

SONY

4K

4K Live Production System

at FIFA Confederations Cup 2013

Reality, Emotion, Excitement

4K Live Production Delivers True-to-life Sports Entertainment

In June 2013, Sony successfully completed a live 4K production trial at the 7th FIFA Confederations Cup which took place in Brazil. The trial was conducted at the Estadio Mineiro in Belo Horizonte, one of six stadiums used in the 2013 football tournament. Together, the Sony/FIFA team produced three matches, utilizing the world's first purpose-built 4K mobile production unit supplied by the leading UK-based company Telegenic.

By fully exploiting advanced 4K technology, Sony is continuously improving the delivery of true-to-life reality, emotion, and excitement, helping audiences to feel as if they're really there.

FIFA and Sony pioneered the use of 4K technology at the FIFA Confederations Cup Brazil 2013



Niclas Ericson, FIFA TV, director

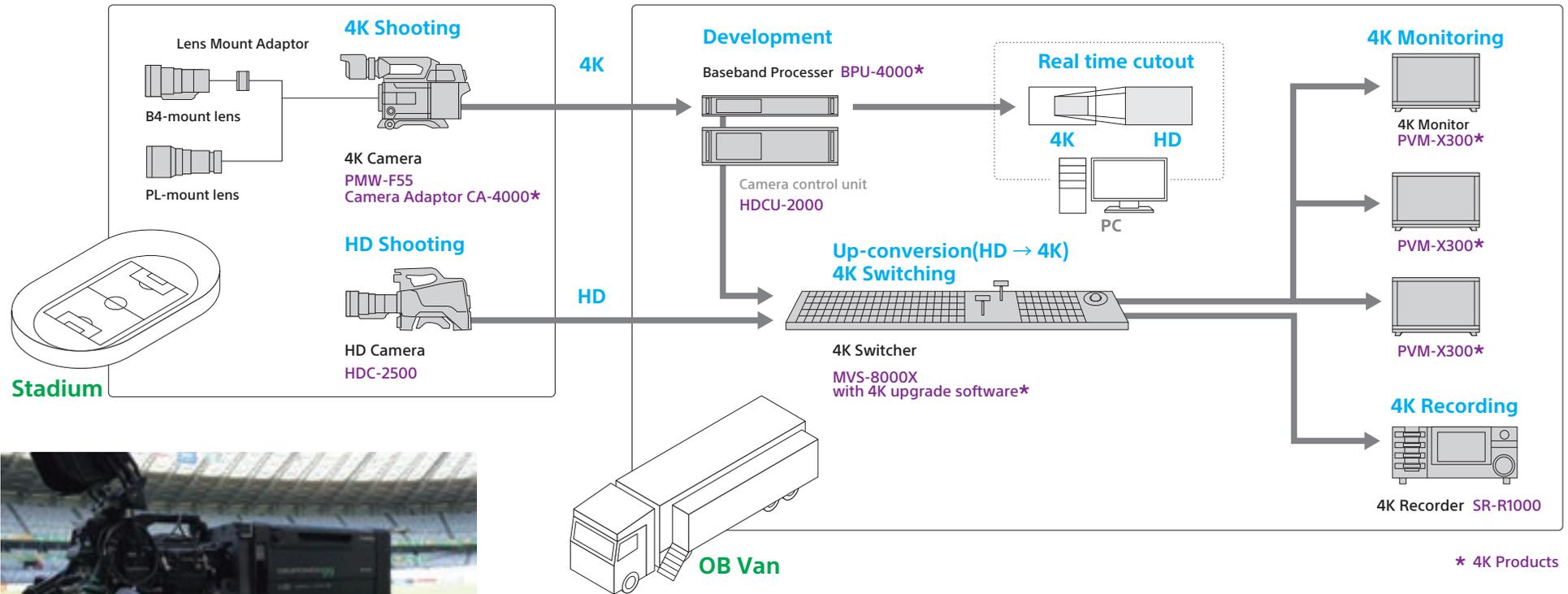
FIFA TV and Sony 4K project

"It is very important to offer the best quality coverage possible at FIFA Events and to meet the expectations of our football fans around the world. FIFA TV has therefore been pioneering new television technology at recent FIFA tournaments.

"The first 4K live production technical trial that took place during the 2013 FIFA Confederations Cup, partnering with Sony, stretched the boundaries of live sports broadcasting by trialing new technology and production approaches. New technologies such as 4K Ultra HD enable us to deliver sharper images, better sound, deeper expression and emotion capturing all the action on the pitch and connecting football fans with the game in a way we have never seen before."

"So the question now is how we can get it financed. The production in Belo Horizonte proved that there could be a number of options that can swing costs higher or lower depending on the equipment and system being used. We are working with Sony to ascertain the most efficient workflow."

4K Production Trial at FIFA Confederations Cup 2013



Sony is continually seeking ways to apply 4K technology, and is making every effort to create high-quality footage capable of transporting audiences with an immersive, true-to-life experience. This time, Sony took on the challenge of 4K live shooting and production at the FIFA Confederations Cup 2013.

As the trial was undertaken in the context of 4K broadcast capabilities of the near future, Sony chose to shoot, switch, and record the matches in 3840/59.94p format. To demonstrate effective use of existing assets, a newly developed lens mount adaptor attached to the PMW-F55 enabled the camera operator to mount an HD broadcast box lens and cinema

zoom lens. For a 4K switcher, a current MVS switcher was upgraded to 4K with special software. The 4K recorder was a current SRMASTER™ recorder, which can also be used for HD. A 30" 4K LCD monitor was able to fit into the limited space of an OB truck to monitor 4K images.

Overall, results were very encouraging. The broadcasters and camera crew who attended the test were satisfied with the quality of the 4K live image. What's more, they were also impressed by Sony's technology and the idea that a 4K system is switchable to an HD system, achieving very high efficiency as well as cost savings.

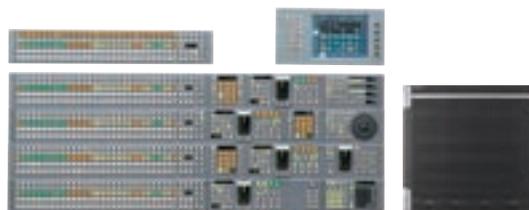
4K Product Highlights



4K Live Camera System

The PMW-F55 4K CineAlta™ camera utilizes a modular design, allowing the setup to be quickly changed between movie and live modes. It's ideal for live 4K shooting when used in combination with other live 4K production equipment.

- Super 35mm 4K CMOS Image Sensor
Accepts PL lenses
- CA-4000 Camera System Adaptor
Sends over a SMPTE fiber cable; supports system operations (intercom, tally, return)
- BPU-4000 Baseband Processor Unit
Real-time 4K digital processing, with simultaneous down-converted HD output
- HDCU-2000 Camera Control Unit
System interface and camera power supply
- LA-FZB2 Lens Mount Adaptor
Accepts a B4-mount lens; includes motorized ND and CC filters



MVS-8000X Multi-format Switcher

Sony's flagship switcher; 3G (1080p), single-link
Optional software upgrade adds 4K support
Optional 4K format converter board (MKS-8460X) enables high-performance HD-4K up-conversion

- At SD, HD, or 1080p: Up to 5 M/Es, 164 inputs, 68 outputs
- At 4K (QFHD): Up to 2 M/Es, 41 inputs, 16 outputs



SR-R1000 SRMASTER™ Storage Unit

This high-speed multi-channel recorder accepts up to four SR Memory cards at one time, and supports multi-camera shooting, slow-motion replay, and other live production features. Its high-speed multi-ingest capability enhances production efficiency in many different venues.

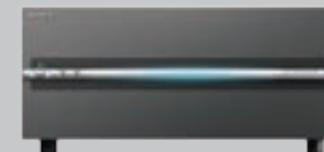
- Industry-standard HDCAM-SR™ codec, MPEG-4 simple studio profile (SStP)
- Accepts up to 4 TB of removable storage



PVM-X300 4K LCD Monitor

This professional 30-inch 4K (4096x2160) LCD delivers powerful monitoring at high-resolution production venues.

- Optional 4K SxS™ player replays SxS memory cards recorded on the PMW-F55 camera



PWS-4400 Multi Port AV Storage Unit

Suitable for both 4K and HD production, this unit records 4K and HD video using as many as four 4K channels through the very efficient XAVC video format. In 4K workflow, a 4K XAVC file is generated and is easily handled in non-linear editing systems (NLE). Smooth and intuitive user interface is provided by a control software with touch panel operation and an attached controller. 4K and HD video clips are able to be transferred interactively to and from external recording media through a media operation software.

- Internal storage: 2 TB standard (up to 8 TB as an option)
- Up to 240/200 fps HD slow-motion playback (4x slow motion when using 60/50 fps)

Sony's Promise to Professional Creators



4K Live Camera System : PMW-F55/CA-4000



Multi-format Switcher System: MVS-8000X Series



SR-R1000 SRMASTER Storage Unit



PWS-4400 Multi Port AV Storage Unit



PVM-X300 4K LCD Monitor

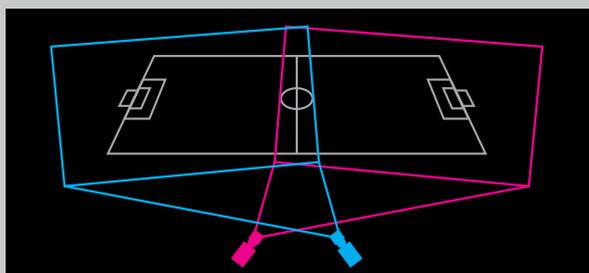
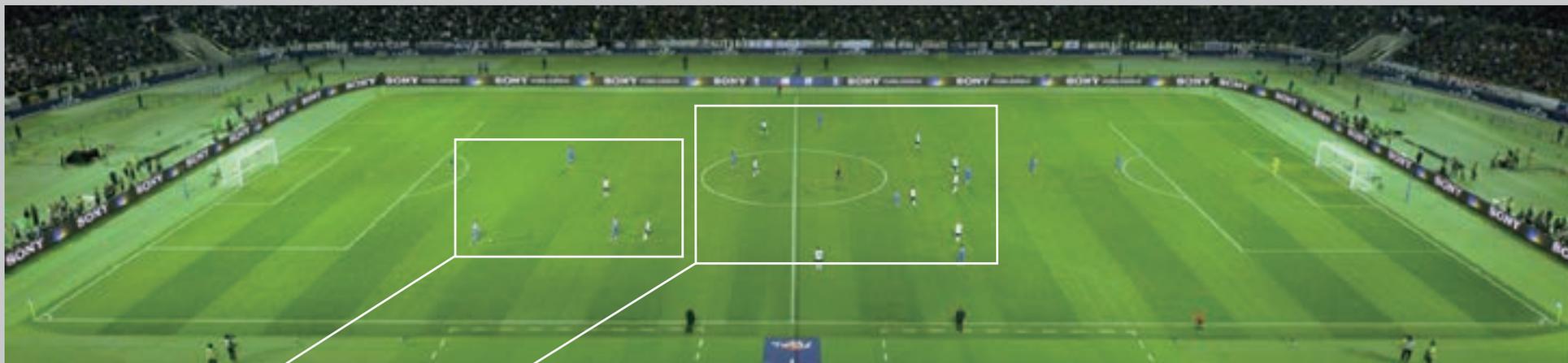


SRX-T615 4K "SXRD" Projector

No longer a distant dream, 4K live production is now readily available to professionals. They can begin by adding some essential 4K devices to their current HD live systems. And it's not just 4K cameras; Sony has also developed key products, systems and workflows from shooting to viewing for 4K live production.

Sony's promise to professional creators is best-fit 4K live production systems enabling them to deliver 4K live viewing experiences with true-to-life reality, emotion, and excitement – exactly what's required for audiences to feel as if they're really there. And Sony aims to provide innovative new workflows that considerably enhance and extend the creative potential of 4K technology.

HD Production Enhancements with 4K Technology



4K Stitching Software captures every exciting moment

PWA-4KS 4K Stitching Software composes an 8K x 2K -wide view of an entire field of coverage, such as a football pitch, shot by dual 4K cameras. Any area on the composed view allows extraction of up to two HD views as if they were cutout images. By shooting the complete field of coverage, there's no chance of missing a single moment of the action.



Telestrator Software adds more entertainment value to your images

Using PWA-TS1 Telestrator Software with the 4K Stitching Software, users can add various graphics and player information to the HD cutout views (for example, a player's name, score, tracking information, and more). This capability can significantly raise the entertainment value of a live sports broadcast.

Note: Player data supplied by Sports VU System, STATS LLC (USA).



High-frame-rate HD capturing for impressive slow-motion images

A 4K live camera system also provides new added value in HD production. The PMW-F55 incorporates the Super 35mm 4K CMOS image sensor, enabling capture with four times the resolution of HD. Utilizing this in HD shooting, users can achieve extremely high-speed capturing at a maximum of 240/200 fps. Users can record 240/200 fps images captured by the PMW-F55, the CA-4000 camera adaptor, and the BPU-4000 base-band processor unit to the PWS-4400 Multi Port AV Storage Unit, which can replay the video at 4x slow motion (60/50 fps). This capability allows for strong highlighting of selected sports action, greatly enhancing the sports broadcast.

Reality, Emotion, Excitement...

Truly Immersive 4K Experience

By continuously innovating ideas and technology, Sony delivers impression beyond imagination, with viewing experiences that touch the heartstrings.

©2013 Sony Corporation. All rights reserved.

Reproduction in whole or in part without written permission is prohibited. Features, specifications and design are subject to change without notice.

"SONY", "CineAlta", "HDCAM", "SRMASTER", "HDCAM-SR", "SxS" and "XAVC" are trademarks of Sony Corporation.

All other trademarks are the property of their respective owners.