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AES Audio Engineering Society - Pacific Northwest Section

Around the Puget Sound, Seattle, Washington, U.S.A.

AESPNW Section Meeting
January 2024 Meeting Notice

What Does "Accurate" Even Mean?

Presented by
James D. (jj) Johnston - Chief Scientist - Immersion Networks
and
AES Pacific Northwest Section

Meeting Produced by Dan Mortensen - AESPNW Chair
Wednesday, January 31th, 2024
7:30PM PST(UTC -8)

This is a hybrid In-Person/Zoom meeting.
The in-person meeting will be held at Digipen in Redmond, WA.
The virtual doors open at 7PM.

Directions to [Digipen](#)

We hear, all the time, people arguing about "accuracy." In what sense do audio professionals and enthusiasts use that word, and do all uses mean the same thing to all people?

Certainly for some equipment and some uses, there is a very, very precise definition, but, even then, how should this be measured and evaluated? In other cases, (for example, "does this sound exactly like the original?"), sometimes it's just not that easy.

What is "the original?" Is it something recorded in a performance space? Is it something generated 100% electronically? Is it something recorded in a studio, with an artificial performance space added? How about large ensemble recordings? And what does "sound

exactly like" mean? Does it mean reproducing the original soundfield, if such exists? Is it due to some added perceptual space in the recording/reproduction/playback/reinforcement?

Of course, after we've sorted those questions out, then we must answer the question of "what does the end listener actually prefer?" There is the element of listener preference here, some may prefer a particular timbral character, which may be an element of their concept of accuracy.

It's a tricky question.

Along the route to that end, some important facets of the method of measurement show up time and time again. Is it "SNR" (Signal To Noise Ratio) that matters? We're expecting a robust discussion after jj presents his notes and some arguments as to how measurement and testing should occur, and we look forward to you joining the discussion.

Our Presenter

James D. (jj) Johnston

jj received the BSEE and MSEE degrees from Carnegie-Mellon University, Pittsburgh, PA in 1975 and 1976 respectively.

- Worked 26 years for AT&T Bell Labs and its successor AT&T Labs Research.
- One of the first investigators in the field of perceptual audio coding.
- One of the inventors and standardizers of MPEG 1/2 audio Layer 3 and MPEG-2 AAC, as well as the AT&T Labs-Research PXFM (perceptual transform coding) and PAC (perceptual audio coding) and the ASPEC algorithm that provided the best audio quality in the MPEG-1 audio tests.
- Currently working in the area of auditory perception of soundfields, electronic soundfield correction, ways to capture soundfield cues and represent them, and ways to expand the limited sense of realism available in standard audio playback for both captured and synthetic performances.
- Mr. Johnston is an IEEE Fellow, an AES Fellow, a NJ Inventor of the Year, an AT&T Technical Medalist and Standards Awardee, and a co-recipient of the IEEE Donald Fink Paper Award.
- In 2006, he received the James L. Flanagan Signal Processing Award from the IEEE Signal Processing Society
- He presented the 2012 Heyser Lecture at the AES 133rd Convention: *Audio, Radio, Acoustics and Signal Processing: the Way Forward.*

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Dan Mortensen

AES PNW 2022-2025 Section Chair

> **n.b.** *The material presented at our meetings is the opinion of the presenter and not necessarily that of the Society. You are encouraged to conduct your own research and to form your own opinions before adopting the presented material as Truth.*