Breakthrough for mobile television

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Long Term Evolution, the new mobile telecommunications standard, will revolutionize mobile Internet. High transmission rates will soon be possible on mobile devices. For this purpose Fraunhofer researchers at HHI Berlin, Germany, developed the cross-layer design SVC over LTE -- a coding method that offers HD films in real-time in the appropriate format for cell phones or netbooks. The experts are presenting their solution in a live demonstration at the Mobile World Congress in Barcelona, Spain.

Clumsy page layouts, slow page load times of podcasts and videos: Today's mobile surfing on the Internet can be really a hassle. The available bandwidths on mobile phone networks vary widely, due to the number and mobility of the users, the location within the mobile network cell, or the capacity of the terminal. Particularly in bandwidth-intensive services, like video streaming, transmissions are frequently subject to disconnections, gaps or interruptions.

The mobile telecommunications standard of tomorrow - Long Term Evolution, or LTE for short - will change everything. It has a higher performance capacity than UMTS, and reaches download speeds being comparable to landline-based DSL broadband network. Not only e-mails and Internet traffic, particularly videos and mobile television benefit from LTE as the breakthrough for mobile Internet technology.

The "Multicore SVC Real-time Encoder" encodes a basic version of the video, the base layer, and places several enhancement layers in the SVC bit stream next to the base layer in one single processing step. Partial

decoding of the scalable bit stream allows graceful degradation and bit rate, format and power adaptation. LTE can now use a higher error protection to transmit the base layer. Thus, each mobile terminal can always decode the basic version of the video stream and guarantees the transmission of video services everywhere and for every given point of time. Under good network conditions, the mobile user can benefit from premium video quality by decoding additional enhancement layers.

The cross-layer design SVC over LTE, an invention by the scientists at the Fraunhofer Institute for Telecommunications, Heinrich Hertz Institute HHI in Berlin, are making high-resolution video encoding over LTE a reality. "SVC over LTE" responds to variable user demands with great flexibility, and enables for the first time seamless adaptive communication without annoying disruptions. Current postage stamp-sized, hiccupping video streams will be a thing of the past.

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