

PRESS RELEASE

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The Department of Moving Picture Technologies of Fraunhofer IIS Delivers First Camera with Single Shot, Non-Regular Sampling Method for High Dynamic Range Video

New method enables use of full dynamic range in one single shot for an enhanced production experience.

LAS VEGAS – April 8, 2013 – (NAB Booth C7843) – Fraunhofer IIS, the world's renowned source for audio and multimedia technologies, today announces the first camera with single shot, non-regular sampling method for high dynamic range (HDR) video. The new method delivers the latest innovation in HDR image and video recording, enabling users to leverage the full dynamic range of a captured scene in the post production process.

Unlike other HDR video methods, Fraunhofer's non-regular sampling records the full dynamic range between the brightest and darkest areas of the images using one single shot. By effectively balancing extreme lighting conditions, such as spotlights or under- or overexposed video scenes, the non-regular sampling of Fraunhofer delivers a premium user experience for recording video under real-world conditions.

"At Fraunhofer, we're in tune to the challenges and opportunities for production professionals to take advantage of HDR," says Dr. Siegfried Foessel, head of department Moving Picture Technologies at Fraunhofer IIS. "Our innovations, including HDR non-regular sampling, showcase the expertise of Fraunhofer in delivering user-friendly, automated production technologies and solutions for an enhanced digital cinema and media process."

The method for HDR places a special non-regular neutral density filter mask with different attenuations in front of the camera sensor. This makes it possible to capture dark and bright image parts simultaneously, eliminating the need to take more than one image. Non-regular sampling allows a near lossless reconstruction of the missing pixels in the corresponding dark or bright image. After reconstruction, the images can be fused together for an HDR image without any motion artifacts. It also avoids different motion blur for dark and bright image parts and increases resolution while keeping the dynamic range.

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Editorial notes

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Compared to multi-exposure techniques, the method of Fraunhofer requires less data to be read by the sensor, the ability to reduce camera size and creates the ability to extend existing camera sensor designs. As a result, the non-regular sampling method of Fraunhofer is the ideal solution for broadcast and video, still image applications, as well as small-sized camera design.

The HDR non-regular sampling method will be showcased at NAB from April 8-11. Show attendees can see a demonstration at Fraunhofer's booth C7843.

The Department of Moving Picture Technologies of Fraunhofer IIS is part of the Fraunhofer Digital Cinema Alliance, which also consists of the Fraunhofer Heinrich Hertz Institute HHI, Fraunhofer IDMT and Fraunhofer FOKUS. The Alliance provides a network of deep expertise and intelligence for the development of scalable technologies and international standards that allow customers to stay ahead of the market.

About Fraunhofer IIS

Founded in 1985 the Fraunhofer Institute for Integrated Circuits IIS in Erlangen, today with more than 780 staff members, ranks first among the Fraunhofer institutes concerning headcount and revenues. As the main inventor of mp3 and universally credited with the co-development of AAC audio coding standard, Fraunhofer IIS has reached worldwide recognition. It provides research services on contract basis and technology licensing. 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 22,000 employees worldwide, Fraunhofer-Gesellschaft is composed of 60 institutes conducting research in a broad range of research areas.

For more information, contact Angela Raguse, rgs@iis.fraunhofer.de, or <http://www.dcinema.fraunhofer.de>.

About the Department Moving Picture Technologies

The Department Moving Picture Technologies develops new innovative imaging systems and procedures based on High Dynamic Range (HDR), Lightfield and 3D capturing methods. Main application areas are the motion picture and TV industry, but also other areas will be covered. The algorithms will be used to extend technical and creative opportunities on the set and in the post production. To achieve practical use specific components like image processing ASICs, software tools or complete prototypes and devices will be developed.

Well known software developments will be used, e.g. easyDCP for creation, play back and control of Digital Cinema Packages. Actual and future extensions will work for enhanced 3D distribution packages, multi-format mastering or archiving of media content. The department is well connected to other organizations and associations and is working in several international standardization organizations.

About Fraunhofer

The **Fraunhofer-Gesellschaft** is the leading organization for applied research in Europe. At present, the Fraunhofer-Gesellschaft maintains 66 institutes and independent research units. The majority of the more than 22,000 staff are qualified scientists and engineers, who work with an annual research budget of 1.9 billion euros. Roughly two thirds of this sum is generated through contract research on behalf of industry and publicly funded research projects. Branches in the USA and Asia serve to promote international cooperation.

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