Fraunhofer

IIS

FRAUNHOFER INSTITUTE FOR
INTEGRATED CIRCUITS IIS

EXCELLENCE IN AUDIO AND MEDIA ENGINEERING

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AUDIO AND MEDIA TECHNOLOGIES BY FRAUNHOFER IIS

Automotive

High-quality 3D sound is now available in numerous premium cars, thanks to Symphoria by Fraunhofer IIS.
The new Fraunhofer Sonamic technology family expands the spectrum of offerings with intelligent audio processing technologies that raise the customer experience of automobile entertainment systems to completely new levels of comfort and quality.

Communications

The 3GPP EVS codec has already enhanced multiple VoLTE services in the United States, Europe and Asia with its outstanding voice call quality and significantly extended indoor coverage. The AAC-ELD communication codec is the first choice for OTT voice communication services that feel like you are speaking with someone in the same room. It is natively available on all mobile phones via the operating system.

Consumer electronics

Today, almost all consumer electronics devices, computers and mobile phones are equipped with Fraunhofer IIS audio codecs. Additionally, the three signal processing technologies from the Fraunhofer upHear family ensure an enhanced user experience with 3D soundbars, 360° cameras, and smart devices. Fraunhofer Cingo delivers the best immersive sound experience via headphones and built-in speakers of mobile devices.

**Fraunhofer Institute for
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Digital radio

Audio codecs surely are one foundation of Digital Radio: xHE-AAC is the mandatory audio codec for Digital Radio Mondiale DRM, while DAB+ is enabled by HE-AAC.
Digital radio solutions by Fraunhofer IIS are used worldwide in radio transmission systems. To enhance the radio experience of end users, Fraunhofer IIS developed services such as Journaline or EWF (Emergency Warning Functionality).

TV broadcast and AV streaming

The AAC codec family, with its latest and most advanced addition xHE-AAC, ensures a smooth and efficient transmission of sound to the audience. MPEG-H Audio brings new features such as immersive and interactive TV sound to the living room. For professional broadcast equipment, lightweight image codecs such as JPEG XS adapt data streams for high resolution images to the available infrastructure and bandwidth.

Moving picture

Production and post-production tools by Fraunhofer IIS such as the easyDCP software suite rank first among solutions for authoring, play-back and validation of Digital Cinema Packages DCPs and Interoperable Master Format IMF packages. Realception developments for light-field enable the processing of multi-camera data and application of VFX for live-action content as known from CGI.

Unrivaled experience

Over the past three decades, Fraunhofer IIS has become an authority in the field of audio and media technologies. From four generations of audio codecs to audio processing and moving picture technologies, our solutions are the preferred standards for any high quality application.

Experts in digital cinema and digital media solutions

As developer of the test plan for the DCI specifications for the six major Hollywood studios and for digital cinema worldwide Fraunhofer IIS provides scientific excellence in imaging technologies, standardization, professional media and industrial applications.

Trusted technology provider

We have licensed our audio codec software and application specific customizations to over 1,000 companies. With more than 30 years of experience, our scientists and engineers design and build complete end-to-end audio solutions tailored to the needs of professionals and consumers.

Without audio and media technologies developed by Fraunhofer IIS, today's media world would be silent and dark:

– **mp3**, **AAC** and **HE-AAC** are today in all consumer electronic devices, PCs and smartphones.

– The **Apple and Android ecosystems** are based on **AAC**, for instance music distribution, Facetime, Airplay, or Carplay.

– Half of the world's **digital broadcast TV sound** and most **digital radio systems** are enabled by audio codecs developed by Fraunhofer IIS.

– The majority of **streaming services around the globe** uses Fraunhofer audio codecs to deliver content to the audience.

– Most **video conferencing and telecommunication services** use Fraunhofer audio solutions.

– The **easyDCP software suite** for movie content mastering and packaging is one of the most reliable tools in the industry with over **1,800 licensees** worldwide.

The latest generation of Fraunhofer IIS audio and media technologies consists of solutions tailored to their respective fields of application:

– **xHE-AAC** offers good audio quality even at very low bit rates down to 6 kbit/s per channel for all kinds of audio signals (speech, audio, mixed). Natively in **Android** and standard codec for **Digital Radio Mondiale**.

– **MPEG-H Audio** is designed for **UHD TV and streaming services** providing interactive immersive sound and has been on air in Korea since May 2017.

– The 3GPP communication codec **EVS**, co-developed by Fraunhofer IIS, provides a highly improved speech and audio quality as well as higher robustness. It is **in use worldwide**, for example in Europe, USA, China, Japan and South Korea.

– **JPEG XS** is the new ISO image coding standard co-developed by Fraunhofer IIS for video over IP. It offers low latency and low complexity for visually lossless compression that enables interoperability and allows an easy and cost effective integration into IP based infrastructure.

Reliable business partner worldwide

Our partners and team members are located around the globe, providing easy and efficient access to Fraunhofer audio and media technologies.

Faster time to market

Fraunhofer IIS' team of more than 250 scientists and engineers guarantees instant access to turnkey software solutions encompassing the latest audio coding and multimedia technologies.

Research powerhouse

Fraunhofer IIS is dedicated to the science of audio and media. It is part of Europe's largest applied research organization Fraunhofer-Gesellschaft.