

SAM delivers 4K 60p post at the 2014 FIFA World Cup™



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Media

Case study

Quantel Rio and Rio Connect power realtime high resolution post production for world's first major 4K event.

FIFA World
Cup 2014

Quantel Rio
Rio Connect

The 2014 FIFA World Cup™ was the first major event to be given extensive 4K coverage thanks to Sony's partnership with FIFA, which promised to deliver "a whole new viewing dimension and...the dawning of a new era in the broadcasting of sport." Reaction from everyone who has seen the results seems unanimous – 4K is brilliant for sports coverage and the World Cup viewed in 4K was indeed a whole new experience.

SAM played a key role in delivering that experience – by providing a Quantel Rio color and finishing system with Rio Connect shared storage for 4K 60p post production. The brief included the posting of 11 two minute promo packages from 11 of the World Cup games that needed to be edited, color corrected, finished and delivered overnight for next-day viewing in 30,000 Sony Stores worldwide to promote Sony's new 4K TVs. They were also shown on giant screens in fan parks around Rio de Janeiro. Four games were shot in 4K 60p by Sony/HBS, and further eight games were shot at 8K Super Hi-Vision by NHK using experimental cameras, and footage from these downconverted to 4K 60p and included in the promos. The Final itself was shot in both 4K and 8K.

Also required was a further promo trailing the Official 4K Film of the 2014 FIFA World Cup™ as well as making half hour selects packages from 11 matches from which the Official 4K Film would subsequently be edited. All in all, a major undertaking judged by any standards – let alone when working at 4K 60p.

Choosing the right system

Sony World Cup 2014 Programme Manager, Mark Grinyer, retained freelance colorist and workflow consultant, Richard Hingley, to research and recommend a suitable post production system capable of handling the demands of realtime 4K 60p and then to travel to Rio de Janeiro to back his judgment by handling 4K post on-site as 4K Editorial Supervisor. "There are a number of systems that claim to be able to handle 4K 60p, but the key issue we needed to nail was speed of turnaround," Hingley recalls.

The system specified by Hingley had around 60TB of shared storage with two Quantel Rio 4KO systems connected – one to handle realtime recording and viewing, the other for simultaneous shot selection, editing, color correction and finishing. The system was also required to soft mount XAVC files from a Sony server or from disk; live games would be recorded into the SAM system as well as onto the XAVC server. "We had to do it this way so that we always had a back-up, and the XAVC recording was also required by FIFA for its archive," Hingley explains.



The clincher for us was the unique ability of SAM's Quantel Rio/Rio Connect system to record 4K 60p live into the system and to be able to start editing the material as it came in," Hingley continues. "SAM had the only viable solution.



Off to Rio

The Quantel Rio/Rio Connect system was first assembled and extensively tested at SAM's Newbury, UK headquarters and then flown out to Brazil and set up in a special area of the International Broadcast Center, which was located 25 kilometers from the Maracanã stadium where the 4K match shoots were carried out. The matches shot in 4K were Colombia v Uruguay on 28th June in the Round of 16, the France v Germany Quarter Final on 4th July, and the World Cup Final itself between Germany and Argentina on 13th July. In addition, extra 4K footage was shot by roving crews around Rio on the three match days to be edited together with selected actual match footage to produce the 4K promo packages for each match.

The process of creating the promo packages was done in two stages. First Hingley created about half an hour of selects for each game, taking the live feed from the 4K production OB truck or the down-converted 8K feed from NHK. The selects will go on to form the basis of the Official 4K Film of the 2014 FIFA World Cup™ which will be edited later in 2014 for release around Christmas time. He then edited down these selects into the two minute promos. "Playing back 4K 60p is not easy. The real reason we chose SAM was to enable us to do live 4K 60p recording as well as XAVC soft mount, and to create the selects and begin editing the promos as the media was being ingested live," says Hingley.

All the tools

"Obviously I made a lot of use of Quantel Rio's editing toolset to create the promos, but I also used the color toolset a lot more than I thought too. For example, because the NHK Super Hi-Vision cameras were development models, they were sometimes not matched, so I had to do some color correction on the promos to ensure color continuity between the 8K-originated footage as well as of course harmonizing it with the 4K F55 footage. In fact, I completed all the selects, edits, finishing, color correction, audio and the titles on the SAM system – it really is a complete color and finishing environment with all the tools you need on-board," says Hingley.

Virtual time-saving

When each promo was complete, they were encoded directly from the Rio thanks to virtualization via the Gateway, which saved at least an hour of export time per package. Once encoded, the promo was uploaded to Sony's Ci media cloud service for distribution. "The hour saved proved to be a real life-saver when HBS announced that they were turning off the power to the IBC at midday on the day after the Final," Hingley remembers. "I would never have had time to output all the material as DPX files in time, but because Sony could look into the GE2 and see the promos as DPX files and start encoding directly from them, we managed to beat the power-off deadline."

A fly in the ointment

The generic background used in interstitials throughout the tournament was based on a 4K close-up shot by FIFA of a real flag rippling gently in the breeze. "They had used this extensively for interstitials in the live broadcasts and we wanted to incorporate it into the 4K promos as well," Hingley remembers. "But when we looked at it in 4K on the Quantel Rio, I could see a little black splodge on the flag, which then started to move across the flag... I zoomed in and there it was – a fly, crawling across the flag! So using Pablo Rio's built-in paint and retouch tools, I masked it, tracked it and painted it out – simple as that.

It's all in the detail

"That's the thing about 4K – you can see an incredible amount of detail. It was great watching the reaction of people who hadn't seen 4K before as they walked up to the screen. With HD, the closer you get to the screen, the less detail you see; with 4K, the opposite is true - you can pick out all the faces in the crowd; the closer you get, the more detail you can see - a really amazing experience."

"Looking back on the whole thing, Sony just wanted to know that the SAM system would just turn on, record and output – which is precisely what it did. In fact, apart from the extra detail you are working with, there is no discernible difference between working with HD or 4K on the Quantel Rio and GE2 set-up – it is just as fast and responsive," Hingley says.

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"It was amazing to be part of something that was new and different – something that had never been done before. It was pretty amazing working with Stereo3D at the 2010 World Cup in South Africa, and I thought that couldn't be beaten, but the effect that the 4K images had on viewers at this World Cup was massive. And of course the SAM system worked flawlessly throughout, making my job a real pleasure - despite the grueling hours!" Hingley concludes.

At a glance

- SAM supplied a Rio Connect system with two Quantel Rio 4KOs for production of 4K 60p promos at the 2014 FIFA World Cup™
 - This was the first major event ever to be shot in 4K 60p
 - 11 two minute promos were produced over the course of the World Cup and sent around the world for next day showing in 30,000 Sony stores and fan parks
- The complete post production, including selects, editing, color correction, finishing and titles were all done on Quantel Rio
 - "The SAM system worked flawlessly throughout, making my job a real pleasure," says 4K Editorial Supervisor, Richard Hingley



The Quantel Rio finishing suite - Richard Hingley's nerve center! HBS' International Broadcast Center was set up at the Riocentro exhibition complex outside Rio de Janeiro, so not only did all the equipment have to be assembled but temporary rooms also had to be constructed to contain all the individual operations – hence the chipboard walls!