Competencies at Fraunhofer HHI

Multimedia
at Fraunhofer HHI

Multimedia is a key technology in the digital society and economy. Images, videos, speech, audio and associated data are indispensable companions, both in private and professional everyday life. Fraunhofer HHI offers solutions based on its diverse technological expertise and combines them in the business unit multimedia.

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Video compression

- Basic research on video compression
- Significant contributions to standards H.264/AVC, H.265/HEVC, and H.266/VVC
- Perceptual optimization
- Implementation of highly efficient standard-compliant encoder and decoder solutions

Immersive media

- Image capture and imaging systems
- Image/video analysis and synthesis
- AR- and VR-systems
- Interaction technologies
- Computer vision
- 3D rendering technologies
- 4D capture and modeling of dynamic objects and persons
- Implementation of immersive and interactive systems

Multimedia communication systems

- Low-latency transmission of video data for interactive services
- Transmission and storage formats for modern video codecs (HEVC, VVC)
- Development and specification of communication systems for immersive services (XR)
- Standardization of transport and media formats

Applications

- Highly efficient solutions for video communication
- Immersive recording and playback systems
- Volumetric video studios and processing chains for volumetric video
- Computer vision systems for multimedia applications
- AR/VR-assistance systems for entertainment, industry and medicine

Awards

- **4 Emmy Engineering Awards** for international standardizations: H.264 / MPEG-4 AVC video compression standard (2008), MPEG-2 Transport Stream (2013) and H.265 / MPEG-H HEVC video compression standard (2017)
- **„Lumiere Technology Award (2018)"** of the Advanced Imaging Society for work on 3D Human Body Reconstruction
- **„Technology Award (2014)"** of the International 3D Society for the development of a trifocal camera
- **ARD/ZDF Förderpreis "Frauen + Medientechnologie (2016)"** for the dissertation "Image Based Approaches for Photo Realistic Rendering of Complex Objects"

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