

New video codec halves streaming time

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A German research institute announced Tuesday a new video standard that halves the bitrate required for streaming, allowing higher quality images on lower-power devices and opening the door wider to adoption of super high-definition 8K content.

The Fraunhofer Heinrich Hertz Institute said the new codec, VVC—Versatile Video Coding, will not compromise <u>video quality</u>. With ever-increasing demands on bandwidth for <u>social media</u> streaming, Zoom conferencing, 4K content and 360-degree panoramic videos, and especially during heightened web use spurred by global quarantines, VVC comes at an opportune time.

The increased transmission efficiency the codec promises to achieve would help major streaming services such as Amazon Prime Video and Hulu reduce costs as they prepare for higher-resolution fare down the road.

In order to obtain 8K quality streaming, current users would require internet connections of at least 85 megabits per second, which exceeds the capacities of many homes. But only half that rate would be required with VVC.

"Because H.266/VVC was developed with ultra-high-resolution video content in mind, the new standard is particularly beneficial when streaming 4K or 8K videos on a flat screen TV," the Fraunhofer Institute said in a press release posted Tuesday. "Through a reduction of data requirements, H.266/VVC makes video transmission in mobile networks (where data capacity is limited) more efficient. For instance, the previous standard H.265/HEVC requires 10 gigabytes of data to transmit a 90-min UHD video. With this new technology, only 5 gigabytes of data are required to achieve the same quality."



The new codec would replace the seven-year-old standard H.265 HEVC (High Efficiency Video Coding). Although HEVC itself represented a twofold increase in efficiency over its predecessor, its use has been marked by drawn-out legal disputes over highly complex royalty system entangled by varying transmission standards for different devices and varying compression rates.

The Fraunhofer Institute says its format, designed in collaboration with Apple, Ericsson, Intel, Huawei, Microsoft, Qualcomm and Sony, and set to be adopted by the Media Coding Industry Forum comprised of 34 major companies, should avoid the royalty quagmire posed by HEVC.

Still, there are challenges ahead before VVC could be universally adopted. For one, VVC demands greater processing power. Its decoding process is up to 10 times more complex than HEVC. The encoding process, too, is lengthy; BBC research team tests found it took 6.5 times longer to encode VVC content than under the current standard. More powerful chips will be required to take on the task. Fraunhofer states, "The new chips required for the use of H.266/VVC, such as those in mobile devices, are currently being designed."

Second, an alternative to HEVC already exists, and it's free; AV1. The open-source codec is not as powerful as VVC but it is 30 percent more efficient than HEVC. It has been adopted by several major media players, including YouTube and Netflix.

Meanwhile, it will be some time before VVC could be implemented. There is no software available yet for coding and encoding the format. Fraunhofer says it expects to introduce such software this fall.

More information: <u>newsletter.fraunhofer.de/-view ...</u> <u>4SHcBTt/V44RELLZBp/1</u>



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