Mt. Diablo Unified School District

Boardroom AV Upgrade

Scope of Work

Demo

- EKC will deinstall existing AV system including Projector, Microphones, cabling, Extron, and all Rack equipment.
- All equipment will be placed aside for district disposal.
- A new rack will be installed in back AV closet consisting of 24RU of rack space with a mounting depth of 26" and a plexiglass door (Middle Atlantic DWR 24-26PD).

Rack

- Power distribution for rack components (Middle Atlantic RLNK-915R),
- (8) Vented rack Panels (Middle Atlantic VT1)
- Heavy duty sliding drawer (Middle Atlantic SS) to hold the PTZ Controller (PTZOptics 4D Visca Over IP Controller).
- A Dual rackmount monitor (Marshall M-LYNX-702-V.3) will be used in conjunction with PTZ Controller to position PTZ cameras ((2) PTZOptics 20xSDI) in preset positions which can be recalled on the newly installed Extron touch screens (TLP 725T Dais controller and TLP 725M wall mounted controller).
- A 12 Port PoE+ switch (Netgear GSM4212P-100NAS) will be used for power the PTZ cameras, control panels, Shure wireless transceivers ((2) Shure MXWAPT8), as well as interconnect for control of other system components.
- Extron DTP Crosspoint 84 4K IPCP MA 70 for video distribution and matrixing.
- Extron DMP 128 FlexPlus C AT for Audio mixing and routing.
- Extron NetPA U 1004-70V for audio amplification.
- Extron SMP 351 3G-SDI to handle video streaming, capture, and Picture in picture processing.
- Extron Media Port 200 will provide HDMI to USB conversion for video input into video conferencing solution.
- Extron SW4 12G HD-SDI to switch camera inputs going into video conferencing solution.
- EKC will label and install all cabling within rack and will dress all cable neatly to be easily identified and worked on if necessary.

In room video

- EKC will install new 98in Display (Samsung QB98T) in place of projector Screen on a flat wall mount (Chief XTM1U).

*Video will be provided from Extron Crosspoint and ran over Extron specified cat cabling to an Extron HDMI receiver (Extron DTP HDMI 4K 230 Rx)
*Control will be provided through the same Extron Rx
*Electrical to be provided by district.

- EKC will install new 98in Display (Samsung QB85R) in place of projector Screen on a flat wall mount (Chief XTM1U).
    *Video will be provided from Extron Crosspoint and ran over Extron specified cat cabling to an Extron HDMI receiver (Extron DTP HDMI 4K 230 Rx)
    *Control will be provided through the same Extron Rx
    *Electrical to be provided by district.

Both Displays will act independent or mirrored depending on which mode is selected on Control Panel.

-An additional output will be provided at dais location for a mobile cart setup via Extron specified cat cabling and terminated into a shielded pass-thru (Extron WPD101C) for quick connect.

Video Input Sources

- 3 HDMI and 1 VGA (Extron DTP T HWP 232 D) (Extron DTP T UWP 4K 232 D) to be installed in place of existing plates.
- PC in rack for Video Conferencing and power point and such. USB will be extended to input location via (Extron USB Extender Plus D R) Decora USB Hub to (Extron USB Extender Plus T) receiver over standard Cat6.

Video Switching

- Extron DTP CrossPoint 84 4K
- All-in-one 8x4 4K matrix switcher, scaler, and control processor
- Two DTP inputs and six HDMI inputs
- Two HDMI outputs and two independently scaled DTP outputs
- Integrated DTP inputs and outputs support transmission of video, control, and audio up to 330 feet (100 meters) over a shielded CATx cable
- Advanced Extron Vector™ 4K scaling engine

Room Cameras-

- At the customer request (2) PTZ Cameras are to be installed at customer desired location and mount to the ceiling via (Vaddio QuickCat PTZ Mount). Cameras will be powered and controlled over ethernet from rack switch and video will be ran through SDI cabling back to rack.
- Presets will be set with District and can be recalled at either Control Panel or PTZ controller located in rack.

- Due to the nature and portability of the wireless microphones, it is not recommended to recall presets with audio.
- For ease-of-use presets can be set and stored from the AV room and recalled on control panel as well as the reverse.

Audio

- (12) wireless desktop bases with 15" Gooseneck microphones that have an LED ring on top to indicate mute, to replace existing hardwire mic setup. (Shure MXW8-Z10 Bases) (Shure MX415LPDF/C Gooseneck Microphones)
- (2) wireless handheld microphones for easy portability and presenting. (Shure MXW2/SM58)
- Microphones come with rechargeable batteries that can last up to 9 Hours on a single charge.
- Batteries are to be recharged in the Docking stations (Shure MXWNCS8, MXWNC2) without having to remove the batteries from the microphones.
- All Microphones transmit to either of the wireless transceivers (Shure MXWAPT8) and are sent back to the rack via Cat6 cabling.
- All audio is processed on a digital signal processor (Extron DMP 128FlexPlus) which provides equalization, compression, limiting and echo canceling (for Video Conferencing) and will interface with the rack pc Via USB for Video Conferencing.
- Speakers will be installed evenly through the room with minimal visual impact as they look like they are AC vents (Extron FF 220T) and can be divided up into four zones.
- Speakers will be powered by a 70V networked amp (Extron NetPA U 1004-70v).

Control

- All audio and video will be controlled by 1 of the 2 touchscreens. Control will include volume, source selection, Power, Audio Mute, Camera Control, Camera preset recall. All with feedback to indicate correct function.
- Audio will be programed with a preset to recall its default settings (settings determined by EKC representative in conjunction with district staff), this will result in a continuity from meeting to meeting.

Streaming / Video Conferencing

- Two cameras provide multiple views of in room and are controlled via touch panel by either, preset recall or PTZ controls.
- Cameras are routed back to rack location and plugged into the Marshall Dual Monitor and looped out to the Extron SDI switcher.
- A feed from the switcher will be fed out to the Extron SMP 351 as well as a feed from the Extron Crosspoint.

- Presets will be set on the SMP 351 (recallable on Touch Panels) to provide picture in picture viewing of what is being displayed on the room displays as well as the Camera selected.
- Meetings can be stored on the internal drive of the SMP and recalled over the network.
- Streaming can be accomplished from the SMP to feed to YouTube etc.
- HDMI output of the SMP 351 will be fed into the Extron Media Port 200 and converted to USB.
- USB from the audio system and Media port 200 will be plugged into the Rack PC (Simply NUC 910-FM7A-061) and will show up in video conferencing applications as an audio device and webcam.

Programming

- All programming of Extron equipment will be done by an EKC representative who has been certified as an Extron Control Professional and DSP Pro.
- Program will be turned over to district at completion.
- At completion of job and sign off, programing will be finalized. Any additional changes will need to be addressed separately unless programing is broken and will be determined by EKC representative.