Case Study
A FOCUS ON IMO PRODUCT IN APPLICATION

i3 Intelligent Controller
Remote Control Radio Towers

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Bell Canada is one of Canada’s largest radio and telecommunications provider; supplying infrastructure as well as radio and television services through different digital and analog platforms.

IMO was approached to provide technical assistance to convert their older, relay-based control systems that controlled and synchronized analogue antenna arrays to a modern PLC-based system; providing a faster and more reliable control system with remote control and monitoring capabilities of multiple sites at once.

Working with engineering and subcontractors, the existing control systems were examined having some control panels dating over 50 years. These control panels contained a combination of timer and relay-ladder logic products and controlled various timing sequences of local antenna arrays.

The antenna sites consisted of 4 or more towers; geographically positioned that when a combination of towers are turned on or off; the radio signal can be aimed in a certain direction at different times of the day, week and month. In doing this, other radio stations, including many signals from towers broadcasting from the USA, can operate without signal interference.

A centralised control system is used to coordinate tower control for several sites at once; these control systems were networked to the individual towers to the control panels containing the relay-logic systems and presented challenges when repairs and maintenance was requires. These systems also were limited in the amount of status and information that could be monitored, and relied on someone to constantly be onsite to monitor various systems.

The existing network was replaced with an Ethernet network, with a fibre optic network to network remote various tower sites. The 15” i3DX was chosen and used to provide high performance PLC control needed to monitor and control local and remote tower sites, and to communicate with antenna control system. Having two, independent Ethernet ports built into the i3DX, a second network was setup to allow maintenance and programmers to remotely, program the arrays sequence control, monitor status, as well as receive alarm notification and access to the i3DX’s built in data logging function.

IMO’s XEL-BSSA expansion modules were placed into each of the remote, antenna panels - replacing the relays and timers that would take a cue from central control systems. As these expansions could contain a number of different input and output types, added monitoring parameters were included to improve and update each site.

IMO also provided on-site training, programming assistance, and after sales technical support to aid the client in the development and deployment of the system.

IMO produce high quality components alongside excellent technical support. We found the components easy to integrate, and we have now created a platform for our customer that is easier to program, support and diagnose issues.

Testimonial, System Integrator

With the changes that have been recently implemented, we now have an upgraded, modern and faster system that met all our requirements for the discrete control of antenna sequencing. It also added more functionality and associated cost value as the controller used offers a significantly improved set of features, including the ability to have remote access over a private network, and faster, more precise control over our legacy equipment.

Testimonial, System Integrator