Press Release

**Erlangen/Las Vegas,
April 11, 2011**

**Visit us at NAB 2011
Las Vegas, NV, USA
Booth SU5520**

**Fraunhofer Institute for
Integrated Circuits IIS**

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** Fraunhofer USA Digital Media Technologies,
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Fraunhofer IIS showcases AAC Loudness Control with Metadata Support at NAB 2011

Fraunhofer's AAC audio codec family enables broadcasters to comply with new CALM ACT loudness regulations

Fraunhofer IIS (NAB booth SU5520), the world's renowned source for audio and multimedia technologies, is showcasing metadata support for its AAC family of audio codecs to address the loudness control requirements of current and future broadcasting systems at NAB 2011.

Loudness control regulations, such as the recent CALM Act (Commercial Advertisement Loudness Mitigation), are being put in place to address consumer complaints about disturbing loudness differences between TV programs and commercials. Fraunhofer's AAC family of audio codecs, including AAC and HE-AAC, now offer the ability to carry the original broadcast metadata to meet the requirements of the CALM Act.

This Fraunhofer Audio Metadata Technology provides broadcasters with a reliable option to solve loudness issues when existing ATSC broadcast signals are translated to AAC for transmission over cable or satellite networks to consumer's homes. The technology also allows for loudness and dynamic range control for ATSC-M/H Mobile DTV transmissions using HE-AAC.

The AAC family of codecs has included broadcast metadata support since their standardization in 1999 – 2004. However, only with the introduction of metadata translation

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software, such as Fraunhofer's Metadata Transcoder, has it been possible to convert ATSC A/52 metadata into the AAC format. Fraunhofer's solution permits all of the standard A/52 metadata, such as Dialogue Normalization, Dynamic Range Control, and Downmix Coefficients, to be translated in real-time to their AAC equivalents. ATSC M/H encoders may also use Fraunhofer Audio Metadata Software to encode AAC metadata parameters directly or from Dolby E sources. All new AAC decoders for broadcast receivers and set-top boxes from Fraunhofer and other major suppliers will support AAC metadata decoding and are interoperable.

The AAC family of audio codecs is used in broadcasting systems worldwide, including Japan and Brazil's ISDB broadcast standards. HE-AAC is the standard codec for mobile media streaming as well as TV and radio broadcasting systems such as DVB, DAB+, ATSC-M/H, ISDB and Digital Radio Mondiale. HE-AAC is an option for the ATSC Candidate Standard for Non-Real-Time Content Delivery. The HE-AAC codec supports multi-channel broadcasting in excellent quality at only 160 kbit/s, which is less than half the bitrate of other surround codecs.

Fraunhofer offers its Audio Metadata Technology in combination with its HE-AAC and AAC encoder and decoder implementations. The company is working together with broadcast and cable encoder manufacturers as well as SoC chip suppliers to include this functionality into their products.

For more information, visit http://www.iis.fraunhofer.de/en/bf/amm/.

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About Fraunhofer IIS

Fraunhofer IIS, based in Erlangen, Germany, has been working in compressed audio and digital broadcasting technology for more than 20 years and remains a leading innovator of technologies for cutting-edge multimedia systems. Fraunhofer IIS is the main inventor of mp3 and universally credited with the co-development of AAC (Advanced Audio Coding) as well as technologies for the media world of tomorrow, including MPEG Surround and data services like Journaline. In addition Fraunhofer IIS is active in the area of standardization, overall broadcast system design, receiver core development, and OEM broadcast server equipment. The technologies developed at Fraunhofer IIS have established themselves globally in satellite-based and terrestrial broadcasting systems, such as Digital Radio Mondiale DRM, DAB Digital Radio, Digital Video Broadcasting DVB, WorldSpace and Sirius XM Radio.

Through the course of more than two decades, Fraunhofer IIS has licensed its audio codec software and application-specific customizations to at least 1,000 companies. Fraunhofer estimates that it has enabled more than 1 billion commercial products worldwide using its mp3, AAC and other media technologies.

The Fraunhofer IIS organization is part of Fraunhofer-Gesellschaft, based in Munich, Germany. Fraunhofer-Gesellschaft is Europe's largest applied research organization and is partly funded by the German government. With nearly 17,000 employees worldwide, Fraunhofer-Gesellschaft is composed of 60 Institutes conducting research in a broad range of research areas. For more information, contact Matthias Rose, matthias.rose@iis.fraunhofer.de, or visit www.iis.fraunhofer.de/amm.

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