AES67 & RAVENNA AES67 – FAQ

General Questions

Q: What is AES67? A: AES67 is an open standard for high-performance audio-over-IP (AoIP) interoperability. It enables different proprietary AoIP protocols such as Dante, Livewire, QLAN, and RAVENNA to communicate with each other using common transport, synchronization, and quality-of-service mechanisms.

Q: What is RAVENNA AES67? A: RAVENNA is a high-performance AoIP protocol developed for professional broadcast applications. It natively supports AES67, meaning RAVENNA devices can communicate with other AES67-compatible devices.

Q: How does AES67 compare to other AoIP protocols like Dante or RAVENNA? A: AES67 is not a replacement for existing protocols but rather an interoperability standard. It provides a common method for different systems to exchange audio but does not include additional features like stream discovery and device management, which are handled by the native protocols.

Network Configuration & Setup

Q: What type of network infrastructure is required for AES67? A: AES67 runs on standard Ethernet networks but requires managed switches with support for Quality of Service (QoS), IGMP snooping, and proper multicast management to ensure efficient operation.

Q: Does AES67 require PTP synchronization? A: Yes, AES67 uses the IEEE 1588-2008 (PTPv2) protocol for synchronization. A properly configured PTP clock is required to ensure all devices remain in sync. Sonifex products use BMCA (Best Master Clock Algorithm) synchronization, which automatically selects the most suitable master clock for the network.

Q: Can AES67 operate on a mixed network with other traffic? A: Yes, but the network must be configured to prioritize AES67 traffic using QoS and DiffServ (DSCP) settings to prevent packet loss and jitter. In systems where both Dante and AES67 are used, it's important to understand how their clock synchronization works. AES67 uses PTPv2, while Dante uses PTPv1 by default but can support PTPv2 when operating in AES67 mode. Because Dante can operate in AES67 mode, both PTPv1 and PTPv2 can coexist on the same network without issue. Sonifex products automatically choose the best synchronization method using BMCA, ensuring seamless clocking between Dante and AES67 devices.

Q: How should IGMP be configured for AES67 networks? A: Proper IGMP configuration is critical to prevent multicast flooding. Managed switches should have IGMP snooping enabled, and an IGMP querier should be configured on one switch to manage multicast group membership efficiently. This helps ensure that AES67 multicast traffic is only sent to the devices that need it, reducing unnecessary network load.

Device Compatibility & Interoperability

Q: Can Dante and RAVENNA devices communicate using AES67? A: Yes, but additional configuration may be required. For example, Dante devices must be switched into AES67 mode.

Q: How does Sonifex handle AES67 stream discovery? A: Sonifex AVN devices support AES67 stream discovery using Bonjour (mDNS / DNS-SD) and SAP. This allows seamless integration with Dante in AES67 mode and RAVENNA devices. The AVN web interface allows for quick and

intuitive setup of AoIP input and output streams. The AVN Portals, PXH12, AVN-CU2/CU4 Ravenna versions support AES67, providing seamless integration with other AoIP systems.

Q: What audio formats does AES67 support? A: AES67 supports PCM-encoded audio at 48kHz, 16 or 24-bit depth, and up to 8 channels per stream.

Q: How are AES67 streams discovered and connected? A: AES67 does not define a mandatory discovery mechanism. Some devices support SAP (used by Dante in AES67 mode), while others use mDNS/RTSP (RAVENNA). Sonifex AVN devices provide automatic discovery using Bonjour (mDNS / DNS-SD) and SAP to simplify this process. If a particular AoIP stream is not discoverable via SAP or Avahi/Bonjour, it is possible to add the SDP manually via Manual entry.

Troubleshooting & Performance

Q: My AES67 streams are not syncing properly. What should I check? A: - Ensure that all devices are receiving PTP synchronization and that the correct master clock is selected. - Check QoS settings to ensure PTP and RTP traffic are prioritized. - Verify IGMP snooping is enabled and that an IGMP querier is configured to prevent multicast flooding. - If using Sonifex AVN devices, ensure that automatic discovery using Bonjour (mDNS / DNS-SD) and SAP is enabled in the web interface.

Q: There is latency or dropouts in my AES67 audio. How can I fix this? A: - Increase the buffer size or latency settings on receiving devices. - Ensure network switches are properly handling QoS and prioritizing AES67 packets. - Avoid using "green" or energy-saving settings on switches, as they can introduce latency.

Q: Can AES67 be used over Wi-Fi? A: While technically possible, it is not recommended due to the real-time nature of AES67 and the lack of deterministic performance over Wi-Fi.

Future Developments & Standards

Q: How does AES67 relate to SMPTE ST 2110? A: AES67 is a core part of SMPTE ST 2110-30, which defines the audio transport standard for professional media networks.

Q: Are there tools available to help manage AES67 streams? A: Yes, tools like RAV2SAP can help bridge discovery between RAVENNA and Dante devices, and software like ANEMAN provides a graphical interface for managing AES67 streams across different manufacturers.

Q: Where can I find more information about AES67? A: The AES website (www.aes.org), RAVENNA Network (www.ravenna-network.com), and the SMPTE website (www.smpte.org) all provide detailed technical documentation and updates on AES67 standards and implementations.