

FRAUNHOFER INSTITUTE FOR INTEGRATED CIRCUITS IIS

PRESS RELEASE

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10 years of AudioLabs in Erlangen: A success story

Erlangen, Germany: Ten years ago, at the start of the 2010 academic year, a unique collaboration was established between Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU) and the Fraunhofer Institute for Integrated Circuits IIS: the *International Audio Laboratories Erlangen*. Since then, the research organization has become an internationally renowned institution with six professorships of its own and a team of 50 people.

The AudioLabs in Erlangen are unparalleled worldwide in their objectives and international orientation: scientists at the university and guests from all over the world work together with researchers from Fraunhofer IIS to develop new technologies for the digital processing of multimedia content. This collaboration among different disciplines and Fraunhofer IIS's long-standing experience in the field of audio compression provides creative impetus for current and future research topics.

An international team

An early research focus was on the processing of music and speech signals. On the university side of things, the work of the AudioLabs began with the appointment of the first professors and staff: Prof. Jürgen Herre (audio coding), Prof. Bernd Edler (audio signal analysis), Prof. Emanuël Habets (spatial audio signal processing) and Dr. Stefan Turowski (coordinator) all took up their posts in 2010. For its part, Fraunhofer IIS put its established IIS Labs to use. Shortly thereafter, the research spectrum was expanded to include further important topics with the appointment of Prof. Meinard Müller (music signal analysis, 2012) and Prof. Tom Bäckström (speech coding, 2013).

As an important branch of research for the AudioLabs, speech coding brought Fraunhofer IIS a decisive step forward in the then ongoing standardization of the new Enhanced Voice Services (EVS) communication codec for mobile applications.

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The research field of music analysis and semantic audio signal processing opened up a whole new field of activity for the AudioLabs and Fraunhofer IIS. Following the latest appointments of Prof. Frank Wefers (2018) and Prof. Nils Peters (2020), not only do the AudioLabs reflect the zeitgeist of today's students, who grew up with virtual or augmented reality as well as the Internet of Things, they also cover important future fields of research and development in the audio and multimedia sector.

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State-of-the-art sound laboratories

While the researchers initially relied on the unique quality on offer at Fraunhofer IIS's "Mozart" sound laboratory, they now have three additional state-of-the-art sound laboratories available for recording and test listening to audio material. In recent years, laboratories for research work in the field of virtual reality (VR) have been added.

Ten years of successful research

In the ten years of their existence, the International Audio Laboratories Erlangen have proven that the combination of scientific excellence and outstanding application is a viable model. A long series of scientific contributions, proofs of excellence and DFG/EU and industry projects as well as a high number of coveted courses show that Fraunhofer IIS's initial decision to invest the license revenues from its mp3 patents, amounting to 60 million euros, was definitely worthwhile.

The AudioLabs' international orientation is not only anchored in the name, but is filled with life every day and attracts researchers from all over the world to Erlangen. In the future, the AudioLabs will continue to strengthen the reputation of the Nuremberg metropolitan region as a first-class research location, both at home and abroad.

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 the fields of audio and moving picture production. Starting with the creation of mp3 and continuing with the co-development of AAC and the Digital Cinema Initiative test plan, 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.