

ANDRITZ AUTOMATION

BrainWave® further strengthens product range

The Automation departments within the Andritz Group Business Areas, along with the two fully owned Andritz affiliates Universal Dynamics Group and IDEAS Simulation & Control form the Andritz Automation Global Network. Approximately 500 engineers at 25 sites worldwide focus on the development and implementation of automation solutions for Andritz systems and plants, including service support.

Andritz Automation continuously works on automation solutions to improve the processes and plants technically and economically in order to raise the value for the customers. The focus is on process simulation, Advanced Process Control (APC), special sensor development, and further enhancement of efficient engineering tools.

Newly developed products

During 2005, several new products for various applications were developed.

In order to run processes on an optimized level, Andritz Automation developed and designed the Andritz Control Expert solution (ACE™) for all relevant process areas of a pulp mill. ACE™ is a process supervisory and monitoring system using the unique BrainWave® technology as the common regulatory controller base. BrainWave® is an adaptive, model based and predictive controller, which accurately forecasts process responses and accounts for multiple objectives. It predicts and prevents disturbances before a process is pushed off target.

For the products of the Rolling Mills and Strip Processing Lines Business Area, the Andritz Line Master series (ALM™) was developed and has been installed in all new processing lines. These APC solutions are especially built to continuously optimize the processes of all kinds of stainless steel annealing and pickling lines, and other heat treatment furnaces and pickling processes.

Andritz Sundwig developed an APC system on the basis of a Model Predictive Control (MPC) for the flatness control of cold rolling mills. Based on an integrated model, the controller predicts the future process behavior and thus raises customer product quality and plant productivity. This new controller has already been implemented successfully in many plants.

Intelligent and complex machine and plant control requires accurate online measured process data. The sensor platform MIS (Multi-Ingredient Scan) was developed to measure various properties of fluid media, such as pulp consistency, ash content, and sludge consistency. The laboratory and site tests of the prototype were very successful; the first industrial installation will be implemented in 2006.

To shorten the planning time and to improve the engineering quality, a continuous optimizing and implementation process on the engineering tools used is in progress.

Business development

In 2005, Andritz acquired Universal Dynamics Group (UDG), an automation services and software company with headquarters in Richmond (Vancouver), BC, Canada. This new acquisition strengthens the capabilities of the Andritz Automation Group in the North American market.

In addition to the engineering services, UDG also markets the software product BrainWave®, which is a PC-based advanced controller that allows customers to optimally control various processes. The BrainWave® controller is unique because it uses a patented technology to create mathematical models of the process while it runs. This type of MPC results in tremendous savings for customers due to increased quality, higher production rates, better operability, and lower energy and raw material costs. General Electric successfully implemented BrainWave® in a number of its polymer plants. BrainWave® has already proven its effectiveness in over 1,000 applications.

Important orders

Andritz Automation will provide the engineering, low voltage equipment, process simulation, automation, installation, and start-up of the systems for Metsä-Botnia's pulp mill project in Uruguay.

For the Chitianhua pulp mill in China, Andritz Automation will provide the project's basic engineering and supply the complete baling line automation system BaleMatic™.

For an Andritz TAD tissue paper machine to be supplied to Procter & Gamble, USA Andritz Automation will provide the control system (PrimeControl™) for the complete machine. The most advanced PrimeControl™ system was started up successfully for a tissue plant of ICT, Spain.

A chip sampling system was added to the first online chip size analyzer, ChipScan™. It was installed at the UPM Wisaforest mill, Finland to supply chip quality information to improve the production process.

BaleTrack™, a newly developed automation tool within the Andritz baling line automation package BaleMatic™, was successfully introduced to the pulp mills of Mondi Richards Bay, South Africa and Veracel, Brazil. BaleTrack™ collects all quality relevant parameters of a pulp bale and tracks this information from the cutter/layboy to the entire baling line. It transfers this data to customers dispatching and ERP systems to be used for the mill-wide information system and quality control system.

For the complete stainless steel plant of JISCO, China Andritz Automation will supply all necessary technological control systems including mathematical models to ensure a high quality standard. For the production lines of JINDAL Stainless Ltd., India, Dongkuk, Korea, and Vacuumschmelze Hanau, Germany Andritz will supply the complete drive and automation equipment including instrumentation. Level 2 automation modules for rolling mills and processing lines, according to ISO/IEC 62264 for adaptive pass program calculation and optimization, were also integrated parts of the deliveries.

For the world's largest sludge drying plant, the Changi wastewater plant in Singapore, Andritz Automation delivered the whole automation, electrification, and engineering, which included instrumentation and software development.

IDEAS Simulation received orders for simulation of the pulp mills of Santa Fe 2 CMPC, Chile, Metsä-Botnia, Uruguay, Suzano Bahia Sul, Brazil, and Marusumi Paper, Japan. Several orders were awarded in the mining industry area.