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AVC-Group Jumps on the PungaNet

New Zealand Broadcaster Replaces Outdated System Using Telos iPort

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AUCKLAND, NEW ZEALAND — AVC-Group operates a large, national, audio contribution/distribution network for 23 radio stations in New Zealand, called "PungaNet." This service allows the 23 indigenous Maori radio stations to share and distribute content

USERREPORT

in real time. It's very different from your standard one-way distribution network.

Four years ago each station used an ISDN codec connecting over 128 kbps, x.25 synchronous circuits to a native MPEG router of our own design. Then Telecom NZ announced the end of x.25 circuits, and a fortuitous chat with Steve Church of Telos Systems saw the genesis of the Telos Zephyr iPort MPEG Gateway.

GENESIS

The Zephyr iPort is a 2RU box with eight IP codecs inside. Studio-side audio I/O is via Axia's Livewire IP audio.

For convenience, there are two RJ-45 Ethernet connections on the rear, one for Livewire and the other for the Wide-Area Network (WAN) connection for the encoded audio streams. Each internal IP codec can be configured separately at different bitrates, sample rates, even different algorithms including AAC, HE-AAC, AAC-LD, MP3, apt-X, MPEG Layer II and uncompressed PCM. Each can provide point-to-point or point-to-multipoint (using multicast) studio connections, act as an STL link or provide an encoder for in-house audio distribution and Internet streaming.

In New Zealand's PungaNet, iPort codecs have replaced the old, single-channel ISDN codecs. WAN IP circuits of 2 Mbps have replaced the 128 kbps x.25 links. And where before there was one feed per station, now there are eight bidirectional stereo codecs that can operate simultaneously. PungaNet's 25 iPorts have been operating continuously for just over two years and haven't missed a beat.

Conveniently, all stations had previously upgraded to Axia studio systems, so adding an iPort to each station's Axia network was simple. We plugged each iPort to the Axia Livewire network using a Cat-5e Ethernet cable, then plugged each iPort's WAN connection into a Cisco router.

Igor Zukina and several Telos Zephyr iPorts

The iPort also offers mixing capabilities through the built-in V-mixer and V-mode functions. Familiar to Axia Livewire users, these are virtual mixing and audio mode configuration tools. Eight of each are inside the iPort with each V-mixer capable of controlling levels and mixing five inputs to a single stereo output, or provide five independent gain controls.

For Axia users, control of levels and channel on/off is provided remotely following an Element mixing control surface. This allows talent in a booth miles from the studio to hear a clean-feed in their headphones, as if they were connected directly to the console.

V-mode provides manipulation of audio channels including down-mix, up-mix left to right, right+left to left, surround to left and right, and other combinations. If you want to create a talkback source that would go only to the left channel of the host's headphones, V-mode will do it.

Any of the sources in an Axia studio, or the iPort's own sources such as the decoder outputs, V-mix and V-mode outputs, can be routed to any encoder input or any V-mixer

input. This creates a fully controllable and functional audio router.

The Zephyr iPort is straightforward to install. It's configured primarily by its Web interface. Set an IP address on the front panel, then connect with your browser from anywhere on your LAN. Once set up, you can remotely back up and restore configurations via the Web interface. The iPort will write its entire setup into one file; restoring an iPort from a backup to a configured and working state takes less than a minute, including reboot time.

The iPort is designed to be connected over a managed IP network that provides Quality of Service (QoS) protocol. It's not intended for use over the public Internet; the Telos Z/IP codec is the tool for that job.

Multicast protocol can provide distribution of a single audio source to multiple receiving codecs. Be careful here because MPLS (a QoS implementation) does not support dynamic multicast routing using IGMP (Internet Group Management Protocol). It is technically possible but expensive for the telco, so usually only static multicast is supported.

At a cost of around $650 per codec I believe the Telos iPort is an amazingly good buy. If you already have Axia studios, choosing the iPort is obvious. If you don't there is still a good option: a single Axia node (analog or AES/EBU) connected directly to the Livewire port will provide an interface for typical broadcast I/O.

For information, contact Telos in Ohio at (216) 241-7225 or visit www.telos-systems.com.