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Dante's in for the long haul

Steve Harvey talks to Audinate, the team behind the nascent 'next-generation' networking technology

Digital media networking just got easy, according to technology developer Audinate – and it's difficult to argue otherwise. Built on existing networking protocols and standards, Audinate's Dante is a plug-and-play solution for transporting digital multimedia that has already been licensed into more than two-dozen audio equipment brands.

The company attracted its first licensee, Dolby Laboratories, back in 2006 after three years of conducting research within the government-funded National Information and Communication Technology Australia (NICTA) research centre in Sydney. NICTA was an initial investor when Audinate was commercialised and there have since been two rounds of venture capital investment. Just a little over two years after spinning off, Audinate has licensed Dante to 25 brands, including Lab.gruppen, Peavey Electronics, PreSonus, Symetrix, Whirlwind and XTA/MC2.

Lee Ellison, Audinate's newly appointed US-based CEO, explains the company's initial target market approach: "What the group did first was really challenge themselves on the highest quality and the hardest thing to do – professional live sound."

Now, as Dante gains traction, he continues: "We're expanding our group. I was brought aboard to help build a presence in the US. We're expanding the sales and marketing and

support; you'll see some additional hiring there. Then we'll move across the pond, because the European market is very important. We have also been adding experience to our board of directors with the addition of Mike Quigley, the former COO of Alcatel."

Aidan Williams, founding CTO of Audinate, points out Dante's wider potential. As a member of the team of former Motorola Labs workers hired for an R&D project at NICTA, he says: "We were trying to develop networking that was useful, not something that was pure research, and to produce a solution that would work for live audio, installed sound, and for people like me, who are musicians, and even, potentially, consumers."

If anybody has any experience with a network it's likely to have been in the home or at the office, says Williams. "You want to be using internet protocols and existing standards to build your networking solution," he adds. The system has to be easy to use and not require users to enter IP addresses or other unique numbers in order to make it work. "If a human has to allocate those numbers somebody will make a mistake, so you have to make that stuff automatic. This is where our Zen protocol comes in, eliminating all those magic numbers."

The name of Audinate's Zen zero configuration protocol both hints at the network's self-awareness and stands for 'zero education needed'. "Zen

(L-R): Lance Korthals, executive vice president, business and market development; Lee Ellison, chief executive officer; Aidan Williams, chief technical officer

makes networking a true plug-and-play process with automatic device discovery and system configuration so you don't need to worry about it. On top of that it's letting people label signals with a meaningful textual label," Williams elaborates. "So when you route an audio channel from your stagebox to the mixer, the configuration displays easy-to-understand contextual labels, not meaningless numbers."

Lance Korthals, US-based executive VP of business and market development, interjects: "As a result, you don't need an IT administrator on the sound crew. There was a great quote from one installer after finishing a large HOW job which used Dante: 'It took me longer to plug in the cables than to configure the system.' If you have a big installation and something goes wrong, this really lowers the amount of customer support."

Utilising internet protocols has an additional advantage, Williams continues. "In addition to running your media over your existing IP infrastructure, you can also connect other devices, even a PC to the network. With our new Dante Virtual Soundcard, a software networking implementation, we can access a lot of the existing software on those computers. Suddenly, all those applications you already have on your Windows or Macintosh PC – digital audio workstation, multitrack recorder, effects – are available to the audio network."

The ability to send and receive sample-accurate audio data across the network is enabled by the separation of the clock synchronisation from the audio transport. That also unlocks the future potential for Dante to push beyond the audio market into data and video applications, as Williams explains. "This

separation of clocking from the transport means that the network isn't locked to an audio sample rate. We can have different sample rates, different bit depths, even different formats – such as compressed audio, completely untimed data, like MIDI, and video – all at the same time."

The single-network solution has been a hit with customers, he adds. "They've really appreciated the fact that you can have control and audio on the same cable. If you're building two networks, one of which may not be the same as the other, or even two parallel networks, you have twice as many things to potentially go wrong."

The only limits to throughput are those imposed by the networking equipment being used, as well as the sample rate and bit depth, of course. "We're happily getting 56 audio channels through a 100Mb/s link in both directions at the same time," Williams reports. "If you have a Gigabit link you can crank that up by a factor of 10 at least, and the total channel capacity of that network is not limited by the speed of any one link, so you can build some truly huge audio systems." After all, he points out: "Internet protocols are scaleable to the size of the world."

Going forward, he concludes, Dante will evolve with developing standards. "We've made use of IEEE and IETF standards, so we're building on the shoulders of giants. As networking technologies advance and we get 10 Gigabit Ethernet, and new standards such as AVB are finalised, we'll also adopt those technologies while delivering all the advantages Dante offers as part of our solution." ✹
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