DeAnza College

Request for Measure C New Equipment Funding For the Three-Year Period 2011-2014 Furniture, Fixtures & Equipment (FF&E)

Please read the *Measure C FF& E Spending Guidelines* to determine what can be purchased with these funds.

The request comprises three parts. All three parts must be completed:

Part 1 – Division Process for Preparing Request for Measure C Funding

Part 2 – Narrative Supporting Request (See questions below.)

Part 3 – Measure C – Budget & Item Detail (See separate Excel Spreadsheet)

IMPORTANT DATES:

Due Date: **November 10, 2011**
Allocation Date: **February 2012**

REQUIRED SIGNATURES

Division: Educational Resources and College Operations

Department: Technology Resources Group **Request # (as per spreadsheet)**

Dean/Manager's Name: Marty Kahn **Signature:**

E-mail: KahnMarty@deanza.edu **Date**: 11-10-2011

PART 1 – DIVISION PROCESS

1. Please Describe Your Division Process For Preparing Your Request.

The attached list is the result of a cooperative effort between the TRG, our MLC building consultants and our college staff and faculty. This equipment request has been part of the plan for the Mediated Learning Center since the inception of the building's concept.

A committee for the Mediated Learning Center was formed in 2007, led by our VP of Finance and Technology and staffed with faculty, Deans, classified staff and student

representatives. Numerous meetings and countless hours of discussion resulted in the current programming of spaces in the MLC. Multi-media production facilities (which form the basis of this request) were determined to be necessary to the mission of the building "to support and enhance the use of media in instruction and student services."

After programming the spaces in the MLC, our design engineer, Ed Breault, created a rough design and equipment list. A consultant was then hired to refine the equipment list and break it into three cost categories: Good, Better and Best. Each member of our Technology Resources Group was asked to submit their technical/equipment needs for the new facility, and key members of the TRG have been speaking with deans and faculty regarding their needs for use of the TRG facilities. Based on current campus needs and technology updates, the attached list was further refined and updated by Ed Breault in October of 2011.

PART 2 –NARRATIVE

Please answer all questions. Put N/A if questions don't apply.

1. Please Describe Your Measure C Project

1.a. Summarize What Is Being Requested

The TRG equipment list is quite diverse. The equipment on the list ranges from network equipment and servers to equipment used for the creation, compression and distribution of audio and video instructional and student support content.

1.b. How Will The Equipment Be Used?

These facilities will allow the creation and distribution of instructional and student support media to our enrolled students and the general public. The "media" that will be created will not be limited to audio or video content; all web media, including but not limited to audio, video, text, still images, still graphics and motion graphics will be created and distributed from this newly equipped facility.

Equipment on the list will be used to create content for the main De Anza website, our Distance Learning faculty and students, our cable TV channel that reaches 400,000 South Bay homes, the local community, grant funded projects and our De Anza classrooms. Many campus departments and programs will use the equipment directly for their programs or classes.

1.c. Can The Equipment Be Shared With More Than One Discipline?

The equipment is sometimes used directly by campus programs or departments (i.e. La Voz, Hollywood North, DASB) but will mostly be operated by staff and student

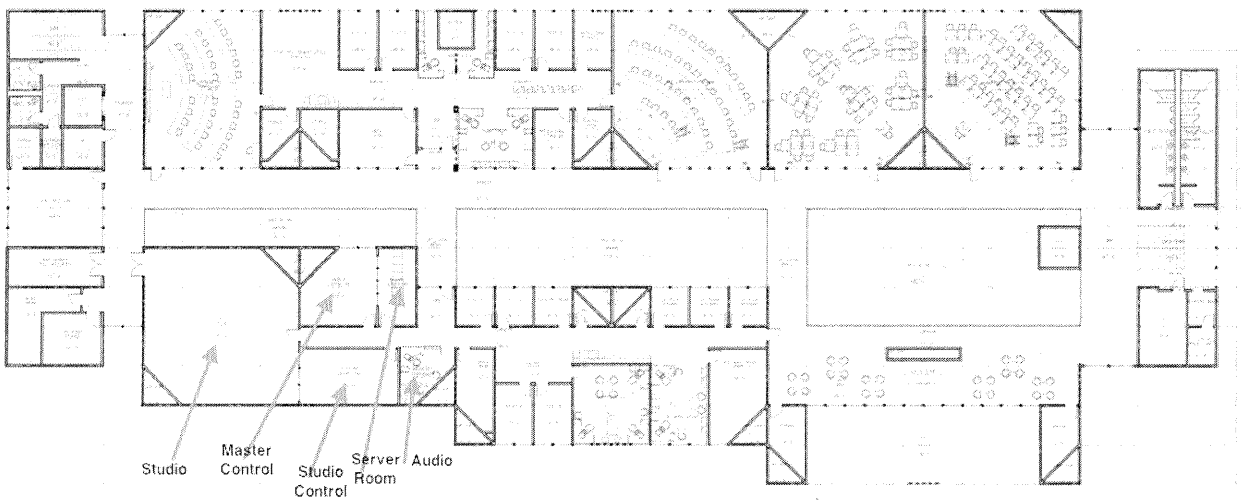
employees of the TRG. However, almost every department on campus will use these facilities and the resulting media at some time. Faculty will use the facilities each week to create on line lectures. Staff will use the facilities to create training and staff development content. Students and Faculty will hold classes in the facility, which will be recorded and delivered using web based servers, cable television and hard media such as DVD and Blu-Ray. Please see Section 2 below for a list of programs and disciplines that will be supported by this request.

1.d. What Is The Anticipated Annual Cost Of Maintenance?

The equipment will be covered by warranty for the first 1-3 years of ownership, depending on the manufacturer. After the warranty period, our staff will have the responsibility to troubleshoot and maintain the equipment. There will be equipment problems that cannot be repaired or resolved in house, in which case the item may be sent to the manufacturer for service. We will also stock parts and supplies for key items in house, to facilitate quick repair. The estimated annual cost of maintenance, including the purchase of parts and the use of outside services, will be $5-$10,000 annually.

1.e. Where Will It Be Located? Is There Sufficient Space?

All equipment will be located on the second floor of the new Mediated Learning Center. The image below represents the layout of the second floor of the MLC, with arrows indicating the space that is specifically designed to accommodate the requested equipment.



2. What Programs And Disciplines Will The Project Support?

2.a. List The Programs/Disciplines That The Equipment Will Support

Below is a table listing the programs and disciplines that have used the TRG facilities/services over the past few years. The list is not comprehensive. It does not, for example, list the many local companies and community groups that have used TRG facilities, nor does it list every academic program, grant funded program, or student services group that have used the facilities:

Academic Services	Accounting	Admissions and Records
Anthropology	Applied Technologies	Art\ Animation
Astronomy	Athletics	Automotive Technology
Biology	Business	Business/Computer Systems
California History Center	Chemistry	Child Development
Computer Aided Design and Digital Imaging	Computer Applications and Office Systems	Computer Information Systems
Counseling	Cross Cultural Partners	Dance and Theater
DARE	Disability Support Services (DSS)	Distance Learning
Economics	Engineering	English
English as a Second Language	Environmental Studies	Film/Television
Financial Aid	Geography	Health Technologies
History	Humanities	IMPACT
Institute for Civic Engagement	Intercultural Studies	Journalism and Mass Communication
Language Arts	La Voz	Library (Learning Center)
Library West Computer Lab (formerly the Open Media Lab)	Manufacturing & CNC Technology (Includes Machining, GD&T/CMM, PLC)	Mathematics
Marketing Communications	Medical Laboratory Technician	Music
Nursing	Philosophy	Photography
Physical Education	Physics	Political Science
Psychology	Reading	Real Estate
Sociology	Speech Communication	Staff Development
Student Success Center	Urdu	

2.b. How Will The Equipment Improve Student Learning Or Student Services?

De Anza College serves students from all walks of life: Full time students, part time students, working and/or single parents, international students, students from every world culture or background. To serve this diverse group of students, De Anza College must offer a variety of learning modalities. Face to face classes that make use of web services and TRG created media are the best form of instruction for some students, but not all. Many students require the flexibility of on line courses and on line lectures; for some this is the only viable option that would lead to a college degree.

The use portable media, on line courses and on line lectures allows the student to learn "anytime, anywhere." It also provides them with the ability to review the content as many times as is necessary to successfully complete the course objectives. The addition of closed captions further enhances the learning for our students for whom English is the second language. The newly developed "searchable captions" allows students to

quickly locate key sections of a lecture for review before a mid term or final, thus increasing the likelihood of success.

2.c. What Data Or Evidence Supports Your Request?

In 1997 De Anza College enrolled 24,083 students. As recently as 2010, De Anza College had 23,760 students enrolled, indicating that overall enrollment has been flat for the past thirteen years. During that same time period, Distance Learning enrollment has increased from 10,709 in 2007 to 13,860 in 2010, showing an increase of approximately 30% over the same time period. Since overall enrollment has not increased, these figures would indicate a significant drop in on campus class enrollment, and an equivalent increase in Distance Learning enrollment.

The services provided by the TRG are mission critical to the continued support and success of Distance Learning. It should be noted that, while Distance Learning is the single largest "client" of the TRG, the TRG supports all academic divisions and departments, as well as Student Services, grant funded programs and many others (see Section 2a for details.)

3. Will The Project Support Student Learning Outcomes Or Other Outcomes?

3.a.i Student Learning Outcomes?

This section is not directly applicable; we do, however, create and deliver instructional content to every discipline on campus, as well as providing administration of technology systems that store SLO data, thus supporting all instructional SLO's.

3.a.ii. Administrative Unit Outcomes?

Our administrative Unit Outcomes for 2010-2011 are:

1) *Students, faculty and the community will perceive and report that the De Anza website is well designed, easy to navigate and delivers important, up to date information.*
2) *Distance Learning students will perceive that the Distance Learning technologies used for their course are well supported, easy to access and are available when needed.*
3) *Students and faculty will perceive that De Anza's customized multi-media classrooms and audio/video production facilities are well supported and are designed to meet the specialized needs of their course.*
4) *Students, faculty and the community will perceive that all of the above technologies and services are created and delivered with consideration for all cultural and ethnic groups and will meet the needs of those with disabilities.*

3.a.iii. Student Services Outcomes?

This section is not directly applicable; we do, however, create and deliver Student Services content to the campus, as well as administration of technology systems that store SLO data, thus supporting Student Services SLO's.

3.a.iv. Program Level Outcomes?

N/A

3.b. How Will Outcomes Be Measured For Future Planning?

The following responses are numbered to correspond with our AUO's, listed in Section 3a.ii.

1) Web Team gets about 10 emails a week from users. These messages will be reviewed and broken into categories such as user complaints, user praise, referred to correct support team etc. These responses will serve as our measurement of success regarding this outcome.

2) Since Distance Learning typically does not include technical questions in their survey, Kevin will ask ETS if they will partner with us and allow us to write some questions into their annual technology survey. Kevin will track the responses and prepare a brief report.
3) Marty will check with the Deans about their faculty and student satisfaction levels with the specialized classrooms designed and supported by the TRG (i.e., ATC Studio, AT120, Kirsch Lecture Capture Classroom, etc.)

4) We will note the lack of user complaints about ADA compliance and ethic and cultural sensitivity. We will then provide a list of procedures/services/policies that we follow/offer which will highlight our sensitivity and efforts toward ethnic, cultural and disability issues.

3.c. What Evidence Supports Your Requests?

Please see Section 2c.

MLC TRG A/V EQUIPMENT LIST

DRAFT BUDGET REFERENCE DOCUMENT

Rev Date: 11/08/20

						Part quantity by room type							Extended cost per by room						
						x1	x1	x1	x1	x2	x1		x1	x1	x1	x1	x2	x1	
Qty	Unit	DESCRIPTION	SPECIFICATION	MAKE	MODEL	Studio Web Record	Mst Ctrl	Aud Booth	Eng Maint and Green	3 Edit Rooms	Server Room	Unit Price	TV Studio and Web Recorder Set	Mst Control	Aud Booth	Eng Maint and Green Room	3 Edit Rooms	Server Room	
1	each	Frame Chassis, Small Converter	AJA DRM Open Frame Chassis, incl 100w 434.00 434.00 power supply; holds 6 large or 12 small converters	AJA	DRM	2	2					$434	$868	$868	$0	$0	$0	$0	$1,736 Sub-Total
1	each	Power Supply, AJA Converters	AJA DWPU, Universal Input Power Supply, 110-220V, for D- and HD-Series Converters	AJA	DWPU	20	10					$46	$920	$460	$0	$0	$0	$0	$1,380 Sub-Total
1	each	HD/SD Video Distripution Amplifier Rackmount Frame	AJA Video FR2 2RU 10 Slot Mounting Frame for AJA RH10DA cards with high capacity power supply	AJA	FR2	3	2					$1,060	$3,180	$2,120	$0	$0	$0	$0	$5,300 Sub-Total
1	each	SD/HD Frame Synchronizer and Converter	SD/HD up/down conversion, SD/SD aspect ratio conversion, HD/HD cross conversion (720p/1080i), Dual HD/SD SDI Inputs and Outputs, Component Analog HD/SD Input and Output, Composite/S Video Input and Output with TBC, 8 Channel AES and Balanced Analog Audio inputs and outputs, 8 Channel Embedded Audio I/O Fully Redundant Power Supplies Standard, 10/100 LAN with Embedded Web Server for Remote Control, Closed Caption Support Including SD to HD upconversion	AJA	FS1		1					$3,800	$0	$3,800	$0	$0	$0	$0	$3,800 Sub-Total
1	each	HD/SD 4-channel analog audio embedder/disembedder	Audio/video; HD/SD A/D converter detects the video input format and embeds the audio inputs in the SDI/HD-SDI outputs, Formats: 1080i 50/59.94/60 Hz and 720p 50/59.94/60 Hz, Video Inputs: HD component YPbPr, (SMPTE-274), BNC, SD component/composite/YC (S Video), BNC, Audio Inputs 4-channel balanced, XLR, Outputs: SDI, HD-SDI, SMPTE-259/292/296 ,3 x BNC	AJA	HD10AMA	2	2		2			$1,100	$2,200	$2,200	$0	$2,200	$0	$0	$6,600 Sub-Total
1	each	SD/HD Analog Composite or Component Video & 4-Channel Analog Audio to SD/HD-SDI with Embedded Audio	Formats:1080i 50/59.94/60 Hz and 720p 50/59.94/60 Hz, Video Inputs HD component YPbPr, (SMPTE-274), BNC SD component/composite/YC (S Video), BNC, Audio Inputs: 4-channel balanced, XLR, Outputs: SDI, HD-SDI, SMPTE-259/292/296, 3 x BNC, Video A/D 12 bits, Audio A/D 24 bits, 48 KHz	AJA	HD10AVA	4	2		4			$729	$2,916	$1,458	$0	$2,916	$0	$0	$7,290 Sub-Total
1	each	HD/SD-SDI to DVI Conversion	HD/SD-SDI to DVI Conversion	AJA	HDP2	4	4		4			$690	$2,760	$2,760	$0	$2,760	$0	$0	$8,280 Sub-Total
1	each	SD/HD Apple ProRes 422 Codec	Apple ProRes 422, SD, HD 720/1080, 10 bit 4:2:2, Up/down/cross-conversion, 10-bit, SD-SDI and HD-SDI I/O (2), Component I/O (SD and HD), Composite and S-video I/O, HDMI video w/8-channel audio I/O, Embedded SDI 8-channel audio I/O, AES/EBU 8-channel unbalanced audio I/O, Analog 4-channel balanced audio I/O (XLR), Analog 2-channel unbalanced audio output (RCA), Genlock with loopthrough, RS-422 machine control, LTC Timecode I/O, Connects to Mac via FireWire 800 cable	AJA	IO HD	2						$2,575	$5,150	$0	$0	$0	$0	$0	$5,150 Sub-Total
1	each	Breakout box	KL-Box-LH Breakout box for KONA LHe	AJA	KL-Box-LH		2	1		3		$250	$0	$500	$250	$0	$750	$0	$1,500 Sub-Total
1	each	HD/SD Analog & Digital I/O Card for Apple Computer	SDI, HD-SDI, analog HD/SD, 12-bit HD analog component I/O, 12-bit SD analog component or composite S-Video I/O, 10-bit hardware HD to SD downconversion. Apple ProRes 422 and Apple ProRes 422 HQ supported, DVCProHD and HDV hardware acceleration, SDI or HD-SDI input, 2 independent SDI/HD-SDI outputs, 2-ch balanced XLR AES and 2-ch balanced XLR analog audio I/O, 8-ch SDI embedded audio I/O, HD/SD Genlock and RS-422 machine control. PCIe card format, Mac compatable	AJA	Kona Lhe		2	1		3		$1,400	$0	$2,800	$1,400	$0	$4,200	$0	$8,400 Sub-Total
1	0.3	HD/SD Video Distripution Amplifier	Dual Rate SD/HD 1x8 Re-Clocking Distribution Amplifer, 10-bit, Equalizing and Re-clocking, 8 outputs, Automatic Input configuration	AJA	RH10DA	30	15					$419	$12,570	$6,285	$0	$0	$0	$0	$18,855 Sub-Total
1	each	Rack Mounting Brackets, AJA Converters	Package of Ten Brackets with Mounting screws	AJA	RMB-10	20	10					$44	$880	$440	$0	$0	$0	$0	$1,320 Sub-Total
1	each	UPS	PC Uninterruptible Power Supply (UPS), APC Smart-UPS, 2200VA/1980W, Input 120V/ Output 120V, Interface Port DB-9 RS-232, SmartSlot, USB	APC	UPS 2200VA		2				2	$1,500	$0	$3,000	$0	$0	$0	$3,000	$6,000 Sub-Total

MLC TRG A/V EQUIPMENT LIST

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Qty	Unit	DESCRIPTION	SPECIFICATION	MAKE	MODEL	Part quantity by room type: x1 Studio Web Record	x1 Mst Ctrl	x1 Aud Booth	x1 Eng Maint and Green	x2 3 Edit Rooms	x1 Server Room	Unit Price	Extended cost per by room: x1 TV Studio and Web Recorder Set	x1 Mst Control	x1 Aud Booth	x1 Eng Maint and Green Room	x2 3 Edit Rooms	x1 Server Room	
1	each	Audio, Balanced to Unbalanced I/F	-10dBV to 4dBu Conversion, RCA & XLR Connectors, Dual Buffered Interface, Transformerless Outputs, Servo-Balanced Inputs and Outputs, Pushbutton 600 Ohm Input Termination, Clip Indicator, Self Powered	Aphex	124A	12	20					$194	$2,328	$3,880	$0	$0	$0	$0	$6,208 Sub-Total
1	each	30" Computer Display	All-digital, 30-inch flat panel display with a 2560-by-1600-pixel resolution. Compatible with Mac computers with a DVI port and Mini DisplayPorts, Viewing angle (typical) 178° horizontal; 178° vertical, Brightness (typical) 400 cd/m2, Contrast ratio (typical), 700:1, Pixel pitch 0.250 mm	Apple	Apple Cinema HD Display (30" flat panel)					6		$1,000	$0	$0	$0	$0	$6,000	$0	$6,000 Sub-Total
1	each	Software, Media encoding	Supports SD & HD video & audio file format, in and out, Encode formats: GXF, H.264 High Profile, DVCPRO HD, MPEG-2/4 Transport Stream,	Apple	Episode Pro	3						$1,000	$3,000	$0	$0	$0	$0	$0	$3,000 Sub-Total
1	each	Software, Video Editing	Supports SD & HD video, Apple ProRes 422 for uncompressed HD quality at SD file sizes, Final Cut Pro 6, Motion 3, Soundtrack Pro 2, Compressor 3 and DVD Studio Pro 4	Apple	Final Cut Studio 2	2	1			3		$1,299	$2,598	$1,299	$0	$0	$3,897	$0	$7,794 Sub-Total
1	each	Computer, Apple, Big, Desktop	Two 2.26GHz Quad-Core Intel Xeon, 8GB (4x2GB), Qty (4) 1TB 7200-rpm Serial ATA 3Gb/s, 3x NVIDIA GeForce GT 120 512MB, Two 18x SuperDrives, Apple Mighty Mouse, Apple Keyboard, Dual-channel 4Gb Fibre Channel PCI Express card	Apple	Mac Pro	4	2			3		$5,500	$22,000	$11,000	$0	$0	$16,500	$0	$49,500 Sub-Total
1	each	Video Patchbay	Video Weco, 2X26, 2 RU, W/self Normal, 75-ohm high-frequency jacks and a BNC rear interface, high bit-rate applications such as HDTV, SDI, AES and high-resolution computer graphics	Bittree	B52T-2WNHD	8	8	1	1			$775	$6,200	$6,200	$775	$775	$0	$0	$13,950 Sub-Total
1	each	Audio Patchbay	Audio Bantam (TT); 2x48; 2RU; Black 12" Chassis; Over/Under Designation Strips; Mono Spacing; Full-Normal, Isolated Grounds; E3 Rear Interface.	Bittree	B96DC-FNPIT/E3 M2OU12B	5	5	1	1			$1,200	$6,000	$6,000	$1,200	$1,200	$0	$0	$14,400 Sub-Total
1	each	Patchcord, Audio	Audio patch cords for Bittree B96DC-FNPIT/E3 M2OU12B, Black, 24"	Bittree	BPC2400-110	20	20	10	10			$14	$280	$280	$140	$140	$0	$0	$840 Sub-Total
1	each	Patchcord, Video	Video patch cords for Bittree B52T-2WNHD, 18"	Bittree	VPC1800-75	20	20	10				$20	$400	$400	$200	$0	$0	$0	$1,000 Sub-Total
1	each	Sata Disk Storage Raid	Eight independent 3Gb/s SATA hard drives directly attached to the computer board, 12 TB of storage capacity using 7200RPM SATA II 3G diskdrive, Controller DDR 333 MHz SDRAM with 256 Mb, 300W Cool Swappable Power Supply with Fan, Includes: HDPro Unit x 1, PCI-E or PCI-X card x 1, PCI Express Cable X 1, for Mac OS X	CalDigit	HDPro HDPro2-D 16TB-E	2	2			3		$6,030	$12,060	$12,060	$0	$0	$18,090	$0	$42,210 Sub-Total
1	each	Sata Disk Storage Raid Rack Mount Kit	CalDigit HDProRackKit; HDPro rackmount kit	CalDigit	HDProRackKit	2	2			3		$200	$400	$400	$0	$0	$600	$0	$1,400 Sub-Total
1	each	Flat Screen Floor Stand	Tilt adjustable, Integrated Cable Management. Click Connect Mounting System, Mounts in portrait or landscape positions, Height-Adjustable, telescoping adjustment from 4 ft to 7 ft., Mounts 42"- 63" / 200lbs flat panel, Black	Chief	PF1UB	2	2					$600	$1,200	$1,200	$0	$0	$0	$0	$2,400 Sub-Total
1	each	Data Switch, Fiber Uplink Card	Fiber Uplink card	Cisco	1000BASE-SX SFP						6	$370	$0	$0	$0	$0	$0	$2,220	$2,220 Sub-Total
1	each	Data Switch, 48 port	1 GB, 48 port switcher/router for private Lan	Cisco	2960G-48TC						6	$3,840	$0	$0	$0	$0	$0	$23,040	$23,040 Sub-Total
1	each	Intercom, Headset	Two-channel wall- or console-mounted headset station	Clear-Com	CC-95	32						$187	$5,984	$0	$0	$0	$0	$0	$5,984 Sub-Total

MLC TRG A/V EQUIPMENT LIST

DRAFT BUDGET REFERENCE DOCUMENT

Rev Date: 11/08/20

						Part quantity by room type							Extended cost per by room						
						x1	x1	x1	x1	x2	x1		x1	x1	x1	x1	x2	x1	
Qty	Unit	DESCRIPTION	SPECIFICATION	MAKE	MODEL	Studio Web Record	Mst Ctrl	Aud Booth	Eng Maint and Green	3 Edit Rooms	Server Room	Unit Price	TV Studio and Web Recorder Set	Mst Control	Aud Booth	Eng Maint and Green Room	3 Edit Rooms	Server Room	
1	each	Intercom, Wireless Intercom Transmitter	Clear-Com CM-222; Tempest 2.4 GHz, 2-channel, full feature BaseStation. Comes with AC power cord; USB cable; 1/8' stereo programming cable; (1) whip antenna	Clear-Com	CM-222	1						**$3,533**	$3,533	$0	$0	$0	$0	$0	$3,533 Sub-Total
1	each	Intercom, Wireless Receiver	Wireless Receiver, Clear-Com CP-222; Tempest 2.4 GHz channel, dual listen wireless beltpack, 4-PIN male XLR, prog port & USB conn. Comes with Li-Poly rechargeable batt	Clear-Com	CP-222	3						**$1,175**	$3,525	$0	$0	$0	$0	$0	$3,525 Sub-Total
1	each	Intercom, Gooseneck Microphone	Clear-Com GM-18; 18" (45.7 cm) PLUG-IN GOOSENECK MICROPHONE FOR ENCORE STATIONS AND ICS PANELS	Clear-Com	GM-18	1						**$153**	$153	$0	$0	$0	$0	$0	$153 Sub-Total
1	each	Intercom, Wall Headset Panel	Two-channel wall- or console-mounted headset station	Clear-Com	HB-702	16						**$232**	$3,712	$0	$0	$0	$0	$0	$3,712 Sub-Total
1	each	Intercom, Camera Interface	Four channel interface connects Clear-Com to TV cameras	Clear-Com	IF4W4	1						**$814**	$814	$0	$0	$0	$0	$0	$814 Sub-Total
1	each	Intercom, Remote Station	Single rack-space, two-channel station is powered by the intercom line. Operator can talk and/or listen on either or both channels. line-level audio program input, with programmable interrupt. Microphone limiting and speaker dipping	Clear-Com	MS-702	1						**$917**	$917	$0	$0	$0	$0	$0	$917 Sub-Total
1	each	Intercom, Power Supply	Four-Channel Intercom Power Supply	Clear-Com	PS-702	1						**$615**	$615	$0	$0	$0	$0	$0	$615 Sub-Total
1	each	Intercom, Remote Station	Remote station provides four independent intercom channels, with programmable front-panel buttons for versatility. Separate volume controls for each channel and four separate audio program inputs. Three IFB channels for talent cuing and announce button/relay for paging	Clear-Com	RM-704	1						**$1,275**	$1,275	$0	$0	$0	$0	$0	$1,275 Sub-Total
1	each	Intercom, Beltpack	Dual channel with 6-pin female and male XLR, 4-pin male XLR headset connector, 2.5 mm AUX headset connector and a RS-232 connector	Clear-Com	RS-602	10						**$370**	$3,700	$0	$0	$0	$0	$0	$3,700 Sub-Total
1	each	Intercom, Remote Station	4x10 assignment matrix allows assignment of any of the ten intercom lines to any of the four intercom channels	Clear-Com	SB-704	1						**$2,270**	$2,270	$0	$0	$0	$0	$0	$2,270 Sub-Total
1	each	Intercom, Battery Charger	Clear-Com T-BC5; Five bay battery charger for 537.00 charging Lithium-Polymer batteries outside of the BeltStation (Beltpack)	Clear-Com	T-BC5	1						**$537**	$537	$0	$0	$0	$0	$0	$537 Sub-Total
1	each	Intercom, Battery	Clear-Com T-LP1; Tempest BeltStation (Beltpack) Li-Poly Battery; charges in T-BC5	Clear-Com	T-LP1	3						**$73**	$219	$0	$0	$0	$0	$0	$219 Sub-Total
1	each	Character Generator	CPU: Intel Core 2 Duo 3.0GHz, RAM: 2GB, 300GB SATA HD (7200RPM), Optical Drives: 20x DVD-RW, video and Key Out [HD-SDI or SD-SDI selectable], Video In [HD-SDI or SD-SDI selectable], Adjustable Genlock Vertical & Horizontal Delay, SD-SDI : NTSC 720x486, PAL 720x576, SMPTE 259M compatible, HD-SDI : 1920 x 1080i, 1280 x 720p (60/59.94/50), SMPTE 292M compatible, Genlock Input [Bi-level Analog & Digital B.B / TriLevel Sync]	Compix	ConverG1 HD	1						**$12,630**	$12,630	$0	$0	$0	$0	$0	$12,630 Sub-Total

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Qty	Unit	DESCRIPTION	SPECIFICATION	MAKE	MODEL	Part quantity by room type: Studio Web Record x1	Mst Ctrl x1	Aud Booth x1	Eng Maint and Green x1	3 Edit Rooms x2	Server Room x1	Unit Price	Extended cost per by room: TV Studio and Web Recorder Set x1	Mst Control x1	Aud Booth x1	Eng Maint and Green Room x1	3 Edit Rooms x2	Server Room x1	
1	each	PC Computer, Std, Desktop	IntelCore 2 Duo Processor 3.0 GHz processor,4GB 2-DIMM DDR2 non-ECC SDRAM, 250GB SATA 3.0Gb/s& 8MB DataBurst Cache Hard Drive, 256MB ATIRadeon HD3450 Dual Mon DVI or VGA (TV-out), FHSupports VISTA, 16X DVD+/-RW,with Roxio CreatorDell Edition, Integrated Intel Gigabit Ethernet, InternalDell Business Audio speaker, USB keyboard (nohotkeys), Dell 2 button optical mouse w/scroll,Windows XP Pro SP2, Dell UltraSharp™ 2009WWidescreen 20inch Flat Panel Monitor VGA/DVIAdjuststand, Energy Star enabled (includes statesales tax, security cable, 4 year on-site warranty and shipping costs)	Dell	OptiPlex 760 Minitower	1	3					**$1,183**	$1,183	$3,549	$0	$0	$0	$0	$4,732 Sub-Total
1	each	DVI F to VGA M converter	DVIAF-VGAM, DVI-A Female to VGA Male Adapter, High quality DVI adapter provides connectivity solutions between digital sources and various display devices	Extron	26-537-01	4						**$30**	$120	$0	$0	$0	$0	$0	$120 Sub-Total
1	each	DVI M to VGA F converter	DVIAM-VGAF, DVI-A Male to VGA Female Adapter, Provides connectivity solutions between digital sources and various display devices	Extron	26-589-01	4						**$24**	$96	$0	$0	$0	$0	$0	$96 Sub-Total
1	each	DVI Distribution Amplifer, 1x2	One DVI-D input, Two DVI-D ouputs with stereo audio switching, Supports single link DVI-D signals up to 1920x1200, including HDTV 1080p/60, Automatic input cable equalization, Provides +5VDC, 250mA power on each output for external peripheral devices, Rack-mountable 1U, half rack width metal enclosure	Extron	60-840-01	3						**$525**	$1,575	$0	$0	$0	$0	$0	$1,575 Sub-Total
1	each	Camera Zoom and Focus Controls	Fujinon SEMI SERVO KIT (A17/S17, A20X8.6/S20x6.4) includes Focus and Zoom controls	Fujinon	MS-01	4						**$1,438**	$5,752	$0	$0	$0	$0	$0	$5,752 Sub-Total
1	each	SDI Multi-Functional Converter/ Upconverter with Frame Synchronizer	Convert and/or upconvert sources from HDMI, DVI, component, composite, S-Video, AES/EBU, and analog audio to HD/SD-SDI (3G/1.5G support). Inputs: HDMI, DVI, RGB, component, composite, S-Video, analog audio, AES/EBU, reference, Input Formats: 1080p 720p 60/59.94/50 480i/p 60/59.94, PC resolutions (640x480, 800x600, 1024x768, 1366x768, 1280x1024, 1600x1200, 1920x1200),Outputs: 3G/HD/SD-SDI (BNCx2), Output Formats: 1080i 1080p 60/59.94 720p 60/59.94, Includes AC adapter (12V DC, 3A)	Grass Valley	ADVC G1	12	10		2			**$989**	$11,868	$9,890	$0	$1,978	$0	$0	$23,736 Sub-Total
1	each	HDMI & SDI to Analog & SDI Multi-Functional Converter / Downconverter with Frame Sync	HDMI & SDI to Analog & SDI Multi-Functional Converter / Downconverter with Frame Sync	Grass Valley	ADVC G2	2	4		4			**$850**	$1,700	$3,400	$0	$3,400	$0	$0	$8,500 Sub-Total
1	each	SDI to HDMI Converter / Multiplexer with 3D Support	SDI to HDMI Converter / Multiplexer with 3D Support	Grass Valley	ADVC G3		4		4			**$850**	$0	$3,400	$0	$3,400	$0	$0	$6,800 Sub-Total
1	each	Master Signal Generator Spare Power Supply	NEO Modular Frame spare power supply	Harris	3923PS	1	1					**$480**	$480	$480	$0	$0	$0	$0	$960 Sub-Total
1	each	Master Signal Generator Frame	NEO Modular Frame with power supply	Harris	FR-3923-EHTTP	1	1					**$2,470**	$2,470	$2,470	$0	$0	$0	$0	$4,940 Sub-Total
1	each	Master Signal Generator Card	HDTV, SDTV, analog video test signals, AES, analog audio, 10 Mhz and 6 Hz test signals on a single module	Harris	TSG-3901-1S	1	1					**$5,025**	$5,025	$5,025	$0	$0	$0	$0	$10,050 Sub-Total
1	each	Optional Analog Audio card, HD Multi-Image Display	Analog audio option card; each card accepts 8 analog audio inputs; maximum of 1 card for every 4 channels of video	Harris	ZP2-AA	1	1					**$1,075**	$1,075	$1,075	$0	$0	$0	$0	$2,150 Sub-Total
1	each	HD Multi-Image Display Beakout Cable	Lock able Harlink cables for breakout of GPIO connectors	Harris	ZP2-HAR	6	6					**$50**	$300	$300	$0	$0	$0	$0	$600 Sub-Total

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						Part quantity by room type							Extended cost per by room						
						x1	x1	x1	x1	x2	x1		x1	x1	x1	x1	x2	x1	
Qty	Unit	DESCRIPTION	SPECIFICATION	MAKE	MODEL	Studio Web Record	Mst Ctrl	Aud Booth	Eng Maint and Green	3 Edit Rooms	Server Room	Unit Price	TV Studio and Web Recorder Set	Mst Control	Aud Booth	Eng Maint and Green Room	3 Edit Rooms	Server Room	
1	each	HD Multi-Image Display, 16 input, 2 outputs	High-resolution 16-channel 2RU multiviewer system, 16 input HD-SDI (SMPTE 292M 1.485 Gb/s) and/or SDI (SMPTE 259M 270 Mb/s) and or composite (PAL/NTSC), Supports 1080i 50/59.94/60, 720p, 50/59.94/60, SDI 525, SDI 625, PAL, NTSC, Number of Outputs 2 – duplicate (in single output mode) or dual output (in ZdH Dual Head mode), auto sensing of HD-SDI, SDI inputs and composite signals, in-picture embedded audio metering, fault detection and alarm messaging, dynamic UMDs, tally display, clock display and aspect ratio management. Ability to download bitmaps for logos on screen, 6 up/down timers, Stylized video window skins, 4 tally lamps - red, green, yellow, blue, In-picture embedded audio bargraphs, Dynamic UMD/tally, 2 analog clocks, 6 digital clocks, Closed caption detection	Harris	ZP2-HD16	1	1					**$26,289**	$26,289	$26,289	$0	$0	$0	$0	$52,578 Sub-Total
1	each	Hear Back Multi-Pack 4	Hear Technologies Hear Back Multi-Pack 4 headphone monitor controller and 4 stations, Three input sources: ADAT Optical, Analog, 24-bit A/D converters, Digital inputs: 44.1KHz and 48 KHz sample rates, 3-LED four-level metering, Built-in DSP Limiter, Balanced Line-Outs, Mono/Stereo, 10-channel control, 8 incoming signals and stereo monitor volume	Hear Technologies	HB4			1				**$1,450**	$0	$0	$1,450	$0	$0	$0	$1,450 Sub-Total
1	each	Fibre Channel Switch	Fibre Chanel Switches: $5k ea (e.g., HP storageworks 8/20q)	HP storageworks	8/20q						2	**$5,000**	$0	$0	$0	$0	$0	$10,000	$10,000 Sub-Total
1	each	Speakers	High output, 2-way loudspeaker, Frequency Range (-10 dB): 53 Hz - 20 kHz, Frequency Response (±3 dB) : 65 Hz – 20 kHz, Power Rating : 375W Cont. Pink Noise 750W Program/1500W Peak, Impedance : 8 ohms	JBL	AC28/95	4	2	2	2			**$800**	$3,200	$1,600	$1,600	$1,600	$0	$0	$8,000 Sub-Total
1	each	DVD/DV/HD Player/Recorder	Professional Blu-ray Recorder, Internal 500GB hard disk for editing, duplicating, Supports BD-R or BD-RE (erasable) Blu-ray disc. HD recordings to a high definition disc, or down-converted and recorded onto a standard DVD, RS-232C terminal for external control, digital and analog inputs	JVC	SR-HD1500US	2	4		1			**$2,295**	$4,590	$9,180	$0	$2,295	$0	$0	$16,065 Sub-Total
1	each	Rack Mount, Waveform/Vectorscope	Rack Mount adapter for LV7730	Leader	LR 2481	1	2		1		1	**$220**	$220	$440	$0	$220	$0	$220	$1,100 Sub-Total
1	each	HD/SDI Waveform/Vectorscope	Multi-Format SD And HD-SDI Rasterizer Conforms To 17 SD & HD Standards; Accommodates 2 SDI Inputs; XGA Output	Leader	LV7730 HD/SD-SDI Rasterizer	1	2		1		1	**$5,469**	$5,469	$10,938	$0	$5,469	$0	$5,469	$27,345 Sub-Total
1	each	Web Encoder	PR-720 technology integrates high resolution graphics and video sources into a PiP (Picture in Picture) or Picture-by-picture format for H.264 playback	Ncast	PR-720-R	2	4					**$5,500**	$11,000	$22,000	$0	$0	$0	$0	$33,000 Sub-Total
1	each	Camera Lens Cable	Panasonic 300LENSYTALLY; Cable for ReturnVideo and Tally. Also works with AJ-HDX400.	Panasonic	300LENSYTALLY	4						**$199**	$796	$0	$0	$0	$0	$0	$796 Sub-Total

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Qty	Unit	DESCRIPTION	SPECIFICATION	MAKE	MODEL	Part quantity by room type: Studio Web Record x1	Mst Ctrl x1	Aud Booth x1	Eng Maint and Green x1	3 Edit Rooms x2	Server Room x1	Unit Price	Extended cost per by room: TV Studio and Web Recorder Set x1	Mst Control x1	Aud Booth x1	Eng Maint and Green Room x1	3 Edit Rooms x2	Server Room x1	
1	each	Camera Studio System	Camera Studio System, Panasonic, 300StudioPlus, or equal, Includes: Camera Control Digital Base Station Unit AG-BS300, Camera Studio Adapter AG-CA300G, Remote Control Unit AJ-RC10 remote control unit, (1) AG-BS300: Supports AC (120v) and DC (12v) power supplies. Includes two SDI (HD/SD) outputs and a composite video output, base station connects with the AG-CA300G camera adapter with two BNC cables allowing transmission of HD digital images, return images, tally signals, mic signals and genlock signals. Users can remotely shade or paint the camcorder from the control room, (1) Camera Studio Adapter AG-CA300G: Remote Control Camera Adapter, lightweight, mounting directly on the back of the camera with two short interconnections between the camera and the camera adapter, (1) Remote Camera Control Unit AJ-RC10: Remote control unit is connected to camera recorder and controls Black level, Flare, gamma, white, knee, shutter, shad, detail and other functions. Connectors: 10pin multiconnector to camera and video monitor to LCD monitor.	Panasonic	300StudioPlus	4						$5,756	$23,024	$0	$0	$0	$0	$0	$23,024 Sub-Total
1	each	Studio Camera	Camera, Panasonic, AG-HPX370, or equal,10-bit, 4:2:2 professional HD camcorder. Chromatic Aberration Compensation (CAC), With 17x interchangeable lens, three 1/3" 2.2-megapixel 3-MOS imagers and full 1920x1080, 10-bit 4:2:2 AVC-Intra recording, 17x HD Fujinon lens included	Panasonic	AG-HPX370	4						$9,236	$36,944	$0	$0	$0	$0	$0	$36,944 Sub-Total
1	each	Camera, Pan/Tilt/Zoom	MultiFormat HD/SD Integrated Camera with full servo Pan-Tilt, 13x Zoom lens, Wireless Remote, and Ceiling Mounting Kit. 720p, 1080i, and 480p switchable component output from HD15 connector, as well as SD composite output via BNC, are standard, Switchable HD/SD-SDI output available with optional AW-HHD100N output board	Panasonic	AW-HE100N	1						$7,600	$7,600	$0	$0	$0	$0	$0	$7,600 Sub-Total
1	each	Camera HDSDI output option card	Optional output board for the AW-HE100 PTZ camera. The board provides HD-SDI (Serial Digital Interface) and SD-SDI outputs which can be used for HD/SD switching.	Panasonic	AW-HHD100N	1						$1,800	$1,800	$0	$0	$0	$0	$0	$1,800 Sub-Total
1	each	Camera, Pan/Tilt/Zoom, controller	Controls five cameras and five pan/tilt heads, 50 preset memories per camera system, RS-232C interface for PC control	Panasonic	AW-RP655	1						$4,300	$4,300	$0	$0	$0	$0	$0	$4,300 Sub-Total
1	each	Camera Viewfinder cable Kit	Camera Viewfinder cable Kit, Panasonic, BT-CS80G, or equal, Viewfinder cable kit for BT-LH80W, 20/15-Pin & 4-Pin Hrs/4-Pin XLR	Panasonic	BT-CS80G	4						$314	$1,256	$0	$0	$0	$0	$0	$1,256 Sub-Total
1	each	Broadcast Monitor, 17" Flat Screen	LCD HD Monitor, 17" Multi-Format LCD Monitor, Panasonic, BT_LH1710, or equal, 1280 x 768 Resolution, AC/DC operation, Waveform monitor and vectorscope displays all picture lines, HD-SDI / SDI input, Audio level meters 2-ch/ 4-ch / 8-ch, Displays time code LTC, VITC, built-in embedded audio decoder, RS-232C and GPI remote control terminals and tally indicators (Red/Green/Amber), Marker and blue-only function, Wide 176° horizontal and vertical viewing angle, Headphone jack and built-in stereo speakers, VESA mounting capability, desk stand	Panasonic	BT-LH1710	1	2		1		1	$2,850	$2,850	$5,700	$0	$2,850	$0	$2,850	$14,250 Sub-Total
1	each	Camera Viewfinder	Camera Viewfinder, Panasonic, BT-LH80WU, or equal, HD/SD 7.9-in, Video System: NTSC and All HDTV Formats and Frame Rates, maximum resolution 800 x 450 Viewing Angle 110° Vertical, 120° Horizontal, Color Temperature Pre-Sets6500k, 9300k, Input and Output Connectors: HD-SDI/SDI: BNC (x1 Input) 15-Pin Viewfinder, Remote: RS-232C, GPI, Power: 4-Pin XLR 1	Panasonic	BT-LH80WU	4						$2,342	$9,368	$0	$0	$0	$0	$0	$9,368 Sub-Total

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Qty	Unit	DESCRIPTION	SPECIFICATION	MAKE	MODEL	Part quantity by room type: Studio Web Record x1	Mst Ctrl x1	Aud Booth x1	Eng Maint and Green x1	3 Edit Rooms x2	Server Room x1	Unit Price	Extended cost per by room: TV Studio and Web Recorder Set x1	Mst Control x1	Aud Booth x1	Eng Maint and Green Room x1	3 Edit Rooms x2	Server Room x1	
1	each	Camera Viewfinder Mount	Panasonic BT Monitor Mount	Panasonic	BT-MOUNT	4						**$126**	$504	$0	$0	$0	$0	$0	$504 Sub-Total
1	each	Camera Cable Assy	Panasonic Studio 300/50 50m cam cables, power and two BNC cables, includes two short BNC-BNC cables to interconnect camera	Panasonic	Panasonic Studio 300/50 50m cam cables	4						**$1,279**	$5,116	$0	$0	$0	$0	$0	$5,116 Sub-Total
1	each	Camera Tripod Adapter Plate	Camera Tripod Adapter Plate, Panasonic, SHAN-TM700, or equal, Quick-release camera mounting plate	Panasonic	SHAN-TM700	4						**$426**	$1,704	$0	$0	$0	$0	$0	$1,704 Sub-Total
1	each	Flat Screen Display, 65" Plasma	1920X1080 Resolution, RS-232, NTSC, HD, VGA, SVGA, XGA, SXGA and DVI inputs; 3 Year Parts & Labor Warranty.	Panasonic	TH-65PF12UK	2	2					**$4,157**	$8,314	$8,314	$0	$0	$0	$0	$16,628 Sub-Total
1	each	Flat Screen Display, 65" DVI-D Input Card	Panasonic TY-FB11DD; DVI-D input board for 11 Series	Panasonic	TY-FB11DD	2	2					**$154**	$308	$308	$0	$0	$0	$0	$616 Sub-Total
1	each	Flat Screen Display, 65" Wall Mount	Panasonic 65" Wall Mount Bracket (Flush)	Panasonic	TY-WK65PV7	2	2					**$347**	$694	$694	$0	$0	$0	$0	$1,388 Sub-Total
1	each	Blu-Ray/CD/DVD Duplicator	Blu-ray CD DVD Duplicator 12x SATA Burner 12 Target + Built-In 500GB HDD + USB Interface	ProDuplicator.com	04BR12X		2					**$1,125**	$0	$2,250	$0	$0	$0	$0	$2,250 Sub-Total
1	each	Storage, Raid	Promise VTrak E-Class 8x SATA RAID Subsystem,2x 32 TB FC RAID. (e.g., PROMISE VTrak x30 16x 2TB SATA)	Promise	2x 32 TB FC RAID: $20k ea (e.g., PROMISE VTrak x30 16x 2TB SATA)						2	**$20,000**	$0	$0	$0	$0	$0	$40,000	$40,000 Sub-Total
1	each	Teleprompter Display System	Readable to 22 Feet, Includes - Flip-Q Pro for Mac, PowerFlip reversing Software for Powerpoint, VGA and composite inputs	Prompter People	PRP FS19	4						**$1,736**	$6,944	$0	$0	$0	$0	$0	$6,944 Sub-Total
1	each	Audio Amplifier	Two channels, 8 ohms, 20Hz-20kHz, 0.03% THD 200W, Signal to Noise 20Hz-20kHz, unweighted <-106 dB	QSC	RMX 850	2	1	1	1			**$297**	$594	$297	$297	$297	$0	$0	$1,485 Sub-Total
1	each	Video Switcher, Main Frame	1 MLE SWITCHER FRAME, QMD Live Production Engine 1 MLE (Rack Frame), Rack Frame Processing Engine including all Standard System boards, Multi-Definition support for any of the following formats: 525, 625, 1080i 50, 1080i 59.94, 720P 50, 720P 59.94, 1080P 24, 1080PSF 24, 1080PSF 23.98, 16 Multi-Definition Serial Digital Inputs, expandable to 32 or 48, 4 Keyers in Full MLEs and 2 Keyers in Half MLEs, 2 UltraChromeTM Chroma Keyers with Super Fine Keying Quality in every MLE, 10 GPI Inputs, 10 GPI Outputs, 3RU Chassis (including Power Supplies), Full 10-Bit Processing in both HD and SD modes, 4:3/16:9 Switchable, 10 Meter Control Panel Cable, System Operation and Engineering Manuals Disc, Full 1 Year Transferable Warranty, Lifetime Software Updated via Ross Website, Lifetime Telephone Support	Ross	QMD-001	1						**$19,735**	$19,735	$0	$0	$0	$0	$0	$19,735 Sub-Total
1	each	Video Switcher, Clip Playback	MediaCacheTM for Global-Store, Adds Animated Logo and Video Clip Playout capabilities to Global Still Store, Includes 1GB Video Cache RAM	Ross	QMD-010	1						**$789**	$789	$0	$0	$0	$0	$0	$789 Sub-Total
1	each	Video Switcher, 16 Output Card	Adds 16 Assignable Serial Digital Outputs (6 fixed outputs on .5 MLE systems	Ross	QMD-021	1						**$6,315**	$6,315	$0	$0	$0	$0	$0	$6,315 Sub-Total

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						Part quantity by room type							Extended cost per by room						
						x1	x1	x1	x1	x2	x1		x1	x1	x1	x1	x2	x1	
Qty	Unit	DESCRIPTION	SPECIFICATION	MAKE	MODEL	Studio Web Record	Mst Ctrl	Aud Booth	Eng Maint and Green	3 Edit Rooms	Server Room	Unit Price	TV Studio and Web Recorder Set	Mst Control	Aud Booth	Eng Maint and Green Room	3 Edit Rooms	Server Room	
1	each	Add MLE 2	For upgrading 1 MLE and 1.5 MLE Systems to 2 full MLEs	Ross	QMD-049-2	1						$11,840	$11,840	$0	$0	$0	$0	$0	$11,840 Sub-Total
1	each	Video Switcher, Add 2 extra Keyers	MultiDSKTM (Keyer 3 & Keyer 4 or Keyer 5 &6), Adds 2 DSK Keyers to the Program/Preset Area for a total of 4 Keyers on .5 MLE/2 Key MLE or 6 Keyers on full MLE, Includes 6 Keyer Module Hardware for installation in PGM/PST Keyer Area.	Ross	QMD-056	1						$3,155	$3,155	$0	$0	$0	$0	$0	$3,155 Sub-Total
1	each	Video Switcher, Redundant Power Supply, Main Frane	Adds Power Supply to QMD Rack Frame	Ross	QMD-077	1						$2,210	$2,210	$0	$0	$0	$0	$0	$2,210 Sub-Total
1	each	Video Switcher, Onsite Commisiioning	Ross QMD-090; Onsite operational training . 1st 2,590.00 day.- 1st day of onsite operational training. 4 weeks advance scheduling notice required.- Training is provided	Ross	QMD-090	1						$2,590	$2,590	$0	$0	$0	$0	$0	$2,590 Sub-Total
1	each	Video Switcher, Onsite Commisiioning - additional day	Ross QMD-094; Onsite commisioning, 1,430.00 additional day. - Additional consecutive day of commisioning. 4 weeks advance scheduling notice required	Ross	QMD-094	1						$1,430	$1,430	$0	$0	$0	$0	$0	$1,430 Sub-Total
1	each	Video Switcher, Squeeze effects Carrier Board	Squeeze & Tease MD Carrier, for MLE 1, One Carrier Board Required Per System for MLE 1,2,3 and 4 S&T MD & WARP Options	Ross	QMD-140	1						$3,945	$3,945	$0	$0	$0	$0	$0	$3,945 Sub-Total
1	each	Video Switcher, Squeeze effects DVE	Migrating Squeeze & Tease MD Channels 1 & 2, for MLE 1, 2 Channels of Multi-Definition 3D DVE for MLE 1 Keyers, enables 3D Effects, Fly any Key Type, Preprocessor Effects such as Defocus, Mosaic, Posterization, Colorization and Strobe, Picture Frame Effect Borders, Lighting and Timeline Sequences and Wipes. Requires QMD-140 Carrier Board.	Ross	QMD-141A	1						$4,735	$4,735	$0	$0	$0	$0	$0	$4,735 Sub-Total
1	each	Video Switcher, Remote Aux Panels	Assignable Remote Aux Panel (includes 10 Meter Control Cable). Control over Aux Bus.	Ross	V-053B	4						$1,578	$6,312	$0	$0	$0	$0	$0	$6,312 Sub-Total
1	each	Video Switcher, Control Panel	Standard Panel Includes: 16 Crosspoint Buttons on Panel, 1 Multi-Level Effects Systems (MLE) Control Areas, Auto-Follow, Dual System Control Touch Screen, Keyboard, Mouse, and Media Drives, 16 Custom Control Macro Buttons with 8 Way Shift, On-Panel Aux Bus Control, Source AwarenessTM Automatic Features, Unique Ross "Roll Clip" Button in Every MLE, 100 Event Memory System, Preview OverlayTM Safe Area/Title and Operator Heads-Up Information Display. 36 Fully Assignable Parallel Tally Outputs, Panel Glow User Definable Button Color Themes, Full 1 Year Transferable Warranty, Lifetime Fader Handle Warranty, Lifetime Software Updated via Ross Website, Lifetime Telephone Support	Ross	V1P-001	1						$15,789	$15,789	$0	$0	$0	$0	$0	$15,789 Sub-Total
1	each	Video Switcher, Mnemonic Displays for Macro Buttons	16 Eight Character Mnemonic Displays. Installed above the Custom Control Macro Row and Displays Custom Control Macro Names	Ross	V1P-005	1						$986	$986	$0	$0	$0	$0	$0	$986 Sub-Total
1	each	Video Switcher, Redundant Power Supply, Control Panel	Redundant Power for Vision 1 Control Panel	Ross	V1P-076	1						$1,420	$1,420	$0	$0	$0	$0	$0	$1,420 Sub-Total
1	each	Video Switcher, Mnemonic Displays for MLE 1	16 Eight Character Mnemonic Displays for MLE 1, Installs above the MLE 1 Program Bus and Displays MLE 1 Source Names	Ross	V1P-105	1						$986	$986	$0	$0	$0	$0	$0	$986 Sub-Total

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						Part quantity by room type							Extended cost per by room						
						x1	x1	x1	x1	x2	x1		x1	x1	x1	x1	x2	x1	
Qty	Unit	DESCRIPTION	SPECIFICATION	MAKE	MODEL	Studio Web Record	Mst Ctrl	Aud Booth	Eng Maint and Green	3 Edit Rooms	Server Room	Unit Price	TV Studio and Web Recorder Set	Mst Control	Aud Booth	Eng Maint and Green Room	3 Edit Rooms	Server Room	
1	each	Video Switcher, In-Desk Mount	Needed for In-Desk Mounting Option.	Ross	V1P-501	1						**$394**	$394	$0	$0	$0	$0	$0	$394 Sub-Total
1	each	22" Computer Display	SyncMaster B2230 22 in LCD Monitor, Black - 1000:1 Contrast Ratio - 5ms Response Time - 1920x1200 Maximum Resolution	Samsung	B2230	2	8	2				**$200**	$400	$1,600	$400	$0	$0	$0	$2,400 Sub-Total
1	each	245T 24" LCD Display	Screen Size 24", Resolution 1920 x 1200, Brightness 300 cd/m_, Contrast Ratio DC1500:1 (1000:1), Response time 6 ms (GTG), Viewing Angle(Horizontal/Vertical) 178° / 178°, Color Supported16.7 M, Signal Input : Video Signal analog RGB, DVI compliant digital RGB CVBS, S-Video, component, Sync. Signal separate H/V, composite H/V, Connector15pin D-sub, DVI-D CVBS, S-Video, component, HDMI	Samsung	245T	2	6		1	2		**$800**	$1,600	$4,800	$0	$800	$1,600	$0	$8,800 Sub-Total
1	each	LCD Display, 46", Instructor, Ceiling	1920x1080 Resolution, RS-232, NTSC, HD, VGA, SVGA, XGA, SXGA and DVI inputs; 3 Year Parts & Labor Warranty	Sharp	PN-465U				4			**$2,300**	$0	$0	$0	$9,200	$0	$0	$9,200 Sub-Total
1	each	Microphone, Antenna/Power Distribution System	UHF Antenna Distribution System, Amplified, UHF Antenna Distribution System that expands a wireless microphone system by splitting one pair of antennas to multiple Shure UR4	Shure	UA845-SWB	1						**$710**	$710	$0	$0	$0	$0	$0	$710 Sub-Total
1	each	Microphone, Wireless, Transmitter	UR1 transmitter is a compact bodypack, constructed of lightweight metal	Shure	UR1	12						**$546**	$6,552	$0	$0	$0	$0	$0	$6,552 Sub-Total
1	each	Microphone, Wireless, Handheld	Wireless Handheld Transmitter with SM58 Cardioid Microphone	Shure	UR2/SM58	4						**$629**	$2,516	$0	$0	$0	$0	$0	$2,516 Sub-Total
1	each	Microphone, Dual Receiver	Dual-channel UHF Wireless Receiver with 2,400 Available Frequencies, Audio Reference Companding, and Control Software	Shure	UR4D	5						**$1,900**	$9,500	$0	$0	$0	$0	$0	$9,500 Sub-Total
1	each	Microphone, Wired, Lavalier	WL93 Series Subminiature Condenser Lavalier Microphone, includes cable terminated with a 4-pin mini connector which connects directly to a Shure wireless body-pack transmitter.	Shure	WL93	14						**$67**	$938	$0	$0	$0	$0	$0	$938 Sub-Total
1	each	Audio Distribution Card	Audio Distribution Amplifer Card, Sierra Video Systems, 501026-40, or equal, Stereo Audio DA with Adjustable Gain, (10) ten low impedance outputs per module, Output impedance 600 ohm balanced, mpedance: < 20 Ohm balanced, Output Level: +24 dBu Max, Frequency Response: ± 0.1db 10 Hz -20 KHz, Noise: < 86 dBu 20Hz - 20Khz unweighted	Sierra Video Systems	501026-40	20	10					**$265**	$5,300	$2,650	$0	$0	$0	$0	$7,950 Sub-Total
1	each	Audio Distribution Card Frame	Audio Distribution Amplifer Mounting Frame, Sierra Video Systems, Series 10 Audio Distribution Amplifier Frame, or equal, 3RU (5.25") Series 10 audio distribution mounting frame accepts up to ten Series 10 stereo audio modules. Ten outputs per module. Internal power supply.	Sierra Video Systems	Series 10 Audio Distribution Amplifier Frame	2	1					**$900**	$1,800	$900	$0	$0	$0	$0	$2,700 Sub-Total
1	each	Podium interactive pen display	Screen a-Si TFT active-matrix LCD display, Communication Interface USB 2.0 (high speed), Connectivity DVI and VGA, Aspect Ratio Native Widescreen 16:9, flexible scaling options to support 4:3 and 16:10, Resolution 1080p (1920 _ 1080), Synchronization Range Horizontal: 30 kHz-80 kHz, Vertical: 56 Hz-76 Hz	Smarttech	ID422W	1						**$2,900**	$2,900	$0	$0	$0	$0	$0	$2,900 Sub-Total

MLC TRG A/V EQUIPMENT LIST

DRAFT BUDGET REFERENCE DOCUMENT

Rev Date: 11/08/20

Qty	Unit	DESCRIPTION	SPECIFICATION	MAKE	MODEL	Part quantity by room type: x1 Studio Web Record	x1 Mst Ctrl	x1 Aud Booth	x1 Eng Maint and Green	x2 3 Edit Rooms	x1 Server Room	Unit Price	Extended cost per by room: x1 TV Studio and Web Recorder Set	x1 Mst Control	x1 Aud Booth	x1 Eng Maint and Green Room	x2 3 Edit Rooms	x1 Server Room	
1	each	Software, HD Playback	Immediate Clip Start, Full support for SD and HD Quicktime Files, Universal (Intel/PPC), Unlimited playlist size and duration, Live playlist editing, Supports DV, Apple ProRes, DVCPro, DVCProHD, DVCPro 50, DVCam, DV50, MPEG-4, M-JPEG, IMX	Softron	OnTheAir Video	3	3					**$1,800**	$5,400	$5,400	$0	$0	$0	$0	$10,800 Sub-Total
1	each	Software, Dongle for OntheAir software	Dongle supplied instead of a serial number. It can be moved from computer to computer without requiring activation/de-activation	Softron	OnTheAir Video Dongle	3	3					**$100**	$300	$300	$0	$0	$0	$0	$600 Sub-Total
1	each	Software, HD Playback Dongle	Softron USB Dongle- Requires physical 125.00 shipment of HW dongle	Softron	USB Dongle for OnTheAir Video	3	3					**$125**	$375	$375	$0	$0	$0	$0	$750 Sub-Total
1	each	DVD Player, Blu-ray High Definition	Multi region player plays all BLU-RAY discs from region A B and C. Plays all SD DVD discs from region 1 2 3 4 5 and 6 PLAYER	Sony	BDP-S5000ES	1	2		2	2		**$720**	$720	$1,440	$0	$1,440	$1,440	$0	$5,040 Sub-Total
1	each	Professional CD Recorder	Slot Loading Transport, 24 bit A/D and D/A Converters, Sample Rate Conversion (32KHz to 48KHz) XLR balanced and RCA unbalanced analog I/O with dedicated input controls, AES/EBU and S/PDIF digital I/O, RS-232C serial control port and Parallel control port, Recordable discs: CD-R, CD-R-DA, CD-RW, CD-RW-DA, Frequency response: 20 Hz~20 KHZ, ±0.8 Db (playback), ±1.0 dB (recording), S/N: 95 dB (playback) 90 dB (recording), Analog inputs: Balanced, Level +4 dBV, Digital input: Coaxial RCA pin jack; Optical TOSLINK, Digital output: Coaxial RCA pin jack, Optical TOSLINK	Tascam	CD-RW901SL	1						**$850**	$850	$0	$0	$0	$0	$0	$850 Sub-Total
1	each	Camera Cable Tubing	Techflex Non-Skid Tubing 1.5" Black 200'	Techflex	NSN1.50BK 200'	2						**$225**	$450	$0	$0	$0	$0	$0	$450 Sub-Total
1	each	DVI-D to S-Video/HD-SDI	Down Converter, Inputs: DVI-D, RGB/YPbPr, plus CV/YC for Keying, Outputs: CV, YC, YUV, YPbPr, plus SD/HD-SDI on models C2-2105A and C2-2155A, DVI: PC to 1920x1200, HDTV to 1080p/60, 4:4:4 Full bandwidth Chroma Sampling, RS-232 and IP Interface & Genlock With Subcarrier Phase Adjustment	TVOne	C2-2105A	2	1					**$2,120**	$4,240	$2,120	$0	$0	$0	$0	$6,360 Sub-Total
1	each	Router, HD Video Mainframe	32x32 HDSDI matrix switcher - Add-On to Existing	Utah Scientific	32x32 HDSDI matrix switcher		1					**$23,548**	$0	$23,548	$0	$0	$0	$0	$23,548 Sub-Total
1	each	Router, X-Point Control Card	Router, X-Point Control Card	Utah Scientific	400E/32		1					**$4,055**	$0	$4,055	$0	$0	$0	$0	$4,055 Sub-Total
1	each	Router, Redundant Controller card	Router, Redundant Controller card	Utah Scientific	SC400		1					**$1,500**	$0	$1,500	$0	$0	$0	$0	$1,500 Sub-Total
1	each	Router Control Panel, 64x1	SCP-64/8 Button per Source 1 RU, Single or Dual Bus, Button per source Control Panel any of 64 Sources Programmable with 8 Levels, 4 Direct Takes for commonly used sources. Ethernet Option	Utah Scientific	UCP-1		2					**$2,250**	$0	$4,500	$0	$0	$0	$0	$4,500 Sub-Total
1	each	Router Control Panel, XY Master	SCP-XY/16 Full Marix 2 RU, Full Matrix, 16 level breakaway, 8 character display, control and status panel. Ethernet control panel with 12 user assignable butons.	Utah Scientific	UCP-XY		2		1		1	**$2,500**	$0	$5,000	$0	$2,500	$0	$2,500	$10,000 Sub-Total

MLC TRG A/V EQUIPMENT LIST

DRAFT BUDGET REFERENCE DOCUMENT

Rev Date: 11/08/20

Qty	Unit	DESCRIPTION	SPECIFICATION	MAKE	MODEL	Part quantity by room type: Studio Web Record x1	Mst Ctrl x1	Aud Booth x1	Eng Maint and Green x1	3 Edit Rooms x2	Server Room x1	Unit Price	Extended cost per by room: TV Studio and Web Recorder Set x1	Mst Control x1	Aud Booth x1	Eng Maint and Green Room x1	3 Edit Rooms x2	Server Room x1	
1	each	HD Player/Recorder	1 Channel IN / 2 channels OUT, NTSC, PAL, and High Definition Video Standards Formats Including 1080i, 720p, 525/625 Line, Mixed HD and SD playback from a single playlist auto up/down conversion, 4 AES/EBU Pairs and 16 SDI Embedded Audio Tracks per Video Channel, Full Uncompressed VBI Capture and Playback, Extensive Native Codec Support in HD and SD: Uncompressed, MPEG-2 I-frame, DVCPRO HD, MPEG HD, HDV 1080i, HDV1080p, HDV 720p (JVC ProHD), IMX, DVCPRO50, DV, DVCPRO, DVCAM, 8TB Internal Raw Storage Standard, Import AVI, QuickTime, Avid DNxHD, DV and MPEG-2 Files	Video Technics	Apella HDS	1	1					**$21,000**	$21,000	$21,000	$0	$0	$0	$0	$42,000 Sub-Total
1	each	Tripod, Telescopic Pan Bar and Clamp	Telescopic Pan Bar and Clamp for Vision 100 & 250.00 750.00 250 - Black	Vinten	3219-91	4						**$250**	$1,000	$0	$0	$0	$0	$0	$1,000 Sub-Total
1	each	Tripod, legs and wheels	Osprey Light Pedestal, single stage pedestal, Crabbing base capability, Max. Capacity: 88 lbs, Height Range: 30.1 to 51.4", Weight: 48.1 lbs, Wheel Lock, Black	Vinten	Osprey Light Pedestal V3950-0001	4						**$9,236**	$36,944	$0	$0	$0	$0	$0	$36,944 Sub-Total
1	each	Tripod, Head	TF drag mechanism, 180° tilt range, Digital balance readout display, Flat base - 3465-3F	Vinten	Vision 250 Pan and Tilt Head 3465-3F	4						**$5,865**	$23,460	$0	$0	$0	$0	$0	$23,460 Sub-Total
1	each	VU/Meter/Speaker	Multi-format audio monitor is a complete, exceptionally high quality audio monitoring solution capable of monitoring audio from HD-SDI, SD-SDI, AES/EBU, and analog signal sources. Monitor up to eight channels from an HD-SDI or SD-SDI bit stream, two sets of four AES/EBU signal pairs (balanced and unbalanced), or eight balanced analog channels.	Wohler	AMP2-S8MDA-3G	1	2		1		1	**$5,825**	$5,825	$11,650	$0	$5,825	$0	$5,825	$29,125 Sub-Total
1	each	Document Camera	1-CCD 1/3" Progressive Scan, 30 frames, VZ-8light3 output the image on RGB (15-Pin D-Sub) and DVI-D outputs, Native signal output SXGA- (1280x960) and WXGA (1280x800) and 720p HD (1280x720) High Definition	Wolfvision	VZ-8light3	1						**$3,180**	$3,180	$0	$0	$0	$0	$0	$3,180 Sub-Total
1	each	Digital Audio Board	32 microphone and line sources, 4 stereo input channels, 16 mix buses, 8 matrix buses, and a stereo and mono bus, built-in graphic equalization and effects, Built-in USB Memory Recorder/Player, Full-console scene Store and Recall, Each Input has LED level indicator, Mini-YGDAI slots	Yamaha	LS9-32	1						**$8,149**	$8,149	$0	$0	$0	$0	$0	$8,149 Sub-Total
1	each	Digital Audio Board, Digtial Audio Card	Digital I/O AES-3, 8 in/ 8 OUt Card for Yamaha LS9-32	Yamaha	MY8-AE AES-3	1						**$330**	$330	$0	$0	$0	$0	$0	$330 Sub-Total
1	each	Digital Audio Board, Digtial Audio Card	Embed/De-embed Card for Yamaha LS9-32	Yamaha	MY8-SDI-ED	1						**$3,250**	$3,250	$0	$0	$0	$0	$0	$3,250 Sub-Total
												Cost per Area	$552,642	$277,847	$7,712	$51,265	$53,077	$95,124	$1,037,667 Total Equipment Cost
1	each	Turnkey system Integration Labor, installation Materials & Documentation	Installation of turnkey system, includes costs realting to Consultation, design and CAD services, project management, and system integration. Audio, video, data and control cabling, connectors & other materials as needed to facilitate installation									**Estimated Installation Cost (25% of Equip Cost)**	$138,161	$69,462	$1,928	$12,816	$13,269	$23,781	$259,417 Total Installation Cost (Estimated)
												Total by Room	$690,803	$347,309	$9,640	$64,081	$66,346	$118,905	$1,297,084 Grand Total