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Innovative Technologies Enhance Mobile Phone Services

The Hong Kong University of Science and Technology (HKUST) has developed a new video streaming technology which enables mobile-phone users to receive any video source and play it on their handsets in real time, with equally high quality, but at a significantly low cost.

This is the first ever video streaming system for mobile phones based on Audio Video coding Standard (AVS) technology. AVS is a new coding standard for compressing digital audio and video and has been developed in China.

The technology can be applied to numerous products and mobile communications services, such as video transmission in 2.5G and 3G systems, mobile TV streaming systems and mobile video surveillance systems. Users can monitor what's going on at home while they are out at work, check the traffic situation before deciding on their route, or watch live TV broadcasts of their favorite programs, such as horse racing or breaking news.

Content played in AVS format guarantees high video quality similar to H.264, and is significantly better than the popular H.263 and MPEG-4 formats commonly used in handsets, but uses as little as half the file size.

Dr Oscar Au, Director of the Multimedia Technology Research Center and Associate Professor of Electrical and Electronic Engineering, said: "Low cost is an added value of this technology. Unlike other dominant coding standards, AVS does not require royalty payments from operators. Consumers can now enjoy high-quality service at a lower cost."

Keeping ahead of the ever-changing mobile communications market, HKUST has also developed a transcoding technology which enables a 2.5G mobile phone to receive and play video content from a high-performance 3G handset.

This is made possible by converting between different formats of video coding, or between video and images. The transcoder is capable of converting video content between AVS, H.264, H.263, MPEG-4 and MPEG-2, or JPEG, JPEG2000 into animated GIF format.



Dr Oscar Au



Comparison of picture quality between H.263 and HKUST's video streaming technology (right)



Mobile communications operators, content providers and eventually mobile-phone users will all benefit from this technology as it helps solve the problems encountered in transmitting Multimedia-Messaging-Service (MMS)

Prof Wen Gao, Chief Scientist of the Institute of Computing Technology of CAS and HKUST's research collaborator, introduces AVS

messages arising from incompatibility of different platforms or different handsets.

The development of these multimedia technologies is supported by the government's Innovation and Technology Fund and in partnership with the Institute of Computing Technology of the Chinese Academy of Sciences (CAS), local telecommunications operators and content providers.