



The Source for Audio Visual Solutions®

Linthicum Hall LI02232
STF 200061 / SR 304764
SOW 19-2699 Rev 1

1. Main Display System

- a. Visual Sound will furnish and install one (1) 86" LCD display onto the front wall of the classroom.
- b. Visual Sound will furnish and install one (1) new DigitalMedia NVX Series Decoder at the 86" Display mounting location.

2. Computer Interface Equipment

- a. Visual Sound re-use the existing room podium. The existing cable cubby will be re-used with Towson standard connection will be added to the cable cubby. The cable cubby will be equipped with the following connections:
 - i. Auxiliary HDMI (cable)
 - ii. 3.5mm stereo audio MP3/Aux Audio jack (connection plate)
 - iii. USB A female jack connected to Towson Provided PC (Connection plate)
 - iv. RJ45 network pass-thru jack wired to Towson Network (Connection plate)
 - v. 120VAC receptacle
 - vi. A Liberty cable adapter ring with Towson standards will be provided.
- b. Visual Sound will integrate the existing Customer Furnished Dedicated PC into this classroom upgrade.
 - i. Please note that the PC will be equipped with a Mini-DisplayPORT output. Towson will provide a 6ft. MiniDP to Male HDMI cable for connection into the system.
- c. Visual Sound will furnish and install two Planar Monitors on the podium.
- d. Visual Sound will furnish and install one (1) dual monitor arm mount for the Planar displays on the Podium.
- e. Visual Sound reuse the existing document camera.
 - i. Please note that this document camera will be connected to the PC via USB. A Sonic Shock Alarm will be furnished for the new Document Camera.
- f. Visual Sound will furnish and install one (1) MPS input 3.5mm audio cable through the cable cubby location.
- g. Visual Sound will furnish and install one (1) Mersive wireless presentation appliance.

3. Video Camera and USB Interface

- a. Visual Sound will furnish and install one (1) new RoboShot USB camera. The camera will be wall mounted towards the rear of the room to capture the professor/presenter at the podium and in front of the projection screen.

4. System Video Switching and Processing

- a. Visual Sound will furnish and install (1) Crestron DMF-CI-8 8-sot card frame
- b. Visual Sound will furnish and install four (4) DM-NVX-E30-C Encoder cards for the following sources:



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- i. Computer (Primary)
 - ii. Aux HDMI (Laptop)
 - iii. Document Camera
 - iv. Mersive
- c. Visual Sound will furnish and install one (1) DM-NVX-D30-C Decoder cards for the following destination:
 - i. Program Audio Out
- d. Visual Sound will furnish and install one (1) 24port Layer 3 managed switch for the Crestron NVX hardware.

5. System Microphones and DSP Electronics

- a. Visual Sound will furnish and install one (1) 18" gooseneck microphone onto the surface of the Podium. This microphone will be used for Speech reinforcement, Panapto and USB software-based conferencing software installed onto the room PC.
- b. Visual Sound will furnish and install one wireless lapel microphone. This microphone will be used for Speech reinforcement, Panapto and USB software-based conferencing software installed onto the room PC.
- c. Visual will furnish and install two (2) new Biamp TCM-1 series microphone arrays throughout the room and one extension microphone near the instructor's station. These microphones will be used for Panapto and USB software-based conferencing software installed onto the room PC. Included with these microphone arrays will be built in loudspeaker amplification to power six (6) total ceiling recessed loudspeakers.
- d. Visual Sound will furnish and install one (1) new Biamp TesiraForte Digital Signal Processor. These devices will provide the USB audio into the Computer for Panapto.

6. Amplification and Loudspeakers

- a. Visual Sound will integrate the existing four (4) ceiling recessed loudspeakers into this upgrade.
- b. Visual Sound will furnish and install two (2) additional ceiling speakers into this upgrade.
- c. An assistive listening system will be furnished and installed

7. Control System

- a. Control of the system will be through a 10" wired touch panel. The touch panel will be installed on the podium using a table top kit. This 10" touch panel will be connected to the Crestron CP3N system processor. A network switch will be included for the control subnet. A dedicated LAN connection from Towson into the Crestron CP3N processor will provide the access to the system for Fusion and X-Panel control
- b. The touch panel will be programmed following the Towson Touch panel/control system guidelines. The following will be available via the touch panel.
 - i. System Start- Power on system
 - ii. Project- Turn on the projector
 - iii. Sources
 - 1. Computer Primary
 - 2. Document Camera with controls including Rotate.
 - 3. Laptop (Aux HDMI)
 - 4. Mersive Wireless (Primary)



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5. Mersive Huddle #1
6. Mersive Huddle #2
7. Mersive Huddle #3
8. Mersive Huddle #4
9. Mersive Huddle #5
10. Mersive Huddle #6
- iv. Destinations
 1. Projector
 2. LCD Huddle #1
 3. LCD Huddle #2
 4. LCD Huddle #3
 5. LCD Huddle #4
 6. LCD Huddle #5
 7. LCD Huddle #6
- v. Volume
 - a. Master Volume Up
 - b. Master Volume Down
 - c. Volume Mute Toggle
 - d. Volume Up/Down arrows will unmute system
- vi. No Sound
 - a. Mute all audio on/off toggle
- vii. Microphone
 - a. Use / Don't Use
- viii. No Show
 1. Please note this function will only mute the projector.
- ix. Finish
 1. Shutdown Yes
 2. Shutdown No
- x. Auto-Shutdown timer with Set up Page
- xi. Help
 1. This button will display the Towson University help desk phone number information.
- xii. Hard Buttons- as per Towson University:
 1. Power Button- Emulate Start/Finish
 2. Home Button- Emulate Source Button
 3. Light Button- Display "Feature Not Available"
 4. Arrow Up- Main Volume Up
 5. Arrow Down- Main Volume Down
- xiii. Device Usage Report module will be included with the program.
- xiv. The system will be added to the RoomVIEW Fusion server.
- xv. The X-Panel will be added and available through the RoomVIEW e-Control.
- xvi. The Network Time Sync module will be included with the program to keep the control system clock in time with the Towson SMTP server.
 1. Towson will have the opportunity to review touch panel layouts prior to the code being loaded into the system.
- c. Visual Sound will furnish and install one (1) Crestron CP3N control system processor.



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8. Lectern Interface and Accessories

- a. Visual Sound will integrate the existing Lectern into this Upgrade.,
- b. Visual Sound will furnish and install two (2) 9-outlet rack power and conditioning strips.

9. Huddle Tables

- a. Visual Sound will furnish and install six (6) 55" LCD displays throughout the room for group/huddle stations.
- b. Visual Sound will furnish and install four (4) tilting wall mounts for four (4) of the 55" displays.
- c. Visual Sound will furnish and install two (2) ceiling mounts for the remaining two (2) 55" displays.
- d. Visual Sound will furnish and install six (6) DM NVX decoders, one for each display.
- e. Visual Sound will furnish and install six (6) Mersive solstice pods, one (1) allocated for each display.
- f. Visual Sound will furnish and install (1) Crestron DMF-CI-8 8-sot card frame into the Lectern equipment rack.
- g. Visual Sound will furnish and install six (6) DM-NVX-E30-C Encoder cards for the following sources:
 - i. Mersive Huddle #1
 - ii. Mersive Huddle #2
 - iii. Mersive Huddle #3
 - iv. Mersive Huddle #4
 - v. Mersive Huddle #5
 - vi. Mersive Huddle #6
- h. Visual Sound will furnish and install six (6) 5" TSW series PORTRIAT Touch panels, one for each huddle station. These touch panel will be programmed as follows:
 - i. Power On
 - ii. Source Select:
 1. Mersive
 2. Room Feed
 - iii. Volume Up, Down and Mute
 - iv. Power Off.

Notes and Clarifications:

- Towson University will provide all network and electric drops as required.
- VSI will return any old equipment to LI for re-purposing or proper disposable per State of Maryland and TU Property management rules / protocol.
- VSI will remove all trash and packing material from site when system is complete.
- The Cisco Router will not be used, Towson LAN will connect to the CP3N LAN port for Fusion access.