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## Telos iPort Strengthens Punga Net

BY IGOR ZUKINA

**AUCKLAND, NEW ZEALAND** — Through its subsidiary Streamcom, AVC Group operates Punga Net, a national, audio contribution/distribution network for 23 Māori radio stations across New Zealand.

### USERREPORT

This service allows the Māori-run stations to share and distribute content in real time. It is very different from the 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, though a fortuitous chat with Steve Church of Telos, we saw the genesis of the Telos Zephyr iPort MPEG Gateway.

The Zephyr iPort is a 2 rackunit box with eight IP codecs inside. Studio-side audio I/O is via Axia Livewire IP audio. For convenience, there are two RJ-45 Ethernet connections on the rear: one for Livewire and the other for a wide area network (WAN) connection for encoded audio streams.

### DIFFERENT CONFIGURATIONS

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, point-to-multipoint (using multicast) studio connections, act as an STL link or provide an encoder for in house audio distribution and Internet streaming.

For Punga Net, iPort codecs have replaced the old, single-channel ISDN codecs, and 2 Mbps WAN IP circuits have replaced the 128 kbps X.25 links. Where before there

was one feed per station, now there are eight bidirectional stereo codecs that can operate simultaneously.

The 25 Punga Net iPorts have been operating continuously for over two years now and haven't missed a beat.

Conveniently, all stations had previously upgraded to Axia Audio studio systems, so adding an iPort to each station's Axia network was simple. We just plugged each iPort to the Axia Livewire network using a Cat5e Ethernet cable, then plugged each iPort's WAN connection into a Cisco router.

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 away from the studio to hear clean-feed audio in their headphones.

V-mode provides manipulation of audio channels including downmix, upmix left to right, right+left to left, surround to left and right, and many other combinations. If you want to create a talkback source which 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 via its Web interface. Just set an IP address on the front panel then connect with your browser from



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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 fully configured and working state takes less than a minute.

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 right 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 Internet group management protocol (IGMP). It is technically possible but expensive for the telco, so usually only static multicast is supported.

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