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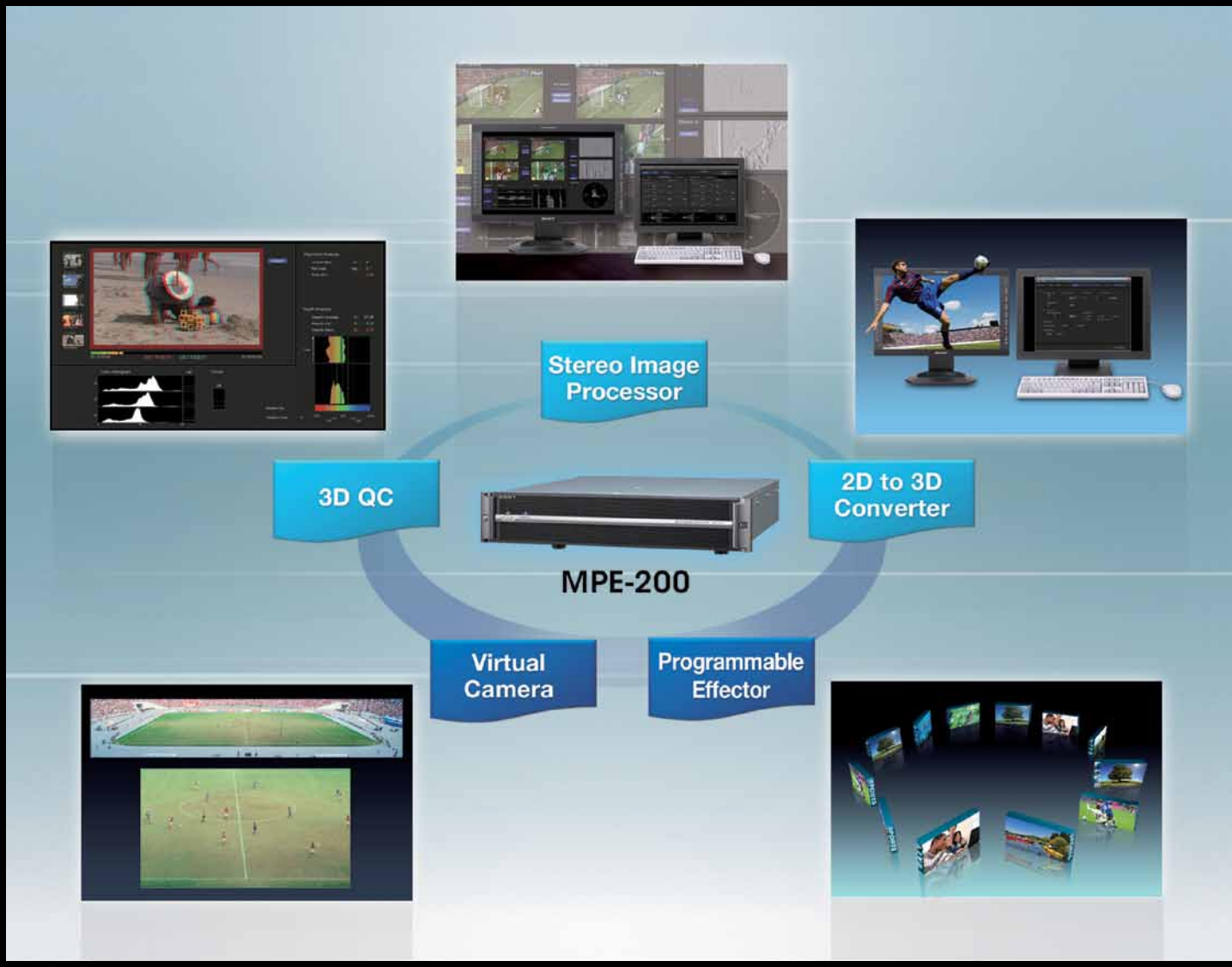


MPE-200 Series

Multi Image Processor and Software

MPE-200
Multi Image Processor

MPES-3D01
Stereo Image Processor Software

MPES-3DQC1
3D Quality Control Software

MPES-2D3D1
2D/3D Converter Software

MPES-FX01
Programmable Effector Software

MPES-VC01
Virtual Camera Solution Software

MPE-200 — Multi Image Processor

The MPE-200 is a versatile, multi-image, high-speed processor that can perform real-time signal processing of high-definition (HD) live image inputs and output images in real time. Equipped with a Cell Broadband Engine (Cell/B.E.) high-performance microprocessor and RSX graphics processor, it receives up to four HD signal inputs and performs real-time signal processing via software.

Several software applications can be installed together in a single MPE-200, and users can switch between applications as required via a computer GUI. The MPE-200 platform line-up includes MPES-3D01 – Stereo Image Processor Software, MPES-3DQC1 – 3D Quality Control Software, and MPES-2D3D1 – 2D/3D Converter Software to enhance 3D production creativity and productivity. Other highly sophisticated solutions include MPES-FX01 – Programmable Effector Software for advanced and striking visual effects, and MPES-VC01 – Virtual Camera Solution Software for virtual panoramic images.

MPES-3D01 – Stereo Image Processor Software

Operated from a computer connected to the MPE-200, this software allows users to correct alignment and color errors produced when capturing 3D images with two cameras. Simplified alignment operation greatly reduces the time-consuming task of mechanical fine adjustment, while excellent performance makes this software ideal for a wide range of 3D shooting and live production applications.

Camera Alignment Correction and Color Matching

Users can make corrections for right/left camera optical axis shift, alignment, roll shift, keystone distortion, and other alignment errors, and adjust white balance, black balance, gamma curve values, and signal level to achieve color matching for images from the right/left cameras. Some automatic adjustment functions such as auto alignment and auto color matching are provided.

Image Quality Improvement when Zooming

Using lens information such as the focal length obtained from the camera, camera alignment is corrected automatically according to the zoom setting. And precise adjustments are made using Keyframe Editor for optical axis shifts and image scale differences caused by zoom operation.

3D Image Appearance Adjustment

The final appearance of the 3D image produced by video signals from the right/left cameras is modified via digital signal processing, changing the toe-in angle and right/left camera inter-axes distance. Users can set a limit on the correctable range beforehand.

Metadata Server

The metadata server allows users to use an HTTP server to send data to a web browser or to a client software application.

PMW-TD300 and Rig Controls

It supports Sony PMW-TD300 camcorders and rigs manufactured by 3Ality Technica*. When connecting to a rig control system, users can control rigs remotely from the GUI, including the toe-in angle between the right/left lenses of the PMW-TD300.

* For details on supported rigs from other vendors, please contact a Sony service representative or dealer.

Waveform Monitoring Display

— Waveform and depth information display

Waveform display shows the waveform of a specified waveform area, and color components are shown as vectors. Depth information display shows the depth information calculated from the horizontal shift between the right/left signals.

— Monitor output format

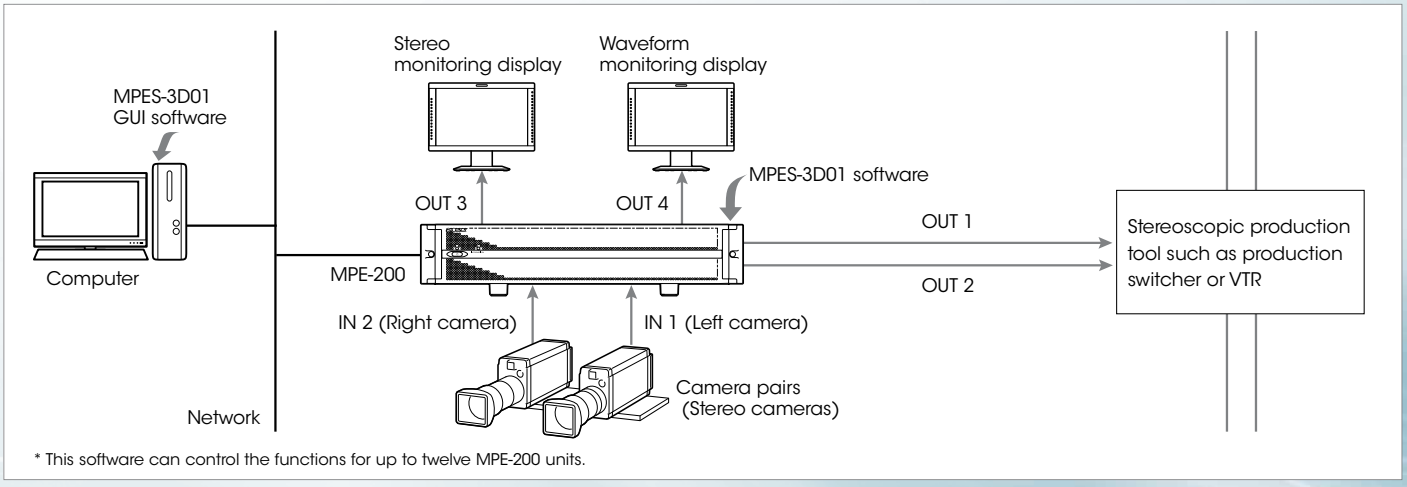
Users can select a monitor output format to facilitate stereo image alignment:
Side by Side, Above Below (Top and Bottom), Left Only, Right Only, Anaglyph, 50% Mix, Difference, Checkerboard, Split Screen

Depth information display

The section exceeding a specified threshold

Depth information distribution

System Configuration Example



* This software can control the functions for up to twelve MPE-200 units.

MPES-3DQC1 – 3D Quality Control Software

Operated via a web browser from a computer connected to the MPE-200, this software allows users to control the quality of 3D images by analyzing disparities and distortions in the 3D image signals in real time. Using the measurement and analysis results to correct errors, it greatly improves efficiency during post-production.

3D Image Quality Control Analysis

The software provides highly accurate 3D image quality analysis of every single frame or field for alignment errors, excessive depth, color and brightness differences, and focus differences, and displays the analysis results in real time on a display connected to the MPE-200 unit. Those issues were previously checked with the naked eye.

Quality Control Result Output

Measurement data for disparities and 3D image distortion are output together with time code information as log data, and problem points are clearly displayed in a list. By using this information, the software greatly reduces post-production editing procedures.

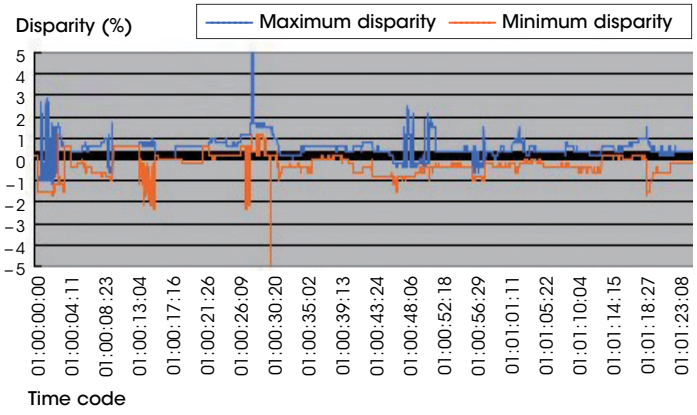
VTR Control via Web Browser

Users can control a VTR from a web browser to go back to any analysis point and check the video.

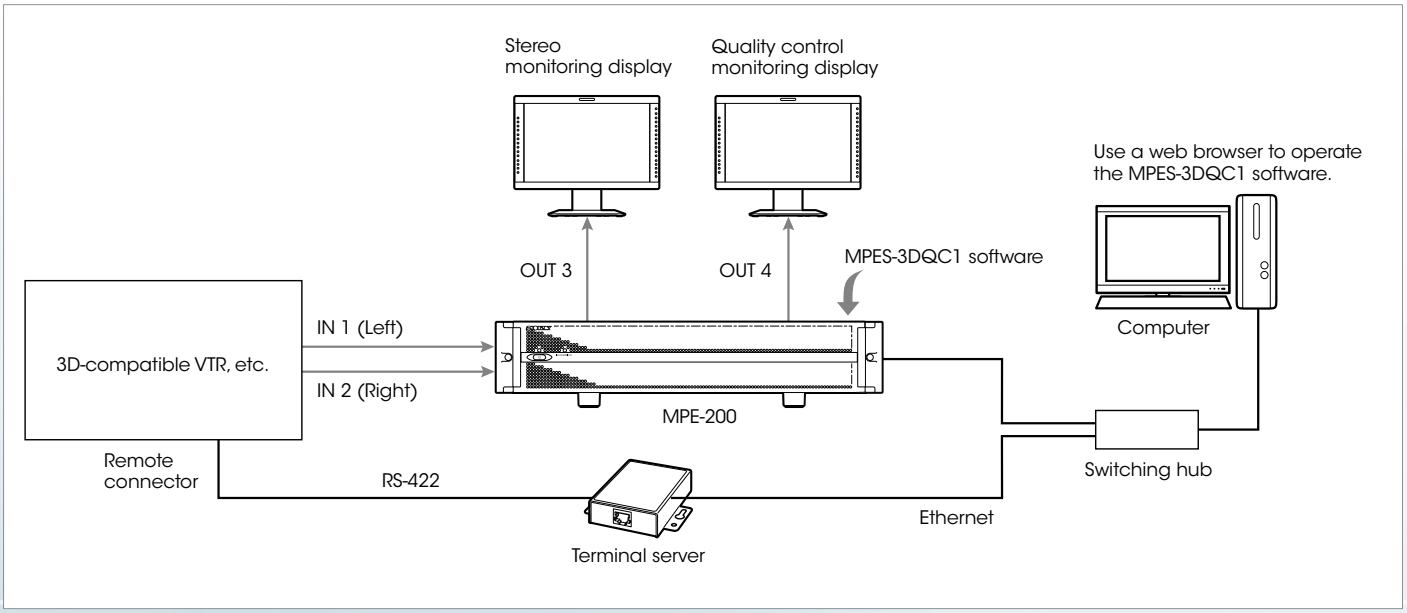
Report Creation

Analysis results for each frame or field are output in XML file format, and summaries are output as reports in PDF format. In addition, by reading XML files in spreadsheet software to create highly accurate graphs or other indexes, content producers and graphic operators can use the mathematical analysis results of 3D effects to improve content quality.

Disparity graph example created by spreadsheet software



System Configuration Example



MPES-2D3D1 – 2D/3D Converter Software

This 2D/3D converter software converts 2D images to 3D in real time. 2D images input from video devices connected to the MPE-200 are converted into natural-looking 3D images with minimal faults by Sony's proprietary algorithm. Impressive high performance, together with versatile and user-friendly operability, make this solution ideal for incorporating 2D elements into a 3D production.

Depth Perception Adjustment via Computer

Operated via a GUI from a computer connected to the MPE-200, this software allows users to adjust the depth perception of a part of the image and the depth perception of the entire image.

Up to Four Video Signal Inputs

Up to four input signal lines are available, one of which can be switched to output.

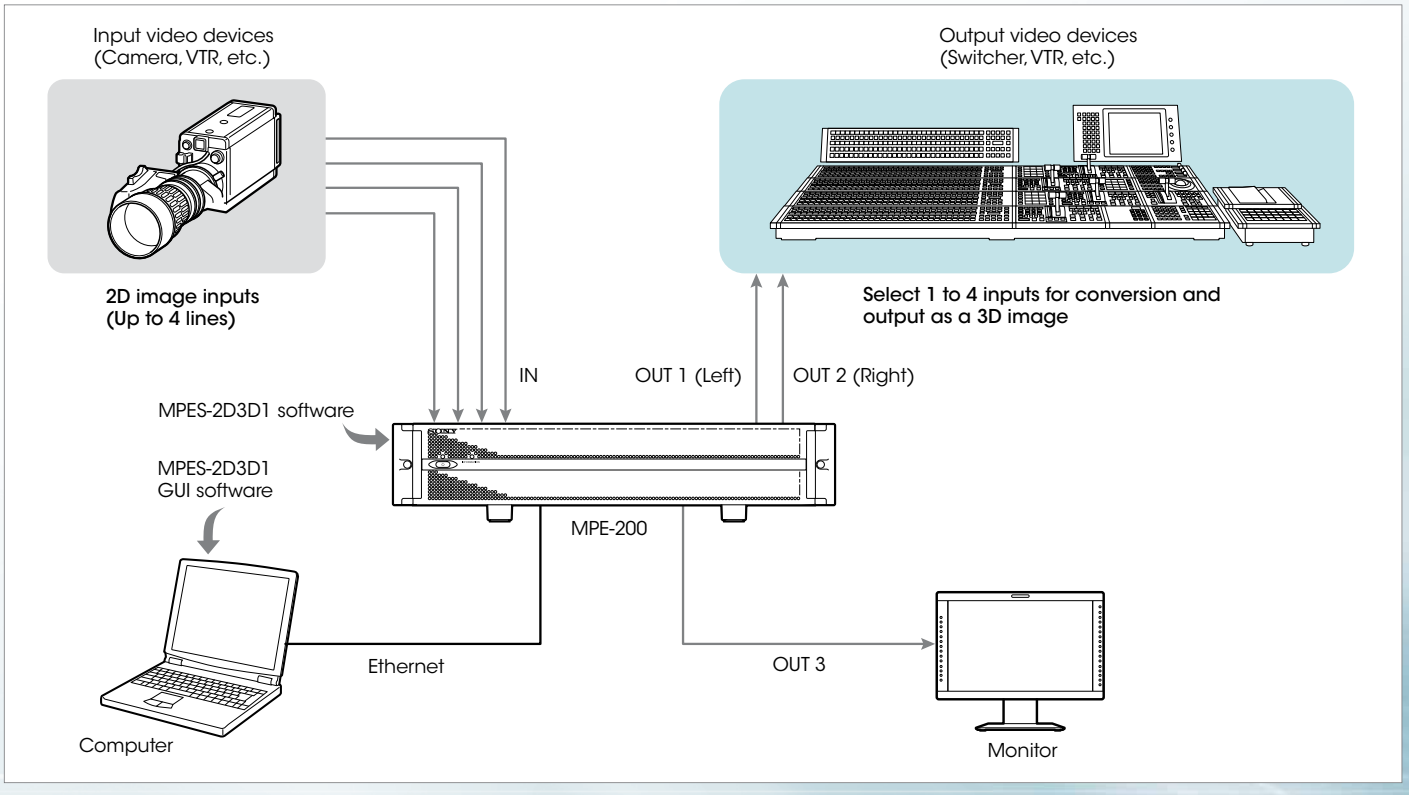
Monitor Display Method

The output image can be checked on 2D or 3D monitors connected to the MPE-200 and recorded on a VTR. Three image monitoring display methods are available for 2D monitors.
3D output: Dual Link
2D output: Side by Side, L/R Mix, Anaglyph

Snapshot

Snapshot is a function to save the settings configured by users. By saving a specific setting as a snapshot, users can easily return to a given setup later, as required. Up to 255 snapshots can be registered.

System Configuration Example



MPES-FX01 – Programmable Effector Software

This software freely creates video effects using an MVS Series switcher and a computer, and it performs real-time rendering of computer graphics (CG) and live video. With these capabilities and more, the software delivers the flexibility, operability, and performance required for a broad range of live production applications – sporting events, entertainment, news programs, and more.

Real-time CG/Video Rendering

This software performs real-time rendering, which simultaneously modifies and renders CG and maps video onto it within the MVS Series switcher system. It improves production workflow which previously required CG data conversion to video signals.

Supported CG Tools

The computer graphics file formats created with Autodesk Maya and 3ds Max are supported.

Up to Four Video Signal Inputs

Up to four input signals and two output signals (video and key) can be configured.

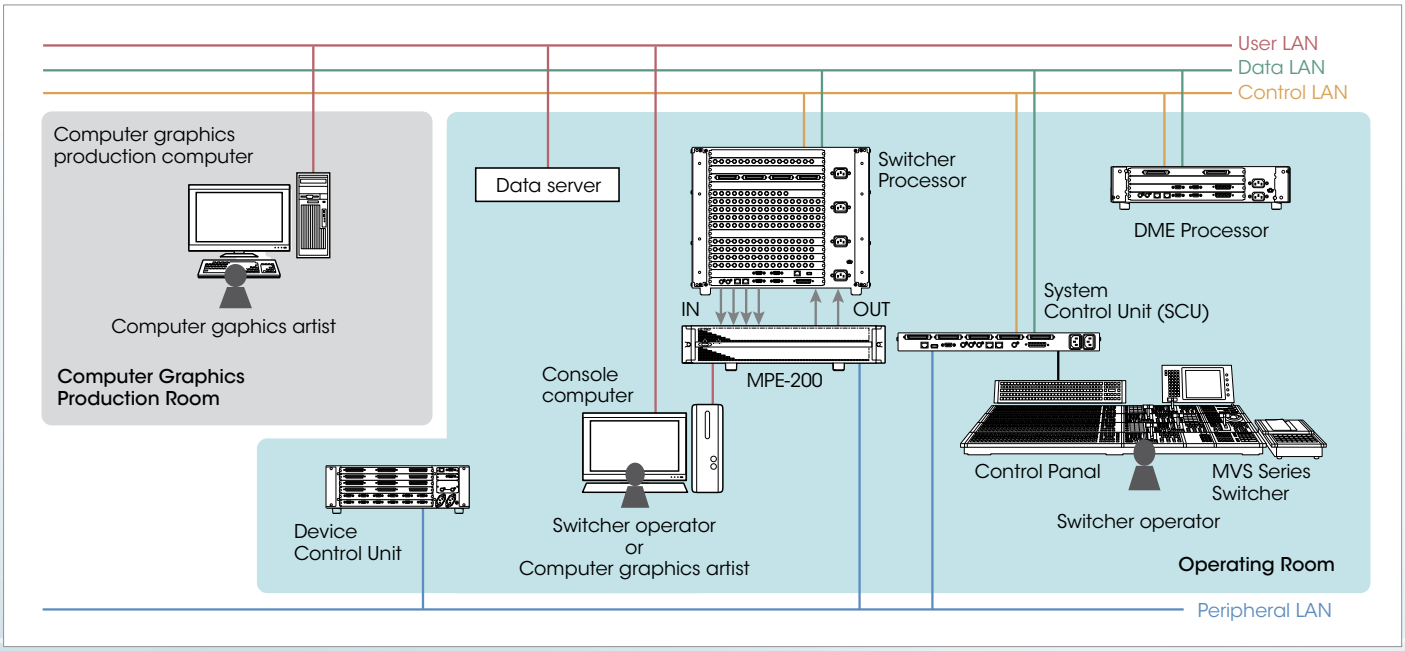
Live Production with MVS Switcher

CG and video signal modifications are performed consistently from an MVS Series switcher. It saves time and enables efficient live production with highly impressive visual effects.

Controllable Menus from MVS Switcher Control Panel

- Recall and replay effects
- Adjust duration to replay effects
- Change color
- Change viewpoint
- Add and adjust lighting (to a maximum of six lightings)
- Change CG object position, rotation, and size (Manipulator)

System Configuration Example



MPES-VC01 – Virtual Camera Solution Software

MPES-VC01 Virtual Camera Solution Software allows users to use the MPE-200 to take separate images of a sports field shot with multiple cameras and combine them into a single image of the entire field. When necessary, it enables close-up imaging of any part of the field. This software is a highly sophisticated solution to capture high-quality panoramic images at major sporting events, and it is useful for public viewing and as a coaching tool at sports clubs since all players are constantly in view.

Stitched and Close-up Images

Stitched, seamless panoramic images are produced from two or three fixed cameras through real-time signal processing. Furthermore, any portion of the captured image can be clipped to provide a close-up image and users can pan and zoom on the close-up image.

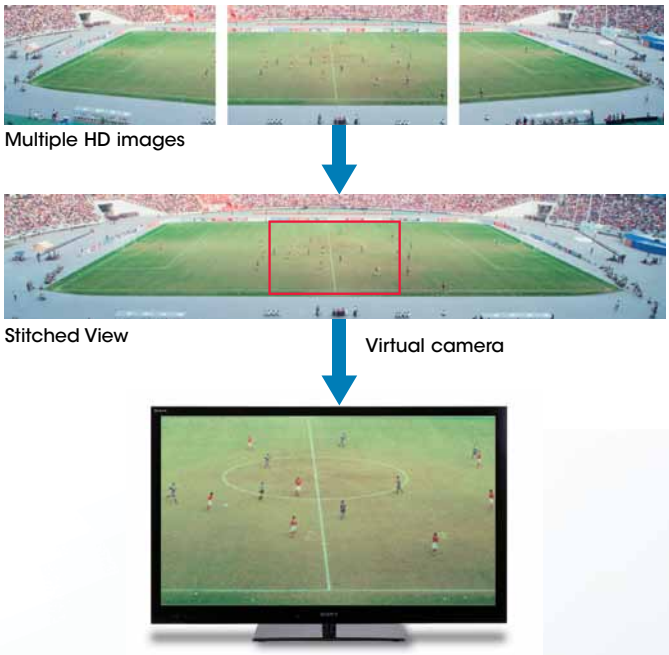
Never Miss Any Action

As this system uses multiple cameras to capture the entire field, every play from every position of the field is captured. With a video server, entire stitched images are always recorded, so that users can replay any missed action.

Monitor Display Method

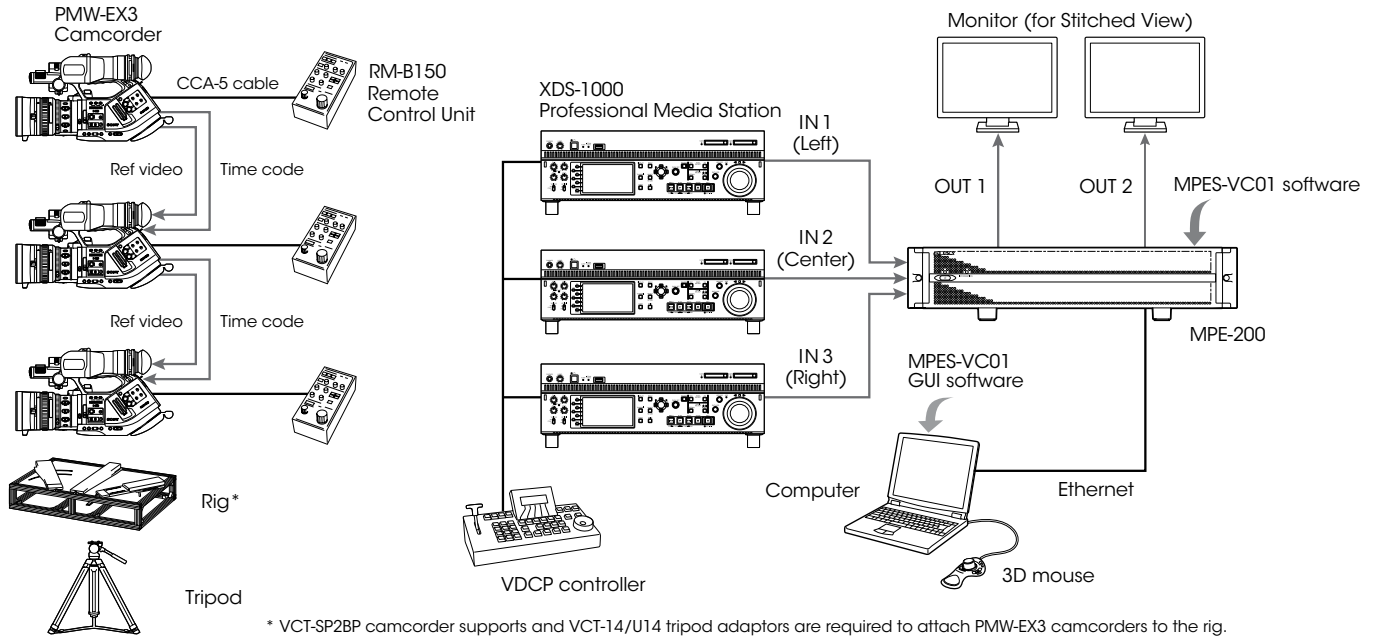
- Stitched View: display stitched image over one, two or three monitors
- Virtual camera: display close-up image of specified area
- Mixed view: display stitched view image and virtual camera image on single HD monitor

Example of How the MPES-VC01 Processes and Outputs Images



* Simulated images

System Configuration Example



* VCT-SP2BP camcorder supports and VCT-14/U14 tripod adaptors are required to attach PMW-EX3 camcorders to the rig.

Specifications

MPE-200

General	
Power requirements	AC 100 V to 127 V, 200 V to 240 V, 50/60 Hz
Current consumption	100 V to 127 V: 4 A, 200 V to 240 V: 2 A
Operating temperature	41°F to 104°F (5°C to 40°C)
Weight	Approx. 25 lb 5.6 oz (11.5 kg)
Dimensions (W x H x D) (excluding protrusion)	17 3/8 x 3 1/2 x 19 3/8 in (440 x 88 x 490 mm)
Supplied accessories	Operation manual (1), Installation manual (1), Notice concerning software (1)
Processor	
CPU	Cell/B.E. (1)
Cash memory	512 KB (PPU)
CPU clock speed	3.2 GHz
GPU	RSX (1)
GPU local memory	256 MB
Memory	
System memory	XDR + ECC (on board) / 1 GB
Sub-memory	DDR2-333 (on board) / 1 GB
Storage device	
Internal hard disk drive	160 GB (Serial ATA 2.5 in.)
External connection ports	
NETWORK-1, -2	RJ-45, 10BASE-T/100BASE-TX/1000BASE-T
USB	USB A (×2)
RS-232C	D-sub 9-pin (male) (×1), Data transfer rate: 38.4 Kbps
IN 1 to 4 (HD-SDI input)	BNC (×4), 75Ω
	Signal format: SMPTE 292M standard
	Signaling rate: 1.5 Gbps
	Cable length: 100 m (approx. 328 ft.) (when using 5C-FB cable (Belden 1694 equivalent))
OUT1 1 to 4 (HD-SDI output)	BNC (×4), 75Ω
	Signal format : SMPTE 292M standard
	Signaling rate: 1.5 Gbps
REF IN	BNC (X1), 75Ω termination
	HD tri-level sync / SD black burst, Tri-level sync is not supported for the 720p format.

MPSE-3D01/3DQC1/2D3D1/FX01/VC01

System requirements	
Operating system*	Windows 7, 32 bits/64 bits, English Version
Java	Version 6 Update 22
CPU	1.6 GHz or higher
Memory	2 GB or more
Graphics chip	Intel or NVIDIA
Hard disk	500 MB or more free space
Display	Resolution of 1280 x 800 or 1280 x 1024
Network ports	One 1000BASE-T port for connecting the MPE-200 unit
Browsing software	Windows Internet Explorer 8

* For details on other supported operating systems, please contact a Sony service representative or dealer.

Supported Video Format

	MPES-3D01 Stereo Image Processor Software	MPES-3DQC1 3D Quality Control Software	MPES-2D3D1 2D/3D Converter Software	MPES-FX01 Programmable Effector Software	MPES-VC01 Virtual Camera Solution Software
1080/59.94i	●	●	●	●	●
1080/50i	●	●	●	●	●
1080/23.98PsF	●	●	●	●	
1080/24PsF	●	●			
1080/25PsF	●	●	●		●
1080/29.97PsF	●	●	●	●	●
720/59.94p	●	●	●	●	●
720/50p	●	●	●	●	

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