

FRAUNHOFER HEINRICH HERTZ INSTITUTE

# PRESS RELEASE

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**PRESS RELEASE**

February 3, 2016 | Page 1  
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## **Fraunhofer HHI successfully completed Panorama-Live-Streaming through the Digital Concert Hall of the Berlin Philharmonic**

**The Digital Concert Hall (DCH) of the Berlin Philharmonic offers classical concerts as video stream for different devices. The Fraunhofer Heinrich Hertz Institute HHI has now made possible the first live streaming of a concert in panorama format. The Berlin Philharmonic uses Fraunhofer HHIs camera technique: With the so called OmniCam-360, high resolution 360 degree images were streamed live around the whole world for the first time.**

The compact OmniCam-360 from Fraunhofer HHI is equipped with ten HD cameras that are attached to a mirror system. The individual produced images are corrected in real time and put together in to a parallax-free UHD video panorama with a resolution of approx. 10,000 x 2,000 pixels. The OmniCam-360 measures about 50 x 50 centimeters and weighs around 15 kilo.

The Berlin Philharmonic recognized the OmniCam-360's potential from an early stage. After numerous productions, the camera came to use now for the first live transmission: The images from the OmniCam-360 were successfully streamed in UHD quality through the DCH platform and provided on a browser based 360 degree player for navigation. By wiping and/or zooming, viewers can focus on that part of the picture that interests them the most. In broadcasts of concerts this could be the section of the orchestra with their favorite instruments, or the conductor, or they could just let their gaze wander.

An impressive concert experience includes not only a panoramic view but also an authentic sound. To reflect the sound as realistically as possible, Fraunhofer HHI and the Fraunhofer Institute for Integrated Circuits IIS recorded the concert with two eight-channel microphone arrays.

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## Digital Concert Hall

Even without a visit to the German capital, the concerts from the Berlin Philharmonic can be experienced around the world since 2008: Per season, some 40 concerts from the DCH are transferred via the internet as live stream and few days after the performance are added to the archive that has become very extensive in the meantime.

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**PRESS RELEASE**

February 3, 2016 | Page 2  
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Click here for more information about [Fraunhofer Cingo](#).

The **Fraunhofer Heinrich Hertz Institute** is a world leader in the development of mobile and fixed broadband communication networks and multimedia systems. From photonic components and systems through fiber optic sensor systems to video coding and transmission, the Fraunhofer HHI works together with its international partners from research and industry. [www.hhi.fraunhofer.de](http://www.hhi.fraunhofer.de)

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The Fraunhofer-Gesellschaft is the leading organization for applied research in Europe. Its research activities are conducted by 66 institutes and research units at locations throughout Germany. The Fraunhofer-Gesellschaft employs a staff of nearly 24,000, who work with an annual research budget totaling more than 2 billion euros. Of this sum, around 1.7 billion euros is generated through contract research. More than 70 percent of the Fraunhofer-Gesellschaft's contract research revenue is derived from contracts with industry and from publicly financed research projects. International collaborations with excellent research partners and innovative companies around the world ensure direct access to regions of the greatest importance to present and future scientific progress and economic development.

Press Contact: **Anne Rommel** | [anne.rommel@hhi.fraunhofer.de](mailto:anne.rommel@hhi.fraunhofer.de) | phone +49 30 31002 353

Department Contact: **Christian Weißig** | [christian.weissig@hhi.fraunhofer.de](mailto:christian.weissig@hhi.fraunhofer.de) | phone +49 30 31002 571