Arena TV World’s First All-IP, 4K UHD OB Fleet

CUSTOMER
Arena TV, UK
www.arena-tv.com

CHALLENGE
Create the world’s first all-IP, UHD OB fleet.

SOLUTION
Grass Valley and Arena, with technology partner Cisco, designed a network topology using a spine and leaf configuration, based around a 2.88 Tb/s Nexus switch.

BENEFITS
OBX is completely flexible, format-wise, and can be configured for 4K UHD, 3G, HD, even SD, without the need to re-cable.

Lighter payload compared with Quad-SDI solutions, and equipment can be distributed more evenly around the OB truck (unlike a conventional SDI router).
Background

Arena is a UK-based production company that holds contracts with the nation’s major broadcasters to provide coverage of events, music, large studio shows and sport. Arena is a Telegraph 1000 business that has remained in continuous family ownership for approaching 30 years.

Challenge

A company that takes pride in innovation, Arena’s latest project has perhaps been their most ambitious to date — to create the world’s first all-IP, UHD OB fleet. Their specific requirements were as follows:

- Commercial, off-the-shelf (COTS)-based infrastructure — Cisco, Arista, Juniper or HP
- Standards-based – SMPTE ST 2022-6, AES 67, TR04 and TR03 (SMPTE ST 2110)
- Signal agnostic — 4K UHD 2160p50, 3G 1080p50 and HD 1080i50
- Future-ready — HDR (High Dynamic Range) and HFR (High Frame Rate)
- Reduction in cabling – for lighter payload and easier access to equipment
- Cost neutral to an equivalent Quad-SDI based solution

Solution

Grass Valley and Arena, with technology partner Cisco, designed a network topology using a spine and leaf configuration, based around a 2.88 Tb/s Nexus switch.

Spine and Leaf Topology
Grass Valley Equipment

- LDX 86i cameras
- Kayenne switcher with Standard K-Frame (4 M/E 4K UHD enabled)
- IPG-3901 IP/SDI gateway cards
- GV Nodes fitted with KMX-4911 multiviewer cards
- iControl Appliance Server (RESTful API)

System Overview

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**HD Replay System**
- **EVS***
- **IPG-3901** - IP Gateway Card
- **TICO** - Software
- **10 GbE SFP+**

**HD/UHD Switcher**
- **Grass Valley**
- **IPG-3901** - IP Gateway Card
- **TICO** - Software
- **10 GbE SFP+**

**Multiviewers**
- **Grass Valley**
- **XCU Universe XF**
- **APPLICATION SERVER**
- **APPLICATION SERVER**

**COTS Network Switch**
- **AIMS Partner**

Grass Valley Equipment

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