/operation routes and create more timely and accurate reports.

YOUR BENEFITS

- Additional data
Increase safety
Reduce OPEX
- Optimized maintenance planning
- Reduction of unplanned downtimes



Mobile application to easily record information from the field, including images, videos, and on-site measurements



Improve the traceability of route execution and information management

Metris XR Remote Assistance Service



Metris Remote Assistance (Metris XR) is a state-of-the-art communication solution designed to provide customers with extended service and support. It offers enhanced potential for interactive operation and maintenance and is supported by dedicated teams of experts and customer care specialists located at all nonwoven service hubs. This remote assistance tool provides comprehensive support

through speech, images, or augmented reality (AR) technology. It combines remote access with AR to accelerate the support process, allowing service technicians to receive necessary instructions easily and effectively through virtual overlays on AR glasses. This helps to shorten the support process and reduce the need for emails and pictures, resulting in faster diagnoses.

YOUR BENEFITS

- Reduce OPEX
- Increase availability
- Reduce carbon footprint
- Save time
- Remote support by ANDRITZ experts
- Fast information exchange
- Reduction of unplanned downtimes



Metris XR video

Global network, local presence



USA
ANDRITZ Inc.
Spartanburg

GERMANY

FRANCE

BRAZIL
ANDRITZ Brasil Curitiba
São Paulo

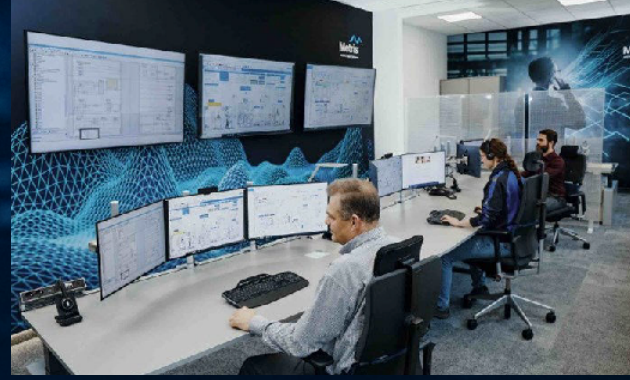
LOCAL & ONSITE SUPPORT



With the goal of providing the most efficient and reactive support possible, we assign dedicated teams of skilled experts who are located close to you.

-  **METRIS PERFORMANCE CENTER**
-  **SERVICE SUPPORT LOCATION**
-  **SALES AND SERVICE**

PREDICTIVE MAINTENANCE & SERVICE



Metris performance center Germany



Metris performance center France

TURKEY
ANDRITZ HTR
Istanbul

ITALY
ANDRITZ Diatec
Colleciovino

CHINA
ANDRITZ China
Wuxi

INDIA
ANDRITZ Technologies
Chennai



Customer experiences



Sébastien Monges, Technical Director,
BCNonwovens

ANDRITZ and BCNonwovens have been collaborating for many years since the first line installation in 2002. Since 2020, BCNonwovens has been using the Metris All-in-one platform as its main digitalization and data acquisition system for the last production line.

"The Metris All-in-one platform can be tailored to meet our individual needs, offering a range of features and benefits for BCNonwovens" says Sébastien Monges (Technical Director at BCNonwovens). "Metris provides us a wide range of functionalities like process monitoring, performance analysis, predictive maintenance, and resource management that we are using every day."

"We are happy with the first two years of collaboration with ANDRITZ and excited for the new upcoming joint development projects" concludes Sébastien Monges.



Cherian Thomas, President & CEO,
Advanced Textiles, Welspun Group

“Implementing such a Metris predictive maintenance system in a spunlace production line is a milestone in India. We are very proud to see our company as a forerunner. The ANDRITZ digitalization experts have fully supported us in the development of our project and offered tailor-made monitoring and analysis of our plant. This is opening up key perspectives for our future operations, even in the short term, by digitalizing our maintenance procedures and checklist routines.”



Ceyhun Zincirkiran,
Managing Director, Sapro

“We really do believe that digitalization and data management are the future for us”. This focus on the environment and sustainability also extends right into the heart of Sapro operations, where a close eye is kept on electricity, gas, and water use. “This is another area where the Metris All-in-one platform is helping us win,” says Zincirkiran. “We can clearly identify where we are using too much energy and we can also identify the sweet spots where we are maximizing our raw material and energy usage.”

GET THE MOST OUT OF YOUR INVESTMENT

At ANDRITZ Nonwoven we know that your business depends on satisfied customers and efficient processes. That's why we support you in every aspect of your nonwoven production. Take advantage of technology that lets you produce consistent quality for decades to come. Benefit from the highly efficient use of energy and raw materials that our production provides. You can rely on our responsive service teams who will protect your investment and optimize your processes. Experience how innovative approaches and digital services give you more control than ever before. With ANDRITZ, the leading supplier for the nonwovens market, you get the most out of your investment.

FRANCE

ANDRITZ Perfojet SAS
Montbonnot, France
p: +33 4 76 52 23 11
perfojet@andritz.com

ANDRITZ Asselin-Thibeau SAS
Elbeuf, France
p: +33 2 32 96 42 42
asselin-
thibeau@andritz.com

ANDRITZ Laroche SAS

84 Rue de Thizy
69470 Cours, France
p: +33 4 74 89 84 85
andritz.laroche@andritz.com

GERMANY

ANDRITZ Küsters GmbH
Krefeld, Germany
p: +49 2151 34 0
kuesters@andritz.com

CHINA

ANDRITZ (China) Ltd.
Wuxi branch office
Wuxi, P.R. China
p: +86 510 8536 1269
nonwoven-china@andritz.com

INDIA

ANDRITZ Technologies Pvt. Ltd.
Chennai, India
p: +91 44 4293 9393
nonwovenservice.india@andritz.com

ITALY

ANDRITZ Diatec Srl
Collecorvino, Italy
p: +39 085 82060-1
diatec@andritz.com

USA

ANDRITZ Inc.
Spartanburg, USA
p: +1 864 587 4848
nonwoven-america@andritz.com

ANDRITZ

