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Fraunhofer HHI and Red Bull Media House work together to develop new VLC technology applications

The Visible Light Communication (VLC) technology allows for the implementation of optical WiFi environments, especially in cases when an existing radio-based solution fails. Red Bull Media House and the Fraunhofer Heinrich Hertz Institute HHI are now working together to develop a palette of promising applications using this technology.

A fast, mobile data transfer with an arbitrary, mobile positioning of transmitter and receiver is today an indispensable prerequisite for the arrangement of multimedia environments within sporting events or other similar occasions. The use of light instead of radio waves to transfer data is an interesting alternative, which, under certain conditions such as a larger number of participants, can provide clear advantages. The challenge is to develop solutions that can connect high mobility expectations with high data rates.

The Red Bull Media House is a media company headquartered in Salzburg. Technological innovations are part of the DNA of the company, according to Andreas Gall, CTO of Red Bull Media House. "Application-oriented research is essential for us. Since its founding, Red Bull Media House has emerged as a spearhead in the media field. The development in the area of optical data transfer is no game for me, but a technology of the future that should be taken seriously, one whom we want to lend wings to".

Fraunhofer HHI activities in this optical mobile communication technology are of long date. Collaboration with industry is for HHI project manager Dr. Anagnostis Paraskevopoulos of great importance. "It is without question that VLC technology can transfer many innovative approaches into practical solutions. However, the litmus test for this technology will be done in a real-world setting. Together with Red Bull Media House, we are able to perform a targeted parameter optimization and promote specific applications along with product development".

FRAUNHOFER HEINRICH HERTZ INSTITUTE

The VLC technology

The demand for wireless communication networks within buildings will further increase during the coming years. The optical light communication offers an alternative, because it simultaneously uses LED-based light sources as data transmitters, which leads to a significant extension of network capacity while maintaining the mobility expected by the users. The optical data transfer avoids all electromagnetic interference with radio networks and is by definition radio-free.

Data rates of higher than 1 Gbit/s and latencies lower than 2 ms are possible with conventional LEDs, which allows for unproblematic broadband real-time video streaming in highest quality (2/4/8K). With only a few additional components, the standard LED light can be turned into a high performance optical WiFi transmitter. A special modulator turns the light diodes on and off in fast rhythm – this is how the digital information is transferred.

For more information about VLC technology go to: www.hhi.fraunhofer.de/vlc

Red Bull Media House is a multi-platform media company with a focus on sports, culture, and lifestyle. As an umbrella brand, we offer a wide range of premium media products and compelling content across media channels as diverse as TV, mobile, digital, audio, and print, with core media offerings that appeal to a global audience. Launched in 2007 in Salzburg, Austria, Red Bull Media House has become one of the world's leading media companies for creating premium content. The company operates a wide portfolio of channels and products for both special interest and broader audiences.

The **Fraunhofer Heinrich Hertz Institute** is a world leader in the development of mobile and fixed broadband communication networks and multimedia systems. From photonic components and systems through fiber optic sensor systems to video coding and transmission, the Fraunhofer HHI works together with its international partners from research and industry. www.hhi.fraunhofer.de

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The Fraunhofer-Gesellschaft is the leading organization for applied research in Europe. Its research activities are conducted by 66 institutes and research units at locations throughout Germany. The Fraunhofer-Gesellschaft employs a staff of nearly 24,000, who work with an annual research budget totaling more than 2 billion euros. Of this sum, around 1.7 billion euros is generated through contract research. More than 70 percent of the Fraunhofer-Gesellschaft's contract research revenue is derived from contracts with industry and from publicly financed research projects. International collaborations with excellent research partners and innovative companies around the world ensure direct access to regions of the greatest importance to present and future scientific progress and economic development.

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