

AES67/ST2110 & Open Control Enable Innovation

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Single-Source Technology Solutions





Proprietary full-stack audio networking solutions offer advantages such as ease-of-use and the avoidance of interoperability issues.



But do these technologies always offer the right tool for the job?

- What if I need to manage both audio and video signals simultaneously?
- Or what if I require encryption?





Applications differ in requirements



LATENCY & SCALE



SECURITY





SIGNAL MIX



USER SOPHISTICATION





Is one tool always right for the job?









Monopolistic Control Systems

- Stifles Innovation
- Reduced set of applications addressed

Open Control Systems

- Multiple vendors innovate & adapt technology stacks to the needs of particular applications
- Drive greater innovation







The AES67 & 2110 ecosystem features multiple vendors innovating using core networking technology from multiple suppliers, such as Ross Video, ALC NetworX, Embrionix or their own internal solutions.



Analogy: Linux vs. Windows OS



- 25 years ago, when Linux was still in its infancy, it was hard to use and limited in capability.
- But it was open and free to innovate, and so untold numbers of developers jumped on!
- Who guessed then how Linux would evolve?





Linux Innovation in Action



US ATC 24,000 flights/ day





50% of global fin. transactions







85% of smartphones



Top 10 Supercomputers

Google





AES67/2110 Innovation Examples

AES67/2110 Innovation WAN Latency

The Challenge:

- Broadcasters want to transport audio across a continental network
- Network latencies up to 80msec

- Implementation of a network latency compensation mechanism leveraging the larger WAN buffers in fully compliant AES67/ 2110-30 solutions
- Handles up to 500msec of latency







Innovation: Uncompromising Performance









- Meet the needs of broadcast applications, with converged video and audio, based on open tech
- Keep up with the rapid advances in NMOS, ST2110, ...
- **Innovation:**
 - Highest-performance, robust and extremely flexible ST 2110 audio networking solution
 - 512 channels, 96kHz, 125 µs packet time and up to 80 channels per stream

AES67/ST 2110 Innovations Customizable UI and Workflow



The Challenge:

 A standards-based AoIP solution with control customized to the unique needs of intercom applications

- Open JSON API allowing the use of the customer's UI and control system
- Customization of specific clock signals enabled synchronization of wireless equipment



AES67 ST 2110 Low Latency Virtual Sound Card for Microservice Platform

AIMS Alliance for IP Media Solutions

The Challenge:

• AES67 & ST 2110 solution enabling containerbased audio processing on Linux COTS servers

- AES67 ST 2110 AoIP solution in a Linux Docker
- End-to-end latency of ~1msec for live audio processing
- Natively supports multiple protocols: NMOS, RAVENNA, Ross DashBoard & JSON RESTful API





AES67/2110 Innovation Centralized Audio Controller

The Challenge:



• Intuitive, free, and multivendor audio network manager with patch-panel

- ANEMAN a simple, open and free controller created by Merging & Digigram
- Works w/ any manufacturer via plug-in
- ANEMAN engine framework will be fully open-sourced to drive further innovation



Open takes longer to get started, but...



- Windows still has significant market share. It continues to serve a purpose very well, but it does not serve all applications.
- Who doubts the value of Linux anymore?
 - Free & open
 - Unleash innovation
- Join us in developing the "full stack" using open technologies, and enable applications that we can't even dream of today



Thank You!

Nestor Amaya

Ross Video



LIVING LIVE!