Television on the go

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Television via cell phone or PDA is an emerging market. At the IFA consumer electronics fair in Berlin, Fraunhofer researchers demonstrated how digital films can be transmitted to portable devices in good quality. The secret: dynamic bandwidth allocation using the DVB-H standard.

Mobility – a creed for the modern age. For many, this means constantly being on the move, whether it's in the car, on a train or in the air. Time spent on the road is not restricted to getting work done either. After all, everyone needs a break to catch the news, get the latest football results or to watch a favorite TV series. The demand for high quality video keeps rising. At the same time, consumers have more and more types of product and transmission media to choose from, particularly for mobile applications.

"Devices in the near future will contain three converging technologies: conventional television broadcasting, wireless technology and the Internet," says Thomas Schierl from the Fraunhofer Institute for Telecommunications in Berlin. "This means everyone will have ubiquitous access to special TV programming – perhaps some even tailored to the user's location." Supplementary information such as related Web pages can also be called up. In addition, users can surf the Internet and receive E-mails in typical fashion. All of this is possible using the Internet protocol – or IP as it's called.

At the IFA in Berlin, Schierl and his team showcased a digital television system for mobile devices based on the Digital Video Broadcasting for

Handhelds (DVB-H) standard. The system provides good quality video transmission while optimizing the use of the available DVB-H channel. This is a key feature because with DVB-H, multiple television programs share a single channel. Different types of broadcast require different data rates. During a news broadcast with an announcer, the frame rate – the speed at which the images change – is less than when transmitting a track and field event, a football game or an action film. "It can happen that one station doesn't need to send at the maximum data rate to achieve optimal quality, while at this same point in time another station needs the full bandwidth."

"We developed a live server system that dynamically allocates transmission rates for each program," explains Schierl, who adds that the principle is referred to as statistical multiplexing. At the IFA, the researchers even demonstrated the system's capability to send live broadcasts to cell phones. Special servers encode the live images and align the video data rates across the individual programs within the DVB-H channel.

Source: Fraunhofer-Gesellschaft