

Delivering the World's First UHD IP Remote Production Trial



Snell
Advanced
Media

Case study

UEFA live remote UHD production tests used SAM technology during the 2017 UEFA European U21 Championship Final.

Gearhouse
& UEFA

Kahuna
LiveTouch
Orbit

Live broadcasts of major sports tournaments, especially those that take place over multiple days and in multiple locations, is a huge undertaking. It normally requires multiple large outside broadcast trucks, a team of production staff, a team of technical staff to set up ahead of the event and metre upon metre of cabling.

Remote production has been trialed as an alternative before, but with UHD now a de facto format for high-end sports production, the bandwidth requirements make it a more complex and expensive business. Until now.

UEFA contacted SAM and Gearhouse Broadcast to examine how this could be done more efficiently, and whether it could be achieved without the need to compress and decompress UHD signals.

Early discussions about this project started back at the beginning of 2017 with UEFA setting out its requirements for a remote production trial. In early March 2017, UEFA confirmed the date and venue for the trial, deciding on the 2017 UEFA European Under-21 Championship Final, held in Poland in June.

UEFA identified IP technology as the only viable solution to meet their exacting technical requirements. Working closely with Gearhouse Broadcast, to ensure the system design would result in smooth integration with the rest of the workflow, SAM delivered a complete – ready configured – Proof of Concept (POC) IP-based remote production system.

Simon Nicholls, System Designer, Gearhouse explains, "Gearhouse approached SAM for an IP solution and 4K workflow as we knew that they have proven technology and a range of products that fitted perfectly into this model. This was to be a test at the very edge of innovation and as such required a manufacturer who we could trust. Gearhouse have been researching and working live more and more in remote production to deliver solutions that production companies will find both efficient and exciting."

The POC system comprised SAM's IQMIX (SDI) and IQAMD (MADI) IP conversion cards, Orbit IP Routing Control System and MV820 2RU Multiviewers. SAM's Kahuna production switcher and its LiveTouch replay and highlights system were also part of the workflow. In addition, SAM provided and commissioned the Cisco Nexus network infrastructure and Tektronix PTP Grandmaster timing solutions for the trial.



This was to be a test at the very edge of innovation and as such required a manufacturer who we could trust.



Case study

On Friday 30 June 2017, the day of the Championship Final, the system went live on-air with UHD signals from five Sony HDC 4300 4K/HD cameras at the stadium sent to London via a specially installed and commissioned pair of fully redundant 100GbE Ethernet links, provided by Level3, Orange and BT Sport. As a multi-vendor, multi-hop network, the logistics had to be carefully managed.

The signals were delivered to UEFA at BT Sport's facility at the Queen Elizabeth Olympic Park in London – around 1600km away, ready for live edit and playout. BT Sport had a dedicated production control room set up with a Director, Vision Mixer, PA, Graphics, Audio Supervisor, LiveTouch operator and Producer.

The LiveTouch server was used in a 2 in/2 out UHD configuration to play UHD replays, packages and graphics. The LiveTouch replay workstation also offered a complete craft editor offering a powerful creative toolset unique to LiveTouch, enabling operators to instantly trade media from edit to live.

The trial represented a milestone on several fronts. It was the world's first uncompressed UHD remote production workflow using IP technology and was also conducted over the longest distance yet for a remote production operation. Other than the camera rigs and camera operators on location at the stadium in Poland, there were no other technical facilities or personnel on site. The workflow deployed by Gearhouse and SAM was able to completely eliminate the need for an OB presence during the live game.

Robert Szabó-Rowe, EVP and General Manager, Live Production and Infrastructure at SAM comments, "This project is a real milestone for remote production, and we are very proud to be part of it. It is the first time that uncompressed UHD signals have been delivered over such a distance with ultra-low latency. The production team didn't see any perceived difference to sitting in an OB truck on location and that for us is a testament to how effective the SAM remote production technology is."

