

## AES APEI Webinar to Explore Computational Platforms for Automotive Audio

AES APEI initiative welcomes top industry experts on February 23, 2021 to discuss audio processing requirements and performance workloads in automotive audio

The graphic features a dark blue background with a car's interior and glowing blue sound waves. On the left, the Audio Product Education Institute (APEI) logo is shown in purple and white. The main title 'Automotive Audio Webinar Computational Platforms for Automotive Audio' is in white. Three circular headshots of speakers are shown: John Redford (Analog Devices), Paul Beckmann (DSP Concepts), and Roger Shively (JJR Acoustics). The event details 'Online Event - February 23 9:00 AM Pacific (12:00 PM Eastern)' and the sponsor 'Sponsored by JJR ACOUSTICS' are also included.

The Audio Product Education Institute (APEI), an initiative of the Audio Engineering Society, will host the second in a series of webinars on Automotive Audio on Tuesday, February 23 (12:00pm EST): Computational Platforms for Automotive Audio. As auto manufacturers continue to push the limits of existing processing platforms to meet the increasing complexities of automotive systems, this online session will discuss the features that are common to all kinds of processing, and the ones that are unique to audio, identifying the distinctive characteristics for automotive audio applications.

Providing software and hardware perspectives, the webinar will explore the need for deterministic processing and how to manage that key requirement against standard computer hardware techniques, such as caching and virtual memory.

While car manufacturers are building features like fully autonomous driving, they are simultaneously innovating on the in-cabin experience, a huge component of which is audio and voice. Immersive sound and personal audio zones, automotive active and road noise cancellation (ANC/RNC), voice-based user-interfaces and in-car communications, engine sound synthesis (ESS) and electric vehicle warning sound systems (EVWSS/AVAS) are just some of the current areas of focus for automotive audio developers.

Digital signal processing (DSP) core technologies need to deliver on deterministic goals with very low processing latency and best-in-class MIPS/mW performance. Some processors feature hardware accelerators to offload common digital signal processing algorithms from the core, making them the ideal choice for real-time audio applications. Considerations with complex peripherals such as Ethernet and USB bring another level of demands.

This event will be presented by Roger Shively (JJR Acoustics, LLC), APEI's Automotive Pillar Chair, bringing 34 years of experience in engineering research and development, which includes significant experience in product realization and in launching new products at OEM manufacturers around the world. Following opening remarks, the event will feature presentations from Paul Beckmann (CTO, DSP Concepts) and John Redford (DSP Architect, Analog Devices), offering a valuable perspective on automotive audio computational platforms.

In the first presentation, Paul Beckmann will discuss “Mapping Automotive Audio Workloads to the Appropriate Processors,” where he will provide an understanding of the primary automotive audio workloads and detail the strengths and weaknesses of different processors to meet the demands of those applications, with predictions for the next five to 10 years.

The second session, by John Redford, will explore “Distinctive Features of Audio Processing” and the needs to steadily increase performance and reduce the cost of related hardware and software components. The presentation will detail how to deal with audio memory and programming needs in a deterministic environment.

This AES Audio Product Education Institute Automotive Audio webinar is part of an ongoing event series that underscores the AES's commitment to providing its membership and the industry at large with practical knowledge in designing and implementing real-world applications and innovative sound systems.

Register for the AES APEI Computational Platforms for Automotive Audio Webinar [here](#).

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