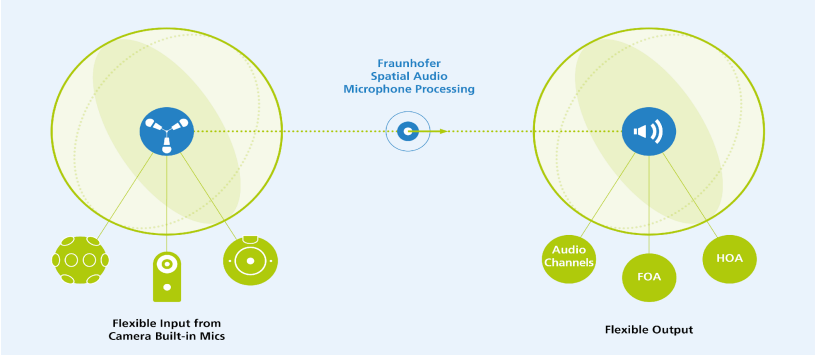
PRESS RELEASE

Felix & Paul Studios to Integrate Fraunhofer upHear Spatial Audio Technology into Next-Generation VR Camera System

Erlangen, Germany/Montreal, Canada – Fraunhofer IIS, the world-renowned experts in audio and media technologies, today announced that Felix & Paul Studios, the Emmy® Award-winning studio behind the world's leading cinematic virtual reality experiences, will integrate Fraunhofer's Spatial Audio Microphone Processing solution into its next generation proprietary 360-degree 3D camera system.



Fraunhofer upHear Spatial Audio Microphone Processing © Fraunhofer IIS

Fraunhofer's Spatial Audio Microphone Processing SDK is designed to ease the high-quality capture of authentic spatial audio content on set. The automated processing algorithm is the first audio technology to be delivered under Fraunhofer's upHear® brand of immersive audio innovations and Felix & Paul

Head of Corporate Communications
Thoralf Dietz | Phone +49 9131 776-1630 | thoralf.dietz@iis.fraunhofer.de | Fraunhofer Institute for Integrated Circuits IIS | Am Wolfsmantel 33 | 91058 Erlangen, Germany | www.iis.fraunhofer.de |

Head of Marketing Communications Audio and Media Technologies
Mandy Garcia | Phone +49 9131 776- 6178 l amm-info@iis.fraunhofer.de | Fraunhofer Institute for Integrated Circuits IIS l www.iis.fraunhofer.de

US Contact
Jan Nordmann | Phone +1 408 573 9900 l Cell +1 408 390 6698 l press@dmt.fraunhofer.org | Fraunhofer USA, Inc. | Digital Media Technologies* | 100 Century Center Court | Suite 504 | San José, California 95112 | www.dmt.fraunhofer.org

* *Fraunhofer USA Digital Media Technologies, a division of Fraunhofer USA, Inc., promotes and supports the products of Fraunhofer IIS in the U.S.*

Studios is the first partner to incorporate and refine Fraunhofer's algorithm into a virtual reality camera system.

"As the world's only full-spectrum VR studio, we are dedicated to creating captivating, immersive experiences and sound plays a very important role in virtual reality storytelling," said Sebastian Sylwan, Chief Technology Officer and Creative Partner at Felix & Paul Studios. "Fraunhofer is a world leader in digital audio technology and innovation and we are delighted to partner with them to incorporate their upHear Spatial Audio Microphone processing into our next-generation camera system; the full integration with our cameras makes the capture of a faithful spatialized scene rendition an integral, no-overhead part of the filming process," Sylwan continued.

"Our upHear Spatial Audio Microphone Processing solution will enable Felix & Paul Studios to enhance their immersive VR content with spatial audio in a simple, yet robust way," said Jan Nordmann, Senior Director, New Media at Fraunhofer USA Digital Media Technologies. "We love to see our technological innovations in the hands of content creators and are very excited to work with the leading cinematic VR studio to enhance their sound capture and processing in the next generation of their camera systems."

Fraunhofer's Spatial Audio Microphone Processing was designed for professional and consumer 360-degree cameras and mobile devices, improving sound capture using the built-in microphones of the device. The algorithm automatically transforms captured sound signals in real time to any popular surround or immersive reproduction format, including First-Order Ambisonics (FOA) or Higher-Order-Ambisonics (HOA), immersive 3D audio with 7.1+4 height channels, or 5.1 surround for legacy systems, while preserving the authenticity of the original audio scene. Its flexible semantic signal analysis approach allows for adoption into devices with three or more microphones in various configurations, as well as more sophisticated configurations like in the case of Felix & Paul Studios' cameras.

Jean-Pascal Beaudoin, Head of Audio at Felix & Paul Studios and Director of Sound at their subsidiary Headspace Studios further commented: "Fraunhofer's technology allows us to faithfully and precisely capture scene-based audio that we can later combine with other sources for a fully immersive audio experience."

About Fraunhofer's upHear Spatial Audio Microphone Processing

Manufacturers, professional content creators, as well as consumers can benefit from the Fraunhofer Spatial Audio Microphone Processing technology:

- **Manufacturers** – the flexibility and customization of Fraunhofer's spatial audio capturing algorithm to unique camera and mobile designs, as well as the possible integration of Fraunhofer upHear in devices, mobile applications or in post-production software can benefit various product categories.

- **Content Creators** – professional content creators will benefit from Fraunhofer's audio quality standard through position-accurate 3D audio and a natural ambience that naturally carries the atmosphere of the captured situation. Furthermore, in post-production, sound designers can easily combine those audio scenes with additional sound elements like voice overs or dynamic objects.

- **Consumers** – integration of Fraunhofer's spatial audio capturing technology in cameras and phones allows the ability to capture immersive sound to accommodate a video with the push of a button. This aligns with today's consumer demand for products that are easy to use and provide high-quality recordings.

To learn more about Fraunhofer's upHear Spatial Audio Microphone Processing, please visit www.uphear.com or meet the company at NAB in Las Vegas (April 24 – 27, 2017), booth #SU6110.

IN COOPERATION WITH

Felix & Paul
STUDIOS

About Fraunhofer

When it comes to innovative audio technologies for the rapidly evolving media world, Fraunhofer IIS stands alone. For more than 25 years, digital audio technology has been the principal focus of the Audio and Media Technologies division of the Fraunhofer Institute for Integrated Circuits IIS. From the creation of mp3 and the co-development of AAC to the future of audio entertainment for broadcast, Fraunhofer IIS brings innovations in sound to reality.

Today, technologies such as Fraunhofer Cingo for virtual surround sound, Fraunhofer Symphoria for automotive 3D audio, AAC-ELD and EVS for telephone calls with CD-like audio quality, and MPEG-H Audio that allows television viewers to adjust dialogue volume to suit their personal preferences are among the division's most compelling new developments.

Fraunhofer IIS technologies enable more than 10 billion devices worldwide. The audio codec software and application-specific customizations are licensed to more than 1,000 companies. The division's mp3 and AAC audio codecs are now ubiquitous in mobile multimedia systems.

Fraunhofer IIS is based in Erlangen, Germany and is a division of Fraunhofer-Gesellschaft. With 24,500 employees worldwide, Fraunhofer-Gesellschaft is comprised of 69 institutes and research units making it Europe's largest application-oriented research organization.

For more information, contact amm-info@iis.fraunhofer.de, or visit www.iis.fraunhofer.de/audio