Where next for AVB and the AVnu Alliance?

David Davies 4 September 2014

2. Certification

The situation with regard to certification of AVB products is more complex. The reason for AVnu's decision to launch a certification programme – to guarantee interoperability of AVB products – requires little explanation. But the impartial observer might wonder about the fact that, as of September 2014, it has yielded little in the way of actual certified product. (*For #1, see the first part of this two-part feature.*)

Joining forces with esteemed test house the University of New Hampshire InterOperability Laboratory (UNH-IOL), AVnu Alliance formally initiated certification for AVB bridges in February 2013 and audio endpoints two months later. To date, however, only two certified primary products (and, it should be noted, related derivatives) have completed the admittedly demanding schedule: Extreme Networks' Summit X440 Series switches (pictured) and the Crown DCi Network Display series amplifiers.

With regard to the pace of the scheme's output to date, Kreifeldt says "the first ones are always the hardest" – but he admits that the programme has perhaps progressed more slowly than might have been hoped. "I think that anyone who works on any kind of technology [project] probably looks back and realises that if they had made a few turns differently, they could probably [have got there more quickly]," he says.

Kreifeldt reveals that "a number" of other products are currently in the midst of certification, although only Audio Science, Harman and Meyer Sound had given their approval to specific mentions at press time. Additionally, new member Pivitec's CEO, Tom Knesel, tells *PSNEurope* that the company "plans to submit its e64i/o MADI-to-AVB bridge for certification this year".

But what of a certification programme for professional video endpoints? Well, the Alliance confirms that it has now completed the Market Requirement Document (MRD) to define a set of profiles for video transport via pro-video equipment utilising the IEEE 802.1 and 1722 family of AVB standards. The next stage is for the MRD to go to AVnu Alliance's Technical Work Group (TWG), where the group will compose the certification tests based on the MRD.

Certification testing for AVB-enabled professional video endpoints is not expected to commence until mid-2015. This might seem a long way off, but it's hard not to feel sympathy for the group responsible when the current emerging requirements – chiefly the much-trumpeted and technically demanding Ultra High Definition (UHD) format – are taken into account. "We really have to ensure that the scheme is future-proof and that we are dealing with 4K and all that is coming through in the future," says Kreifeldt.

3. Switches
One of the abiding obstacles facing the project has been the need for dedicated switches to make AVB networks operate. This has appeared to threaten the scheme's prospects in a fashion that has not confronted technologies such as Ravenna, which can operate via existing switches.

With only the aforementioned Extreme Networks' switches having completed the certification process at this time, leading industry consultant Roland Hemming's claim that "the gear is simply not there" is not without foundation. Putting aside the issues of certification and availability, the challenge of implementing AVB-enabled switches is obviously far from negligible.

Hemming (pictured right) says that while "the companies within AVnu normally do great marketing," he is "astonished at their ineptness with promoting AVB", adding: "Even their use of language has been somewhat arrogant. AVnu talk about [replacement of] 'legacy' switches, when they mean every switch in the world except around 20 models. A kinder way might have been for them to talk about 'future switches'."

Speaking on behalf of network specialist and AVnu Alliance member Arista Networks, vice-president of sales, Warren Belkin, says: "Arista has brought AVB to off-the-shelf Ethernet switches with web scale economies, and it isn't true that these are 'expensive' compared to non-AVB Ethernet switches.

However, Hemming raises the point that even with AVB switch availability the vast majority of audio installations are refurbishments where the building switches may not be changed, preventing faster adoption of AVB anyway. Greater availability will surely push down price-points eventually – but in the meantime, it is clear that, at least, there is a 'legacy' perception problem that the AVnu Alliance would do well to address.

4. Layers
Inextricably interlinked with the switch issue is the topic of utilising existing network infrastructures and increased convergence with IT. One of the ways in which Audinate's Dante media networking technology has benefited, says CEO Lee Ellison, is in its ability to operate over existing networks. "The challenge is to make sure that existing products will work together without the need to put in separate networks. The convergence with IT can only occur if you are leveraging that infrastructure," he says. (*Read parts one and two of this three-*

part feature for comment from the AVnu's Rick Kreifeldt, industry consultant Roland Hemming and more.)

Dante's case to market has been further strengthened in recent months by the introduction of Dante HC – which supports up to 512 x 512 redundant bi-directional uncompressed audio channels on a single Xilinx FPGA – and the Dante Via software application. The ability of Ravenna, too, to operate via existing switches has also served it well in a competitive marketplace. Meanwhile, the recent arrival of AES67 – which both Dante and Ravenna will support – gives standards reinforcement to Layer 3 RTP transport. And in time, AES67's 'case' may be further boosted by the introduction of the network control-oriented AES-X210, which is likely to be published in late 2014.

"Enquiries about AVB?" says Ellison, who notes that Audinate remains an active member of the AVnu Alliance. "Well, there was a lot of interest four years ago, but it has gradually fallen away, particularly over the last 18 months. By contrast, there has been a rise in enquiries regarding AES67."

The question inevitably arises, then, of whether a Layer 3 version of AVB is needed to complement its existing, Layer 2-centric incarnation. Hemming notes: "Layer 3 is important, but it has also become a buzzword which has perhaps unfairly hindered AVB against its competition. Not that many projects actually need Layer 3, but it's become something that seems important and AVB doesn't currently offer that comfort. Like it or not a Layer 3 version of AVB is needed." (*Pictured is an AVB-ready unit unveiled by Riedel at ISE, but which is yet to be certified.*)

5. Perception
Whatever the strength of the AVB case, anonymous opinion related to *PSNEurope* in preparation for this article – not to mention wildly fluctuating feedback to the 'future of networking' questions in the [*PSNLive* survey](#) over consecutive years – confirms that many end-users remain uncertain about its advantages or the extent to which it will eventually become a day-to-day working reality.

For sure, the AVnu Alliance has maintained a presence at many of the leading trade shows – although it is not exhibiting in its own right at IBC this month – and there has been a steady flow of op-ed-style pieces about the project's objectives. But the opinion voiced by Hemming – that there hasn't been a properly open debate about the role of AVB – is hardly an isolated one.

"Their message was 'AVB is coming, get used to it,' not 'what do you think?', 'how would you like us to use it' or 'what is important to you?'" he says. "I was the first to go public with the belief that AVB may not work out for pro audio. A leading AVnu company replied that 'my opinion was against the views of 50 major companies' – now, that's really not much of a debate."

Xavtel recently became an AVnu Alliance member

Where next?

Roland Hemming's viewpoint on the current prospects for AVB – that it will retain a part of networking future, but possibly in a fairly niche capacity – is underlined by his own 2013 research revealing that "even when counting generously AVB was 5% of all available networked products [URL in Links section] And I am confident that will have declined further by the time we complete same research this year."

With a few protocols now being AES67 compliant and more expected to be within the next few months, it is possible to see the industry drifting further away from AVB. And yet, and yet… it is clear that the Alliance retains an admirably ambitious vision for the future of AVB. For one, broadcast is more firmly in the Alliance's sights than ever before (does this bring AVB more firmly into competition with Ravenna? "I guess so," admits Kreifeldt); to this effect, Jan Eveleens, CEO of Axon Digital, recently presented a two-hour session on AVB for Broadcast at the European Broadcast Union Network Technology Seminar in June. Meanwhile, in automotive, there are a number of ongoing schemes relating to AVB deployment via infotainment and driver assistance cameras – projects that, at the very least, promise to bring the technology to a broad consumer audience.

The sheer number of companies behind AVB and the considerable investment already made in related products strongly suggest that the project will not come to an ignominious conclusion. But as this article has demonstrated, direct and specific questions persist that must be addressed clearly, comprehensively – and above all, *publicly* – if AVB is to achieve the kind of mainstream success originally envisaged.

www.avnu.org

http://rhconsulting.eu/blog/files/EveryNetworkedProduct.html

Review of 2014: Part 2 – Dante triumphant?

Jon Chapple 30 December 2014

On the networking front, 2014 was unmistakably the year when Dante – the media networking protocol developed by Sydney, Australia-headquartered Audinate – came into its own. Microphone and headphone giant Sennheiser announced its support for the technology in April, at NAB in Las Vegas (its great rival in the professional marketplace, Shure, signed up to Dante in June 2012), and in June – just nine months after announcing its 100th OEM partner, Studio Technologies – Dante reached another milestone with news of its 150th licensee in the form of Kramer Electronics, revealed exclusively by PSNEurope. (Pictured is Audinate CEO Lee Ellison.)

Complementing the seemingly irresistible rise of Dante was the AES launch of the Media Networking Alliance, formed to promote adoption and support adopters of the newly ratified AES67 standard. AES67, an Ethernet-based networked audio-over-IP interoperability standard, is a layer-3 protocol suite based on existing standards and designed to enable interoperability between various IP-based audio networking standards, such as Dante, the broadcast-focussed RAVENNA, Livewire and Q-LAN.

But for every winner there are dozens of losers, and by September David Davies, writing in PSNEurope, was posing the question 'Has the AVB dream lost its lustre?' in response to the rival networking technology's "perceived loss of momentum and […] image problem" for use in pro-audio applications.

Although Audio/Video Bridging remains strong in the broadcast and automotive sectors (Jan Eveleens, CEO of Axon Digital, presented a two-hour session on AVB for broadcast at the European Broadcast Union Network Technology Seminar in June, and there are a number of ongoing schemes relating to AVB deployment via infotainment and driver assistance cameras), Davies was forced to conclude: "The sheer number of companies behind AVB and the considerable investment already made in related products strongly suggest that the project will not come to an ignominious conclusion. But, as this article has demonstrated, direct and specific questions persist that must be addressed clearly, comprehensively – and above all, publicly – if AVB is to achieve the kind of mainstream success originally envisaged."