

Movicon SCADA Software Provides Enhanced Supervision of Large Solar Parks in South Africa and Brazil

RESULTS

- Improved control of the power supplied to the grid
- Enhanced monitoring of devices, equipment and systems
- Ability to perform data analysis and visualization of trends
- Improved communication with electric grid managers



APPLICATION

SCADA systems for photovoltaic power stations.

CUSTOMER

Operator of 11 photovoltaic power stations in South Africa and Brazil.

CHALLENGE

New SCADA systems were required for 11 photovoltaic power stations in South Africa and Brazil, with a total capacity of 825 MW. The existing system had been developed for the end user over a decade earlier and the aging systems were used to collect large amounts of data (from 5,000 to 10,000 I/O for each system), process, aggregate and visualize the collected data and communicate with the distributed control system or third party systems. The main objectives were to revamp the supervision system graphics and introduce advanced tools for visualizing graphical trends and data analysis of collected data using reports. The end user also requested that the SCADA system be integrated with web pages and be capable of exporting collected data in .csv file format.

SOLUTION

Delin Elettronica, an integrator of supervisory and control systems in sectors such as renewable energy, was tasked with revamping the existing supervisory systems. The new systems are based on Emerson's Movicon.NExT™ SCADA platform, which can be used to monitor the state of inverters, photovoltaic strings, weather stations, network analyzers, meters and medium voltage cell switches,

“We chose the Movicon platform for its scalability, integrated tools, modern software technology, captivating graphics and connectivity. It is a big advantage to have all those features in one unique solution and requiring just a single license.”

Andrea Bononcini
Senior Software Engineer
Delin Elettronica

and control the power supplied by the system by controlling the inverters and power plant controllers. All field data is collected using the TCP/IP Modbus communication drivers provided with the Movicon.NExT platform. Essentially Emerson's Movicon.NExT team brought product capabilities and domain expertise in delivering a proven efficiency enhancing solar power supervisory control and monitoring solution. The PC server uses a network card to collect data from the field, communicate with the power grid manager by means of the OPC UA protocol and send notifications and reports by email. The collected data is historized by the Movicon.NExT solution in the SQL Server Express database on the PC server. Web pages have been integrated within the supervision system for the security video camera surveillance, and visualization and tracker control system for solar panel movements.

The Movicon.NExT software platform is an all-inclusive platform for developing and implementing all the functions needed by the supervision system. Although the project goal was to revamp the supervision system, it still had to retain all the functions the previous software provided. With support from Emerson, Delin Elettronica was able to replicate any functions that were not natively present in the Movicon.NExT platform. In addition, the system architecture is also set up for the use of additional remote clients when the need arises resulting in a truly scalable system.

RESOURCES

Movicon

www.Emerson.com/Movicon



The Movicon.NExT software platform processes, aggregates and visualizes collected data.

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