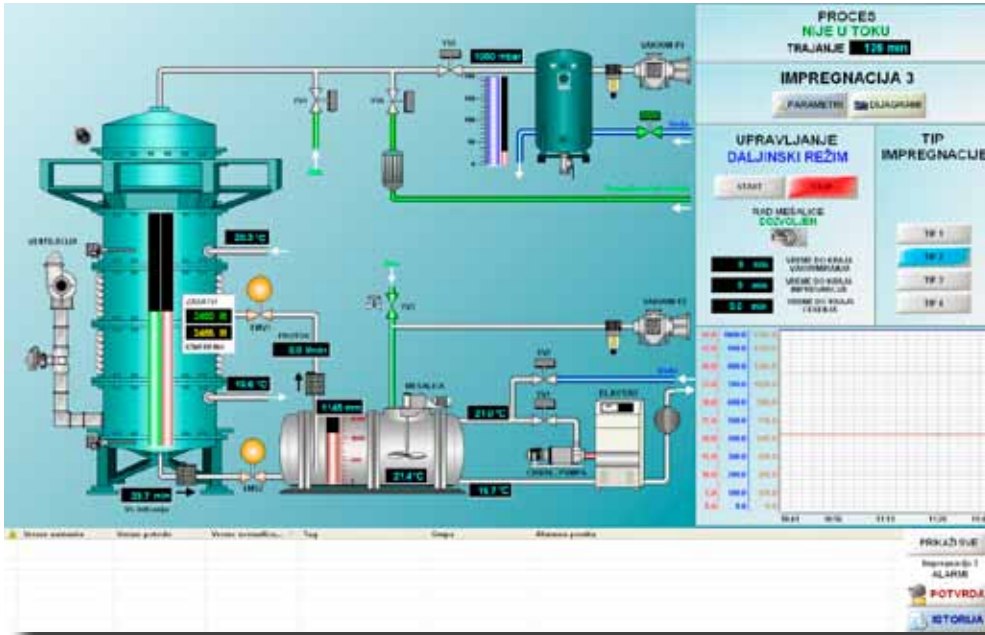


Wind Power for Europe Achieved With InduSoft Web Studio

UNO-LUX PROCESSING implements InduSoft Web Studio in the process of impregnation and polymerization of wind turbine generators rotors and stators.



Impregnation facility for stators of wind turbine generators – main screen

- The flexibility and reliability of InduSoft Web Studio made it an ideal solution for this type of application, thanks to the native drivers that make it possible to communicate directly with the AutomationDirect PLCs.
- UNO-LUX PROCESSING Ltd. Belgrade implemented a SCADA system for rotor and stator polymerization that is able to generate reports for each step of production
- The SCADA system developed in InduSoft Web Studio has increased production, facilitated regulatory compliance, and can be easily scaled upward as the facilities grow.

UNO-LUX PROCESSING has been actively developing solutions for supervision and control of production processes in wind turbine generators factory in Serbia for over a decade. These factories include an impregnation and polymerization facility for treatment of generators, stators, and rotors, as well as other rotating electrical machines.

Published data shows that already every 4th wind turbine in Europe uses generators produced and assembled in Serbia.

Demands for production capacity expansion and technology improvements combined with ever stringent quality control requirements resulted in the need for updated supervisory and control solutions. In the wake of this trend, UNO-LUX PROCESSING developed a solution for the automation of production equipment in all

industrial halls of one of the largest wind turbine production facilities in Serbia.

As equipment was moved to a new location within the facility a need for new, centralized SCADA system with a capability to monitor a 100% of existing processes arose.

The new SCADA solution had to fulfill all production demands of the previous production facility, with the option to integrate any and all future production equipment.

UNO-LUX PROCESSING chose InduSoft Web Studio SCADA software to meet these requirements, based on excellent experience in earlier projects made with InduSoft.



Background

UNO-LUX PROCESSING Ltd. is situated in Belgrade, Republic of Serbia, and specializes in industrial automation, design and implementation of supervisory and control systems for machines and industrial plants.

Experience in the industry and ongoing collaboration in automation of the production facilities were the main reasons that UNO-LUX PROCESSING Ltd. was selected to implement the new SCADA solution. The process began with choosing the best SCADA software platform.

Positive experience with InduSoft Web Studio in previously installed SCADA solutions for drying ovens within the same facility convinced UNO-LUX PROCESSING Ltd. to use InduSoft Web for this application.

The Challenge

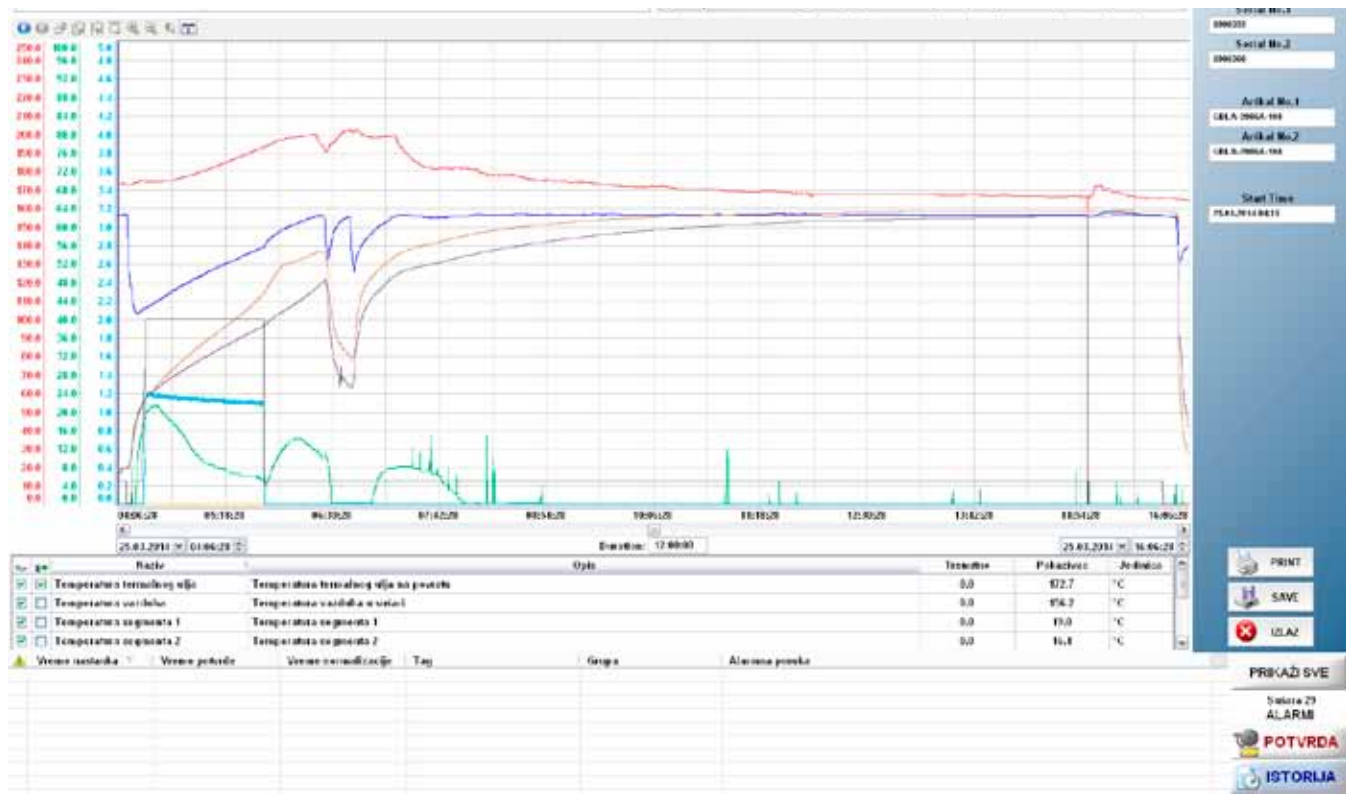
The key variable during the drying and polymerization process of stators and rotors

for wind turbine generators is the temperature of the air in the oven. It is critical to keep this temperature within specific parameters in order to ensure a high quality product. The system must accurately control the oven parameters and enable operators to carefully monitor the process at the SCADA workstation.

In the impregnation process, vacuum levels in the impregnation vessel, levels of impregnation resin, and temperature during all impregnation phases must be controlled and monitored and kept within acceptable limits.

Every treated product must be followed by corresponding reports that contain trends of all critical values, including the identification data for the treated product and the identification of the operator in charge of the process. Generated reports must be automatically archived and printed to accompany the product.

Trend of measurements during polymerization process



Main screens for the impregnation and polymerization processes



The SCADA application had to support different access levels (operator, shift leader, technology engineer, maintenance service and system administrator), and the SCADA software also had to support direct communication with AutomationDirect (Koyo) PLCs, which were used to automate all of the production equipment.

Since production is ongoing, replacement of the existing SCADA workstations with the new solution could not interrupt the production process.

InduSoft Web Studio was chosen for its capabilities in automatic report generation, direct communication with PLCs, and security features that allow user and group level authentication.

The Solution

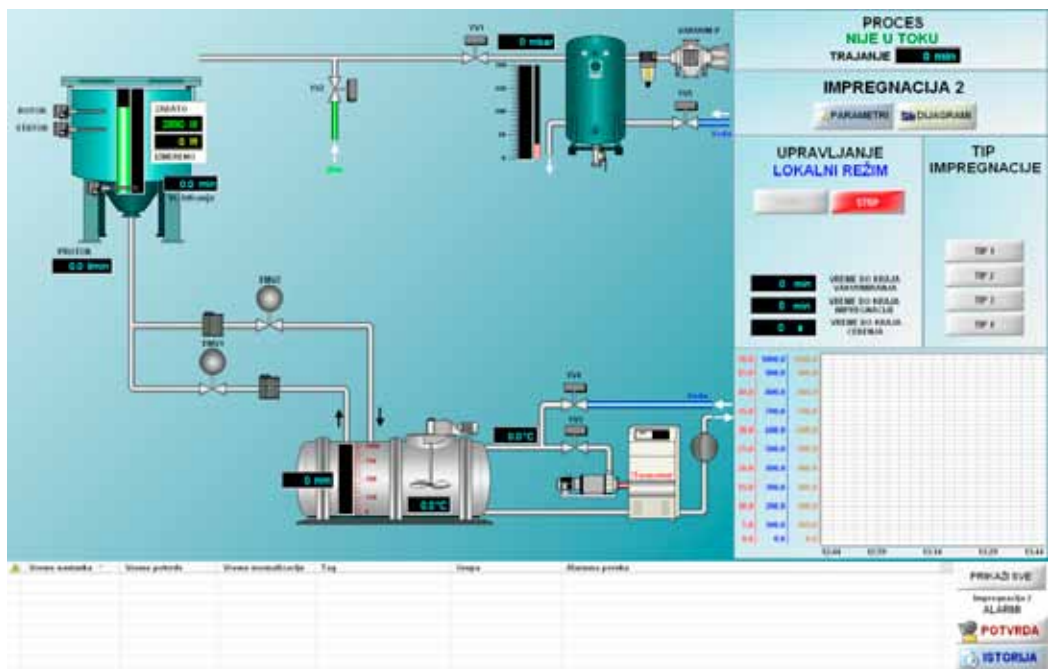
InduSoft Web Studio enables easy visualization and control of the process. The development environment also makes it easy to duplicate similar process representations (example: polymerization ovens), which lowers total development time and cost.

The main screen is intuitive and easy to read, and supervision and control capabilities are clearly defined on pop-up screens.

Experience with earlier projects using InduSoft Web Studio, especially with trend display objects, made it easy to configure automatic report creation. The report contains an optimized display of trend diagrams for important process variables in regular time intervals, as well as other important information, all suitably formatted for printing. The printed report follows the corresponding product, making tracking easy.

The script commands in InduSoft Web Studio provide an easy solution for archiving and printing reports. Defined archiving procedure guarantees a clear overview and makes it easy search reports based on different criteria.

Communication with Koyo PLCs was implemented using the MODBUS TCP/IP protocol, available as a native InduSoft Web Studio driver.



Main screen for impregnation process

The security system has multiple access levels that enable different user classes to use the data and control the process according to their privileges, thus providing strict compliance with regulatory standards. Every command issued through the workstation remains archived, and can be referred to later.

Alarms are filtered and displayed separately depending on what equipment is in use, or all active alarms can be viewed. Communication alarms are displayed in a separate window. The alarm history screen allows the process engineers an easy overview of the process execution, and easy troubleshooting.

Deployment of the new SCADA system was done without any interruption to the production process. During deployment, the old supervisory system functioned in parallel with the new one.

The Result

This project is vital for the future growth of this production facility. The updated SCADA solution has increased the quality in supervision and control of the existing equipment, and it also provides for easy expansion of the system in the future. InduSoft Web Studio allows new workstations to be added quickly as needs arise or as equipment changes. The Web Thin Client application is also especially important; it enables supervision from any location, twenty-four hours a day (one client license is already provided with runtime license).

Implementation of this project in InduSoft Web Studio was a valuable experience for UNO-LUX PROCESSING engineers. After all, “Job well done” by satisfied customer is the best reference it’s possible to receive.

For more information contact your local distributor or InduSoft directly at info@indusoft.com.

