



# Media Networking Alliance

## Promoting adoption of AES67

### *What is AES67?*

AES67 is a published standard which defines interoperability guidelines for high-performance professional digital IP networking. This is achieved by specifying the synchronization mechanism, encoding format and QoS provision for delivering audio data, as well as connection management functions associated with audio delivery. AES67 uses existing and standard protocols and technology from the IEEE, IETF and other standards developing organizations. It does not invent new protocols or technologies; rather, AES67 defines how to use existing protocols as a system in an interoperable manner.

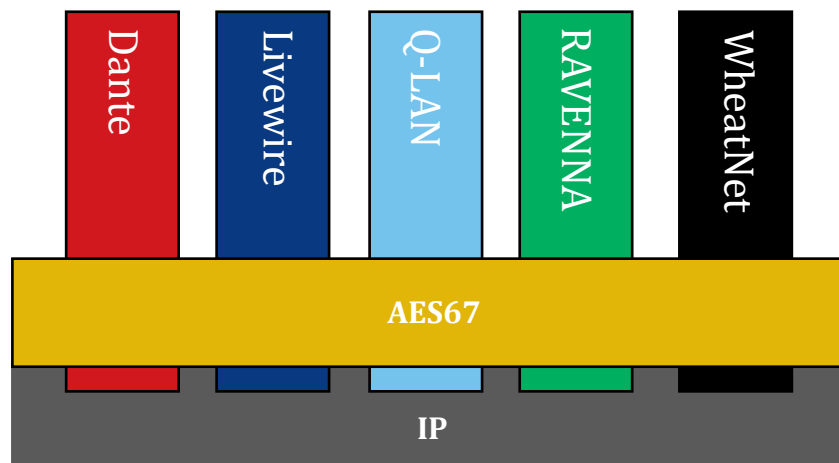
The technical scope of the standard focuses on higher performing networks which enable high-quality, high-capacity and low-latency digital audio transport. The level of network performance required to meet these demands is typically available on local area networks and achievable on enterprise-scale networks. Because IP protocols are readily carried over Ethernet networks, the standard is also fully applicable to Ethernet networks of any size.

AES67 is useful for interoperability scenarios within broadcast, music production and post-production facilities as well as for commercial audio applications including fixed and touring live sound reinforcement.

### AES67 Key Facts

- Provides interoperability of audio-over-IP systems
- Coexists with established AoIP solutions
- Provides audio transport potential between facilities or areas within a facility which are using otherwise incompatible systems
- Defines synchronisation, media clocks, transport, encoding and streaming, stream description, connection management
- Does not depend on special conversion, but exists as a transport option within each end point

*Advertisement and discovery are not defined, but are discussed in the standard*



*AES67 coexists with established audio-over-IP solutions, providing the glue between otherwise incompatible systems*



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### *Not just another IP transport solution...*

AES67 provides the means for exchanging audio streams between areas with different networking solutions or technologies already in place. It can be expected that the various IP-based solutions will enhance their capabilities in order to adopt an AES67-compliant stream mode to facilitate inter-system interoperability. It is expected that the various solutions will remain on the market as their individual features exceed the commonalities defined by AES67. However, AES67 can be seen as the “glue” between these different networking solutions, but may also be adopted as their native mode of operation.

	AES67
<b>Synchronization</b>	IEEE 1588-2008
<b>Network transport</b>	IPv4
<b>Streaming protocol</b>	RTP/UDP, multicast & unicast
<b>Payload format</b>	L16 & L24 48 kHz (44.1 / 96 kHz optional) 1 ... 8 channels/stream
<b>Connection management</b>	Unicast: SIP Multicast: IGMP
<b>Advertisement &amp; discovery</b>	Not specified, but SAP, Bonjour and others are discussed
<b>Typical latency</b>	2 - 5ms

### MNA Members

- |                                  |                              |
|----------------------------------|------------------------------|
| ALC NetworX                      | Harman Professional          |
| Archwave Technologies            | Lawo                         |
| ARG Electrodesign                | Merging Technologies         |
| Attero Tech                      | NTP Technology               |
| Audio - Technica                 | Ningbo Soundking Electronics |
| AVA Networks                     | QSC                          |
| British Broadcasting Corporation | Riedel Communications        |
| Bosch Security Systems           | Shure Incorporated           |
| Calrec Audio                     | Solid State Logic            |
| Cymatic Audio                    | Swedish Radio AB             |
| Digigram                         | SVSi                         |
| Directout                        | The Telos Alliance           |
| Focusrite Audio Engineering      | Walt Disney Imagineering     |
| Genelec                          | Yamaha                       |

Correct as of April 2016

### *The future of audio-over-IP?*

Other audio-over-IP solutions will continue to exist, as most of them already have a significantly large installed base. Most of them also offer application-specific functionality beyond the scope of AES67. By now, most of the existing solutions have already been modified or enhanced to support AES67. This will open up the landscape of product diversity and widen the field of application for AES67-capable devices.

Limited interoperability can also be expected with devices compliant to the next revision of the EBU Tech 3326 protocol suite, which is currently work in progress in the EBU ACIP2 Work Group.

Just recently, the Video Services Forum has released a set of Technical Recommendations (namely VSF TR-03 and TR-04) which cover the transport of SDI content in elementary essence flows (i.e. separate, but synchronized RTP streams for video, audio and ancillary data). AES67 has been chosen as the transport protocol for the elementary audio streams.

### *About Media Networking Alliance*

The Media Networking Alliance (MNA) is a non-profit trade association that has been formed to promote adoption and support adopters of the newly ratified AES67-2013 standard, through a program of education, marketing and ongoing technical support.

Members include a host of manufacturers and technology providers, as well as end-users of audio-over-IP solutions. Benefits include AES67-related education resources as support through the technical and marketing work groups.

To learn more about the Media Networking Alliance or to enquire about joining, please visit our website or contact us for further information.