

SEPARATION

**INTELLIGENCE FOR
MACHINE AND
PROCESS CONTROL**

METRIS addIQ CONTROL SYSTEMS

ANDRITZ

ENGINEERED SUCCESS



Metris

ANDRITZ
Digital Solutions

The brain behind your operation

Your ANDRITZ equipment is like a perfectly honed muscle, capable of working flawlessly, day in, day out. But without any sort of control, even the most perfect muscle is useless. Which is why you need a brain – or in the case of your machinery you need automation. And that's why the specialists at ANDRITZ have developed Metris addIQ control systems – the brain behind the operation.

From basic automated movement, up to a point where the machine can recognize changes and imbalances within the process and help you to optimize accordingly: your separation

specialists will help you find the perfect solution and schedule its implementation according to your production timetable, keeping downtime to a minimum.

addIQ control systems are part of Metris, the ANDRITZ brand for digital solutions – which is the combination of expertise, technologies, and products. The brand includes both digital IIoT (Industrial Internet of Things) solutions and Smart Services which are arranged and adapted individually to meet the requirements of every single customer – even exploiting the capabilities of systems already installed and measurably enhancing plant performance.

How can you make your machines and processes even smarter?

Is your business the best it can be? Perhaps you have untapped potential to reduce production losses and maximize availability? Even with the best equipment, there is always room for improvement in performance, productivity, and profit. Metris addIQ control systems deliver all three.

WE WORK WITH YOU TO DELIVER EXACTLY WHAT YOUR BUSINESS NEEDS

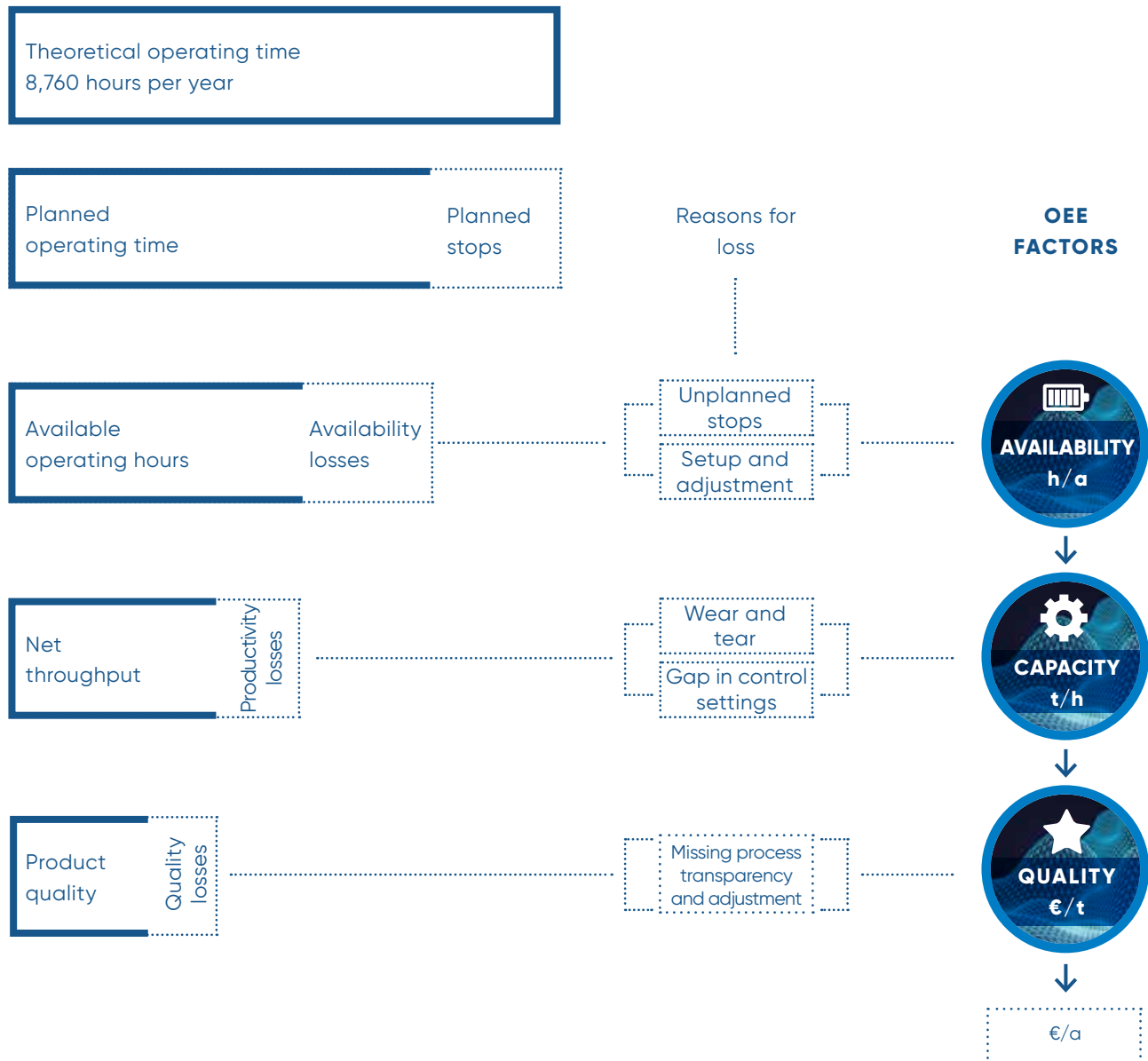
The ANDRITZ specialists use their in-depth expertise to provide scalable solutions that are individually tailored to regional and application specific requirements, whether it's automation for new equipment or life-cycle extending upgrades. By providing cutting-edge automation technologies and digitalization, we ensure best-in-class performance.

Adding value with Metris addIQ control systems

- Enhance availability and minimize production costs
- Increase overall equipment efficiency and reduce risk of operational errors
- Analyze and optimize processes with data collection
- Global automation specialist network providing local service
- Scalability of solutions
- Production transparency via mobile app access

Our contribution to your success

The anatomy of overall equipment effectiveness:



OEE – OVERALL EQUIPMENT EFFECTIVENESS

The goal of any operator is to maximize availability, capacity, and quality while minimizing costs. By applying automation from ANDRITZ, you can reduce downtime, as features like predictive analysis allow you to optimize

availability and take preventative action to avoid downtime. Capacity and quality are easy to control and enhance with customizable systems – the Metris addIQ control system is based on the latest PLC and HMI technologies and has an integrated fail-safe system.

The Metris addIQ portfolio



OPTIMIZATION

MONITORING



AUDITS

TRAINING

**AUTOMATION
UPGRADES
FOR EXISTING
MACHINES,
PROCESS LINES,
AND PLANTS**

**AUTOMATION
FOR NEW MACHINES,
PROCESS LINES,
AND PLANTS**

Features

addIQ PURE*

- Extremely compact design
- Includes specific machine control functions
- Cost-efficient solution for standalone machines
- 4" HMI panel for monitoring and parameter set up

addIQ ECO

- addIQ Pure +
- Easy integration into overall control systems
- Monitoring and control of single machine
- Intuitive design of operator interface
- 4" HMI panel as standard with possibility to upscale to bigger screen sizes
- addIQ Connect (optional)
- addIQ Monitoring (optional)
- Ready for future functional updates
- Basic trending functions
- SmartSIM* (optional, requires 9" HMI)

addIQ DYNAMIC

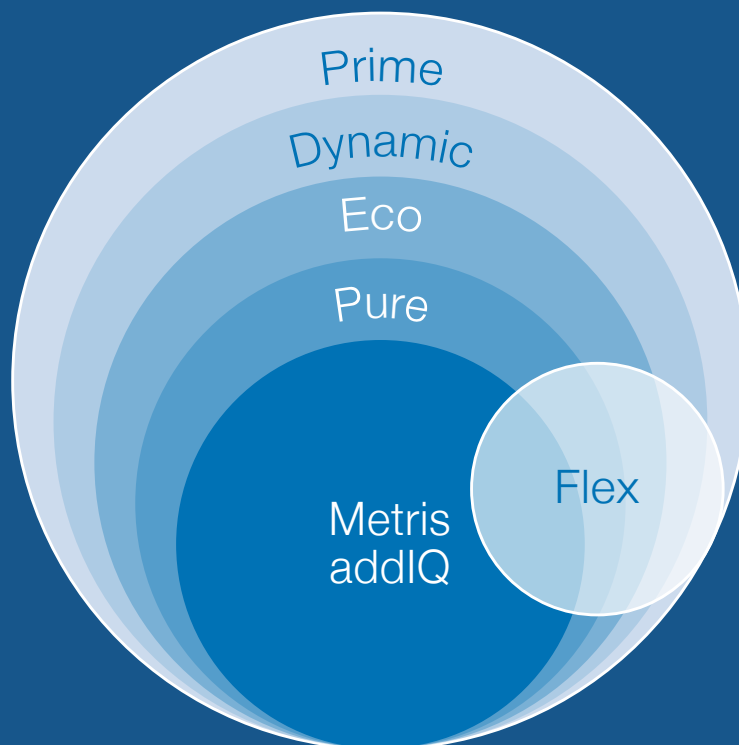
- addIQ Eco +
- Monitoring and control of machine and machine auxiliaries
- 9" touchscreen as standard with possibility to upscale
- High-end optimization and trending functions
- addIQ Connect (optional)
- addIQ Monitoring (optional)
- addIQ Optimizing (optional)

addIQ PRIME

- addIQ Dynamic +
- Full process line control system
- Remote-access function
- 15" touchscreen as standard
- addIQ Connect
- addIQ Monitoring
- addIQ Optimizing (optional)
- High-end trending and diagnostic functions

addIQ FLEX

- Customized solution to meet specific customer mill standard



*only available for selected equipment

Intelligence for machine and process control



Various Metris addIQ packages allow every business with separation processes to optimize its performance – whether you have a huge municipal wastewater operation or a niche family brewery. Choose the features that meet your separation challenges the best.

addIQ PURE*

The addIQ Pure package is the entry level of the addIQ series. It comes with a 4" widescreen touch panel. addIQ Pure includes specific machine control functions, compact design, and cost effectiveness by smart utilization of drive integrated functions.

addIQ ECO

The addIQ Eco package is another highly cost-efficient solution for the control of a single machine. It comes with a 4" widescreen touch panel and intuitive operator design, along with a high-performance controller. The design is ready made for future functional updates and further options.

addIQ DYNAMIC

The addIQ Dynamic package includes a 9" widescreen touch panel, intuitive operator design, and a safety-integrated controller. For monitoring and control of machine and machine auxiliaries, addIQ Dynamic is the right choice.

addIQ PRIME

The high-end solution is the addIQ Prime package, ideal for complete systems and plants. It comes with a 15" widescreen panel PC and the most sophisticated features of the intuitive operator design. The controller is a high-end device with extensive expansion possibilities. High-end trending and diagnostics functions as well as remote connectivity comes as part of this package.

addIQ FLEX

The most flexible solution is addIQ Flex. Scope of control and technical specification can be customized to a large extent.

Each package has individual specifics that are directly connected to the type of machine it is used for. The standard documentation is based on ANDRITZ uniform engineering tools and can be supplied as a pdf or dwg file. The documentation package contains circuit diagrams, enclosure layout drawings, terminal lists, material lists, signal lists, and wiring lists.

OPTIONS

SmartSIM*

ANDRITZ SmartSIM is a computer-assisted classroom training course, which can be used at any time without affecting actual plant operation.

METRIS addIQ CONNECT

addIQ Connect connects your machine with the safe ANDRITZ environment and enables remote support for a fast interaction between your machine and the ANDRITZ specialists.

METRIS addIQ MONITORING

With this monitoring tool you can monitor the health status of your machine 24/7 from anywhere in the world.

METRIS addIQ OPTIMIZING

Our analyzing tool Metris addIQ Optimizing and the ANDRITZ specialists seek out ways for you to save money and of stabilizing and increasing production on your equipment.

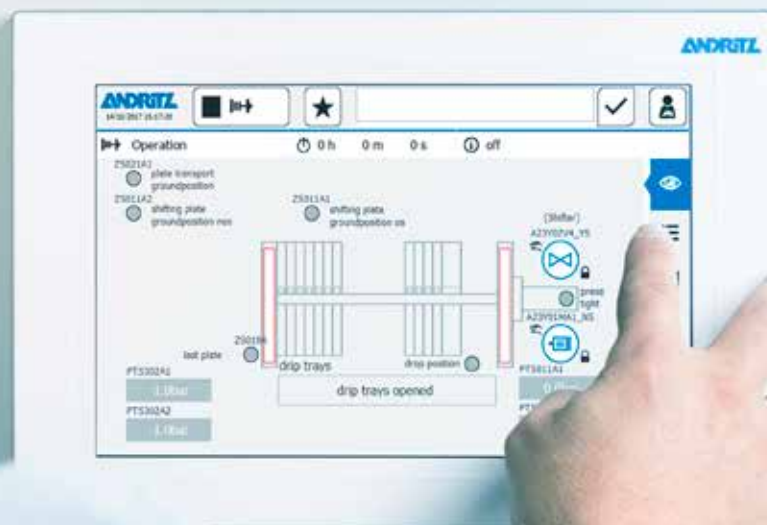
EX

The EX automation system is the ideal option for processes in explosion prone areas.

How to increase your machine's availability by avoiding operational errors?

See how we did it! A 25-year-old municipal wastewater treatment plant near Vienna was in urgent need of an upgrade due to corrosion. The goals were the driest cake possible at the lowest operating costs and minimal chemical usage. But there was a catch – the plant could only be shut down for a maximum of six weeks.

ANDRITZ dismantled the existing system, installed new equipment throughout, and fitted the entire plant with optical control and tailor-made automation control. The HMI (Human Machine Interface) system has proven its value: its intuitive design using clear symbols and icons ensures full-scale efficiency for the entire facility. Smart analysis functions provide a quick and easy way to check the process status, while intelligent maintenance functions help guarantee operational accuracy and error minimization. Mobile connectivity allows these features to be remotely accessed from any location at any time.



HMI – let our intuitive operator interface work for you

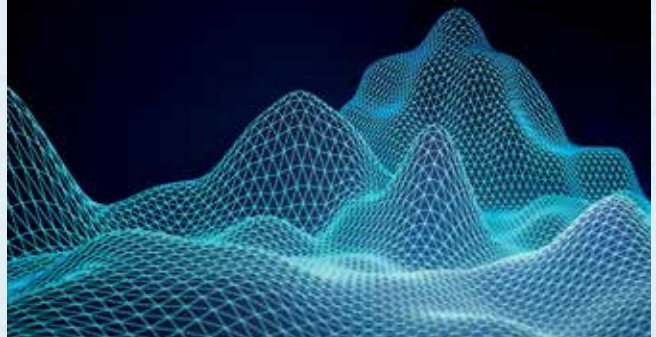
The ANDRITZ specialists have bundled the latest research findings from market trends and fresh insights into a solution package for HMI design. An intuitive operator design ensures full-scale efficiency in operation – from an individual machine up to an entire plant.


42% of abnormal situations are caused by human error, compared to 36% caused by equipment failure, and 22% by the process. To keep this human error factor to a minimum, ANDRITZ has improved the usability of the interface by incorporating factors such as whether users are right or left-handed, eyesight, level of education, and cultural diversity.

The overall usability concept takes the different requirements of the operating staff into account and enables operators with different levels of experience to fulfill their tasks at the same time. Easy-to-read icons diminish intercultural barriers and minimize translation and training efforts. Mobile connectivity features and a smart analysis function combine to guarantee operational accuracy around the clock from any location.

Benefits

- Ease of use for smooth operation
- Operational concepts for handling workforce diversity and cultural requirements
- One-look analysis for efficiency increase in operation
- Mobile connectivity for high accessibility with smart devices
- Process performance increase due to operational error minimization
- Structured user access levels for personnel
- Multi-language user-interface





What happens when a production site has an urgent need to replace its machine control system, but simply can't afford an extended shutdown?

The perfect solution is the Metris addIQ upgrade Pure, Eco, Dynamic, or Prime. The key here is precise planning and painstaking preparation. By getting to know every detail of a customer's system and needs, it is possible to dramatically shorten downtime and keep production flowing.

IDEAL FOR:

- Any business looking to reap the benefits of new technologies to optimize processes in any industry
- Producers with outdated components that have reached their end of life
- Operations suffering from limitations in automation system capacity (trends, alarms, application storage)

WHAT DOES AN addIQ UPGRADE INVOLVE?

- The upgrade can be carried out in several steps to accommodate your production schedule
- It is platform-independent (Siemens, Rockwell, Covistar etc.) and existing technology can be incorporated or replaced as needed
- Complete solutions from a single source: ANDRITZ supplies engineering, hardware, software, and equipment, as well as safety concept evaluation and implementation through to explosion zone investigations

Enhance performance and boost productivity



The full service provision by ANDRITZ doesn't end with a new product or a full system overhaul. Even for operations using machinery from other suppliers, we offer customized upgrades, process optimization, and safety audits, all of which fulfill typical standards such as IEC, UL508A, CE, etc.

Solutions range from exchanging outdated control systems to enhancing the life-cycle management of existing installations.

SAFETY AUDITS

The goal of a safety audit is to list all risks, hazards, and safety-critical points and make recommendations for addressing them. The audit involves document research, review and preparation and is carried out by an ANDRITZ specialist. With frequent changes to rules and regulations, customers can benefit from a standalone safety audit, with the peace of mind that comes from knowing that your safety standards conform to the latest legislation and that you have reduced any possible risks.

ADVANTAGES INCLUDE:

- Ensures the reliability of the control system by replacing outdated hardware with state-of-the-art components
- Intuitive user interface for easy operation, thus high availability and good performance
- Easy integration into existing production lines/ systems ensures a short start-up time
- Ready for remote support to ensure short response times (addIQ Connect)
- Process improvements where necessary
- New automation documentation in electronic form

Moving to a modern control network under tight time constraints



Need to upgrade your machine control system



Thorough analysis of existing system



Optimization proposal for software (and if relevant also hardware) to improve the processes



Quality management by utilizing high-end test scenarios



Installation of new control system on site



Running in full automatic mode immediately after set-up and SmartSIM training



Infoscreen


Simulation process

Machine status

In Production

Alarm list

No Training ✓



Comment

The centrifuge is in production and is running on the defined work point.

ANDRITZ

Production mode 0s Centrifuge in production

Emergency Stop

Bearing temp. 1 33.0 °C

Food material

Vibration 1 0.0 mm/s²

Bowl speed 1400 Rpm

Relative speed 5.00 Rpm

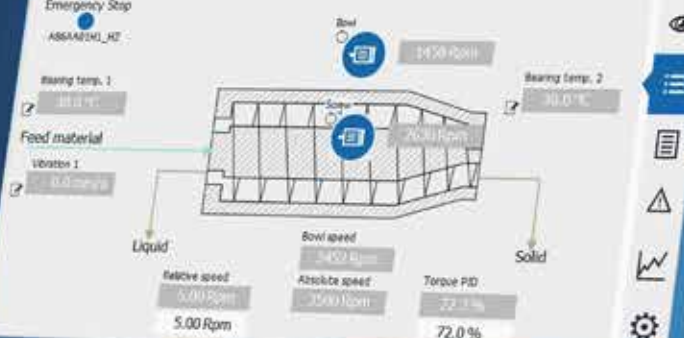
Absolute speed 3500 Rpm

Torque PID 72.1 %

Bearing temp. 2 30.0 °C

Liquid

Solid



SmartSIM*, simulation-based operator training



Production operations today can be very challenging. Among the difficulties you face is the need to train a new operator or implement a new machine control system. There can be a lot of questions in such situations, but help is at hand. ANDRITZ, your full-service provider for solid/liquid separation equipment and systems, has developed a simulation-based operator training system called SmartSIM, to meet this need. This helps you to get more out of your machine with a minimum of training time.

ANDRITZ SmartSIM is a computer-assisted classroom training course, which can be used at any time without affecting actual plant operation. The working principle for this training is simple: Using the original operating interface, trainees can control a digital twin of your machine, including the individual parameters of your production operations.

In the course of this training, the operator learns – with professional on-site support from an ANDRITZ specialist – how to run the machine, respond properly to alarm situations, and improve performance of the machine/process. At the end of the training course, every operator is able to respond properly to real-life operating challenges and achieve certification level.

FEATURES

- Flexible training in a computer-assisted learning environment
- Multiple participants in one training session, trained simultaneously in the same machine/process conditions and problem scenarios
- Realistic process model with real production parameters integrated into a digital twin
- Training to deal with even the most difficult or least expected machine/process conditions
- Certification of new operators to the level of knowledge and performance you require and re-certification of existing operators through refresher training (automatic reminder for re-certification via ANDRITZ eLearning platform)

APPLICATION

ANDRITZ SmartSIM is available for various models of solid/liquid separation machines and systems with an Metris addIQ control system.

*only available for selected equipment

Benefits

- Reduced downtime because there are fewer operating errors
- Shorter start-up time
- Lower maintenance costs because operators are well trained



How can better data keep your wastewater plant flowing?

Optimal sludge flows demand accurate data – anytime, and anywhere. Which is why our mobile app is customized to give you precisely the information you need, when and where you need it most.

For a municipal wastewater plant in southern Germany, this ANDRITZ solution provides easy-to-access performance and trend reports, real-time sludge and polymer flow monitoring, long-term process data, and much more. All tailored to give a transparent overview of the facility, improve process performance, and prevent unplanned shutdowns.





Analyze your machine performance with addIQ Monitoring

With Metris addIQ Monitoring you can monitor the health status of your machine 24/7 from anywhere in the world.

METRIS addIQ MONITORING

addIQ Monitoring monitors the health status of your machine. The addIQ packages Eco, Dynamic, and Prime can be equipped with this tool as an option. It incorporates addIQ Connect and provides the following features:

- Dashboard
- Trend
- Logbook
- Notifier
- Mobile access
- Reports
- QR identification

METRIS addIQ CONNECT

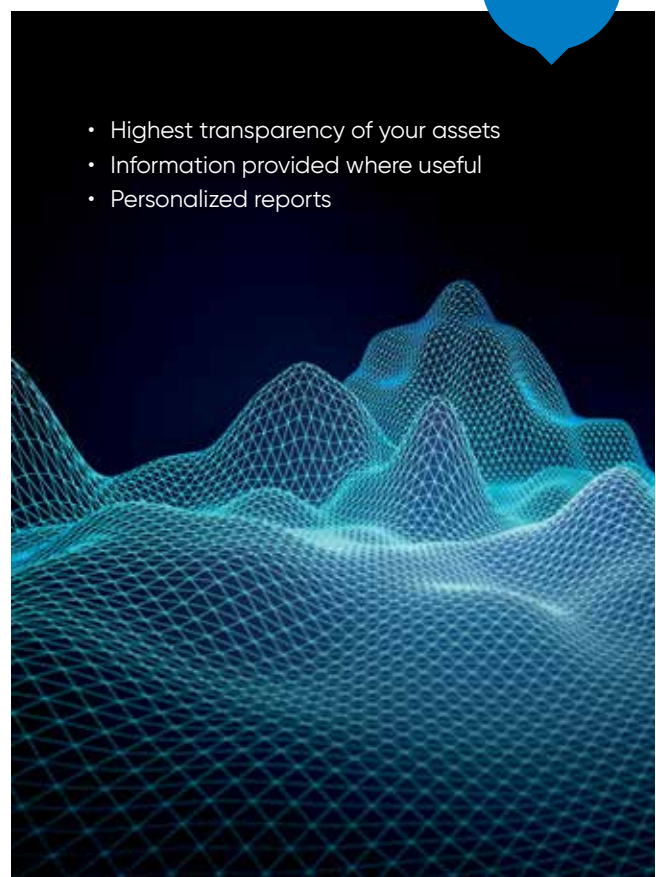
addIQ Connect links your machine to the secure ANDRITZ environment. Besides that, addIQ Connect enables remote support for fast interaction between your machine and the ANDRITZ separation specialist. The only thing you need is the addIQ Connect app, the VPN gateway provided by ANDRITZ and an internet connection to access the secure ANDRITZ data cloud.

FEATURES

- Store trend data for 24 months
- Cyber-secured data connection and back-up in the safe ANDRITZ data cloud
- Present the most important KPIs for process values on the dashboard
- Generate automatic reports (every shift, every day, every month) with process values and corresponding trend curves to an e-mail recipient
- Direct access to process live data and to machine-related documentation with the mobile app, either via the secure ANDRITZ data cloud or on local servers
- Automatic e-mail notifier for the most critical process alarms
- Logbook functionality for the maintenance and operations team

Benefits

- Highest transparency of your assets
- Information provided where useful
- Personalized reports



How can a city's wastewater plant produce over 10% more energy with less polymer?

Metris addIQ RheoScan, our automated optical polymer measurement and dosing system, helped one wastewater plant achieve 34% lower polymer consumption in the belt thickener alone and increased annual biogas production by more than 10%.

A wastewater treatment facility in Ljubljana, Slovenia, needed to reduce its high polymer costs and increase its overall efficiency. ANDRITZ had the solution: real-time optimization for KPIs with addIQ RheoScan. By installing an automated optical polymer measurement and dosage system, the plant now uses around 34% less polymer in the belt thickener and 16% less polymer in the decanter. What's more, the new technology has resulted in an 11.7% increase in annual biogas production.

16% / reduction
in Polymer use
in the decanter

34% / lower polymer
consumption

>10% / more energy



Boost your production process with addIQ Optimizing

IDENTIFY OPPORTUNITIES

Even if your machine has the world's most modern automation system, there is always room for process improvement. Our analyzing tool Metris addIQ Optimizing identifies opportunities in your equipment to save money and stabilize and increase production. It combines the longterm data trending tool with powerful analytical software as well as remote access to process and equipment specialists.

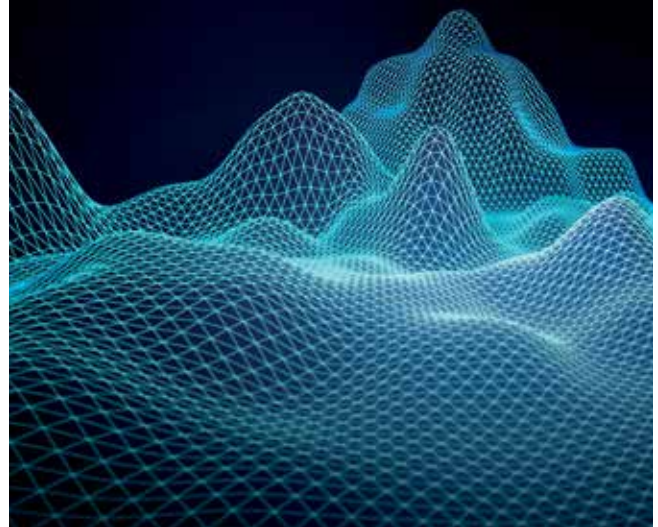
The software collects information from your PLC systems about each control loop, control valve, motor, and variables in the process. Sophisticated signal processing and statistical tools in the software identify parameters that are not performing well and predict the economic impact on the process. Then, the human expertise takes over. ANDRITZ specialists work with your operations and maintenance team to prioritize the opportunities and make corrections. The result? An increase in operational stability and a reduction in waste.

FEATURES

- Identifies improvement and savings opportunities
- Statistical analysis of control effectiveness available at the push of a button
- Prediction of failure in specific equipment
- Human interpretation through ANDRITZ process specialists

Benefits

- Saves money by reducing off-spec product or wasted raw materials
- Increases production by enhancing process stability
- Better end product quality – less variation
- Increases equipment availability



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
- reduce production downtime
- maximize user-friendliness

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ANDRITZ

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