SPECIFICATIONS

SUPPLY OF MULTIMEDIA AUTHORING LAB DEVICES AND INSTALLATIONS

ORDER NO.: 7000013172
WBS ELEMENT: G-011915-002

No.	Item	Description	Quantity
1	65 Inch Smart TV	Screen Size: 65 inches Display Type: QLED/OLED Resolution: 3840 × 2160 (4K UHD) Refresh Rate: >90Hz HDR Support: HDR/HDR10+/Dolby Vision Color Technology: High Contrast. Invert Colors, Gray Scale Audio Output: 20W Speaker System: 2CH Audio Features: Adaptive Sound Connectivity: Wi-Fi 5, Bluetooth 5.3, Ethernet Operating System: Smart TV OS with Proprietary Screen Cast HDMI Ports: <3 USB Ports 2 × USB-A HDMI Audio Return: eARC / ARC VESA Mount Compatible Year Model: Less than 3 Years Weight with Stand: <25 kg	1
2	Adjustable(swivel) TV wall mount for 65” TV	VESA Compatibility: (300x200, 400x400, 600x400) mmm Weight Capacity: <45kg Tilt and Swivel Capability	1
3	Lighting	A. Softbox Kit • Softboxes: 2 x 27" x 27" • Bulbs: 2 x 35W, 5700K, 90+ CRI • Light Stands: 2 x 7.3' adjustable • Sockets: 2 x E27 B. Ring Lights • Color Temp: 3200K–5600K (adjustable) • Brightness: 0–100% dimming • Control: Wireless IR remote (50 ft range) • Stand: Adjustable 34"–96 • Power: AC + optional battery, USB port (5V/2A) • Includes: Phone holder with flex arm	1

		C. 5-in-1 Reflector Kit • Sizes: 43" • Surfaces: White, silver, gold, black, translucent • Material: Durable nylon fabric • Extras: Includes carrying case	1
		D. Three pieces of Overhead LED panels: Specifications Light Type Professional Bi-Color LED Panel Power Output 200W Color Temperature 3200K – 5600K CRI ≥97 TLCI ≥97 Brightness Control 0–100% Dimming Control Options Onboard / DMX / Bluetooth App Bluetooth Functionality Wireless Smartphone Control Mobile App Support Yes Group Lighting Control Yes Cooling System Silent Fanless Operation Mounting Type Ceiling/Grid Compatible Power Supply AC Power Light Spread Soft Wide-Angle Studio Lighting Flicker-Free Operation Yes Barndoors Included Recommended Use Broadcast / Multimedia Studio	3
4	Professional Video Camera & Accessories	Professional camcorder specifications: • UHD 4K Camcorder with LCD Touchscreen and 20x Optical Zoom Lens • Photo Sensor Technology CMOS • Video Capture Resolution 4K • Maximum Focal Length 627 Millimeters • Maximum Aperture 2.8 f • Flash Memory Type SDXC • Video Capture Format MP4 • Supported Audio Format PCM • Screen Size 3.5 Inches • Connectivity Technology HDMI, USB	1
5	Tripods/Supports	• Tripod stand compatible with Video Recorder Camera Quoted	1
6		**Camera with 50mm lens**	1

	Professional Digital Camera & Accessories	**Professional Mirrorless Camera with 50mm Lens** • 30.3 Megapixel full-frame CMOS sensor and DIGIC 8 image processor • Dual Pixel CMOS AF with 5,655 manually selectable AF points • Continuous shooting speed: Up to 8 frames per second (fps) • 4K 30P and 10-bit 4:2:2 HDMI output • Built-in EVF with 3.69 million dots, Vari-Angle Touchscreen LCD and dot-matrix LCD panel • Mirrorless Digital Camera Body • Storage: Supports SD/SDHC/SDXC memory cards (UHS-II compatible) • Connectivity: WiFi and Bluetooth for wireless transfer and remote control **Camera Accessories** • SDXC Card: 512GB • Camera Bag • Extra Battery • Compatible mount adaptor •	
7	Tripods/Supports	Tripod stand compatible with The Professional Mirrorless camera	1
8	Video Mixer / Live Stream Switcher	**Key Features: Video Mixer** • **4 HDMI Inputs:** Supports up to four HDMI sources, such as cameras, computers, or gaming consoles. • **Built-in Hardware Encoder:** Enables direct live streaming via Ethernet without the need for additional software. • **USB-C Output:** Allows for recording to USB flash drives in H.264 format. • **Multiview Monitoring:** Provides a 10-view display, including program and preview outputs, input sources, media player, and audio meters. • **Audio Mixer:** Features a 2-channel digital audio mixer per source with Fairlight audio enhancements. • **Control Options:** Supports control via built-in panel, software control, and optional hardware panels. • **Compatibility:** Works seamlessly with other HDMI-compatible devices. **Specifications:**	1

		• **Video Inputs:** 4 x HDMI Type A (10-bit HD switchable) • **Audio Inputs:** 2 x 3.5mm stereo mini jack (analog) • **Video Outputs:** 1 x HDMI • **Streaming:** Direct streaming via Ethernet to platforms like YouTube Live • **Recording:** Direct recording to USB flash disks in H.264 format • **Multiview Output:** HD • **Control:** USB Type-C (firmware, control), RJ45 (Ethernet, control	

9	Video Streaming Encoder	• **Video Input:**
		  ○ 1 x 3G-SDI (compatible with HD-SDI and SD-SDI)
		  ○ 1 x HDMI 1.4b
		• **Video Output:**
		  ○ 1 x 3G-SDI Loop-out
		  ○ 1 x HDMI 1.4b Loop-out
		• **Audio Input:**
		  ○ 4-channel embedded audio (via HDMI & SDI)
		  ○ 1 x 3.5mm Line In
		• **Video Formats Supported:**
		  ○ HDMI: 3840x2160p, 1920x1080p, 1920x1080i, 1280x720p, 720x576i (PAL), 720x480i (NTSC)
		  ○ SDI: 1920x1080p, 1920x1080i, 1280x720p, 720x576i (PAL), 720x480i (NTSC)
		• **Encoding Formats:**
		  ○ H.264 (AVC) and H.265 (HEVC)
		  ○ Supports Baseline, Main, and High profiles, up to Level 5.1 (H.264), Level 5.0 (H.265)
		• **Streaming Protocols Supported:**
		  ○ NDI HX3, NDI HX2, SRT, RTMP, RTMPS, HLS, TS over UDP/RTP/RTSP
		  ○ Onvif (Extensible for SIP/GB-T2818)
		• **Streaming Performance:**
		  ○ Supports streaming to 8 destinations simultaneously
			1

		○ Adjustable bitrate up to 120Mbps • **Intercom & PTZ Control:** Yes • **Network Connections:** ○ 1 x 10/100/1000M RJ45 Ethernet port ○ PoE (Power over Ethernet) supported (802.3af class 3) • **USB Interfaces:** ○ 2 x USB 2.0 Type-C ○ 1 x USB 2.0 Type-A • **Display:** ○ 1.14" LCD display with touch buttons • **DHCP:** Yes • **Management:** ○ WebRTC and Server • **Power Consumption:** ≤5W • **Power Supply:** DC 12V/1A	
10	Professional Multimedia NAS storage	• NAS Type Professional 10 SSD bays, all-flash architecture, 25GbE networking, and enterprise multimedia workflows Multimedia NAS Drive Bays Minimum 8–10 Bays Supported Drives 2.5-inch SATA SSD / NVMe SSD Minimum Capacity 10TB and above RAID Support RAID 0, 1, 5, 6, 10 Processor Intel Core i5/i7 or AMD EPYC RAM Minimum 16GB DDR4/DDR5 Network 10GbE Ethernet SSD Cache Support Yes Expansion Slots PCIe Expansion Multi-user Access Yes Video Editing Support 4K/8K Editing Operating System QTS / QuTS Hero Backup Features Snapshot & Cloud Backup Hot-Swap Drives Yes UPS Support Yes Up to 4tb compatible SSD card installed	1
11	Hard Drive Docking Station	USB 3.0 Aluminum Dual Bay Hard Drive Dock for 2.5" & 3.5" SATA HDD SSD with SD/Micro	1

		SD Card Reader and Offline Clone/Duplicator Function Support	
12	Desktop Computer	• System Unit Specifications • Minimum cores: 12 • Minimum threads: 20 • Processor base frequency: Minimum 3.5 GHz • Maximum turbo frequency: Up to 5GHz • Minimum Total processor cache: 25MB • GPU Specifications • GPU Architecture: Pascal • Min. Base Clock Speed: 1,607 MHz • Min. Memory: 8GB GDDR5X • Display Outputs: 3x DisplayPort, 1x HDMI, 1x DVI-D • Max Resolution: 8K (7680x4320) • VR Ready: Yes • Minimum RAM Size: 16GB, (DDR4 or DDR5) • Minimum Storage: 1TB SSD • Operating System: Windows 11 Pro with genuine license • Keyboard layout – English • USB-C Thunderbolt Ports • Connectivity: Wi-Fi 6E, Bluetooth, Bluetooth 4.2 or better, USB 3.0, HDMI, VGA, • Monitor: 27" FHD LCD Display • Wired Keyboard and Optical Mouse	2
13	Green Screen/Backgrounds	Green Screen Backdrop Kit with Stand, 8x7.2ft for Streaming Video and Photography Shoots	1
14	Photography Backdrop	White, black and gray backdrop, 8x7.2ft for Streaming Video and Photography Shoots	1
15	Fiber optic HDMI 65ft	8K HDMI Fiber Optic Cable CL2 Rated 65 Feet 48Gbps 8K60Hz 4K120Hz Dynamic HDR	1
16	Fiber optic HDMI 60ft	8K Fiber Optic HDMI Cable 60FT Certified Ultra HD High Speed HDMI 2.1 Cable, 8K60 4K120 144Hz, 48Gbps	4

17	HDMI cable 10ft	8K HDMI 2.1 Cable 10 Feet in Wall Rated 8K60Hz 4K120Hz eARC ARC HDCP 2.3 2.2 Ultra High Speed Compatible with Dolby Vision	4
18	DisplayPort Thunderbolt to HDMI Converter	Mini DisplayPort to HDMI Cable, Mini DP (Thunderbolt) to HDMI Cable 6.6ft, Nylon Braided Aluminum Shell, Optimal Chip Solution for MacBook Air/Pro, Surface Pro/Dock ,Monitor	2
19	USB A-B Cable	USB-A to USB-B 2.0 Cable for Printer or External Hard Drive, Gold-Plated Connectors, 6 Foot, Black	2

20	Production Monitor	• Screen Size: 27 inches (
		• Aspect Ratio: 16:9 (widescreen)
		• Resolution: Full HD (1920 x 1080)
		• Refresh Rate: 60Hz to 75Hz
		• Connectivity:
		  ○ HDMI
		  ○ VGA/Display Port
		Adjustable Height
			2

21	Audio Mixer/Interface or Sound Card	**Type:** • USB audio interface with built-in digital mixer features **Inputs:** • 2 XLR/TRS combo jacks (for mics or instruments) • 2 stereo line inputs (for keyboards, synths, etc.) **Outputs:** • Main stereo output (for speakers) • Headphone output with separate volume control **Connection to Computer:** • USB-C (for audio and power) **Audio Quality:** • 24-bit / 48 kHz resolution (standard for home recording) **Phantom Power:** • +48V available for condenser microphones **Controls & Features:** • Physical knobs and buttons for gain, mix, volume • Integrated basic mixer functionality • LED metering for levels • Monitor mix knob (to blend between input and playback)	1

		Software Integration: • Plug-and-play with most DAWs • No extra drivers needed for most systems •	
22	Studio Pro Headphone set	**Type:** Over-ear, closed-back headphones (for studio monitoring) **Sound Quality:** • Clear, balanced sound (focused on accurate, flat response) **Driver Size:** 40mm **Frequency Response:** • Wide range (usually 10 Hz to 20 kHz or higher) • Aimed at reproducing both low and high-end frequencies clearly **Impedance:** • 32Ω or 50Ω **Comfort:** • Padded ear cups and headband • Adjustable for different head sizes • Foldable design **Cable:** • Detachable Typically around 3 meters long	2
23	Microphone Set	UHF wireless system • 2 Headset • 2 Lavalier Bodypack • 2 Lapel Mic	1
24	Wireless Conference Boundary Microphones	• **Type:** Wireless microphone system (includes both receiver and handheld Dynamic Microphone, Shotgun microphone) **Transmission:** • UHF (Ultra High Frequency) for stable, long-range wireless signal • Up to 100 meters (328 feet) range, **Microphone Type:** • Handheld dynamic microphone (designed for vocal use) • Built-in transmitter (integrated into the microphone) **Receiver:** • Dual-channel receiver (can support two microphones or devices at once) • Includes both balanced XLR and unbalanced ¼” outputs for easy connection to audio equipment **Frequency Response:**	1

		• Wide range (typically around 60 Hz to 20 kHz), capturing full vocal range and clarity **Audio Quality:** • Clear, consistent audio transmission with minimal interference • High-quality, reliable sound for live performances, presentations, or broadcasting **Controls & Features:** • Automatic frequency scanning (helps find available channels) • Adjustable volume on receiver and microphone • LCD display on receiver for signal strength and battery status **Power Source:** • Microphone powered by AA batteries • Receiver powered via AC adapter	
25	2-Way Powered Wall Speakers	**Type:** 2-way powered speakers **Built-in Power:** 2x30W RMS, 2x80W peak **Frequency Response:** • 45Hz to 20kHz (-10dB) • 100Hz to 20kHz (±3dB) **Woofer:** 5.25“ polypropylene cone **Tweeter:** 0.5“ Mylar dome **Sensitivity:** 85dB SPL (1W@1m) **Max SPL:** • Continuous: 105dB • Peak: 110dB **Power Source:** 90–240V AC **Crossover Frequency:** 8kHz **Audio Inputs:** • 3.5mm mini jack (unbalanced) • RCA (unbalanced) • Terminal block (balanced) **Audio Outputs:** • Speaker out (for external speakers) • 3.5mm mini jack (subwoofer and loop out) **Controls:** Volume, bass, and treble **Power Mode:** ON or AUTO **Signal-to-Noise Ratio:** 83dB+ **Total Harmonic Distortion (THD):** <0.2% **Input/Connectivity:** XLR or 3.5mm jack	1

26	2-Way Active Studio Monitors	**Type:** 2-way active (powered) near-field studio monitors **Woofer:** 6.5" composite woofer (for bass and mids) **Tweeter:** 1" silk dome tweeter (for high frequencies) **Power:** • 90W total power (55W for the woofer, 35W for the tweeter) **Frequency Response:** • 45Hz to 20kHz (wide range for detailed sound) **Max SPL:** 104dB (maximum sound pressure level) **Connectivity:** • Balanced XLR input • Balanced ¼" TRS input • Unbalanced RCA input **Controls:** • Volume control • High and low frequency adjustments (for tuning the sound) **Size:** Compact, designed for close listening **Ideal For:** • Home studios • Audio production and mixing Professional recording environments	1
27	Ethernet Switch	• **Ports:** 16 Gigabit Ethernet ports (for high-speed connections) • **PoE+ Support:** Powers devices like IP cameras, phones, and access points through the Ethernet cable • **Management:** Managed switch (allows control and monitoring of the network) • **PoE Power Output:** Typically, up to 30W per port • **Speed:** Gigabit (1 Gbps) on each port for fast data transfer • **Switching Capacity:** High enough to handle full-duplex data traffic efficiently • **VLAN Support:** Allows network segmentation for better control • **Quality of Service (QoS):** Prioritizes network traffic to ensure smoother performance for important tasks • **Security Features:** o Port security o Access control lists (ACL) o Authentication protocols	1

		• **Management Access:**
		  ○ Web interface
		  ○ SNMP (Simple Network Management Protocol)
		  ○ CLI (Command Line Interface)	

28	Audio visual Rack	**Type:** • 15RU (Rack Units) audio/video gear housing solution **Design:** • Professional-grade rack for organizing audio and video equipment • Typically features a sturdy, rack-mountable structure **Material:** • Durable construction (usually metal or reinforced material) **Cooling & Ventilation:** • Often includes fans or vents to ensure equipment stays cool during operation **Accessibility:** • Front and/or rear access for easy equipment connections • Lockable doors (in some models) for security and protection **Mounting:** • Rack-mountable, with standard holes for 19-inch-wide equipment	1

29	Cable Cubby/Tbus	• **Pop-up desktop hub** for multimedia and power access
		• **Connections Included:**
		  ○ HDMI, VGA, 3.5mm Audio
		  ○ USB 2.0 port
		  ○ AV (RCA) interface
		  ○ 6.35mm Mic input
		  ○ 2 x Network (LAN) ports
		  ○ Universal power socket
		• **Design:**
		  ○ Pop-up mechanism (flush when closed)
		  ○ Desk/table installation
		  ○ Cable management-friendly
			1

30	Audio Cables	• 15 Ft professional bulk audio Cable	1

31	Audio Connectors	• XLR, 3.5mm, Jack connectors (VARIOUS)	1
32	Power Extension Outlet	• Heavy Duty 6-Way Industrial Power Extension Strip	2
33	Online UPS with batteries	**Power Capacity:** 5kVA (5000 VA) **Voltage:** 230V input / 400V support **Outlets:** 4 × IEC 32A **Runtime:** Extended runtime capable (supports external battery packs) **Management:** • Pre-installed Network Management Card • SmartSlot for accessories • **Form Factor:** Rack/Tower convertible External Battery Bank 8 × 12V 100Ah deep-cycle batteries	1
34	Installations, Cabling & Accessories	Design, Project Management. Installation, Testing, Training and Commissioning. Installation: Mounting, Setup of Equipment and sound treatment: installing and positioning all necessary hardware, including • Adapters and Connectors • Audio Systems • Charging station • Mounts and Stands • Protections • Additional Considerations • Furniture suitable for the various spaces Cable • Power Cabling: Ensuring that all devices have reliable power connections. • Network Cabling: Internet settings for downloading and streaming content. • Data Cabling: (USB 3.0 or HDMI) • Cable Management: Proper organization of cables to prevent tripping hazards, keep everything tidy, and ensure easy access for maintenance.	1
35	Acoustics and soundproofing Specifications	**Wall Acoustic Treatment** The room walls shall be treated using professional acoustic materials to reduce reverberation and improve speech intelligibility.	1

		Minimum Requirements • Acoustic panels with NRC rating ≥ 0.80 • High-density acoustic foam panels • Fabric-wrapped acoustic boards • Mineral wool or Rockwool insulation • Corner bass traps • Acoustic diffusers where necessary Performance Requirements • Reverberation Time (RT60): 0.3 – 0.6 seconds • Noise Reduction Coefficient (NRC): Minimum 0.80 • Balanced sound absorption across mid and high frequencies **Sound Isolation** The room shall be isolated from external noise sources. Minimum Requirements • Double-layer soundproof gypsum boards • Mass Loaded Vinyl (MLV) • Acoustic sealants • Resilient channels and isolation clips • Soundproof insulation within wall cavities Performance Target Minimum STC Rating: 50 or higher **Flooring** Requirements • Acoustic carpet or carpet tiles • Rubber acoustic underlay Vibration isolation pads where required **Doors and Windows** Acoustic Doors • Solid-core acoustic door • Acoustic perimeter seals • Automatic drop seals Acoustic Windows • Double-glazed acoustic glass • Laminated soundproof glass Airtight installation **Cabling Treatment** Provide a non-destructive access point for cables for both now and future modifications.	

36	Warranty for Electronic equipment	1. WARRANTY FOR ELECTRONIC EQUIPMENT (Minimum One-Year Warranty Coverage) Electronic Equipment Warranty Clause The Contractor/Supplier shall provide a comprehensive warranty for all electronic equipment supplied and installed under this project for a minimum period of Twelve (12) Months from the date of commissioning and official handover. The warranty shall cover, but not be limited to: Manufacturing defects Hardware failures Electrical faults Factory component malfunction Installation-related faults System integration failures Defective accessories and peripherals Software or firmware instability directly associated with supplied equipment The warranty shall apply to all procured electronic equipment including but not limited to: Multimedia editing workstations NAS storage systems SSD storage devices PTZ cameras Camcorders Video switchers and livestream encoders Studio monitors and display systems Audio mixers and microphones Lighting systems and controllers Network switches and communication equipment UPS systems and power management equipment Accessories and mounting systems During the warranty period, the Contractor/Supplier shall: Repair or replace defective equipment at no additional cost to the Client. Provide technical support and troubleshooting services.	

		Supply genuine replacement parts where required. Respond to fault reports within a maximum of Five (5) working days. Ensure minimal downtime of operational systems. Cover all transportation and labor costs associated with repairs or replacement. Any equipment replaced under warranty shall inherit the remaining warranty period or receive an additional minimum Ninety (90) days warranty, whichever is longer. The warranty shall not cover damages resulting from: misuse, vandalism, unauthorized modifications, fire outbreaks, flooding, power surges outside specified tolerances, or other force majeure events.	
37	Warranty for Acoustic Treatment	WARRANTY FOR ACOUSTIC TREATMENT WORKS (6–12 Months Defect Liability/Warranty Period) Acoustic Treatment Warranty Clause The Contractor shall provide a warranty and defect liability coverage for all acoustic treatment works executed under this project for a period ranging from Six (6) to Twelve (12) Months from the date of practical completion and handover. The warranty shall cover: Detachment or failure of acoustic panels Defective POP acoustic installations Cracks or structural defects in acoustic finishes Loose mounting systems Warping or deformation of acoustic materials Defective soundproofing installations Poor finishing workmanship Material deterioration under normal studio operating conditions Failure of adhesive systems	

		Acoustic seal failures around treated openings and wall sections The acoustic treatment works shall include, but not be limited to: Acoustic wall treatment POP soundproofing installations Ceiling acoustic systems Bass traps and diffusers Acoustic foam installations Studio sound isolation systems Acoustic door sealing systems Treated window replacement works Cable and penetration acoustic sealing During the warranty period, the Contractor shall: Correct all workmanship defects at no additional cost. Replace damaged or failed acoustic materials resulting from poor workmanship or manufacturing defects. Conduct inspection and maintenance where necessary. Respond to defect notifications within Five (5) working days. Restore affected acoustic performance levels to the approved specification standards. The warranty shall not apply to damages caused by: deliberate destruction, flooding, structural movement of the building, fire, unauthorized modifications, or misuse of the facility. At the expiration of the warranty period, the Contractor shall conduct a final inspection jointly with the Client to certify satisfactory completion of all defect rectifications.	

Minimum of One (1) year warranty