Newcap’s Edmonton storefront broadcast facilities

June 21, 2005 was important in many ways to different people; some know it as the first day of summer, others as a time to start planning that vacation—and to others it was a day where radio took a turn to be right in your face.

Newcap Radio is one of Canada’s leading small- and medium-market radio broadcasters, and over the previous nine months had been creating new interactive studios in the Greatest Indoor Show on Earth, the West Edmonton Mall.

Now, four broadcast studios face right into the mall, with retractable glass windows that can be pulled aside for special events such as celebrity visits.

Listeners can now see their radio heroes live on-air.

Along with the studios are seven production facilities, three news facilities and the entire behind-the-scenes support staff.

More Than Just See-Through Studios

Newcap Alberta had a need to consolidate its Edmonton operations. The move brought together 790 CFCW, 96X, K-Rock and the Cat Country network studios, as well as the operations of Newcap Alberta. The new storefront facility makes a statement.

The interactivity of the storefront stations goes beyond the removable glass.

Al Anderson, General Manager of Newcap Radio Alberta, explains that “the visitor can actually walk through the front part of the facility, which has many interactive components”.

The interactive area includes a museum-style Historic Moments in Radio Broadcasting where visitors can push a button and listen to broadcasts of major historic events. Visitors can also see behind the scenes. The Rack Room, considered the central nervous system for any radio station, is glassed and lighted, and production studios are in full view. In the main foyer are visual displays such as an Historical Timeline of Radio, which provides a visual reference for landmark events, including the invention of radio.

Like any good show, there is a backstage. In this case, it’s the offices and the

BY DOUG MATTICE
working area of the facility. Ultra-modern offices, boardrooms and hallways are lit theatrically. There is a Jock Lounge/Green Room where the jocks can do their show-prep, and where guests can wait to go on air. There is a feeling of being backstage in a large theatre. Rather than being an afterthought, the office area is structured to support the front-line.

The $4 million renovation was designed by Jennifer Jordan, interior designer for the West Edmonton Mall. “I wanted to create an exciting visual expression of radio,” she said. And she has created a modern and theatrical space that makes a statement.

World-Class Technology

If you think it’s all window-dressing for the same old, same old…think again. Newcap has scrapped all of the old broadcast systems, and replaced them with the latest, fully digital Axia plant, enabling extreme versatility from the studio controls right out to the broadcast tower. This system eliminates the need for carts and CDs. All radio programs and calls can be recorded with ease.

The installation of the plant took six weeks instead of six months. It is easier to maintain and re-configure; the routing of signals is not done through wires, but through computer. Changes can be made quickly from any place we can hook up to the Internet, without having to heat up a soldering gun.

The technology installed throughout the on-air portion of the facility is the Axia Livewire Audio Network from Telos. The system includes five SmartSurfaces interconnected with an assortment of 40 Axia Audio Nodes. We are using microphone nodes, analog nodes, AES nodes, GPIO nodes and router nodes. Once the equipment is connected to the various nodes they are in turn connected to the Livewire network via Category 6 cabling. We decided to use Category 5 wire for our analog audio to go from sources to the associated nodes.

Each microphone node has eight mic inputs and eight stereo line level outputs that can be configured to give you a line level output of any audio stream in the system. The analog nodes have eight stereo line level inputs and outputs. The GPIO nodes have eight outputs that can be associated with a particular source for DC control. It also supplies the SmartSurface with its power. The router nodes are placed in convenient rooms for monitoring, i.e. rack room or Engineering.

In a typical control room arrangement, microphones feed directly into the microphone node. A Livewire Cat6 cable then goes into an Ethernet switch, while the external analog sources (in this case CD players) are wired to the analog node, and that in turn is wired to the switch. The SmartSurface is connected to the switch along with the GPIO (general purpose input/output) node. Along with this is another box called the Mix Engine, here the different audio is mixed and processed. This box performs all the functions that in the past were typically done by the audio console. The Ethernet switch is then wired out to the rack room via Cat6 to a 100 MB backbone.

In the rack room all of the other external sources (music computers, satellite receivers, etc.) are also wired point-to-point to the nodes—which are wired to Ethernet switches, which are in turn wired to the backbone.

From the 1 Gb port on the switch we had to put in media converters because the run to our STLs was over the recommended 100 metres. We are using fibre to...
get the signal from the rack room to the penthouse of the hotel where our STLs are located.

In the penthouse we have our AES nodes along with an analog node and they are connected to an Ethernet switch. The AES output is connected to our STLs to give us a complete digital link from control room to transmitter. The analog nodes are used for analog audio backup and to get our off-air signals to our control rooms.

The Axia system was installed by Pippin Technical, Axia’s Canadian representative. They spent several months planning and pre-configuring the system. When it came time for the installation it went as smooth or smoother than most analog installs. As with any installation this complex we did encounter a few challenges early on, but nothing that could not be addressed on the spot.

The wonderful thing about the system is that there are no cross connects to contend with. If a change has to be made (equipment added or back feeds changed, etc.) this is all done through software. It only takes minutes to add equipment to the system after it has been wired to a node. Should any announcer wish to change the layout of the surface to make it easier for them to use, literally push a button or two, make your selection and save it. It’s that easy.

Our production facilities use the Presonus Firepod and Central Station instead of the traditional consoles. All production is done on computers. Once again, all analog wiring is done over Cat5 cabling.

We have nodes in the production studios, they are part of the Livewire network but in this case are mostly used for audio routing within the production block. They can call up any source on the Livewire network through Pathfinder software.

Our newsrooms use KLZ’s Newsroom 4 software. They also have Axia nodes to be able to pull up sources much the same way as production. The newsrooms are also part of the network so that they are able to go on air from their studios, which are located in an area of the building away from the control rooms.

A Sign Of Things To Come?

If this installation had to be done with traditional analog wiring and configurations it would have taken an estimated four to six months. Going this route it took only six weeks from the time construction was finished to when we went on the air. In the entire facility we have two multi-pair cables (one for analog backup to STLs and one for Telco lines), and only two punch blocks (not including Telco demarcation) and these are there for the distribution of our master clock system.

With the ease of installation, the reliability of the system and the flexibility of configuration this was the way to go, and we are willing to go this route again with our other stations. In fact, another install is planned for one of our other Alberta stations with the intention of interconnecting it with our West Edmonton Mall facility.

This new broadcast facility has no comparison. No other broadcaster has combined the latest technology with the level of showmanship and interactivity now on display in the West Edmonton Mall.

Radio has a face.

Doug Mattice is Chief Engineer for the Newcap’s West Edmonton Mall facility. He may be reached by e-mail at dmattice@edmontonradiogroup.com.