

ANDRITZ OPERATOR TRAINING SIMULATOR (OTS)

Reduce the risk to people, plant, and investment

ANDRITZ

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How can we make a difference in your mill?

This is the question that guides the development of every ANDRITZ automation and digitalization solution for the pulp and paper industries. More than delivering technology, our commitment is to generate real and measurable impact on our customers' operations. We believe that true value lies in results you can measure. That's why we focus on outcomes that are tangible, trackable, and aligned with our customers' goals. In practice, this means connecting solutions that can act on:





These are real gains, connected to each pillar, transforming technology into tangible results. By connecting solutions designed to solve specific industry challenges, we deliver new ways to make a difference and contribute to results. This is how we transform technology into real value.

ANDRITZ Operator Training Simulator (OTS)

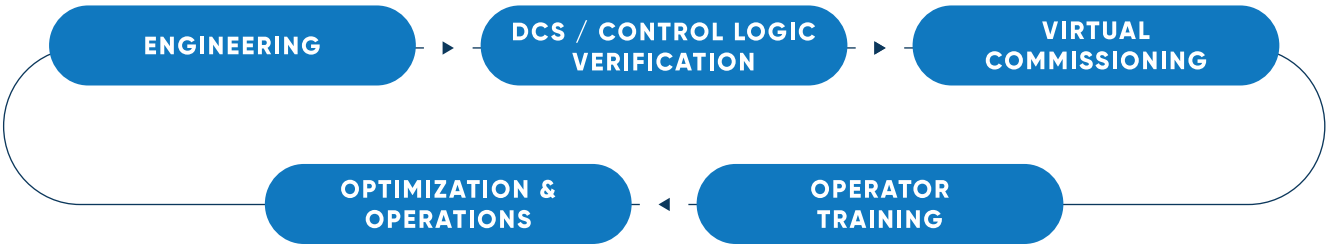
Every pulp and paper operation faces a unique combination of challenges shaped by its lifecycle stage, operational complexity and strategic objectives. Whether commissioning a new mill, modernizing an existing plant, migrating control systems, or strengthening day-to-day operational performance, the need to reduce risk and make informed decisions remains constant.

LEADING THE WAY ON OPERATOR TRAINING

ANDRITZ Operator Training Simulator (OTS), powered by IDEAS, is designed to address these diverse realities with a single, flexible solution. By combining high-fidelity dynamic simulation with real control logic and realistic operating scenarios, OTS adapts seamlessly to different customer situations and project types. The same simulation environment can support early-stage engineering validation, de-risk commissioning activities, accelerate operator readiness, and continue delivering value throughout ongoing operations.

FROM ENGINEERING EXCELLENCE TO AUTONOMOUS OPERATIONS

At ANDRITZ, our ambition is to make fully autonomous mills a reality. This vision is driven by measurable outcomes that improve process performance, asset reliability, human safety, and sustainability. OTS plays a central role in this journey by enabling operational readiness, reducing uncertainty, and allowing critical decisions to be validated in a virtual plant environment instead of on the production floor.



KEY AREAS OF PROJECT DEVELOPMENT

PROCESS DESIGN

Enables you to test and verify design concepts and process control logic-quickly, and at low cost and low risk

CONTROL LOGIC (DCS)

Stage, test, and validate control logic with IDEAS-identify and correct errors to achieve a faster, smoother start-up

OPERATOR TRAINING

Provide your operators with realistic, hands-on training modules to reduce risk to your operators and your equipment

OTS transforms simulation technology into tangible operational value by directly supporting the key performance dimensions that define successful pulp and paper operations.

Measurable value to customers

More than delivering technology, our commitment is to generate real and measurable impact on our customers' operations.

We believe that true value lies in results you can measure. That's why we focus on outcomes that are tangible, traceable, and aligned with our customers' goals. The measurable values below show how ANDRITZ OTS translates this commitment into real performance improvements across the mill:



UP TO 0.5% PRODUCTION INCREASE



UP TO 0.5% MILL AVAILABILITY INCREASE

UP TO 10% PRODUCTIVITY INCREASE

ANDRITZ OTS solutions for pulp and paper

ANDRITZ OTS provides a high-fidelity simulation foundation that can be tailored to individual process areas, enabling realistic validation, training, and operational readiness across the entire plant. Below is an overview of the ANDRITZ OTS solutions available for the key areas of pulp and paper operations.

PULP

- Wood processing
- Cooking
- Washing
- White liquor oxidation
- Oxygen delignification
- Screening
- Bleaching
- Pulp drying
- Evaporation
- Methanol plant
- Recovery boiler
- Lime kiln
- Recausticizing
- Gasification
- Power boiler
- SulfoLoop
- Steam and turbogenerator
- Water treatment plant
- Boiler water treatment plant
- Effluent treatment plant

PAPER

- CTMP
- Paper machine
- Tissue machine
- Biomass power boiler
- Coal-fired thermal power plant
- Boiler feedwater treatment
- Steam distribution and turbogenerator
- Water treatment
- Effluent treatment

Driving business performance through operational readiness

PROCESS
From a process perspective, ANDRITZ OTS enables faster stabilization during start-up, deeper understanding of process behavior, and reduced quality losses. Operators and engineers gain insight into how the process reacts under normal and abnormal conditions, allowing issues to be addressed before they impact production.

ASSETS
From an asset perspective, it contributes to smoother commissioning and ramp-up by reducing mechanical stress and avoiding trial-and-error during start-up. This results in improved plant availability and more predictable project outcomes.

HUMAN
From a human perspective, it creates a safe, realistic training environment where operators can build competence and confidence without risking people or equipment. Skills are standardized across teams, and new operators can reach operational readiness faster.

SUSTAINABILITY
From a sustainability perspective, better-trained operators and validated control strategies help reduce emissions, energy consumption, and water usage, while improving the handling of abnormal and safety-critical situations.

By connecting simulation directly to these pillars, ANDRITZ OTS ensures that technology translates into real, measurable value.



BUSINESS IMPACT: FROM SIMULATION TO PERFORMANCE
By shifting critical learning and validation activities from the plant floor to a virtual environment, OTS delivers clear business benefits. Issues are resolved earlier, rework during commissioning is reduced, and the transition from mechanical completion to stable production is accelerated.

Simulation-based verification and training help shorten the time required to reach design capacity, improve productivity during early operations, and support a strong return on investment. Instead of reacting to problems after start-up, teams are prepared to handle them proactively.

CONTINUOUS BENEFITS FOR LIFECYCLE
During the engineering phase, IDEAS is used to build high-fidelity steady-state and dynamic models based on P&IDs, equipment data, and process specifications. As the project progresses, these same models are expanded to include detailed control logic for DCS verification and testing.

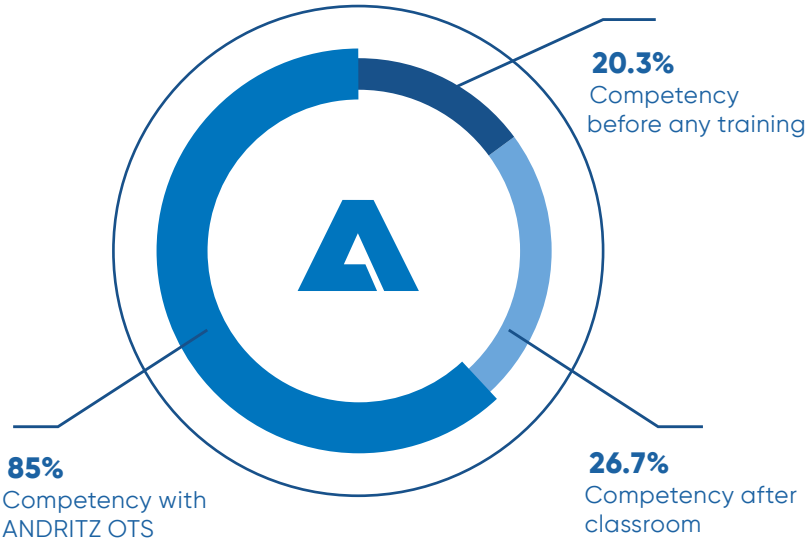
Rather than being discarded after commissioning, the very same dynamic model becomes the foundation for Operator Training Simulation. After start-up, the simulator continues to deliver value through operator training, process optimization, and ongoing operational support. This continuity ensures consistency, accuracy, and maximum return on engineering effort across the entire lifecycle of the plant.

De-risking start-up through virtual commissioning

In one documented case study, operator competency was assessed through a standardized evaluation consisting of 300 questions, designed to compare traditional instructor-led training with simulation-based training using ANDRITZ OTS. The assessment was conducted at three distinct stages to clearly measure learning progression: first, before any training had taken place; second, after completion of classroom-based instruction; and finally, following hands-on training with ANDRITZ OTS.

HOW SIMULATION TRANSFORMS OPERATOR COMPETENCY

The results demonstrated a clear and significant improvement in operator competency when simulation was introduced. Prior to any training, the average competency level was measured at 20.3%. After classroom instruction alone, competency increased modestly to 26.7%. Following training with ANDRITZ OTS, however, the competency score rose substantially to 85.0%, highlighting the effectiveness of high fidelity simulation in accelerating learning, reinforcing operational understanding, and improving overall readiness.



ONE SOLUTION, MULTIPLE SCENARIOS AND APPLICATIONS

ANDRITZ OTS is designed to support a wide range of project and operational scenarios.

Rather than being limited to a single phase or application, it evolves with the plant. It enables customers to move confidently from design to start-up and into stable, efficient operations, using one consistent model that reflects the real process.

This adaptability makes ANDRITZ OTS a strategic asset that supports decision-making and performance across the full lifecycle of pulp and paper operations.

GREENFIELD PROJECTS
Enables validation of process design, verification of control logic, and operator training well before mechanical completion, significantly reducing start-up risk

BROWNFIELD PROJECTS
Provides a safe environment to test process changes, equipment upgrades, or control modifications without impacting ongoing production

DCS MIGRATION AND MODERNIZATION PROJECTSS
Allows logic behavior and multivendor DCS integration to be tested realistically, minimizing surprises during cutover

ONGOING OPERATIONS
Serves as a continuous training and knowledge-retention platform, supporting on-boarding of new operators and continuous skill development for experienced personnel

Why customers choose ANDRITZ OTS

ANDRITZ combines deep pulp and paper expertise beyond start-up with high-fidelity simulation, lifecycle thinking, and global execution capability

INDUSTRIAL KNOW-HOW

ANDRITZ brings the deepest domain coverage in the pulp and paper industry. Our simulation models and libraries are built around real pulp and paper processes, reflecting decades of process knowledge and hands-on operational experience. This ensures that simulations accurately represent real-world behavior, enabling customers to address industry-specific challenges with confidence rather than relying on generic models.

FULL LIFECYCLE COVERAGE

Unlike solutions focused solely on training, ANDRITZ OTS supports the full lifecycle of a plant. The same simulation environment is used during conceptual design, engineering validation, control logic verification, commissioning, operator training, and ongoing optimization. This continuity eliminates handovers, reduces rework, and maximizes the return on engineering effort by allowing one model to evolve with the plant over time.

SEAMLESS MULTI-VENDOR DCS INTEGRATION

It integrates with all major PLC and DCS platforms, enabling customers to test and train using the same control logic and operator interfaces as the real plant.

AUTONOMOUS OPERATIONS ENABLER

OTS is a key building block in ANDRITZ's broader automation and digitalization strategy. By enabling operational readiness, validating decisions in a virtual environment, and supporting continuous improvement, it contributes directly to the journey toward more autonomous, efficient, and sustainable mills. This alignment ensures that simulation is not a standalone tool, but an integrated part of future-ready operations.

GLOBAL EXPERTISE WITH LOCAL EXECUTION

ANDRITZ combines global reach with local presence, supported by experienced pulp and paper process experts worldwide. Our teams work directly with customers during critical project phases such as commissioning and start-up, ensuring that simulation models, control strategies, and training programs are effectively implemented on site.



CONTACT US FOR MORE INFORMATION

Advancing autonomous operations is our vision and is becoming an integral part of industrial processes. ANDRITZ is at the forefront of this transformation, leveraging digital innovations along with deep operational and technical expertise to improve process efficiency, quality management, and production reliability and availability.

We focus on developing autonomous pulp mills and process optimization, to support efficient andsustainable operations by combining automation, electrification, intelligent instrumentation anddigitalization to create measurable value throughout the full lifecycle and the entire value stream.

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