XCell

Automation Platform for HV and MV Substations

The **Ideal Platform** for new substations, facilitating the **Integration** of **New Technologies** including **IEC 61850** and **DLMS Smart Meters**.

XCell is an advanced substation automation platform designed specifically for HV and MV substations. Its state-of-the-art technology provides real-time access to hardwired plant data, intelligent IEDs, networked IEC 61850 devices and smart meters. This makes it ideally suited for new substations or upgrade and integration of existing substations.

Applications include: IED integration platform; RTU Substation Gateway; IEC 61850 Gateway; DLMS Smart Metering Gateway; Protocol converter; Retrofit solutions.

Designed for use in the most demanding electrical environments, **XCell** solutions are widely used in 400kV substations where high availability is critical to the continuity of power. **XCell**´s exceptional reliability and redundancy guarantees high system availability through dual power sources, redundant I/O processors and redundant SCADA links.

XCell is an automation platform that provides utilities with choice, flexibility and expansion capabilities, including:

✓ Scalable, Flexible, Architecture.
✓ Exceptionally High Reliability.
✓ SCADA Protocol Support (Serial & IP Protocol).
✓ IED Integration.
✓ IEC 61131 PLC programming.
✓ IEC 61850 Integration (Client & Server).
✓ DLMS Smart Meter Support.
✓ High Density Plant Interface.
✓ Redundant I/O Processors.
✓ Web server.

e-NET xcell

Making the Smart Grid Real

Modularity

XCell is a modular hardware and software architecture. Each processor supports up to fifteen plug and play I/O modules. I/O modules range in functionality, point counts, and interface/termination options.

Multiple processors can be installed to provide redundant I/O processors, data segregation, extra communication interfaces or redundancy. Critical software applications can run in multiple processors to ensure there is no single point of failure. Multiple processors can be combined to form a data concentrator and multiple racks can be networked together to form large systems.

The number and combination of modules or cells can be configured to meet the specific site requirements. Its scalability allows it to be used in large HV substations with tens of thousands of I/O points and small MV substations with a few hundred points.

Each processor module supports two Ethernet ports and five serial ports (RS232/RS485/RS422), along with a display for status and diagnostic information. The I/O module range includes 64 channel digital inputs, 32 channel digital outputs and 32 channel DC analogue inputs.

IEC 61850 Gateway

XCell is ideally suited as a substation gateway for IEC 61850 Substation Automation Systems where it communicates via IEC 61850 to the protection relays/IEDs and communicates to the Control Centre via the SCADA protocol.

XCell supports a rich suite of SCADA protocols including DNP3 (serial and TCP/IP), IEC 60870-5-101/104 and an extensive range of proprietary protocols. It also supports multiple SCADA links, generally preferred for increased availability for SCADA connections.

SmartLogic Programming

To provide flexible site-specific solutions **XCell** supports the IEC 61131 graphical application standard, allowing simple graphical application development using:

- ✓ Ladder Diagrams
- ✓ Function Block Diagrams
- ✓ Structured Text
- ✓ Sequential Function Charts
- ✓ Instruction List.

This allows site-specific applications to be constructed graphically using a PC application and downloaded to the product without complex programming or product modifications. These IEC 61131 applications can be simulated to verify the functionality before downloading to the **XCell** product.

Substation Toolset

The **XCell** product is supported by a comprehensive suite of tools for both configuration and diagnostics. These include user-friendly PC based applications allowing the user to easily replicate configurations through templates and drag and drop facilities.

Configurations can be downloaded via direct connection to the product or remotely by means of a TCP/IP connection. Remote diagnostics are also supported, giving access to data values, hardware status, software versions, event logs and internal diagnostic logs. Configurations can be uploaded for viewing or further modifications.

A local display panel on the front of the processor module provides live I/O data and diagnostics. Here data values can be displayed along with hardware module information and IP address information.

SCADA Master

Redundant Communications

SCADA Master

* **Protocols**

* **Protocols**

**GPS Clock
(internal or external)**

Centralized
IEC61131
Applications

IEC 61850 / Serial / Hardwired

* **Protocols:**
IEC 101/104
DNP3.0 (serial & IP)
RP570
L&N Conitel
Indactic
Sinaut
Wisp+
Redac
IEC 61850
Modbus
…….