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AES 'Plugfest' proves AES67 interoperability

Media Networking Alliance, Bothell, Washington, USA. The AES, in cooperation with the European Broadcast Union (EBU), recently held a 'Plugfest' with equipment from 10 manufacturers, to demonstrate functional compatibility – or interoperability – between a number of different implementations of the AES67-2013 standard.

AES67 is a standard to enable high-performance audio-over-IP streaming interoperability between the various IP based audio networking products currently available, such as Dante, Livewire, Q-LAN and RAVENNA. It is not a new technology but a bridging compliance mode common to all IP-Networks; a mode you can put a device into, on any participating network. AES67 operates over standard layer 3 Ethernet networks and, as such, is routable and fully scalable, like any common modern IT network. As a rule of thumb, any network infrastructure capable of handling VoIP should be able to handle AES67. The Media Network Alliance (MNA) has been recently formed to promote adoption and support adopters of the newly ratified standard, through a program of education, marketing, and ongoing technical support for the standard.

The Plugfest was held at the Institut für Rundfunktechnik (IRT), in Munich, Germany, from 27 to 30 October [1]. Ten companies tested 16 products against each other to confirm interoperability. The participating manufacturers were ALC NetworX GmbH, Archwave AG, Axia Audio, Digigram SA, DirectOut GmbH, Georg Neumann GmbH, Lawo AG, Merging Technologies S.A., SOUND4 and Telos Systems Inc. Technical personnel from IRT, Swedish Radio and the BBC assisted in the tests and observed the outcomes on behalf of the EBU.

All products tested are currently available networked-audio products with AES67-specific extensions. Implementations varied from software implementations on a PC to hardware-based FPGA solutions. Tests were chosen to demonstrate audio streaming interoperability (linear PCM coding, 24 bits per sample, 48 kHz sampling frequency, 2 channels) between each device as a transmitter, and all other units as receivers. All devices were used to test synchronization and primary interoperability. A number of smaller groups were then formed to test specific optional details.

All devices performed perfectly in the planned tests, with the exception of a few very minor bugs that were rapidly fixed, proving the proposed functionality of AES67 is both real and robust. With the successful performance of all 16 devices, expectations were exceeded and the observers from the BBC, IRT and Swedish Radio found the resulting data and outcome very encouraging. As the planned tests were carried out successfully so quickly, there was time available to carry out some additional optional tests. During these optional test some differences were observed,

specifically with Session Initiation Protocol (SIP) and unicast streaming. But since these tests were discresionary, not all were prepared for them.

Stefan Ledergerber, Director R&D Lawo Group and member of the MNA steering committee, was present: “The Plugfest proved that AES67 is not vaporware, it works. It is the ideal form of making the various existing technologies talk to each other and giving the users the possibility to interconnect a huge variety of equipment, based on open standards. There is still enough room for differentiation between the various technologies out there, allowing for healthy competition between them, and continuing to drive industry innovation forward. The fact that we are all based on IP layer 3 ensures full scalability of installations and maximum leverage of IT industry advancements.”

The MNA is looking forward to promoting further activities of this kind, and in driving forward education, marketing and technical events. And the alliance is now actively seeking applications for membership from those who wish to influence the future development of the industry.

Speaking for the AES, Mark Yonge, AES Standards Manager concludes, “This Plugfest was organized to allow various manufacturers to confirm their products' AES67 interoperability with others in a commercially-neutral environment. The ultimate people to benefit from these tests will be the clients of these manufacturers because their quality of interoperability is known rather than assumed. A further Plugfest is anticipated in 2015 in North America to continue this useful work”

[1] AES-R12-2014, "Standards project report - AES67 Interoperability PlugFest - Munich 2014" Audio Engineering Society, New York, NY., US.
www.aes.org/publications/standards/

About the Media Networking Alliance (MNA)
The MNA is a not-for-profit corporation with membership available to all manufacturers, organizations, companies and individuals who are interested in the objectives and purposes of the alliance.

The MNA’s objectives are:

- to promote the adoption and standardization of AES67 as an audio interoperability standard through marketing and education.
- to develop future AES67 specifications and other documents that augment, enhance or extend the primary AES67 specification for the purposes of enabling and promoting increased interoperability and reliability.
- to provide developer support for AES67 products, and actively support those members producing AES67 compliant products, including, but not limited to, AES67 System Development Kit and AES67 Test Tools.
- to provide a forum and environment in which members of the alliance can meet to review standards development and compliance programs, and to foster the development of new products based on the AES67 standard.
- to educate the business and end-user communities about the value, benefits and applications for AES67.

- establish and maintain relationships with educational institutions and other technology associations and organizations that help to promote the use and development of AES67 products.

Companies who have demonstrated AES67 compliant equipment:

ALC NetworX (and all RAVENNA partners)
Archwave
Digigram
DirectOut
Genelec
Jutel
Lawo
Merging Technologies
Georg Neumann
QSC
Sound4
Studer
Telos Alliance
Wheatstone

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