

Scalable Video Coding over LTE – the Key to Mobile Live Streaming

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Press release from: [Fraunhofer Institute for Telecommunications, Heinrich-Hertz-Institut](#)

Fraunhofer Heinrich-Hertz-Institut realizes the first scalable video transmission via a 3GPP-LTE air interface at its LTE-Advanced Testbed in Berlin

Researchers at the Fraunhofer Heinrich Hertz Institute in Berlin have now succeeded in engineering the world's first reliable video transmission using scalable video coding over a LTE air interface. H.264/Scalable Video Coding (SVC) provides an interface for flexible, bandwidth-optimized transmission of broadcast video-streaming in 3G-LTE networks which has been integrated into the Berlin LTE-Advanced Testbed. Applications are broadcasting services with different levels of quality according to the available bandwidth. Unlike traditional broadcasting applications such as DVB-T, 'SVC over LTE' ensures reliable transmission of a basic video layer with the option to flexibly enhance the perceived video quality by transmitting additional data packets depending on the availability of bandwidth or improved reception conditions. (End of Abstract)

In mobile wireless networks the available bandwidth for each user varies considerably depending on the number of users, the position in the mobile radio cell or the capability of the end device. Bandwidth demanding services like video streaming, often suffer from interrupted transmission, especially in wireless networks. With 'SVC over LTE', there is now a technique available for future mobile wireless standards, e.g. LTE (Long Term Evolution), which uses several video layers ensuring a flexible response to changing user requirements, while always guaranteeing transmission of the video services with a basic video layer. The basic video layer benefits from a higher error protection but allows flexible changing or adding of further layers which enhances the video quality. On the other hand a bandwidth reduction leads to transmission of video with a reduced number of layers saving the battery life-time of mobile devices and therefore enabling energy-efficient and bandwidth aware live streaming. Quality-enhancing add-on layers can be received under good propagation conditions or with a more powerful end device.

These innovations by the Fraunhofer Heinrich Hertz Institute are critical for video broadcasting to a large number of mobile end devices as in video streaming services but can also be deployed as a unicast service like in video-on-demand.

Since November 2007 the Berlin LTE-Advanced Testbed has been testing future mobile radio technologies under real-world conditions. Development of the Testbed has been sponsored in parts by the Federal Ministry of Education and Research (BMBF) under promotion reference 01BU0631.

For more information go to www.hhi.fraunhofer.de/icc

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Fraunhofer Institute for Telecommunications, Heinrich Hertz Institute

World leaders in the development of mobile and fixed communication networks and their key applications

Founded in 1928, over the course of its more than 80 year history the Fraunhofer Institute for Telecommunications, Heinrich-Hertz-Institut,

has developed into one of the world's leading research institutes for the development of mobile and fixed communication networks and

the key technologies that drive them. Today's R&D focus is on electronic imaging and interactive media, communication networks and photonic components.

In 2008 the Institute had an operating budget of approx. 25 million Euro. The ratio of third party funding lay at 76 percent of

which 42 came from industry, 31 percent from contract research for the Federal Government and individual State Governments and 22 percent from funding by the European Union. At the beginning of 2009 the Institute had a staff of some 250 employees and some 80 students.

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