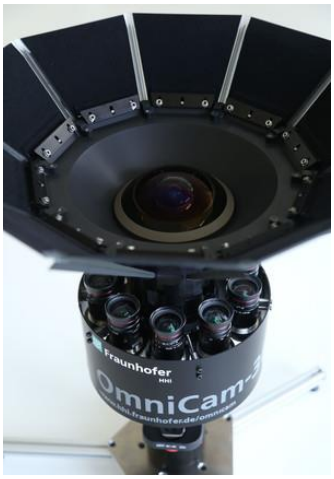
PRESS RELEASE

Fraunhofer HHI with latest VR and AR technologies at IBC in Amsterdam

At IBC 2017 Fraunhofer HHI presents the latest developments in 360 degree video, Virtual Reality (VR) and Augmented Reality (AR).

You find the following highlights at Fraunhofer Booth B80, Hall 8:

New 360 degree OmniCam-360 with closed sphere and live stitching



Fraunhofer HHI's OmniCam-360 is a worldwide unique system for recording high-resolution video panoramas. For instance sport or musical events can be experienced in an Ultra High Definition panorama up to 360 degree. The latest development makes it possible to provide this UHD panoramic content for VR glasses. Thanks to the real-time solution of Fraunhofer HHI, the ten single camera segments are smoothly composed to an UHD video that can be transmitted to VR glasses so that the spectator is able to enjoy a truly immersive experience. At IBC the new very light version of the OmniCam-360 with closed sphere will be shown.

OMAF viewport-dependent VR video streaming using HEVC tiles – Enabler for high quality in 360 degree video services

Only high resolution content can give a sense of immersion in VR video applications, but the large amount of data poses a challenge to common transport systems and decoders. Tile Based DASH Streaming with lightweight HEVC Tile Aggregation allows to easily adapt on-the-fly the 360 degree video data stream to the current user viewport. This technology allows reducing throughput and decoder requirements significantly without complex transcoding.

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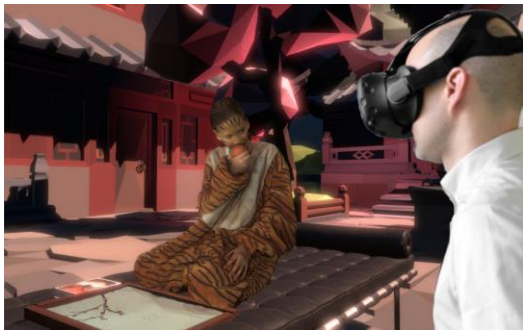
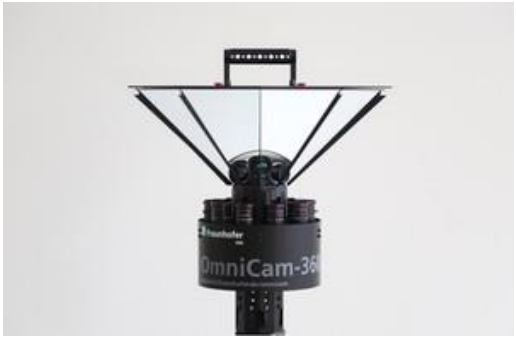
3D Human Body Reconstruction from Fraunhofer HHI digitizes human beings



At the Fraunhofer Heinrich Hertz Institute, the 3D Human Body Reconstruction technology captures real persons with multiple cameras at the same time and creates naturally moving dynamic 3D models. Afterwards, they can be integrated in computer graphics, virtual worlds or real scenes. The human 3D models can be manipulated to change their viewing direction, movements and animation. A novel capture and lighting system is under construction that allows 360 degree volumetric video acquisition and creation of full dynamic 3D Human Body Reconstruction.

Interactive live streaming of 10K video panoramas with HEVC



Through high-quality 360 degree video capturing the spectator can enjoy an immersive video experience. The OmniCam-360 captures live high-quality 360 degree panorama video. The video is transmitted from the OmniCam-360 to an UHDTV. Any section (region of interest - ROI) of the panorama can be selected with a remote control and scaled to UHD. The user may scroll horizontally trough the panorama and also zoom out, in order to show the complete panorama on the screen. For the use of VR glasses, an UHD receiver decodes the HEVC panorama video and the full panorama is down sampled to UHD and re-encoded.

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HEVC Live Statmux: High efficient bitrate allocation between multiple video encoders in real-time with the Statistical multiplexer (Statmux) for HEVC

The latest generation of Fraunhofer HHI's H.265/MPEG-HEVC software encoding technology is enabling HEVC live encoding of 10-bit 60Hz UHD video with High Dynamic Range (HDR) and Wide Color Gamut (WCG). With the Statmux, Fraunhofer HHI developed a new component of its HEVC Live Encoder Software Developer Kit (SDK). The technology enables an analysis of the video material and an allocation of the total bitrate to different video encoders depending on the complexity of the content. Thus, significant bitrate savings as well as quality improvement of the video content of single channels can be gained while the available bandwidth is used most efficiently.

After one of the biggest equipment upgrades in the history of broadcasting in Germany, regular operation of DVB-T2 HD started in spring this year. ZDF, the largest public broadcaster in Germany, selected the R&S AVHE100 encoding and multiplexing solution from Rohde & Schwarz with HEVC technology from Fraunhofer HHI for its headend implementation. The Rohde & Schwarz system handles the central signal processing as well as encoding and multiplexing for the new DVB-T2 network. The integrated HEVC encoder was developed by Fraunhofer HHI, which also played a major role in the development of the HEVC standard.

Innovations for the digital society of the future are the focus of research and development work at the **Fraunhofer Heinrich Hertz Institute HHI**. In this area, Fraunhofer HHI is a world leader in the development for mobile and optical communication networks and systems as well as processing and coding of video signals. Together with international partners from research and industry, Fraunhofer HHI works in the whole spectrum of digital infrastructure – from fundamental research to the development of prototypes and solutions. www.hhi.fraunhofer.de

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