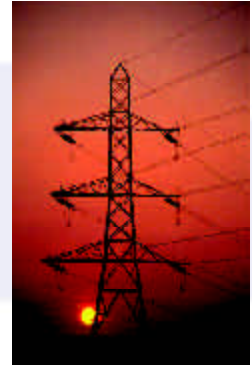


The Dawn of a New Era

The explosion of microprocessor technologies over the past decade has had a profound impact on the electrical transmission industry. Historically, control, protection and metering subsystems were comprised of separate devices, each designed with a specific purpose in mind. Unfortunately, these devices existed in near isolation, with little or no exchange of information between them.

Intelligent Electronic Devices, or IEDs have changed all that. Today, control, protection, metering and a wide range of other tasks can be performed by a single IED. Advances in networking and communications have also made possible the integration of these IEDs so that they can function together and share information not only within the substation but beyond into the owner's enterprise systems.



New standards and technologies are revolutionizing the area of substation automation.

Development of new standards, such as IEC 61850, and new technologies are revolutionizing the way in which engineers design, implement and test the next generation of substation automation systems. Unique skills are required for the careful application of these new technologies, with the objective of forming a cohesive and powerful system capable of controlling, protecting and monitoring today's substations. Besides fulfilling these traditional roles, these systems are also able to deliver valuable information that can be used to increase reliability, enhance functionality and reduce costs in today's deregulated market.

Why Substation Automation?

There are strong pressures in a restructured and competitive electricity market to reduce costs while simultaneously improving quality of supply. Delivering solutions that meet both of these objectives can be difficult to achieve.

Substation automation, if properly implemented, offers tangible benefits which can fulfil these diverse and often conflicting objectives.



- **Reduced Installation Costs** - Because IEDs share information over a communication network, their installation results in less wiring and cabling. This translates directly to a significant costs savings over the traditional method of implementing separate control, protection and metering subsystems.
- **Reduced O&M Costs** - By providing information to a Reliability Centered Maintenance system, IEDs can help predict when maintenance will be required. This can help reduce regular maintenance costs and will also forewarn you about major and costly equipment problems
- **Reduction in Lost Revenue due to Outages** - Utilizing the IED equipment monitoring features, operators can be given advance warning of system problems allowing them to react to the situation before transmission capability is lost due to a forced outage.
- **Enhanced Functionality and Flexibility** - Besides the control and protection capabilities of the IED, other capabilities are available that could be used to increase performance and decrease costs. Features such as automatic notification and dispatch of maintenance personnel, high accuracy revenue metering, load profiling, power quality monitoring and fault locating can all be utilized to improve the bottom line.
- **Improved Asset Management** - By using the SA system to closely monitor the condition of the equipment within the substation, more capacity can be squeezed from existing equipment and cost effective decisions can be made on replacing old and obsolete equipment.

Why Teshmont for Substation Automation?

Founded in 1966, Teshmont is a world leader in high voltage power transmission engineering. Our team of professional engineers and technologists has provided services in over 20 countries around the world for some of the largest and most advanced transmission systems! We have a proven track record of providing top quality services on time and within budget and strive to exceed our clients' expectations. Our objectives are not to complete just another project but rather to provide our clients with the expertise and services they need to see that their objectives are met.

Teshmont will provide you with:



- **Expertise** – We have substation automation experts who help clients implement the latest control and protection systems.
- **Flexibility** – We can meet your specific needs by providing the appropriate level of assistance to complement your company's capabilities and provide maximum efficiency.
- **Independence** – We are not affiliated with any manufacturer and will provide a design which is the optimal solution for your particular needs.
- **Innovation** – We use a state of the art Real Time Digital Simulator to test system performance and have experience implementing the latest IEDs.
- **Cost Savings** – Our approach will take your SA project from start to finish and will provide you with an optimal solution that is focused on improving reliability, reducing costs and generating more revenue.
- **Training** – Our interactive approach to projects ensures that your personnel will be armed with the knowledge to ensure sustainable results.

The Difference is Knowledge

Teshmont has the knowledge, experience and skills required to help you reap the benefits of substation automation by providing a complete range of services necessary for the successful implementation of any SA project. These services include:

- Designing Substation Automation Systems
- Designing networking and communication systems
- Performing system programming and IED parameterization
- Conducting off site testing of the SA system including power system simulation testing utilizing a state of the art real time digital simulator.
- Developing HMI systems and database applications
- On site installation review and commissioning
- Preparing specifications
- Managing projects of all sizes
- Performing cost/benefit analysis
- Designing auxiliary systems (power supply, air handling etc)
- Conducting training

Teshmont has the “state of the art” skills, knowledge and experience required to take your substation automation vision from concept to reality.

Contact Teshmont to see how we can help you with all of your substation automation needs!