Fraunhofer IIS

FRAUNHOFER INSTITUTE FOR INTEGRATED CIRCUITS IIS

# PRESS RELEASE



## Fraunhofer and b<>com present VR Comedy Show "Vaudeville" in MPEG-H Spatial Audio based on the VRIF Draft Guidelines

**Erlangen, Germany/Rennes, France/Amsterdam, The Netherlands: Fraunhofer Institute for Integrated Circuits IIS, the world-renowned experts in audio and media technologies, and the Hypermedia innovators from the French Research and Technology Institute b<>com have teamed up at IBC 2017 to showcase an end-to-end spatial audio system for production, delivery, playback and rendering of Higher Order Ambisonics (HOA) MPEG-H Audio, the international standard for immersive audio. The first virtual reality experience produced with this toolchain is the episodic VR comedy show "Vaudeville" from French VR studio DVGroup.**

The content is delivered to VR headsets following aspects of the draft guidelines of the Virtual Reality Industry Forum (VRIF), which enable the production and delivery of high quality VR experiences, emphasizing interoperability in an open ecosystem.

While VRIF is not in itself a standards development organization, members advocate for the creation of an interoperable end-to-end ecosystem for high-quality audiovisual virtual reality services. At IBC 2017, the VR Industry Forum will publish a first draft of its guidelines for VR at www.vr-if.org/guidelines/. Fraunhofer IIS and b<>com present the very first VR experiences based on aspects of these guidelines.

The virtual reality environment demonstrated at IBC, rendered on Samsung Gear VR headsets, produces an entertainment experience with a stunning level of immersion. The audio mix which is configured as Higher Order Ambisonics, has been produced using the b<>com Spatial Audio Toolbox and is delivered using VRIF's 3D Audio Baseline media profile, which is based on the MPEG-H Audio technology, substantially developed by Fraunhofer IIS. The 3D Audio Baseline media profile is technically specified in MPEG as part of the Omnidirectional Media Format (OMAF).

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MPEG-H Audio is a true multiscreen audio codec system that can carry audio channels, ambisonics audio and audio objects with metadata, which enables maximum creative freedom in the creation of interactive and immersive audio experiences. The MPEG-H TV Audio system is already on-air in South Korean UHD TV broadcast. It is part of the ATSC 3.0 and DVB-UHD television standards and suitable for Over-the-top (OTT) content. Advanced capabilities of MPEG-H include:

- **Immersive Sound:** MPEG-H adds 3D audio components for an immersive audio experience.
- **Interactive Audio:** Consumers have the ability to adjust the sound mix to their preferences.
- **Universal Delivery:** MPEG-H tailors playback to sound best on any device and in any environment.

For effortless integration on VR playback systems, Fraunhofer IIS provides a VR Audio SDK, ready to create a VR experience with MPEG-H Audio decoding and the best-in-class audio rendering.

Through its Spatial Audio Toolbox solution, b<>com is providing state-of-the-art tools for producing and post-producing High Order Ambisonics Audio.

At IBC in Amsterdam, from 15-19 September 2017, visitors to the b<>com (Hall 8, booth G14) and Fraunhofer (Hall 8, booth B80) booths can experience Vaudeville VR with MPEG-H Audio.

For more information, visit www.iis.fraunhofer.de/amm

**Statements:**

"High Order Ambisonics, or Scene Based Audio, is an essential format in order to produce compelling VR experiences. Together with DVGroup and Fraunhofer, we are proud to showcase, for the very first time, an end-to-end ecosystem in line with the VRIF recommendations for the distribution of such experiences."
**Ludovic Noblet, Director Hypermedia at b<>com**

"Partnering with b<>com on developing this end-to-end VR audio system based on MPEG-H Audio has been a great example of collective innovation. Seeing what level of immersion creatives such as DVGroup can produce with it, is even more rewarding."
**Jan Nordmann, Senior Director, New Media Fraunhofer USA Digital Media Technologies**

"At DVGroup, we encourage authors to use spatial audio as a narrative tool in their stories. This collaboration on Vaudeville aimed at pushing 360-3D experiences to high-end quality standards. The spatial audio tools developed by b<>com give the volumetric feeling of space which is often missing in 360-VR productions. Together

with Fraunhofer, an important step is achieved pushing forward truly immersive experiences to end consumers."
**François Klein at DVGroup**

## About b<>com

With its innovations, the Institute of Research and Technology (IRT) b<>com is taking part in the European digital transformation. Its 230 researchers develop tools, products, and services that make everyday life easier. They focus on two fields of research: Hypermedia (ultra-high definition images, 3D sound, smart content, virtual and augmented reality) and more agile ultra-high speed networks (cloud, cybersecurity, ultra-high speed mobile, network resilience, Internet of Things). Of the many fields of application for these technologies, e-health has allowed b<>com to participate in the digital revolution going on in medicine.

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**About Fraunhofer IIS**

The Audio and Media Technologies division of Fraunhofer IIS has been an authority in its field for more than 25 years, starting with the creation of mp3 and co-development of AAC formats. Today, there are more than 10 billion licensed products worldwide with Fraunhofer's media technologies, and over one billion new products added every year. Besides the global successes mp3 and AAC, the Fraunhofer technologies that improve consumers' audio experiences include Cingo® (spatial VR audio), Symphoria® (automotive 3D audio), xHE-AAC (adaptive streaming and digital radio), the 3GPP EVS VoLTE codec (crystal clear telephone calls), and the interactive and immersive MPEG-H TV Audio System.

With the test plan for the Digital Cinema Initiative and the recognized software suite easyDCP, Fraunhofer IIS significantly pushed the digitization of cinema. The most recent technological achievement for moving pictures is Realception®, a tool for light-field data processing.

Fraunhofer IIS, based in Erlangen, Germany, is one of 69 divisions of Fraunhofer-Gesellschaft, Europe's largest application-oriented research organization.

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