Insight into future of ultra-HDTV live stream technology

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Pioneering research at the University of Essex into making ultra-high definition TV (UHDTV) available to the masses will be showcased at the world's biggest international broadcasting event this week.

The technology has already been used to successfully live stream the University's Graduation ceremonies across the globe earlier this year via the internet and will now form the basis of new research into the challenge of live steaming 8K images, which are 16 times higher resolution than current HD.

Led by Professor Stuart Walker, from the School of Computer Science and Electronic Engineering, the team at Essex managed to live stream the 4K UHDTV – four times the current HD resolution – by adapting off-the-shelf video compression equipment.

The beauty of their project is that they were able to compress the ultra-high definition image so it could be live streamed at just 8 Mbit/s via ordinary broadband connections without loss of quality and in real time – avoiding the frustrations of waiting for the stream to buffer.

"This type of live streaming involves a huge amount of raw data, equivalent to about 63,000 phone calls being made all at once. It was a major challenge to be able to compress this signal to a size which could be accessed by even the most basic broadband connection around the world. But we did and the results were amazing," explained Professor Walker.

To fully appreciate the high quality image, the recipients would have needed a special 4K TV, but with prices becoming more affordable for these high-tech TVs it is only a matter of time before they are commonplace in homes.

"The barrier for 4K images being streamed to homes is artificial," added Professor Walker. "We have shown that by using off-the-shelf equipment we can deliver live 4k streaming so it is accessible to most people in the planet."

The team will now focus on the challenge of making live 8K images affordable to all by compressing the data so it too can be live streamed via regular broadband connections.

Their research will be showcased at the International Broadcasting Convention (IBC 2014) in Amsterdam, which starts on Thursday.

Provided by University of Essex