Fraunhofer IIS

Driving Immersive Sound

MPEG-H Audio paves the way to the future of in-car entertainment

About MPEG-H Audio in Automotive

MPEG-H Audio is a new audio technology providing more realism through sound from above as well as around the listeners, putting them in the middle of the action. It also provides an unprecedented degree of freedom to consumers to personalize the audio experience, to actively engage with the content and adapt it to their own preferences. MPEG-H Audio supports channel-, scene- and object-based audio as well as any combination of these formats. The signaled metadata carries all the information needed to enable interactivity. The MPEG-H Audio system provides the highest sound quality and user experience on all devices from mobile phones to TV sets to cars.

Future-proof Automotive Audio

Streaming services are the preferred medium of audio content consumption today. Several well-established services such as Amazon Music, Tidal, Deezer, nugs.net, and WOWOW offer an immersive audio experience powered by Sony's 360 Reality Audio format, which is based on MPEG-H Audio. In-car entertainment is a perfect use-case for MPEG-H Audio: Immersive audio content – be it music streaming services with 360 Reality Audio, immersive audio books and podcasts, or rear-seat entertainment – makes it possible to unlock any sound system's full potential.

Get immersed in music and enjoy the pure sensation of sound.

Premium sound systems benefit from discrete 3D audio content that preserves the artists' intent, while midrange or entry-level systems still achieve the best possible sound quality with a state-of-the-art downmix and enable consumers to listen to all their streaming services in the car. Rear-seat entertainment applications with installed screens can make use of the interactivity features of MPEG-H Audio that are already well established in streaming and broadcast. The advanced accessibility options of the system make for better speech intelligibility and binaural rendering for connected headphones, which guarantees an immersive experience. MPEG-H Audio also enables advanced warning sounds with spatially rendered signaling. Audio objects can be positioned freely within an MPEG-H Audio mix. Only one warning sound item needs to be produced across all car models and the warning sound will be rendered at the correct position according to the available playback system.

Automotive Audio Solutions by Fraunhofer IIS

Automotive audio has been an important part of the institute's product development for more than 10 years. Our interdisciplinary team of researchers, engineers, and Tonmeisters dedicates its work to providing all vehicle occupants with the best sound possible. Today, you can enjoy our audio technologies, such as mp3 and AAC decoding and digital radio receiver solutions in nearly every brand-new car. Our automotive audio processing technologies Symphoria and Sonamic can be found in numerous car models by some of the largest European OEMs.

About Fraunhofer IIS

For over 30 years, the institute's Audio and Media Technologies division has been shaping the globally deployed standards and technologies in its fields. Starting with the creation of mp3 and continuing with the co-development of AAC, almost all consumer electronic devices, computers, and mobile phones are equipped with systems and technologies from Erlangen today. Meanwhile, a new generation of best-in-class media technologies – such as MPEG-H Audio, xHE-AAC, EVS, LC3/LC3plus, Symphoria, Sonamic, and upHear – is elevating the user experience to new heights. Always taking into account the demands of the market, Fraunhofer IIS develops technology that makes memorable moments.

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Exemplary framework for in-car environments: *The integration of an immersive audio streaming service directly in the head unit enables the transmission of the bit stream to the decoder, which transfers MPEG-H Audio content into a channel-based PCM data stream. Alternatively, MPEG-H objects and associated metadata can be provided to the renderer directly. Afterwards, a multi-channel or object-based renderer creates an enveloping sound experience based on the given speaker layout. If only stereo content is available, an upmix solution can ensure a continuous immersive sound impression.*