



**Proposal for the City of Carson, CA**  
**Emergency video system upgrade**  
**Contact: Kevin Kennedy, IT Manager**  
**Prepared by Leslie Clavey**

September 11, 2019

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**New Chamber equipment:**

This proposal is in response to the questions posed by the client with respect to video quality of the signals coming from the chamber and the overall ease of use of the system. After direct feedback from council members with respect to city clerk control over certain functions within the meetings.

**New studio equipment and configuration:**

This proposal directly responds to certain questions raised about the quality of the signals within the studio as well as the final output signals seen on the cable system and the streaming service. Additional concern over the layout and ease of use of the system are also addressed with a simplified design which eliminates multiple operational steps, adding to the ease of troubleshooting and giving direct control over the equipment in use. Lastly, the signal is not degraded until needed for the non-HD feeds being created.

**Switcher and camera joystick control panel:**

**Blackmagic Design ATEM 1 M/E Advanced Panel ..... \$ 3,100**

The Blackmagic Design ATEM 1 M/E Advanced Panel is a full-featured hardware control panel for BMD ATEM switchers. It connects via Ethernet and provides hands-on tactile control, essential for broadcast studios. An LCD information display surrounded by soft-touch menu buttons and rotary encoders allows for intuitive programming of control functions. Aside from the main display, each programmable button has an LCD scribble strip to illustrate its function. Since buttons can perform different functions, up to 20 inputs can be accessed by shifting the 10 input buttons. The buttons themselves have curved indentations to help avoid incorrect keystrokes. Real-time dynamic controls are available in the form of a single 3-axis joystick and large weighted T-bar fader. Use the joystick to remotely control PTZ cameras or effects, and the T-bar to adjust transitions, wipes, fades, and more.

**BiAmp equipment being added (client has existing 2 Audia TS-2 chassis):**

**Audia ..... \$ 4,500**

AudiaFLEX is an expanded version of Audia®, the benchmark in digital audio systems for demanding professional sound installations. AudiaFLEX provides the same easy-to-use software and functional algorithms, but with far greater flexibility in the choice of I/O configurations. Inputs and outputs may be specified by pairs, in any combination, up to a total of 24.



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<b>Logic box for mixer – 30 I/O connections to control mute and light on microphones (Quantity 3).....</b>	<b>\$ 360</b>
Logic Box is a natural extension of Nexia products. This device provides both logic inputs and outputs, as a programmable control interface. Logic inputs allow creation of custom control panels, with completely programmable functions. Logic outputs allow the system to provide programmable triggers to external circuits, such as status indicators and speaker relays. Innovative design allows 20 available connections on the Logic Box to be configured in any combination of inputs and outputs.	
<b>Voltage control box – 2 connections each for manual volume control (Quantity 3).....</b>	<b>\$ 300</b>
Voltage Control Box is a natural extension of Audia products. It provides four inputs for analog potentiometers plus four logic input/output connections, as a programmable control interface. Voltage Control Box allows creation of custom control panels, with completely programmable functions. Potentiometers may be assigned to control various system levels throughout the chamber.	
<b>Remote volume control (Quantity 5).....</b>	<b>\$ 420</b>
These remote volume controls will allow for direct (manual) adjustment of volume levels in the respective zone of the PA system. This would allow manual control for the city clerk staff for: Audience, Staff and Dais. In addition, the council break room and the studio. These manual controls can be adjusted through the software interface as well.	
<b>Programming template for logic and voltage boxes (custom configuration for site-specific macros).....</b>	<b>\$ 1,200</b>

**Replacement Wireless Microphones:**

<b>Replace wireless receivers (wireless microphones can be adjusted or muted by the operator) (Quantity 4).....</b>	<b>\$ 840</b>
Shure Wireless receiver (BLX4R [J10: 584 to 608 MHz]). The Shure BLX4R Wireless Rackmount Receiver gives you world-class design and tour-tough build quality, along with easy setup and operation. Thanks to Shure's cutting-edge, 1-touch QuickScan technology, the BLX4R makes frequency-selection hassles a thing of the past.	
<b>Replace wireless hand-held microphones. Shure model BLX2/PG58-H10 (Quantity 2) .....</b>	<b>\$ 280</b>
<b>Add wireless body packs. Shure BLX1-J10 (Quantity 2) .....</b>	<b>\$ 280</b>
<b>Add wireless Lavalier microphones. Shure CVL-B/C-TQG (clip on) (Quantity 2) .....</b>	<b>\$ 80</b>

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<b>Add wireless over-the-ear microphones. Shure MX153T/O-TQG (Quantity 2)</b> .....	\$	440
<b>Antenna extender cabling (moving to over lectern)</b> .....	\$	150

**Note: We will re-use the existing Shure UA-844 power distribution system although the antenna will be moved to increase the signal level.**

**Studio audio monitoring:**

<b>Operator bucket earphones (Sony MDR 7506 or equivalent)</b> .....	\$	100
<b>Audio monitoring selection switch</b> .....	\$	250

**Note: We will re-use the existing Wholer AMP-1A to monitor the various inputs including monitoring – in real-time – the encoding process.**

**Studio 49” wide monitor (on bench under window):**

<b>Dell U4919DW or equivalent wide monitor</b> .....	\$	1,400
<b>VESA mount to wall behind monitor (to keep desk clear)</b> .....	\$	250

**PA (networkable – allows for remote control):**

<b>Ashly NE8250.70 (replaces existing audio equipment which are not suitable for broadcast)</b> .....	\$	1,840
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The ne8250 from Ashly is a professional-quality 8-channel power amplifier with Ethernet capability designed for installed applications. Housed in a robust 2RU enclosure, this highly-efficient amplifier uses standard Euroblock input and output connectors, allowing it to connect to practically any 4 or 8 Ohm system (150W/Channel @ 8Ω or 250W/Channel @ 4Ω or 500W @ 8 Ω Bridge Mode). The ne8250 has an Ethernet port, which offers Ethernet control and monitoring of the amplifier functions using the Protea software. It also has a normal/bridge switch, allowing you to switch the amplifier into Bridge Mode. Other features include a wide complement of protection circuitry, remote level control, and the ability to expand the unit's capability via optional expansion modules.

<b>Adding cabling to hallway and studio speakers</b> .....	\$	20
<b>Adding cabling for zoning chamber and dais speakers</b> .....	\$	20

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**HDMI inputs for dais, staff and lectern (with adjustable audio)**

<b>HDMI signal switch at staff desk</b> .....	\$	780
Wiring will connect directly to manual HDMI input switcher to allow staff to select source for the projector and TV, on-air (live) and recording. Staff can also select whether signal is sent out or not.		
<b>Replacement faceplates for HDMI signal (includes audio inputs to BiAmp/PA) – (Quantity 6)</b> .....	\$	480
Replace faceplates for dais (1), staff (4) and lectern (1). New faceplates will include a RJ-45 input jack to fill the legacy mounting hole.		
<b>Cabling for new HDMI signal paths</b> .....	\$	525
Upgrade HDMI cables for dais, staff and lectern inputs for switch.		

**Dais HDMI monitors for dais (Quantity 5)**

<b>Dell P2415Q 23.8 (Quantity 5)</b> .....	\$	2,150
Replace legacy VGA monitors with 4K capable monitors. With a resolution of 3840 x 2160. In fast mode; 6ms gray-to-gray (typical) and in normal mode; 8ms gray-to-gray (typical). DC 2,000,000:1 (1000:1).		
<b>VESA mounts for dais, Chief/Legrand JWSUB or equivalent (Quantity 5)</b> .....	\$	900
This model may change after client input during installation.		

**Rackmount upgrade materials**

<b>Middle Atlantic rack (Quantity 1)</b> .....	\$	4,500
<b>Lynx Marshall HD-SDI (702 V3) monitor (Quantity 1)</b> .....	\$	1,070
<b>Lynx Marshall SD monitors (Quantity 2)</b> .....	\$	2,140
<b>Aten KVM “flip-up” screen/keyboard/mousepad</b> .....	\$	500

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**Mediastar Inc. automated Master Control with failure fallback and autorecovery:**

**Mediastar single channel Master Control, on-air router and H.264 playback system inclusive bundle:**

Fully-Integrated Master control system with H.264 and still-frame playback for one television channel..... \$ 47,000

Master Control server:

**Mediastar** integrated Master Control software package:

- Auto-recovery after power failure
- Device control for up to 8 bi-directional A/V devices (contact sales for list)
- HD-SDI output with 4:3 aspect ratio to remain NTSC compatible
- Schedulable/controllable 2 channel on-air mixer for background audio ramping

Integrated Bulletin-board:

**Mediastar** integrated broadcast-grade bulletin-board (not scan converted video):

- Includes broadcast scheduling
- Slides can play as individual or grouped together
- Slides can be grouped together as virtual "shows" with videos
- Slides can be automatically scheduled to expire and stop playing

On-air Audio/Video router:

**Mediastar** integrated Audio/Video router with remote control:

- 8X1 A/V SD switcher, with manual operator override
- RS170A broadcast output (as required by the cable company)

HD/SD video server:

**HD/SD video server** with built-in HD to SD.

- This video server meets or exceeds the following specifications:
- High Definition Specifications: AVC/H.264 HD: MP@L4.1 and HP@L4.1 up to 20 Mbs, MPEG2 HD: MP@HL up to 60 Mbs
- Standard Definition Specifications: AVC/H.264: MP@L3.1 up to 10 Mbs, MPEG2 SD: MP@ML up to 15 Mbs and MPEG SD: 422@ML up to 50 Mbs
- The video server has been upgraded to include 30 hours of local transport (hard-drive storage) for added reliability

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**Mediastar single channel Ingest, Non-linear editing, Production and scheduling workstations (two):**

- Scheduling workstation: **Mediastar** integrated hardware and software package:
- Production – create templated or scripted frames for maximum efficiency
  - Editing - storyboard “thumb-nails” for quick editing, pre-air proofing
  - Scheduling - unlimited advanced user-friendly scheduling, automatic drop-offs
  - 32-bit (NTSC RS170A) broadcast-quality Image Capture board (no scan conversion)
  - Multi-channel RGB/S-Video/Composite NTSC display monitor, with under-scan

**Note: Two scheduling workstations are called for, one for the studio and one for the PIO office so they can create slides and manage the schedule.**

- H.264/MPEG2 HW encoder: **Netstar III** H.264/MPEG2 encoding, NLE and DVD ripping functionality:
- Server platform with built-in RAID, dual processing available
  - H.264/MPEG2 hardware encoder to (no frame loss as with software encoders)
  - CD and DVD Blu-ray<sup>®</sup> authoring
  - DVD, DVD-DL and DVD Blu-ray<sup>®</sup> “ripping” (accepts content from any DVD for playout)

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mediastar-SG<sup>®</sup>



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**Additional broadcast equipment specified:**

**Remotestar bundle - Manage all your Mediastar equipment remotely** ..... \$ 5,550  
Connect and manage all the **Mediastar** equipment (including Production/scheduler, Master Control server and the H.264 video server) from any Ethernet connected PC or MAC, or dial-up connected PC or MAC or any Mobile PC capable cellular telephone. Over-ride schedules, do "live" switches, diagnose problems, update schedules, upload and download files to all **Mediastar** equipment, including your H.264 video server. Includes Slingbox for remote viewing and KVM over I/P for remote management (note: Remotestar is mandatory for FSC clients). Requires internet access.

**HD-SDI signal path from dais to studio**

**Extron HDMI-HD-SDI transmitter pair** ..... \$ 1,300  
**Crestron transmitters for upper hall (overflow) TV, lower hall and conference room TVs (3)** ..... \$ 1,800  
**Rackmount for legacy Crestron hardware** ..... \$ 150  
**Wallmounts for monitors (Quantity 2)** ..... \$ 300

**New voting system:**

**D-Scan corporation Deliberator™** (comes with 5 voting keypad entry systems)..... \$ 5,950  
The Deliberator™ is intended for city councils, community boards, planning commissions or corporate forums engaged in vigorous debate or public hearings. The Deliberator allows members to self-regulate speaking order and control discussion times in an open and fair manner. The Deliberator system communicates directly with the system (display) PC. The software registers requests-to-speak, keeps time for every speaker and tallies keypad votes and allows for screen layout and customization using PowerPoint.

**HD streaming appliance:**

**Wowza Clearcaster** ..... \$ 5,995

A/V Inputs: 1 x 6G SDI/HD/Ultra HD, or 1 x HDMI 2.0a, Supported Capture Inputs: 4K: Up to 2160p30, 4k (interlaced video supported), A/V Outputs: 2 x HDMI, Encoding: Universal Mode: H.264/HEVC AAC - up to 1080p60; 4Kp30, Facebook Mode: H.264/AAC - Up to 1080p60; Auto configure redundant encoders. Network: 1GB Ethernet, DHCP support, manual network configurable. Display: Built-in LCD screen with button controls. HDMI out of Streaming Engineer Health Monitoring. Titling/Graphics Support for graphics via browser-based sources. Size: 1RU, rack mountable, 1/2 depth. 200W internal power supply. API Available with Full Control in Universal Mode Available via GraphQL API in Facebook Mode

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<b>Equipment total (taxable)</b> .....	\$ 96,920
<b>Sales tax (9.5%)</b> .....	\$ 9,207
<b>Equipment total (with tax)</b> .....	\$106,127

**Installation expenses:**

On-site Installation 10 days (2 technicians for 9 days) .....	\$ 30,000
Per Diem (12 days).....	\$ 3,336
Shipping & Handling .....	\$ 2,800

<b>Installation total</b> .....	\$146,892
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**Due to the urgent nature of this work, Mediastar is offering terms as follows: 50% deposit at time of order, 50% balance upon completion.**

Order authorized by: \_\_\_\_\_

Print Name: \_\_\_\_\_ Title: \_\_\_\_\_

Purchase Order Number if Required: \_\_\_\_\_ Date: \_\_\_\_\_

Please list the shipping address you want used:

\_\_\_\_\_  
\_\_\_\_\_

Please list the billing address you want used (if different from shipping address):

\_\_\_\_\_  
.....

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