

PRESS RELEASE

PRESS RELEASESeptember 8, 2020 || Page 1 | 2

Fraunhofer IIS presents 8k video over IP transmission with JPEG XS at the virtual IBC 2020

Erlangen/Tokyo: The standardized JPEG XS codec was developed to handle media workflows from acquisition to the distribution encoder by using internet settings and Ethernet infrastructure only. The Fraunhofer IIS expert team for video coding successfully implemented a pilot project for streaming of 8k video over IP in cooperation with the Japanese public broadcaster NHK.

JPEG XS provides lowest latency for video over IP transmission. With the requirement for seamless media workflows, the handling of highest-quality images over internet protocol (IP) in local and wide area networks was required and JPEG XS is a codec enabling these requirements. The video coding expert team of the Fraunhofer-Institute for Integrated Circuits IIS in Erlangen developed a JPEG XS SDK in order to integrate JPEG XS in broadcast and movie production workflows to transfer high-quality images during the production and post-production process via IP in studio quality. The Fraunhofer JPEG XS SDK runs with CPU and GPU support.

JPEG XS – a game changer technology for future production workflows

Production and broadcast studios are looking for new ways to manage video and image transmission by Ethernet to make their workflows easier and more cost-efficient. With JPEG XS as new standardized video codec by ISO focusing these requirements, Fraunhofer IIS set up a system consisting of a PC based real time encoder with 4 by 12G SDI input and 10G Ethernet output and a PC based real time decoder with 10G Ethernet input and a 4 by 12G SDI output synchronized to the input of the encoder. The transmission of the data was operated on a 10G Ethernet link as SMPTE 2110 stream. The synchronization between input of the encoder and output of the decoder was realized over PTP IEEE1588 (Precision Time Protocol).

Fraunhofer IIS and NHK are introducing the proof of concept

Together with the Japanese broadcaster NHK the team of Siegfried Foessel, Head of the Department Moving Picture Technologies at Fraunhofer IIS, carried out a pilot project to proof the capability of JPEG XS under real-time broadcast conditions. "In this pilot project the challenge was not only to use JPEG XS for transferring 8k video streams, but

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

Editorial notes

Angela Raguse | Phone +49 9131 776-5105 | angela.raguse@iis.fraunhofer.de | Fraunhofer Institute for Integrated Circuits IIS | www.iis.fraunhofer.de

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also to check the synchronization and the behavior of the system under real-time conditions," states Foessel.

"We verified the quality of JPEG XS during our evaluation phase with different compression ratios in order to use for our broadcast services. We will present all technical details about this evaluation and the excellent results in this pilot project at the virtual SMPTE ATC conference in November," explains Masayuki Miyazaki, Deputy Head of Production Engineering Division at Engineering Development Center, NHK.

For further information see also our virtual booth, webinars or chat with our experts at www.ibc2020.digitalmedia.fraunhofer.de.

PRESS RELEASESeptember 8, 2020 || Page 2 | 2



JPEG XS – the new standardized low-latency codec for transfer of images up to 8k in production quality via IP © Adobe IStock | Fraunhofer IIS | Picture in color and print quality:
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About Fraunhofer IIS

For over 30 years, the institute's Audio and Media Technologies division has been shaping the globally deployed standards and technologies in the fields of audio and moving picture production. Starting with the creation of mp3 and continuing with the co-development of AAC and the Digital Cinema Initiative test plan, almost all consumer electronic devices, computers and mobile phones are equipped with systems and technologies from Erlangen today. Meanwhile, a new generation of best-in-class media technologies – such as MPEG-H Audio, xHE-AAC, EVS, LC3/LC3plus, Symphoria, Sonamic and upHear – is elevating the user experience to new heights. Always taking into account the demands of the market, Fraunhofer IIS develops technology that makes memorable moments.