VISUALISE

Radically enhancing the spectator experience at public events

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If you are interested in participating in or sponsoring collaborative research, then contact 3C Research.

Communications, computing and content research

3C RESEARCH

Communications, computing and content research

VISUALISE

Visually improved Spectator Experience

What is the problem ?

Spectators at large-scale events tend to have a poor experience, often due to their location and the lack of information and personalized content. Large-scale public media-centric events are commonplace, for example, the World Rally Championship, Formula One, the Olympic Games, Glastonbury, and the British Open. Typically such events demand and deploy a huge infrastructure of production and transmission equipment with many fixed and portable cameras. Most of the content is never made available to local spectators except through a single feed of edited output to portable TVs or large screen displays.

Goals

- To develop video compression and streaming techniques that work effectively with low cost wireless broadband networks.
- To integrate fixed (service park and trackside) and mobile (in-car) cameras into a live-viewing infrastructure.
- To develop enhanced spectator interactivity using standard mobile terminals (i.e. mobile phones and PDAs).
- To integrate live timing and GPS data in a seamless Visualise interface.
- To analyse and enhance the performance of current (WiFi and HSPA) and emerging (WiMAX and LTE) wireless techniques.
- To allow rapid planning and deployment of networks through the exploitation of advanced propagation modelling tools.
- To provide content management, distribution and integration with the existing broadcast infrastructure.
- To develop a demonstrator, hosted by ISC (International Sportsworld Communicators) at the UK stages of the 2006 and 2007 World Rally Championship.
- To investigate business cases and charging models.

Achievements

The Visualise team has developed:

- A complete hardware/software system to deliver the Visualise experience.
- A wireless module to track and store the location of all drivers in the WRC.
- A low-cost mobile camera acquisition system using long-range WiFi links to stream IP-TV content directly to mobile terminals and the Internet.
- An in-car audio-video system to stream live content to spectators.
- A rugged H.264 AVC encoder to compress, packetise and serve live IP video streams at 256 kb/s.
- A Windows Mobile interactive GUI with integrated multi-channel video.
- Dynamic selection of live video streams based on user preferences (i.e. follow a specific driver or watch content from a particular location).
- An advanced computer network that operates anywhere on the planet by combining satellite access to the Internet (BGAN) with local WiFi, cellular and WiMAX communications.
- GPS tracking and live interactive map displays.
- World-leading simulation models of multiple-antenna enhanced WiFi and WiMAX communication systems.
- Novel video compression algorithms to reduce data rates and enhance tolerance to dropped packets.

A variety of exploitation routes are being investigated.

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