

Digital Video Group 105 Sylvia Road Ashland, VA 23005-1312 V-804-559-8850 F-804-559-0017

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SECTION 1

DVG Approach to Professional Services

Digital Video Group Approach to Professional Services

At Digital Video Group, each system project will be approached as a unique opportunity to engage with our clients to meet or exceed their needs in regard to video production. The DVG technical approach to system design will be customized on a per project basis. In general, the process as outlined below will be followed in order to meet the objective of providing a highly functional design with top notch equipment and quality integration services.

The first step will be a client discovery meeting. This will include but is not limited to the production operators and engineers who will operate and maintain the system.

The production workflow will be analyzed. Discussions will cover the overall requirements of the system including camera specifications, size and type of facility routers, video switcher, and audio mixer, graphics, number of users in typical productions, sizes of studio and control rooms, etc.

DVG will then provide the client with a suggested equipment list, system flow diagrams, operator console layouts, and equipment rack elevation drawings – all based on the results of the discovery process.

Once general design and an equipment list have been agreed upon, CAD drawings will be created that will be the foundation for the integration. All CAD drawings will include unique cable numbers and equipment system names. The drawings will indicate locations and elevations of all equipment.

DVG utilizes WireCAD for CAD design. This video specific CAD system allows multiple engineers to concurrently work on the same project. The different elements of the design are kept together which ensures accuracy throughout the installation.

Drafts of the design will be provided to the customer for review and approval. Once all parties are satisfied with the CAD design, equipment will be ordered and the integration will begin.

DVG will typically build racks with all central core equipment at our Virginia facilities. This will allow much of the equipment and system to be configured and tested prior to onsite delivery. This minimizes disruption of the end user's existing operation. DVG will also integrate projects into a client's existing racks per a project's requirements.

On-site integration typically starts with cable runs to various locations that will be the backbone of the system. DVG makes every effort to keep like signals together. Velcro strips, rather than tie wraps, will be used as much as possible for technical and service issues.

Equipment in racks and operator consoles will be integrated with two goals: all cable bundles will be as tidy as possible; all cable bundles will be as serviceable as possible. The phrase "livable rack" will be applied to wiring integration. This mantra will result in installations that will allow for growth and service over time, while remaining presentable.

As the equipment is integrated, commissioning of equipment will begin. Unlike most system integrators, DVG strives to commission as much of the equipment as possible with its own engineers. This will provide overall system flexibility as a whole, as each piece of equipment will be optimized for system interfacing, rather than as an island to itself. This will also allow DVG to support the system after completion more effectively and efficiently.

Manufacturer commissioning will be utilized when required.

Once system commissioning is finalized, system testing will begin. All cables will be tested by methodically analyzing the CAD drawings and checking off each individual cable to ensure its functionality.

Overall system functionality will be tested. The client will be invited to participate in the system testing. Any issues or discrepancies immediately will be addressed. Any client change requests will be addressed individually.

The final step will be system and equipment training. The first session generally will be system overview training. Each major sub system workflow will be reviewed. Operator training will occur on all equipment requiring specific training. A follow up review will be conducted to ascertain if any outstanding issues or workflow problems were discovered during the training sessions.

Upon completion of the project, any changes to the design will be updated and a final as built package will be delivered to the customer as a hard copy print and as a PDF file.

DVG warrants that all materials and workmanship directly related to the installation and integration of the system will be free from defects for a period of one year from the acceptance of the system. DVG will pass through to the client all manufacturer warranties. At conclusion of the project DVG will provide full warranty information for the system, hardware, and software.

SECTION 2

DVG Design Build Capabilities

Digital Video Group Design Build Capabilities

Digital Video Group's has a solid resume for delivering exceptionally designed, engineered, integrated, and supported Design/Build systems for many satisfied clients for over 16 years.

Unlike many other video system integrators, DVG main business model is not to solely integrate projects based on an outside consultant's design. DVG is focused on working with its clients from the beginning of the project to deliver the system the meets and exceeds the project's requirements from a technical, operations, and financial perspective.

DVG's engineers are not strictly assigned to perform just one specific role on any given project. The project engineer will oversee the entire project.

A project starts with an application engineer working with the client and sales person to develop a project scope. During this process, the application engineer will be consulting with the project engineer. Once an order has been received, the project engineer will be responsible for coordinating the project schedule, will assign the integration team, and work closely with purchasing to ensure all equipment arrives in time.

DVG project engineers will design the overall signal flow, rack elevations, and create CAD drawings and wire run lists. This helps eliminate translation issues between the engineering and CAD stages. The same engineer will also oversee integration. The engineer's responsibilities continue with commissioning and system training.

This provides the client and project a continuity from start to finish – there is one person who is *totally* responsible for the entire project. Many system integrators divide a project between numerous engineers and technicians – handing off responsibilities from one person to the next. Experience shows this scenario often leads to a higher percentage of system failures and support issues.

DVG's engineers commission a significant amount of a project. This allows the engineer to fully understand the capabilities and complexities of the system's operation. It also allows DVG integration services to be more efficient and economical. Manufacturer commissioning is enlisted when required. DVG engineers work alongside of the manufacturer during these commissioning sessions in order to provide more responsive support.

DVG has an Avid certified support representation on staff who provides detailed design, commissioning, training, and support. This is unique in the system's integration world.

Many DVG engineers have a production background. This allows the design process to be responsive not only to the engineering requirements but also to the operational nuances. These engineers will provide product training on production switchers, character generators, routing switchers, intercom, audio mixers, and editing systems. The training is not only product specific but also system specific. This is a level of training often beyond what a manufacturer can offer, as the factory trainer generally only understands his/her specific product.

DVG does not live and die by change orders. All reasonable client requests will be considered, and many are implemented under the original scope of the project. More involved requests or substantial system modifications will be negotiated.

SECTION 3

DVG Project References

Digital Video Group Broadcast Systems Professional References June 2021



• BBC, Washington DC

Upgrade of Studio Camera Robotics and Teleprompter System – provided and installed three Ross Cambot 600PT robotic pan/tilt head, one Ross BlackBird S2 2 stage elevating robotic pedestal with 600PT head, Ross SmartShell robotic control system, and two CueScript 17" teleprompters.

Ted Tait, Chief Engineer 202-355-1735 <u>ted.tait@bbc.co.uk</u> June 2021 Value: \$200K

• Defense Media Activity, Fort Meade, MD

Broadcast Studio Production System Upgrade – provided design, engineering, and commissioning for the UHD upgrade of one of the facility's video production systems. The project consisted of four Hitachi SK-UHD4000 with Fujinon UHD lenses, four Cuescript 19" prompters and software, a Ross Carbonite Ultra production switch, a Ross 128x130 UHD routing switcher with UHD patch panels, a Ross UHD Xpression character generator, a Ross Tria+ UHD video server, Evertz reference generators, AJA KiPro Ultra 12G recorders, Leader UHD waveform monitors, Sony UHD monitors, and AJA FS4 frame synchronizers/converters. This system also provides tie line connections to the facilities 1028x1028 Utah Scientific HD router.

Robert Meade, Senior Design Engineer 301-222-6665 <u>robert.f.meade4.civ@mail.mil</u> May 2021 Value: \$1,52M

• Charles County Government, LaPlata, MD

Studio, Production Control Room, Post Production, and Master Control Upgrades - provided design, engineering, and commissioning for the County's video production facility. The project consisted of replacing the existing studio cameras with four Panasonic AW-UE150 PTZ cameras and one controller, a Newtek TC2 productions system, a Yamaha QL5 audio mixer, CueScript teleprompters, IKAN LED studios lights with a DMX control panel, a new studio set by Interpretive Woodworking Design, a Tightrope VIO600 master control playback system, and a Sony NavigatorX media asset management system.

Brent Huber, Lead Video Producer 301-885-1309 <u>HuberB@charlescountymd.gov</u> May 2021 Value: \$450K

US Central Command / AV3, Tampa, FL

Broadcast Studio Production and Post Production System Upgrade – provided design, engineering, and commissioning for the UHD upgrade of the facility's video production system. The system was designed to support HD and UHD production. System included two Hitachi SK-UHD4000 UHD studio cameras, Ross Cambot 600 Blackbird remote controlled PTZ system and pedestal, Ross Ultrix 2ME production switcher, Yamaha CL3 audio mixer, Chyron Character generator, Sony and TV Logic monitoring, Apantac UHD multiviewers, Analog Way scan converters, Leader waveform monitor, Evertz reference generator, Ross Ultrix 72x72 routing switcher, Clearcom Eclipse intercom, AJA frame sync and recorders, and TBC Consoles operators console. The post production system included four Apple Mac Pro edit workstations, a Facilis SAN, and various editing and graphics applications.

Danny Cox (AV3), Senior Design Engineer 240-633-8398 dan.cox@av3inc.com April 2021 Value: \$600K

• Tennessee Air National Guard, Knoxville, TN

Broadcast Production System Router and Multiviewer Upgrade – provided design, engineering, and installation for the upgrade of the facility's video, audio, and production multiviewer system. System included Grass Valley Sirius 830 routing system, frames 288x288, populated 72x72 HD video, 120x120 AES audio,3x3MADI, 32x32 stereo analog, and 10 internal multiviewers.

Ronald Waite, TEC-U 865-336-3898 <u>ronald.waite.2@us.af.mil</u> December 2020 Value: \$236K

• York County Government, Yorktown, VA

Automated Broadcast Production System Upgrade – provided design, engineering, and installation for the upgrade of the County's Board of Supervisor's council chamber video production system. System included a Ross Lightning production control system, an upgrade of the production switcher to a Ross Ultra, Allen and Heath Audio mixer, and a processor upgrade to the Ross Xpression character generator.

December 2020 Value: \$89K

• Virginia Commonwealth University, Richmond, VA

Broadcast Production System – provided design, engineering, and installation for the upgrade of the facility's video production system. System included Sony PXW-FX9 digital cinema camera with Carl Zeiss lens, Miller fluid heads and tripods, Ross Carbonite Black Solo production switcher, Allen and Heath Audio mixer, Ross Xpression Live character generator, TV Logic monitoring, AJA Ki Pro Ultra recorder, AJA FS2 frame sync, NEC 2x2 video wall, a Whisper Room audio booth, and Ikan studio lighting.

Joseph Kuttenkuller, December 2020 Value: \$178K

• James Madison University, Atlantic Union Bank Center, Harrisonburg, VA

Sports Broadcast Television Production System and Broadcast Cabling – provided design, engineering, and installation for the in-house video production system and facility broadcast cabling for the University's new sport's arena. System included Hitachi Z-HD5500 broadcast cameras with Sony and Marshall POV cameras, Fujinon 20x and 43x lenses, Miller fluid heads and tripods, Ross Carbonite Black Plus 3ME switcher, 3 channel Xpression character generator, Ross Mira Express replay system, Yamaha TF1 audio mixer, Samsung monitoring, Ross Ultrix 128x128 router and multiviewer system, Clearcom intercom, AJA frame sync and recorders, MultiDyne video and Ethernet fiber transceivers, and IWD operators console. The broadcast cabling included all video, audio, fiber, triax, patch panels and network wiring for the entire arena.

Katie Windham, Event Manager 605-695-6147 <u>Katie.Windham@daktronics.com</u> November 2020 Value: \$1.5M

• Virginia State University, Petersburg, VA

Radio Station Upgrade– provided, design, engineering, and installation for University's FM radio station control room and studio. System included Wheatstone LX24 radio audio panel and IO blades, Sennheiser and Electro Voice studio microphones, Comrex, Telos, and Tieline telephone hybrids, Genelec speakers and IWD operator's console.

Jane Harris, Assistant Vice President 804-524-6239 jsharris@vsu.edu November 2020 Value: \$179K

• East Carolina University, Raleigh, NC

Sports Broadcast Television Production System– provided consultation, design, engineering, and commissioning for the in-house video production system sport's arena. System included seven Panasonic AW-HE140 PTZ and two Panasonic AJ-PX380G broadcast cameras Miller fluid heads and tripods, Ross Carbonite Ultra 2ME switcher, 3 channel Xpression character generator, Ross Mira Plus six channel replay system, Berringer X32 audio mixer, TV Logic monitoring, Ross Ultrix 128x128 router and multiviewer system, Clearcom HelixNet digital intercom, AJA frame sync and recorders, MultiDyne video, audio, intercom and Ethernet fiber transceivers, and IWD operators console.

November 2020 Value: \$720K

• North Carolina House of Representatives, Raleigh, NC

Automated Production Control System – 6 Panasonic AW-UE150 HD PTZ cameras, Ross Lightning legislative production control system, Ross Graphite Switcher/CG/Clips, 32x32 Ross Ultrix HD video router, Ross terminal gear. An add-on to the project included 9 remote controlled PTZ cameras for two sub-committee rooms.

Peter Capriglione, ISD Director <u>Peter.Capriglione@ncleg.gov</u> November 2020 Value: \$421K

• Library of Congress, Washington DC

Broadcast Television Production System Upgrade – provided design, engineering, and installation for the in-house video production system. The project was the continuation of a multi-phase upgrade to the Library's television production system started with the installation of a HD/UHD capable video router in 2019. The system was designed to support HD signals, but was wired to support 12G-SDI UHD signals for future upgrades. System included Ross Carbonite Ultra production switcher, Xpression Live character generator, Wheatstone L8 audio mixer and eight MADI IO blades, Sony monitoring, MultiDyne video and Ethernet fiber transceivers, and TBC operators console.

Tom Nauer, Production Coordinator 202-707-1183 <u>tnau@loc.gov</u> November 2020 Value: \$272K

University of Virginia, Darden School of Business, Charlottesville, VA

Upgrade to existing Broadcast Television Studio and Post Production SAN– provided design, engineering, and installation for upgrade of existing broadcast studio and post production data storage system. The system was designed to support HD signals, but was wired to support 12G-SDI UHD signals for future upgrades. System included Vinten pedestals, Cuescript prompter and talent monitors, Ross Carbonite Ultra switcher, Xpression Live character generator, Yamaha TF3 audio mixer, Sony and TV Logic monitoring, Ross Ultrix 64x64 router, Clearcom party line intercom, AJA frame sync and recorders, Facilis 256 TB SAN, Facilis LTO archive system, and IWD operators console.

Kris Seale, Manager Darden Video Production 434924-3935 <u>SealeK@darden.virginia.edu</u> September 2020 Value: \$412K

• Department of Homeland Security, Washington DC

Broadcast Insert Television Studio – provided design, engineering, and installation for single camera broadcast studio for use by senior department administration to interact with broadcast outlets. System included Hitachi Z-HD5500 camera, Miller pedestal, Cuescript prompter and talent monitors, Sony lavaliere microphones, Ross Carbonite Black Solo switcher, Xpression Live character generator, Tascam audio mixer, Sony monitoring, AJA frame sync and recorders, LiveU LU600 transmission system, and IWD operators console.

Susanne DeSantis, Senior Project Manager 202-804-5778 <u>Susanne.DeSantis@GDIT.com</u> August 2020 Value: \$164K

• WCVE, Richmond VA

Facility Routing Switcher Installation - Provided engineering and installation for Grass Valley Sirius 840 HD-SDI video routing switcher frame 576x576 and populated 264x240 HD-SDI and 12x12 MADI, with associated patch panels.

Mark Spiller, VP for Engineering 804-560-8153 <u>mspiller@ideastations.org</u> July 2020 Value: \$325K

• BBC, Washington DC

Upgrade of Existing Production Control Room and Technical Core – included redesigning the expanded Galley (production control room) which included a Ross Carbonite Black Plus production switcher, a Calrec Brio 36 audio mixer, a Ross Mosaic video wall processor that fed the three-screen studio LED monitor wall, Clearcom Eclipse matrix IP intercom and IFB system, Apantac IP-KVM system, and Interpretive Woodworking two row production console. The audio system relied heavily on a sophisticated Dante digital audio network that interfaced between the Calrec audio mixer, the Eclipse intercom system, the radio DHD mixing platform.

Ted Tait, Chief Engineer 202-355-1735 <u>ted.tait@bbc.co.uk</u> July 2020 Value: \$800K

• Nexstar News Nation, Chicago, IL

Video Wall Graphics System Engineering - provided CAD engineering and design assistance and newsroom graphic support system for news studio extensive video wall system.

Mark Turner, Vice President – Station Operations 813-221-5722 <u>mturner@nexstar.tv</u> June 2020

• Oriole Park at Camden Yards, Baltimore MD

Routing Switcher and Multiviewer Upgrade - provided and Installed updated Evertz 128x128 HD-SDI video and 64x64 analog audio routing switchers. Also provided and installed Evertz VIP-X 72x12 multiviewer monitoring system.

Vince Steier, Technical Manager 410-347-9325 <u>vsteier@mdstad.com</u> March 2020 Value: \$225K

• Georgia College, Milledgeville, GA

Green field design build for renovated Terrell Hall television studio facility. The system included a studio, production control room and technical core. The studio included two Hitachi Z-HD5500 cameras mounted on Miller Skyline 70 fluid heads and pedestals, one Hitachi DK-H200 box camera mounted on a KXWELL PTZ remote head, CueScript teleprompters, Shure ECM77B microphones, and a FX Design studio set. The production system included a Ross Graphite production switcher with two channels of newsroom computer system MOS connected Xpression graphics and two video server clip channels, a Yamaha QL-1 audio mixer with RIO digital stage boxes, a Ross 64x64 NK routing switcher, TV Logic broadcast video monitor, Clearcom party line intercom and IFB system, a AJA FS2 frame synchronizer, an AJA Helo streaming encoder, a Ross Inception newsroom computer system, and an IWD operator's console The project also included a FX Design designed and installed studio set.

Mary Jean Land, Chair Department of Communication 478-445-8261 <u>maryjean.land@gcsu.edu</u> January 2020 Value: \$721K

• Big Whig Media, Washington DC

Green field design build of a multi-purpose broadcast production facility in the historic Willard Hotel in downtown Washington DC. The system consisted of a main studio, a podcast studio, three uplink studios, four non-linear edit bays, and two roof mounted remote control cameras. The broadcast studio technology consisted of three Sony HXC-70 broadcast cameras systems which included Ross Cambot 520 PTZ remote-controlled heads and Cuescript teleprompters and time code displays, a Lectrosonic wireless microphone system, a Clear-Com wireless IFB system, a Marshall POV camera, a Yamaha RIO1608 stage box, and NEC and Sharp on-set displays. The production control room technology, which supported production in all studios, consisted of a 2 ME Ross Graphite production system with one channel of XPression character generator and two channels of clip servers, one channel of Ross Xpression Live character generator, two Ross Carbonite Black Solo production switchers, two Yamaha QL1 audio mixers, a Ross Cambot PTZ remote camera control system, a Sony PTZ camera control system, Sony video monitoring, Genelec audio speakers, two CueScript prompting workstations, Clearcom party-line intercom and two independent IFB systems, two AJA KiPro Ultra recorders, two AJA Helo streaming encoders, 3 AJA FS2 frame sync/scaler, a Tektronix waveform monitor, JK Audio hybrids, a Marshall POV camera, and Interpretive Woodwork and Design's custom-designed operator consoles.

Keith Nahigian, President 202-280-2415 <u>keith@nahigianstrategies.com</u> December 2019 Value: \$1.1M

• Alfred Street Baptist Church, Alexandria, VA

Remote Control Broadcast Cameras – provided and installed 2 Hitachi DK-H200 broadcast cameras with Fujinon image stabilization lens, KXwell broadcast quality remote camera heads and controller.

Bobby Lacy, Director of AV Media 540-809-5574 <u>blacy@alfredstreet.org</u> December 2019 Value \$106K

• Maryland Senate, Annapolis, MD

Automated Production Control System – 7 Panasonic AW-HE130 HD PTZ cameras, Ross Lightning legislative production control system, Ross Graphite Switcher/CG/Clips, 16x16 HD video router, Ross terminal gear.

Mike Gaudiello, Office of Information Systems, 410 946-5300 <u>mike.gaudiello@mlis.state.md.us</u> September 2018 Value \$225K

• American Farm Bureau, Washington DC

Upgrade of Existing Studio and Production Control Room– includes four existing Panasonic AW-HE130 PTZ remote controlled broadcast cameras, Ross Carbonite Ultra production switcher, existing Yamaha QL-1 audio mixer, Ross Xpression Live CG character generator, AJA KiPro Rack recorders, Ross 48x48 NK routing switcher, AJA FS2 frame synchronizers, Ross terminal gear, Clearcom party-line intercom and IFB system, and Interpretive Woodworking production console. The system was designed for local and remote operation. Each camera and microphone signal was distributed to IP encoders for remote production.

John Earl, Director of Technical Resources 202-406-3651 johne@fb.org October 2019 Value: \$145K

• Liberty University Green Hall, Lynchburg, VA

Build Out of Second Control Room and Tech Core in Green Hall Facility – included repurposing existing eight Sony studio camera systems, a Grass Valley production switcher, a Calrec audio mixer, a Ross Xpression character generator, expansion of existing Evertz SDI EQX routing switcher, new Evertz EQX fiber optic routing switcher, Evertz TDM audio router, Evertz VIPX multiviewer system, Evertz Dreamcatcher record and playback system, expansion of existing RTS Adam intercom system, Evertz 5701MSC-IP master reference system, Grass Valley Cobra camera transmission systems, and IHSE KVM switch. Also updated the Vines Center IMAG control room with a Ross Carbonite Black Plus production switcher, two Sony HXCF80HN broadcast cameras with Fujinon XA55X9.5BESM-S5L and ZA22X7.6BERM lenses, Vinten Vector 75 fluid heads, and Ross terminal gear. KC Spiron, Executive Director Broadcast Communications 434-582-8615

kspiron@liberty.edu

September 2019 Value: \$2M

• Epic Games, Cary, NC

Post Production 1080/UHD Editing Rooms And Equipment Technical Core – included five HP Z8 editing workstations with dual, wide screen UHD monitors, audio and UHD video monitoring, Ross Ultrix UHD/12G video routing switcher, DNF Controls control system, IHSE dual head KVM and USB3 switching system.

Joe Wilson, Senior Editor 919-854-0070 joe.wilson@epicgames.com July 2019 Value: \$950K

• Prince Georges Community College, Largo, MD

Facility Update – Hybrid 1080/UHD Upgrade. Included Studio, Production Control Room, Tech Core, and Editing SAN. Four Hitachi SK-UHD4000 cameras interfaced into the production system as 1080 sources, but also connected individually via quad 3G directly to AJA KiPro Ultra recorders and 4K displays for ISO UHD recording and monitoring. The production system included a Ross Carbonite Ultra production switcher, a Yamaha QL-1 audio mixer with two RIO1608 digital stage boxes, a three channel Ross Xpression character generator and clip server, a 2x2 1080/UHD quad multiviewer system, AJA KiPro Ultra recorders, a Ross 72x72 MK routing switcher, TV Logic broadcast video monitors, Clearcom intercom and IFB system, a Facilis Hub 16 96TB post production SAN, Ross Incoder clips transcoder integrated with the Facilis SAN, a AJA FS2 frame synchronizer, Interpretive Woodworking production console, on set news desk, riser, and background wall.

Angela Mathis, Manager of PGCC 301-546-1850 <u>mathisao@pgcc.edu</u> July 2019 Value: \$750K

• WSLS NBC 10 (Graham Media Group), Roanoke, VA

Complete Greenfield TV Station Relocation Project – included buildout of 30 rack technical core, main production control room, ingest control area, in-house RF distribution and monitoring system. Systems include a Grass Valley Ignite automation system, a Grass Valley Stratus News Ingest and Editing, a Ross Ultrix router, Evertz L-Band routing, RTS Intercom system, a Calrec Brio 12 audio console, Linear Acoustics CALM, DNF tally system, Ross, Evertz and AJA terminal equipment, Imagine and Wohler test equipment, Lectrosonics wireless and IFB systems, JVC/Planar/NEC/Sony monitoring throughout the whole plant, Wells AV CMP-100 RF distribution system, Apantac multiviewer, Cuescript prompters, Miller pedestals, Adder IP KVM, Interpretive Woodworking custom operator consoles.

Ricky Williams, Director of Technology 540-512-1541 <u>rwilliams@wsls.com</u> April 2019 Value: \$2M

• Boitnott Visual Communications, Midlothian, VA

Portable Video Production System – Three Hitachi Z-HD5000 1080P studio cameras, KXWELL broadcast PTZ fluid heads and controller, a Ross Carbonite Black Solo production system, a Behringer audio mixer, an AJA Kumo 16x16 routing switcher, Clearcom party line intercom, a AJA Ki pro Ultra recorder, and a double wide Calzone production case.

Daniel Yeary, Vice President 804-379-9400 <u>dyeary@boitnottvisual.com</u> April 2019 Value: \$165K

• North Carolina Central University, Durham, NC

Green field design build for new School of Mass Communication television studio facility. The system included a studio, production control room and technical core. The studio included three Hitachi SK-UHD4000 cameras mounted on Vinten Vision 250 fluid heads and Osprey Light pedestals, CueScript teleprompters, 65" LCD and 98" interactive touchscreen monitors, and Shure digital wireless microphones and IFB. The production system included a Ross Graphite production switcher with two channels of newsroom computer system MOS connected Xpression graphics and two video server clip channels, a three channel Ross Tria clip server, a Yamaha QL-1 audio mixer with RIO digital stage boxes, a Ross 64x64 Ultrix routing switcher with MADI/Dante interfacing to the audio system, Sony broadcast video monitor, Clearcom HelixNet intercom and IFB system, a AJA FS2 frame synchronizer, an AJA Helo streaming encoder, Marshall POV cameras, and a Ross Inception newsroom computer system with four client workstations.

Felecia Casey-Hicks, TV Studio Manager 919-530-6803 <u>fcaseyhicks@NCCU.EDU</u> January 2019 Value: \$675K

• Portsmouth High School, Portsmouth, VA

Master Control Playback System Upgrade – Replaced existing master control playback system with four channel Tightrope Flexcast video server, Carousel bulletin board graphics system, and AJA Kumo video router.

Cherise Newsome, Director of Communications, 757-393-8743

<u>cherise.newsome@portsl12.com</u> February 2019 Value: \$76K • C. D. Hylton High School, Prince William County (VA) Public Schools, Woodbridge, VA Video Production Control Room, Technical Core, and Studio – Three Hitachi Z-HD5500 studio cameras, a Ross Graphite production system will internal Xpression character generator and two clip server channels, a Yamaha QL-1 audio mixer, a Ross NK 64x64 routing switcher, Clearcom analog party line intercom and IFB system, various studio monitors, IWD custom operator consoles.

Joseph Long, Video Systems, Engineer II, 703-791-7354 LongJW@pwcs.edu February 2019 Value: \$350K

• Associated Press, Washington DC

Large Video Routing Switcher Installation – GV Sirius 840 HD video router frame 528x528 and populated 350x506, NV9000 Web services server, integration with client BNCS control system.

Lou Pagan, Deputy Director, Technology Washington 202-641 9882 lpagan@ap.org December 2018 Value: \$350K

• Library of Congress, Washington DC

Large Video Routing Switcher Installation – Ross Ultrix HD/4K video router populated 134x134, redundant reference system, 12G rated patch panels, system wired for 12G SDI.

Tom Nauer, Production Coordinator 202-707-1183 <u>tnau@loc.gov</u> December 2018 Value: \$221K

• Prince William County Government, Prince William, VA

McCoart Center Production Control Room and Council Chamber Upgrade – System renovation included five Hitachi DK-Z50 Ross camera mounted on Telemetrics remote controllable PTZ heads, a Ross Carbonite Black Plus 2 M/E Switcher, a Yamaha QL-5 audio mixer, a Ross Xpression 2 channel character generator, a Ross Ultrix 64x64 HD video router, Symetrix audio processor, Crestron control system, various Planar displays, Panasonic laser projector, Yamaha amplifiers and speakers, IWD custom operator console.

Stephen Harris, Video Engineer (703) 792-4561 <u>sharris2@pwcgov.org</u> September 2018 Value \$600K

• Maryland House of Delegates, Annapolis, MD

Automated Production Control System – 7 Panasonic AW-HE130 HD PTZ cameras, Ross Lightning legislative production control system, Ross Graphite Switcher/CG/Clips, 16x16 HD video router, Ross terminal gear.

Mike Gaudiello, Office of Information Systems, 410 946-5300 <u>mike.gaudiello@mlis.state.md.us</u> September 2018 Value \$225K

• Maryland Public Television, Owings Mills, MD

Video Switcher, Multiviewer and Audio Mixer Installation – Grass Valley 4 M/E Karrera video switcher, five Grass Valley KMX multiviewers with Sony 75" monitors, and Calrec Artemis Lite audio mixer

Chad Hooker, Chief Engineer 410-581-4043 <u>chooker@mpt.org</u> May 2018 Value: \$950K

• Elon University, Elon, NC

Schar Center Production Control Room and Tech Core – 5 Sony HXC-FB80HD cameras, Ross Carbonite Black Plus 2 M/E Switcher, five display multiviewer system, Yamaha QL-5 audio mixer, Ross Xpression 2 channel character generator, Ross Ultrix 128x128 HD video router, Ross Abekas 8 channel Mira replay system, fiber interconnects to multiple remote sports locations, IWD custom operator consoles.

Joe Davis, Assistant Director of Technology Design and Integration (336) 278-6610 jdavis3@elon.edu August 2018 Value \$850K

• Fairfax County Government, Fairfax, VA

Video Production Vehicle Renovation – completely renovated County owned 24' van into state of the art mobile production system. Included 4 Hitachi Z-HD 5500 cameras, Ross Graphite 2 M/E Switcher/CG/Clips, Yamaha TF-1 audio mixer, Ross NK 64x64 HD video router, Clearcom intercom, Ross, AJA, and Ensemble terminal gear, production vehicle physical renovation

Greg Smalfelt, Senior Video Engineer 703-324-5929 <u>Gregory.Smalfelt@fairfaxcounty.gov</u> May 2018 Value: \$400K

• Arlington Public Schools - AETV, Arlington, VA

Video Production Control Room, Technical Core, and Studio – Three Hitachi Z-HD6000 studio cameras, Ross Graphite production system will internal character generator and two clip server channels, Yamaha QL-1 audio mixer, Ross NK 64x64 routing switcher, RTS analog party line intercom and IFB system, various studio monitors, IWD custom operator console.

Duane Loomis, Video Systems, Engineer, 703-228-5753 <u>duane.lomis@apsva.us</u> February 2018 Value: \$425K

• WCVE – Virginia State House GAB Center, Richmond, VA

Video Production Control Room, Tech Core, and Studio - Three Sony HXC-FB75 studio cameras, Ross Graphite production switcher, Xpression character generator with two channels clip server, Yamaha TF-3 audio mixer, Ross Ultrix 64x64 routing switcher, Clearcom analog party line intercom and IFB, AJA KiProRack recorders, IWD custom operator console.

Mark Spiller, VP for Engineering 804-560-8153 mspiller@ideastations.org December 2017 Value: \$250K

• Prince William County Public Schools, Prince William, VA

Edward Kelly Leadership Center Production Control Room and Council Chamber Upgrade – System renovation included five Hitachi DK-Z50 Ross camera mounted on Ross Cambot 520 remote controllable PTZ heads, Ross Carbonite Black Plus 2 M/E Switcher, Yamaha QL-1 audio mixer, Ross Xpression 2 channel character generator, Ross Ultrix 64x64 HD video router, Symetrix audio processor, audio conferencing system, Crestron control system, various Planar displays, Yamaha amplifiers and speakers, IWD custom operator console.

Joseph Long, Video Systems, Engineer II, 703-791-7354 LongJW@pwcs.edu December 2017 Value: \$800K

• SB Ballard/Norfolk State University, Norfolk, VA

Video Production Studio and Auditorium Control Room – the studio control room includes a Ross Carbonite Black Plus 2 M/E Switcher, five display multiviewer system, Studer Vista 1 audio mixer, Ross Xpression 2 channel character generator, Ross Mira clip player, Ross Ultrix 128x128 HD video router, Clearcom party line intercom and IFB systems, an audio production control room with sound booth. The auditorium system includes six Panasonic AW-HE130 PTZ remote controlled cameras, Ross Carbonite Black production switcher, a Ross 96x96 Ross NK routing switcher, three Panasonic PT-RZ12KU projectors, Allen and Heath DLIVE-S3000 audio mixer, Shure ULXD4Q wireless microphones, D&B speaker system, TBC operator consoles.

Chuck Smith, Project Manager 757-689-5415 <u>csmith@sbbballard.com</u> November 2017 Value: \$2.5M

• High Point University, High Point, NC

Control Room and Tech Core Upgrades - 3 Hitachi Z-HD6000 cameras, Ross Carbonite Black Plus 2 M/E Switcher, four display multiviewer system, Yamaha QL-1 audio mixer, Ross Xpression Prime character generator, Ross Xpression Clips player, and Ross NK 72x72 HD video router

Rob Powell, Professor 336- 972-7100 powell0@highpoint.edu August 2017 Value: \$400K

• Prince William County Government, Prince William, VA

Production Control Room Upgrade – Replaced existing production switcher, multiviewer, and character generator systems in McCoart and Chinn Library control rooms

Stephen Harris, Video Engineer (703) 792-4561 <u>sharris2@pwcgov.org</u> August 2017 Value \$180K

• Loudoun County Public Schools, Broadlands, VA

Production Control Room and School Board Council Chamber Upgrade – System renovation included four Hitachi DK-Z50 Ross camera mounted on Ross Cambot 520 remote controllable PTZ heads, Ross Carbonite Switcher, Yamaha QL-1 audio mixer, Ross Xpression character generator, Ross NK 64x64 HD video router, MultiDyne fiber transmission, IHSE KVM switch, IWD custom operator console.

Brenda Allen, Administration Building Coordinator, 571-252-1130 <u>brenda.allen@lcps.org</u> August 2017 Value: \$275K

• James Madison University, Harrisonburg, VA

Production Switcher and Replay System Upgrade – replaced existing production switcher and replay systems with Ross Carbonite production switcher and Ross Mira replay system

Clayton Metz, Director of Video Content 540-271-0598 <u>metzct@jmu.edu</u> May 2015 Value: \$110K

Montgomery Community Media, Rockville, MD

Studio and Production B Upgrade – Replaced existing character generator, added remote controlled PTZ heads, added Newsroom Computer system. Included Ross Xpression dual channel character generator with clips, Ross MOS gateway, Ross Inception newsroom, two Ross Cambot remote controlled PTZ heads, and IWD custom operator console

Michael Walsh, Technical and Network Manager, 240-630-0628 <u>mwalsh@mymcmedia.org</u> April 2017 Value: \$150K

• Prince William County Government, Prince William, VA

Master Control Playback System Upgrade – Replaced existing master control playback system with four channel Tightrope Flexcast video server, Carousel bulletin board graphics systems, a Tightrope automation/VOD server, a Ross NK 16x16 HD video router, and TV Logic quad video monitor set.

Stephen Harris, Video Engineer (703) 792-4561 <u>sharris2@pwcgov.org</u> March 2017 Value \$75K

• Maryland Public Television, Owings Mills, MD

Large Routing Switcher Installation – Utah Scientific Series 400 Series 2 Router 528x528 HD video, 256x256 AES audio, 64x64 RS-422, 64x64 time code, 12 control panels.

Chad Hooker, Chief Engineer 410-581-4043 <u>chooker@mpt.org</u> February 2017 Value: \$950K

• WCVE, Richmond, VA

Mobile Production Vehicle – Production system for news and sporting event in customized Sprinter van. Four GV LDK-80 studio cameras, Ross Carbonite Black production switcher, Ross dual channel Xpression character generator, Yamaha QL-1 audio mixer, Newtek, Tricaster 4x2 replay system, Ross NK 64x64 routing switcher, Clearcom analog party line intercom and IFB, AJA KiPro Rack recorders.

Mark Spiller, VP for Engineering 804-560-8153 <u>mspiller@ideastations.org</u> February 2017 Value: \$550K

• Pew Charitable Trusts, Washington, DC

Studio, Production Control Room, and Tech Core - Two production studios designed for live broadcasts and podcasts, and for live to tape recordings. System included two Hitachi DK-Z50 Ross camera mounted on Ross Cambot 520 remote controllable PTZ heads, Ross Carbonite Switcher, Yamaha QL-1 audio mixer, Ross Xpression character generator, Ross NK 64x64 HD video router, Clearcom party line intercom and IFB, CueScript prompting, Matrox streaming encoder, IWD custom operator console.

Chris Peslis, Officer, Communications, 202-540-6517 <u>cpeslis@pewtrusts.org</u> November 2016 Value: \$400K

• Elon University, Elon, NC

McEwen School of Communication Two Production Control Rooms and Tech Core Upgrade -Each control room: Ross Carbonite Black Plus 2 M/E Switcher, Wheatstone S-4 audio mixer, Ross Xpression 2 channel character generator with clips, Ross NK 128x128 HD video router, Clearcom Eclipse digital party line intercom with IFB, IHSE KVM, AVID Nexus data storage system, IWD custom operator consoles.

Vic Costello, Professor 336-278-5669. <u>vcostello@elon.edu</u> September 2016 Value: \$1M

• Radford University, Radford, VA

Studio, Production Control Room, Tech Core and Post Production Upgrade - 4 Hitachi HD cameras, Ross Carbonite Black Plus 2 M/E Switcher, Yamaha QL-1 audio mixer, Ross Xpression character generator, Ross NK 72x72 HD video router, AVID ISIS data storage system, IWD custom operator consoles

Randy McCallister, VP IT 540-831-7514 <u>rmccalli@raford.edu</u> October 2016 Value: \$800K

• York County Board of Supervisors, Yorktown, VA

Production Control Room and school Board Council Chamber Upgrade – System renovation included four Panasonic AW-HE130 Panasonic remote controlled cameras, Ross Carbonite Switcher, Soundcraft audio mixer, Ross Xpression Prime character generator, Ross NK 34x34 HD video router, AJA KiPro recorder, Ross, AJA and Ensemble Designs terminal gear, IWD custom operator console.

July 2016 Value: \$150K

• Longwood University, Farmville, VA

HD Studio and Post Production System - 3 Hitachi HD cameras, Ross Carbonite 2 M/E Switcher, Yamaha QL-1 audio mixer, Ross Xpression character generator with clips, Ross NK 72x72 HD video router, and AVID ISIS data storage system, IWD custom operator console.

Ryan Stouffer, Ph.D. Assistant Professor 434-395-4937 <u>stoufferrr@longwood.edu</u> October 2015 Value: \$800K

• Montgomery Community Media, Rockville, MD

Master Control Playback System Upgrade – Replaced existing master control playback system with four channel Tightrope Flexcast video server, two Carousel bulletin board graphics systems, a Tightrope automation and VOD server, two Tightrope live streaming servers, AJA FS1 frame synchronizers, Apantac multiviewer, Avocent KVM switch, Sierra video router, and IWD custom operator console.

Michael Walsh, Technical and Network Manager, 240-630-0628 <u>mwalsh@mymcmedia.org</u> October 2015 Value: \$125K

• Loudoun County Government, Leesburg, VA

Dulles Conference Room AV and Production System – - System renovation included four Sony BRC-900 remote controllable PTZ cameras, four Sharp 75" monitors, Extron DVI routing system, AMX control system, Yamaha amplifiers and speakers. Portable production system included Ross Carbonite production switcher, Ross Xpression Live CG, Behringer RX1202FX audio mixer, AJA KiPro recorder, Wohler monitoring. Project include relocating main technical equipment racks which included Ross routing switcher upgrade and Nevion SDI fiber transceivers

Stan Rogers, Video Producer, 571-442-7326 <u>stan.rogers@loudoun.gov</u> September 2015 Value: \$400K

• James Madison University, Harrisonburg, VA

Studio, Production Control Room, Tech Core and Post Production Upgrade - 3 Hitachi Z-HD600 cameras, Ross Carbonite Plus 2 M/E Switcher, Ross Xpression character generator, Grass Valley NV-8144 144x144 HD video router, Grass Valley K2 four channel video server, AJA KiPro recorder, Ross, AJA, and Ensemble Designs terminal gear, Clearcom wireless IFB, Ross Inception newsroom computer system.

John Hodges, Technology Manager 540-568-6062 <u>hodgesj@jmu,edu</u> May 2015 Value: \$475K

• Frederick County Board of Supervisors, Winchester, VA

Production Control Room and school Board Council Chamber Upgrade – System renovation included four Hitachi DK-Z50 Ross camera mounted on Eagle remote controllable PTZ heads, Ross CrossOver Solo production switcher, Yamaha 01V96R audio mixer, Ross Xpression Live character generator, Ross NK 16x16 HD video router, AJA KiPro recorder, Ross, AJA and Ensemble Designs terminal gear, IWD custom operator console.

April 2015 Value: \$185K

• Arlington County Board of Supervisors, Arlington, VA

Production Control Room and County Board of Supervisors Council Chamber Upgrade – System renovation included three Hitachi Z-HD5000 studio camera cameras, Ross Carbonite Switcher, Yamaha 01V96 audio mixer, Ross Xpression Prime character generator, Ross NK 64x64 HD video router, AJA KiPro recorders, Ross, AJA and Ensemble Designs terminal gear, IWD custom operator consoles, Imagine Communications Versio master control playback system.

Robb Farr, Executive Producer April 2015 Value: \$488K

• International Association of Fire Fighters, Washington, DC

Studio, Production Control Room, and Tech Core - Production studios designed for live broadcasts and podcasts, and for live to tape recordings. System included two remote controller Sony BRC-H900 cameras and one Sony PMW350 camera, Ross Carbonite 2 ME Switcher, Presonus audio mixer, Ross Xpression character generator, Ross NK 34x34 HD video router, Clearcom party line intercom and IFB, Autoscript Script prompting, Digital Rapids streaming encoder, IWD custom operator console, Whisper sound booth.

Marty Sonnenberg, General Manager, 202-842-7555 <u>marty@E18media.com</u> February 2014 Value: \$320K

SECTION 4

DVG Engineering Awards

National Set Design : News Nation *DVG did the design for the on set technology

https://www.broadcastproductionawards.com/winners/1430/



Engineering Awards

Set Technology Local : WFLA



Engineering Awards

Best Local Set Design – WREG



Engineering Awards



Excellence in Engineering Award - BBC

SECTION 5

DVG Project Pictures

Digital Video Group Broadcast Systems Professional References Facility Upgrade Projects June 2021



University of Virginia Darden School of Business, Charlottesville, VA



Before

After

<image>

Before

After

Digital Video Group 105 Sylvia Road Ashland, VA 23005 Facility Upgrade Project Professional References June 2021

Prince Georges Community College, Largo MD

BBC Washington DC Studio



Before

After

Elon University, Elon, NC



Before

After

Montgomery Community Media, Rockville, MD



Before

After

Georgia College, Milledgeville, GA



Before

After

Arlington County Public Schools, Arlington, VA



Before

After

Arlington County TV, Arlington, VA



Before

After



Master Control Before

Master Control After

Digital Video Group 105 Sylvia Road Ashland, VA 23005

Prince William Hylton High School, Manassas, VA



Before

After

Loudoun County Government, Leesburg, VA



Before

After

Digital Video Group 105 Sylvia Road Ashland, VA 23005

WSLS-TV, Roanoke, VA



Before

After

Integration Examples



Maryland Public TV Router





WSLS Router

Digital Video Group 105 Sylvia Road Ashland, VA 23005



WSLS Tech Core

George College Tech Core

UVA Darden School Tech Core



Elon University Tech Core

Digital Video Group 105 Sylvia Road Ashland, VA 23005