**AVEVA**

# Thomson Technology designs a custom application template for use in its 2400 switchgear series using AVEVA™ Edge, significantly reducing HMI programming time

**Thomson Technology**
**Industry - General Manufacturing**

## Goals

- To provide standard communications through Modbus Serial, Modbus TCP, and Remote OPC.

- To improve programming time and provide overall cost savings.

- To provide a communication gateway between devices, acquiring data from engine controllers, meters, protection relays, and other devices in the field.

## Challenges

- Time spent in development of the HMI was preventing the company from meeting its objective of providing the industry's shortest available lead times.

- The company's various SCADA/HMI development software suites had unintuitive interfaces, causing long development time and labor expenses for application development.

## Results

- The company reduced HMI programming time from 50% - 60% per project.

- Energy management is easy to track and control using the series 1400 Switchgear's intuitive HMI.

- The Scheduler is capable of reading hundreds of set points, and displaying them all in a visually intuitive way.

- The solution provides standard communications through Modbus Serial, Modbus TCP, and Remote OPC.

## Solutions

- AVEVA Edge

## AVEVA Edge generates huge time savings and offers Thomson Technology a feature-rich HMI

Langley, British Columbia, Canada – A facility is only as reliable as its power source. The equipment depended on to ensure the availability of electrical power must be robust, and reliable. That's why the equipment produced by Thomson Technology is so critical to the power generation infrastructure, as is the HMI that connects those systems to operators.

Specializing in modular switchgear and power generation equipment, Thomson Technology began researching an improved development platform for its flagship Series 2400 switchgear. The solutions had to be as reliable as the products Thomson Technology produced itself.

Thomson Technology has been developing, designing, and manufacturing power generation controls and switchgear since 1973, providing systems for critical applications such as health care, data centers, water, and wastewater treatment plants, as well as oil and gas exploration.

Servicing these challenging types of industries, Thomson needed an HMI capable of meeting the demands of its ever-changing technology requirements. Its search for a better solution led them to AVEVA Edge.

## Flexibility, customization, scheduling, and communication required of new HMI

Thomson Technology identified that the time spent in the development of its HMI for its Power Generation Switchgear Systems was preventing them from meeting the company's objective of providing the industry's shortest available lead times.

For several years, Thomson Technology custom-programmed its HMIs using many well-known development platforms on the market. While the company was able to create interfaces for the HMI, it was unable to find a solution that offered both the reliability of a hardware-based platform and the flexibility of a hardware-independent solution.

In addition, the unintuitive interfaces of the various SCADA/HMI development software suites the company was using resulted in long development time and a large expenditure for labor in application development.

Once Thomson Technology made the decision to find a better answer to its problem, the company put together a list of requirements that had to be met by a new HMI application development software. Among them included aspects of flexibility, easy customization, scheduling, and communication.

One major reason for the switch to a new development platform was the need to easily create new projects based on a basic template to quickly customize each HMI for its intended application. The new SCADA/HMI development platform had to allow for customization of a new project simply by enabling options in a configuration process.

The same standard PLC/HMI programs also had to be able to perform different tasks based on selected features. This configuration process had to include automatic screen layout changes based on information entered, as well as include a built-in simulator that would enable Thomson Technology to test new features or troubleshoot existing projects.

The ability to save and load the project configurations in their own files was critical. This feature, in combination with the simulator, would allow the company to quickly load a site configuration without changing the programs. In addition, it would run tests to offer support to the service department, or simply develop a new project quickly.

In order to keep their interfaces intuitive, Thomson Technology also needed complete control over the design of the interface. To include advanced information to operators, the company needed the functionality to develop projects with popup help screens, messages and indicator lights detailing the meaning of each individual set point in the application. It also had to apprise the operator of any conflicts or illegal operations, as well as the status of communication with field devices.

Thomson Technology also wanted customers to have control over their HMI, so the company looked for a SCADA/HMI development platform that would allow changes to be made during the runtime without stopping the program. Customers would conceivably need the ability to add or remove users, edit communication parameters, configure their own web server for remote monitoring, generate reports from history files, and configure the application to send automatic emails when the system triggered alarms.

Because the scheduler implemented by Thomson Technology can use hundreds of set points, it was crucial to display and allow the user to edit them in a visually intuitive way. Just as important was the ability to save and load all the scheduler set points to a file. This would save time when entering hundreds of set points, and to easily deploy them on multiple sites.

Finally, it was imperative that the new HMI development platform serve as a communication gateway between devices. It should be able to acquire data from engine controllers, meters, protection relays, and other devices in the field. It also had to provide a central monitoring and logging platform to send the information further up the chain to integrate it with a larger SCADA system.

## AVEVA Edge provided required functionality reducing development time and costs

The solution to this challenging set of requirements was AVEVA Edge development platform, which offers all the required functionality. It also enables customers to cut development time further by using the Rapid Application Configuration Environment that exists as a ribbon interface development environment for AVEVA Edge applications.

Thomson Technology designed a custom application template for use in its Series 2400 switchgear. Each system in the series is delivered with an integrated HMI.

IT also offers options for communication with the BAS (Building Automation System), BMS (Building Management System), or plant monitoring system.

In addition, Thomson Technology's application offers standard communications through Modbus Serial, Modbus TCP, and Remote OPC.

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"Virtually any protocol is available, from DNP 3.0 to BACnet."
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**Blake Debasio**
Engineering Manager, Thomson Technology

Another option that they provide is multiple remote stations which are delivered using the AVEVA Edge Thin Client.

Not only did AVEVA Edge meet and exceed the requirements necessary for the SCADA/HMI development platform, but Thomson Technology soon began to incorporate other features as well.

Thomson Technology also uses AVEVA Edge to offer a "Virtual Technician", where staff can remotely connect to the panel PC via the Internet enabling them to diagnose problems and adjust the PLC or HMI without ever having to travel to site.

## The result – significant reduction in HMI programming time and costs

Thomson Technology was able to reduce HMI programming time by 50%-60% per project. In addition to these time savings, the company is able to offer a feature-rich application, a standardized, highly serviceable installation, and an application that provides many important communications, data logging, and remote maintenance features that did not exist in previous applications.

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