

LIVE END-TO-END STREAMING OF VR360 10K VIDEO WITH MPEG-OMAF AND HEVC TILES

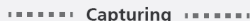


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The traditional way of streaming high-quality VR360 panoramic video with resolutions up to 10K x 4K consumes large amounts of bandwidth and requires decoding capabilities beyond 4K video at the receiving side. The new MPEG-OMAF standard solves this by spatially segmenting the video into HEVC tiles and packaging the tiles in a way that the receiver can request the high-definition tiles for the user's viewport and low-definition tiles for the areas out of sight. At the receiver the tiles are aggregated into a single HEVC compliant video stream and decoded with a legacy hardware video decoder.

- **Capturing:** Fraunhofer HHI's OmniCam-360 is a worldwide unique system for recording high-resolution VR360 video. Thanks to the real-time solution (RTSE) of Fraunhofer HHI, live events can be captured with a resolution up to 10k x 4k.
- **Encoding:** The latest generation of Fraunhofer HHI's H.265/MPEG HEVC software encoding technology is integrating tile-based HEVC live encoding for distribution of VR360 content. Before encoding, the content from the Omnicam-360 is spatially segmented and the resulting tiles are independently encoded at different resolutions.
- **Streaming:** The HEVC tile streams are packaged with the MPEG-OMAF standard using the Viewport-Dependent Media Profile. Using these tiles, the devices – VR glasses and TV screen – can assemble the required image, with optimal resolution. In the user's line of vision, the image is therefore of high definition and behind him, the resolution is low. MPEG-OMAF and HEVC tiles enable efficient delivery of live ultra-high-resolution VR360 video to fixed and mobile devices.