PRESS RELEASE

Fraunhofer IIS introduces Application Support Package to facilitate JPEG XS Integration

Erlangen, Germany; The new JPEG XS codec is a revolutionary milestone in bringing professional high-quality video transfer to an all-IP workflow without limiting image resolution or latency. The Fraunhofer JPEG XS SDK offers a free Application Support Package to guide and assist system integrators and developers with the fast and convenient implementation of JPEG XS applications into professional workflows and devices. Professionals can now speedup the process, profiting from subframe-latency, high error resilience and high-speed video transfer from standard to high-resolution displays.

Integrating a Software Development Kit SDK may prove difficult, time- and money-consuming. It´s not about a lack of knowledge, but what appears obvious in the code, holds many pitfalls before it gets started successfully.

The video coding experts at the Fraunhofer Institute for Integrated Circuits IIS decided to shorten this time by providing an Application Support Package that is included in the Fraunhofer JPEG XS SDK. "We have focused on code examples for the most common encoding and decoding functionalities in typical workflows such as camera image to stream conversion or stream to display image", explains Siegfried Foessel, Head of the Moving Picture Technologies department at Fraunhofer IIS.

JPEG XS – High performing for professional broadcasting workflows

In broadcasting a variety of video frame grabber and playout cards, from standard to ultra-low latency, are used for data transfer. The Application Support Package for the JPEG XS SDK from Fraunhofer IIS supports the three currently most used I/O cards for SDI and HDMI – the most common for each segment – with sample code implementations. But, what about already built-in internal computer interfaces for web cameras, X11 system or the GPU? For these use cases the Fraunhofer experts developed software code for interfacing with Video4Linux, X11 and the Direct Rendering Manager (Linux only). And, for cross-platform use, software code for integrating the SDL2 library is available.

Additional functionality is provided by Fraunhofer for encapsulating code streams into file formats and transport streams. Many of these formats are primarily used or required

in broadcasters´ workflows or equipment in order to take full advantage of the low latency and high quality of JPEG XS. For transport streams, the Application Support Package also contains code for packing and unpacking of JPEG XS code streams into RTP (RFC 9134), enabling ST2110 workflows, and into MPEG-TS (ISO/IEC 13818-1).

Improved error resilience for transport streams

In order to achieve a smooth presentation of the video streams in the event of network errors, the Fraunhofer code adds additional error resilience functions to avoid interrupted or broken video streams. Even better error resilience can be reached by using the special Fraunhofer functions for Forward Error Correction (FEC) according to ST2022-5.

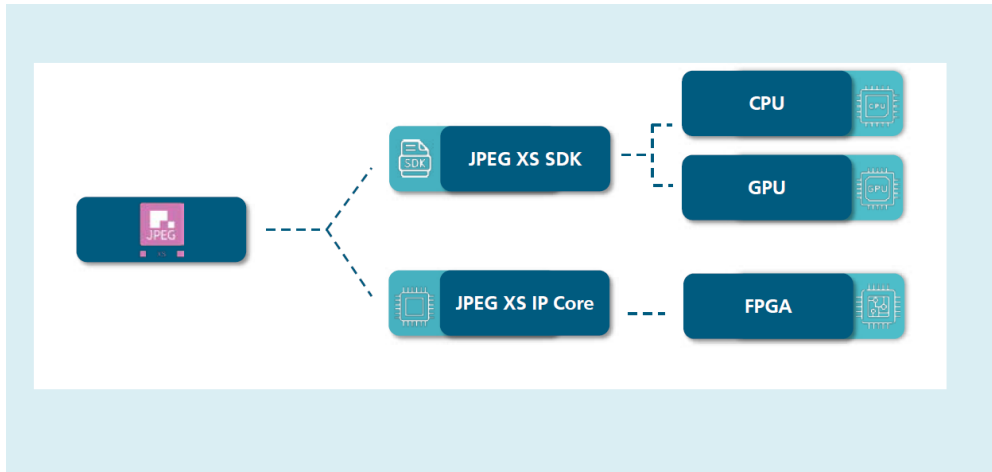### Subframe latency support – balancing the core workload

To improve performance, Fraunhofer IIS provides a smart thread allocation in its SDK. This allows users to achieve Ultra-Low-Latency by evenly distributing the processing workload across all cores. The Fraunhofer code is available for parallel and interleaved processing of image slices and results in only 180 lines latency for a purely software based coding and transport system according to SMPTE ST2110.

High Speed conversion from 422 YUV to 444 RGB

A certain plus for broadcasters is the high speed conversion from standard broadcast 422 to high resolution displays of 444. A real-time display for broadcast streams on standard monitors e.g. in the camera control room are possible without additional expense.

More information available at: www.iis.fraunhofer.de/jpegxs
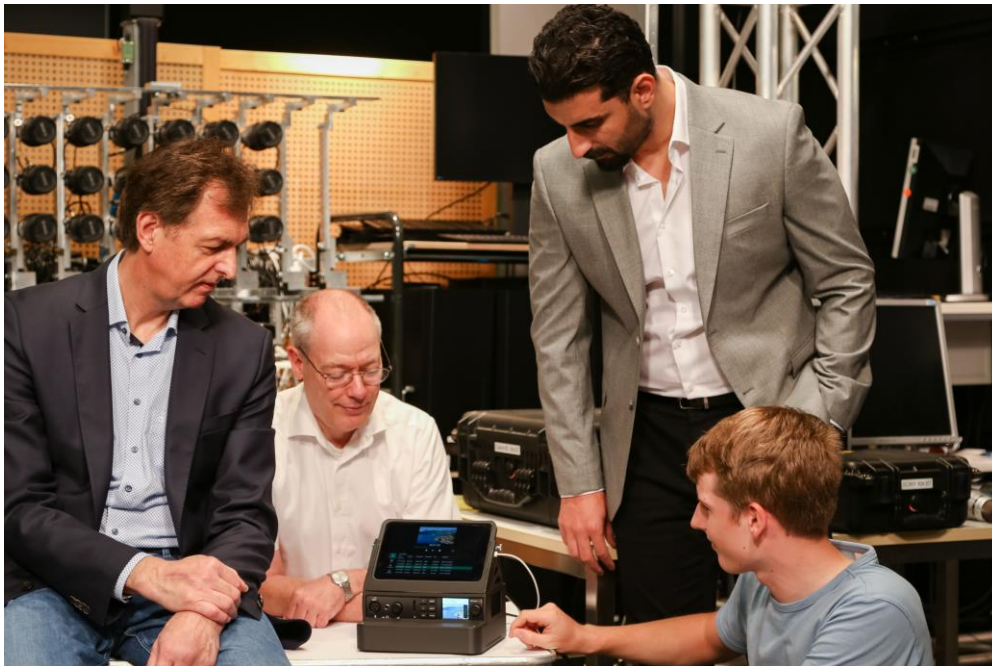or see us for a briefing and demo in Hall 8 B80.

FRAUNHOFER INSTITUTE FOR INTEGRATED CIRCUITS IIS

3 ways to easily integrate JPEG XS in your workflow

The Fraunhofer IIS JPEG XS coding experts with an application prototype for JPEG XS in a recording device | copyright Fraunhofer IIS

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. Detailed information on: www.iis.fraunhofer.de/jpegxs