

PART 1 – GENERAL

1.1 PROJECT DESCRIPTION

- A. The Simulation Recording Contractor shall procure, assemble, install, test, and document the Simulation Recording System as described in these specifications and as depicted on the enclosed drawings.
- B. Refer to the CD set of drawings provided by the architect as part of these specifications.
- C. Refer to Addendum A- System Questionnaire for additional information that is required for the bid submittal.
- D. It is the intent of these specifications to provide a complete simulation recording system capable of connecting to the simulation audiovisual equipment provided by the simulation AV contractor. The Simulation Recording Contractor shall assure they understand completely the functional requirements of the simulation recording system specified herein, verify the completeness of the equipment specified, the correctness of the type, numbers, and the overall suitability of the equipment to meet the purpose of the specifications.
- E. Add/Alts are shown at the end of this document.

1.2 SYSTEM DESCRIPTIONS

2nd FLOOR

- Sim Control Room (206)
- Nursing Debriefing Room (202)
- Nursing Sim Lab (201)
- Nursing Sim1 (201A)
- Nursing Sim2 (201B)
- Nursing Sim3 (201C)
- Nursing Sim4 (201D)
- Nursing Sim5 (201E)
- Nursing Sim6 (201F)
- Nursing Sim7 (201G)
- Nursing Sim8 (201H)

- R.C. Sim Control Room (256)
- R.C. Skills Lab (250)
- R.C. Sim1 (255A)
- R.C. Sim2 (255B)
- R.C. Sim3 (255C)
- R.C. Sim4 (255D)

- IPE Control Room (261A)
- IPE Simulation Room (260)

A. NURSING SIMULATION AREA

The Sim Control Room 206 is a small space with four (4) sim control stations. This room is used to control eight (8) nursing simulation rooms (Nursing Sim1 through Sim8). Each sim control station shall facilitate a single scenario. One (1) mic will be provided per control station by the audiovisual contractor for communicating through the simulation room speaker. One (1) OFE PC shall be used per control station for the AV recording software, and an additional OFE PC will be provided for each manikin in the simulation room. Desktop speakers will be provided per control station by the audiovisual contractor to allow the audio being captured to be heard in the control room. One (1) pair of wired headphones will be provided per control station by the audiovisual contractor to be used when required.

Each simulation room (sim1 through sim8) will have a minimum of one (1) faceplate for connecting an OFE manikin, and one (1) faceplate for connecting an OFE vitals touch screen monitor/ all-in-one PC. These rooms will also have a faceplate for connecting an auxiliary medical device to be captured during trainings. All faceplates are provided by others. A ceiling speaker will be installed by the audiovisual contractor for hearing the facilitator's control room mic in the simulation room. A minimum of one (1) ceiling mic will be installed by the audiovisual contractor to pick up audio in the room. One (1) fixed IP and two (2) PTZ IP cameras will be installed by the audiovisual contractor in the ceiling for capturing video during simulation scenarios. The equipment required to convert the vitals monitor/PC(s) and auxiliary device(s) to IP streams for capture shall be included in the Simulation Recording Contractor's bid response. Refer to the drawing set for locations and quantity of devices.

Debriefing for this area will occur in Nursing Debriefing Room 202. All audiovisual equipment in this room will be provided by others. An OFE computer will be provided to playback recorded simulation scenarios through the AV system. Any required licensing for the OFE PC for video playback shall be included in the Simulation Recording Contractor's bid response.

B. R.C. SIMULATION AREA

The Sim Control Room 256 is a small space with four (4) sim control stations. This room is used to control four (4) R.C. simulation rooms (R.C. Sim1, Sim2, Sim3, Sim4). Each sim control station shall control a single scenario. One (1) mic will be provided per control station by the audiovisual contractor for communicating through the simulation room speaker. One (1) OFE PC shall be used per control station for the AV recording software, and an additional OFE PC shall be provided for each manikin in the simulation room. Desktop speakers will be provided per control station by the audiovisual contractor to allow the audio being captured to be heard in the control room. One (1) pair of wired headphones will be provided per control station by the audiovisual contractor to be used when required.

Each simulation room (1 through 4) will have a minimum of two (2) faceplates for connecting an OFE manikin, and two (2) faceplates for connecting an OFE vitals touch screen monitor/ all-in-one PC. These rooms will also have two (2) faceplates for connecting auxiliary medical devices to

be captured during trainings. All faceplates are provided by others. A ceiling speaker will be installed by the audiovisual contractor for hearing the facilitator's control room mic in the simulation room. Two (2) ceiling mics will be installed by the audiovisual contractor to pick up audio in the room. Two (2) fixed IP and two (2) PTZ IP cameras will be installed in the ceiling by the audiovisual contractor for capturing video during simulation scenarios. The equipment required to convert the vitals monitor/PC(s) and auxiliary device(s) to IP streams for capture shall be included in the Simulation Recording Contractor's bid response. Refer to the drawing set for locations and quantity of devices.

Debriefing for this area will occur in R.C. Skills Lab 250. All audiovisual equipment in this room will be provided by others. An OFE computer will be provided to playback recorded simulation scenarios through the AV system. Any required licensing for the OFE PC for video playback shall be included in the Simulation Recording Contractor's bid response.

C. IPE SIMULATION AREA

The IPE Control Room 261 is a small space with one (1) sim control station. This room is used to control the IPE sim room 260. The sim control station shall facilitate a single scenario. One (1) mic will be provided by the audiovisual contractor for communicating through the simulation room speaker. One (1) OFE PC shall be used for the AV recording software, and an additional OFE PC shall be provided for each manikin in the simulation room. Desktop speakers will be provided by the audiovisual contractor to allow the audio being captured to be heard in the control room. One (1) pair of wired headphones will be provided by the audiovisual contractor to be used when required.

IPE sim room 260 will have a minimum of one (1) faceplate for connecting an OFE manikin, and one (1) faceplate for connecting a vitals touch screen monitor/ all-in-one PC. This room will also have a faceplate for connecting an auxiliary medical device to be captured during trainings. All faceplates are provided by others. Four (4) ceiling speakers will be installed by the audiovisual contractor for hearing the facilitator's control room mic in the simulation room. One (1) ceiling mic array will be installed by the audiovisual contractor to pick up audio in the room. Two (2) fixed IP and four (4) PTZ IP cameras will be installed in the ceiling by the audiovisual contractor for capturing video during simulation scenarios. The equipment required to convert the vitals monitor/PC(s) and auxiliary device(s) to IP streams for capture shall be included in the Simulation Recording Contractor's bid response. Refer to the drawing set for locations and quantity of devices. A wall mounted flat panel display will be provided by the audiovisual contractor. This display will be able to view the vitals monitor, ventilator, and display recorded videos for debriefing. Refer to the drawing set for locations and quantity of devices.

Debriefing for this area will occur in IPE sim room 260. The flat panel display and in-ceiling speakers will support playback of recorded simulation scenarios through an OFE computer. Any required licensing for the OFE PC for video playback shall be included in the Simulation Recording Contractor's bid response.

3rd FLOOR

- Student Collaboration Area 301

D. STUDENT COLLABORATION AREA 301

The Student Collaboration Area 301 is a large space with a large flat panel display provided by others. An H.264 decoder will be provided by the audiovisual contractor to view a camera feed from the IPE Simulation room on the display. An analog audio feed will also be provided by the audiovisual contractor to hear audio from the IPE Simulation room through the display's speakers.

1.3 THE SPECIFICATION

- A. The "Specification" is defined as the body of documentation provided to the Contractor with the Request for Proposal, as well as all addenda to said documentation. Throughout this document, words such as "herein" refer to the entire Specification, and not just this written document.

The specification includes, but is not limited to:

1. This written specification document
2. All drawings in the CD drawing set
3. Cable terminations and labeling schedule
4. Additions and/or modifications as detailed in written addenda
5. Additions and/or modifications as detailed in drawing additions or reissues

1.4 DEFINITION OF TERMS

- A. Within this section of the specifications, the following definitions shall apply:

1. The term "**Architect**" is used to indicate:
Randall Scott Architects
14755 Preston Rd. Suite 730
Dallas, TX 75253
972.664.9100
2. The term "**Consultant**" is used to indicate:
Level 3 Healthcare
955 E. Javelina Avenue Suite B-106
Mesa, Arizona 85204
www.L3Healthcare.com

O: 480.892.1071

F: 480.892.5295

The term "**Owner**" is used to indicate:

Midwestern State University

3410 Taft Blvd.

Wichita Falls, TX 76308

3. The term "**Bidder**" is used to indicate that entity generating the bid response.
4. The term "**Contractor**" is used to indicate the successful Bidder to whom the Owner has awarded the contract.
5. The term "**Furnish**" is used to indicate the responsibility to ship or deliver the item to the job site, freight prepaid, for receipt, staging and installation by others.
6. The term "**Install**" or "**Installation**" is used to indicate the responsibility of receiving the item at the job site, providing adequate storage, unpacking or uncrating the item, physically securing the item or otherwise making ready the item for its intended use by following the instructions and approved methods of the manufacturer and those contained herein.
7. The term "**Provide**" is used to indicate the responsibility to both "**Furnish**" and "**Install**".
8. The term "**Provided by Others**" shall refer to material and work, which is related to this contract, but has been provided by parties other than the Simulation Recording Contractor. An example might be in reference to a projection screen installed during building construction but requiring interface to the AV control system.
9. The terms "**NIC**" and "**Not In Contract**" are equivalent to "**Provided by Others**".
10. The term "**OFCI**" (Owner Furnished Contractor Installed) shall refer to equipment that will be furnished by the Owner for installation by the Contractor. The Contractor shall be responsible for installing and integrating this equipment as detailed herein.
11. The term "**shall**" is mandatory; the term "**will**" is informative; and the term "**should**" is advisory.

1.5 SUBSTITUTIONS

- A. It is not an intention of this specification to limit or restrict Bid Responses to those containing products by specific manufacturers, but rather to set a baseline of operational performance and functionality that all Bid Responses must meet or exceed. If a particular Bid Response contains no deviations from this specification, the Bidder may submit the Bid Form alone. However, if a Bid Response contains deviations from this specification, additional submittals are required to thoroughly document each deviation and demonstrate that the modified system will meet all intentions of this Specification.

1.6 RECOMMENDATIONS

- A. Should the Bidder have recommendations that will enhance the performance of the systems, or reduce costs without the loss of performance, such comments shall be made in the Bid Response. All suggestions that are of value to the Owner shall be taken into consideration in the evaluation of the Bid Response. The Bidder shall represent all such proposals as “alternates”, with the appropriate cost modifications shown separate and apart from the costs of the system as specified.

1.7 DEVIATIONS

- A. For deviations in equipment or hardware, the Bidder shall provide a written statement describing why such deviations are requested. The Bidder shall also provide the manufacturer’s specifications and warranty information on proposed substitutions. The Contractor shall be responsible for repaying any additional expenses incurred by other trades, the Consultant, the Architect, and/or the Owner, as a result of instituting such deviations without prior approval.

1.8 EXCEPTIONS

- A. Notwithstanding the detailed information contained in this Specification, the Bidder shall be responsible to see that a complete and functioning system is installed. The Bidder shall notify the Consultant, prior to bidding, of any and all exceptions to these specifications and related drawings. This shall include any errors or omissions in the system design that, in his/her opinion will prevent the system from achieving all intentions of the Specification.

1.9 REQUEST FOR INFORMATION

- A. All requests for information shall be communicated by way of a Request For Information (RFI). An RFI may be e-mailed to Stephen Shelley in MSU Purchasing. Verbal requests for information shall be permitted only during the Pre-Bid meeting. All Bidder questions and responses to Bidder questions shall be under the heading “Addenda to the Bid” and made public to all Bidders. All Requests for Information must be received by the date and time indicated in the cover letter accompanying this specification. Requests for Information received after this date shall not be honored.

1.10 BID RESPONSE

This document must be signed and dated by a principal or officer of the company.

A. PERFORMANCE, PAYMENT, AND OTHER BONDS

Performance or Payment bonds may be required for this project.

B. ITEMIZED PRICING

The bidder shall provide itemized unit pricing for each item in the equipment list unless otherwise indicated on the 'Bid Form'. The Bidder agrees that the Owner may increase, decrease, or delete entirely individual items, scheduled quantities of work to be done, or materials to be furnished after execution of the Contract.

C. TAXES

The Bidder shall provide totals for all applicable state and local taxes where indicated on the bid form.

D. POST- BID INTERVIEW

Upon receipt of Bid Responses, the Owner, Architect, and Consultant shall require Bidders to participate in a Post-Bid Interview. Bidders shall be prepared to arrange a private demonstration of the software, either in person or via video conference. This meeting shall also be used to answer questions, and clarify any discrepancies in Bid Responses.

E. ACCEPTANCE

Upon acceptance of the bid, the Bidder assumes responsibility for supplying such materials and taking such actions, whether specifically mentioned herein or not, to satisfy all intentions of the Specification without claim for additional compensation.

1.11 SITE CONDITIONS

A. GENERAL

The Bidder shall be responsible for investigating any potential conflicts with site-related or union-related issues regarding use of personnel, scheduling, access to the site, storage of tools and equipment on-site, and other areas of potential conflict. If these issues impact the Bidder's Bid Response, the impacts on cost and schedule should be clearly noted in the Bid Response.

B. EQUIPMENT DELIVERY AND STORAGE

Costs of all shipping to the sim audiovisual contractor's site for staging, to the jobsite, and of all unusual storage requirements, shall be borne by the Contractor. It shall be the responsibility of the Contractor to make appropriate arrangements, and to coordinate with the authorized personnel at the site, for the proper acceptance, handling, protections, and storage of equipment so delivered.

C. REFUSE

The Contractor shall keep the site and building free of all debris and clutter, to the satisfaction of the Owner or site manager. On a daily basis, the Contractor shall remove refuse and rubbish related to the specified work from the site and shall leave the relevant areas and equipment clean and in an operational state. The Contractor shall be responsible for repairing any damage caused to the premises by the Contractor's installation activities, at no cost to the Owner.

D. WORK UNDER OTHER CONTRACTS

Construction of the HS+HS building is under a separate contract where the construction process was initiated in February 2018. The software contractor shall be responsible for coordination of the work described in these specs and drawings so as NOT to hinder the completion of construction related to the HS+HS building, north parking lot, utilities for the new building, or the storm water pollution prevention plan for the new building. These projects are scheduled for Substantial Completion to occur on May 16, 2019 and Final Completion on June 14, 2019.

When performing work on the HS+HS site while in the care and custody of Trinity Hughes Sundt, Subcontractor must follow Sundt's project safety plan. The plan is inclusive of 100% hard hat, high visibility clothing, eye protection, shirts with sleeves and hard soled shoes (no tennis shoes).

Work hours for the HS+HS site are 7:00 AM to 5:00 PM, Monday – Friday. After hours work and weekend work will be accommodated with 72 hour notice. A Trinity Hughes Sundt employee must be present when any work is being performed on the HS+HS site.

Cooperate fully with separate contractors for HS+HS so that work under those contracts may be carried out smoothly, without interfering with or delaying work under this Contract.

E. CONTRACTOR USE OF PREMISES

Use of the Site: Limit use of the premises to work in areas indicated. Confine operations to areas within contract limits indicated.

Owner Occupancy: Allow for Owner occupancy of the new HS+HS building.

Driveways and Entrances: Keep driveways and entrances outside the contract limits clear and available to the Owner, the Owner's employees, and emergency vehicles at all times.

Do not use these areas for parking or storage of materials. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

Use of the Existing Building: Maintain the existing building in a weather tight condition throughout the construction period. Repair damage caused by construction operations.

Take all precautions necessary to protect the building and its occupants during the construction period.

1.12 SCOPE OF WORK

- A. Review all architectural, mechanical, electrical, millwork and audiovisual drawings.
- B. Project management including merchandise and labor control, scheduling and all coordination with client, architect and consultants.
- C. Timely purchasing of all equipment provided by the winning bid responder. Coordination with the various vendors and suppliers.
- D. Preparation and submission of all shop drawings, for the assembly and wiring of the simulation recording system.
- E. Testing and staging of audiovisual systems at Audiovisual Contractor's facility. Review of all system functions and operation. Inspection by the AV Consultant and client representative.
- F. Regular job site visits to verify dimensions and to coordinate with various trades such as electrical contractors, millwork contractor, general contractor, architect and interior designers, etc.
- G. Coordination and delivery of all equipment provided by the winning bid responder to the job site. Assurance of delivery to a safe clean area.
- H. Responsible for the delivery of all equipment provided by the winning bid responder to the appropriate secured location.
- I. Preparation of as built documentation drawings, owner's manuals, and operator instructions. Provide a complete Documentation Package of all shop drawings, owner's manuals and operator instructions to the client and consultant.

- J. Assist with training and demonstration sessions for operators, end-users, interested executives, and others. Provide training and assistance to the client on the proper use, operation maintenance of the audiovisual systems.

1.13 WORK EXCLUDED

- A. Work not included in this contract shall be:

1. Providing conduit, power receptacles, junction boxes, cable raceways, electrical back-boxes, floor boxes, lighting fixtures, lighting dimming systems, or millwork except where otherwise specified herein.
2. The data and voice network is provided by Others.
3. All computers and servers shall be OFCI unless specifically indicated otherwise in the bid response. All computers and servers required for a fully functional system shall be indicated in the bid response. A separate line item shall be included for each computer and server, whether provided by the winning bid responder or not, with the itemized equipment list provided by the bidder.

1.14 GENERAL CONDITIONS

- A. The General Conditions, Requirements, and Special Provisions, of any larger body of specifications, of which this Specification may be a part, are hereby made a part of this Specification. In the event that any clauses or provisions of the larger body of specification conflict with the letter or intent of this Specification, the Contractor shall immediately notify the Consultant for clarification and direction.

1.15 SCHEDULE

- A. The schedule is of paramount importance. The Simulation Recording Software Contractor shall submit a scheduling plan with the bid return, indicating the various milestone dates after award of contract for completion of design, shop fabrication, staging, onsite installation work, testing and acceptance broken into phases as necessary. This shall be in the form of a Gantt chart, and be consistent with the project schedule.

1.16 QUALIFICATIONS OF BIDDERS

- A. Work specified herein shall be the responsibility of a single Simulation Recording Contractor. Bid responses shall document a minimum of five years of experience in the fabrication, assembly

and installation of systems of similar complexity as specified herein. This requirement shall apply equally to suppliers and manufacturers of the Simulation Recording and Simulation AV subsystems and major components to be used on this Project.

- B. The documentation shall include the names, locations, descriptions, total contracted amount, and points of contact for at least three installations of the type and complexity specified herein.
- C. Each bidder shall have at least one directly employed supervisory employee that possesses a current certification, from a recognized AV or IT organization or institution, providing formal training in audiovisual and/or IT technology. Proof of this shall be supplied with bid. Examples of acceptable certifications are InfoComm CTS and CompTIA A+.
- D. A complete list of the project team shall be provided. The key contact or Project Manager for the Simulation Recording Contractor must be readily available to answer any questions the architect, consultant, audiovisual contractor, general contractor project director, account manager, project manager, field manager or electrical contractor may have.

1.17 SUBCONTRACTOR INFORMATION

- A. The Bidder shall indicate any portion of the project for which the Bidder intends to engage a Subcontractor. The Bidder shall further identify all responsibilities and all work to be performed by the Subcontractor. All work performed by the Subcontractor shall be under the supervision of the Contractor and shall be the responsibility of the Contractor.

1.18 QUALITY ASSURANCE AV9000 – **Not used on this specification.**

1.19 RELIABILITY

A. GENERAL

The system is designed to provide professional quality operation over a period of several years without the need for continual maintenance. Equipment that has a high failure rate is not acceptable for installation as part of this system.

B. WARRANTY

The Bidder shall make known, in writing, at time of Bid any exceptions that might exist between conditions described herein and Bidders policy of warranty. After acceptance of bid, all conditions and requirements of warranty described herein shall apply.

1. The Contractor shall guarantee all equipment, materials, and labor for a period of 1 year from the date of final acceptance.

2. During the warranty period, within 24 hours of notification, the Contractor shall answer all service calls and requests for information.
3. During the warranty period, within 48 hours of original notification, the Contractor shall provide emergency service to restore operation of the system, replacing defective materials, repairing faulty workmanship, making temporary repairs, and providing loaner equipment as necessary, all at no charge.
4. The Contractor shall notify the owner after any service call whether such call is or is not covered under warranty. The Owner may be billed for non-warranty calls. The Contractor shall notify the Owner of any service call or work to be performed for which charges may be incurred before such work commences.
5. Improper functioning, for warranty purposes, means failure of the system to meet the intentions of the specification because of internal defects. It does not include Owner caused malfunctions such as re-adjustment of the controls, re-tuning of the system, or injury to the system beyond normal wear. Nor does the warranty cover paint, exterior finishes, fuses, lamps (including projection lamps) or associated labor, unless the damage or failure results from defective materials or workmanship covered by the warranty.
6. The Contractor shall take such actions at the time of installation to ensure that all equipment is installed in accordance with the manufacturer recommended environmental and electrical operating conditions and requirements. After installation, the Contractor shall be responsible for the repair or replacement of said equipment that the Contractor installs which fails due to environmental or electrical conditions, even if not covered by the manufacturer's warranty. The Contractor shall not be held responsible for damages due to changes in environmental conditions, which occur after system acceptance.
7. Unless otherwise directed, the Contractor shall activate all manufacturer warranties in the Owner's name. The start date of the warranties shall be the date of final acceptance.
8. If the Contractor has modified certain components, the manufacturer warranty may be void. In this case, the Contractor is responsible for providing warranty coverage equal to that of the manufacturer.
9. Certain subsystems and system components may require installation by authorized representatives for the complete manufacturer warranty to apply. If this pertains to any subsystem or component for this project, it is the Contractor's responsibility to make arrangements for the complete manufacturer warranty to apply. These arrangements are to be at no additional cost to the Owner.

C. SERVICE CONTRACT

As part of this Specification, the Contractor shall initiate a one-year maintenance service contract to commence on the date of final acceptance and continue to the first anniversary of the date of final acceptance as defined in 'System Acceptance'.

The maintenance service contract shall include two semi-annual visits to the site for inspection and routine maintenance of all equipment.

PART 2 – PRODUCTS

2.1 APPROVED CABLING

If cable is required to pass through plenum exposed outside of conduit or enclosure-The appropriate rating of this cable must be used. – ***Not used on this specification.***

2.2 EQUIPMENT LIST

The equipment lists below are provided to the Contractor for use in preparing the bid response. These lists include major system components and peripherals provided by the Simulation Audiovisual Contractor, but should not be considered all inclusive. The complete equipment package bid response will take into account this document, all drawings, written addenda, any or all drawing additions or reissues, as well as implied system operability. Upon submittal of bid, the Contractor accepts responsibility to assure that complete, functioning systems are installed.

The Contractor shall further notify the Consultant, prior to bid submission, of any and all exceptions to these specifications and related drawings. This shall include any errors or omissions in the system design and/or any inconsistencies or ambiguities between package documents that, in the Contractor's opinion, may impact costs to the Owner or prevent the system from achieving all intentions of the Specification.

A. MASTER QUOTE NUMBERS

For the convenience to the Contractor in preparing the bid response, Master Quote numbers have been provided for several equipment groups. – ***Not used on this specification.***

B. AUDIOVISUAL EQUIPMENT

This equipment list is provided to indicate the audiovisual equipment the successful bidder shall be required to integrate with. All the equipment on this list shall be provided by others. All additional equipment required to ingest signals in to the recording system to create a fully functional system shall be included in the Simulation Recording Contractor's bid response.

1. VIDEO SYSTEM

a. PTZ Camera

- i. HDTV 1080p resolution w/ 12x Optical zoom
 - ii. 360-degree pan with Auto-flip
 - iii. Zipstream
 - iv. IP52-rated protection against dust and water
 - v. Easy installation including PoE (802.3af)
 - vi. Model
 - 1. Axis P5515 (Set output resolution to 720p)
 - b. Fixed Camera
 - i. HDTV 1080p resolution
 - ii. Remote digital zoom and focus
 - iii. WDR – Forensic Capture
 - iv. Zipstream
 - v. Axis Lightfinder technology
 - vi. Model
 - 1. Axis P3225-V (Set output resolution to 720p)
- 2. AUDIO SYSTEM**
 - a. DSP
 - i. Support for up to 12 I/O cards with a maximum of 48 channels of audio
 - ii. Support for up to 420x420 channels of digital I/O over AVB
 - iii. Support for up to 32x32 channels of CobraNet audio networking
 - iv. Support for up to 64x64 channels of Dante audio networking
 - v. Support for up to 3 DSP cards
 - vi. SpeechSense and AmbientSense processing algorithms
 - vii. System configuration and control via Ethernet or serial connection
 - viii. Model
 - 1. Biamp Tesira Server-IO w/AVB
- 3. CONTROL SYSTEM**
 - a. KVM over IP Transmitter
 - i. DVI-D input
 - ii. USB 2.0 input with class control
 - iii. Line in/Mic input
 - iv. Line output
 - v. RS-232 connection
 - vi. EDID management
 - vii. Communicates over standard IP network using a single CATx cable
 - viii. Model
 - 1. Avocent HMX5100T-001
 - b. KVM over IP Receiver
 - i. DVI-D output
 - ii. USB 2.0 with class control
 - iii. Line in/Mic input
 - iv. Line output

- v. RS-232 connection
- vi. EDID management
- vii. Communicates over standard IP network using a single CATx cable
- viii. Model
 - 1. Avocent HMX5100R-001
- c. KVM over IP Manager
 - i. LDAP integration
 - ii. SNMP v3 support
 - iii. External NTP server support
 - iv. Open API for 3rd party control systems
 - v. Model
 - 1. Avocent HMXAMGR24-001 & HMXLIC-100BDL 100-Node License
- d. Command and Control Switch
 - i. Ability to connect to up to 4 workstations
 - ii. Cursor navigation switching
 - iii. Instant mouse and keyboard switching
 - iv. Control via 3rd party systems
 - v. Four USB-B ports
 - vi. Four 3.5mm stereo audio in connections
 - vii. Model
 - 1. Avocent SVKM140-001
- 4. EQUIPMENT RACK AND ACCESSORIES**
 - a. Equipment Rack
 - i. 44 rack spaces
 - ii. Useable depth of 36"
 - iii. Fully welded construction
 - iv. Static capacity of 10,000 lbs.
 - v. Load capacity of 2500 lbs.
 - vi. Grounding and bonding stud
 - vii. Removal split rear knockout panels
 - viii. Model
 - 1. Middle Atlantic MRK-4436
 - b. UPS Backup Power
 - i. Automatic Voltage Regulation
 - ii. 4 millisecond transfer time
 - iii. Pure Sine Wave technology
 - iv. 2150VA/1650W
 - v. Eight NEMA 5-20R receptacles
 - vi. SignalSAFE power cord with NEMA 5-20P plug
 - vii. Model
 - 1. Middle Atlantic UPS-2200R

2.3 LIST OF MANUFACTURERS

Vertiv

Avocent Business Unit Main Office
4991 Corporate Drive
Huntsville, Alabama 35805
<https://www.vertivco.com/en-us/>

Axis Communications

West Coast Office and Axis Experience Center
18101 Von Karman Ave.
Irvine, CA 92612
Tel: 800-444-2947
<https://www.axis.com/us/en>

Biamp Electronics

9300 SW. Gemini Drive
Beaverton, OR 97008
Tel: 800-826-1457
www.biamp.com

Extron USA West

Worldwide Headquarters
1025 E. Ball Road
Anaheim, CA 92805
Tel: 800.633.9876
<http://www.extron.com/index.aspx>

Middle Atlantic Products

300 Fairfield Road
Fairfield, NJ 07004, U.S.A.
Tel: (973)839-1011
<http://www.middleatlantic.com/>

2.4 PRODUCT SPECIFICATION

Unless restricted by the published specifications of a particular piece of equipment, or unless otherwise required under the Detailed Specifications, the following performance standards shall be met by this system:

- A. Cameras
 - 1. IP cameras only.
- B. Video Encoding
 - 1. H.264
- C. Video Resolution
 - 1. 720P minimum.
 - 2. 1080p capable as future upgrade path preferred.
- D. Camera Control
 - 1. Native support for Axis PTZ cameras required in recording software.
- E. Video Feeds
 - 1. A minimum of 4 video feeds shall be capable of being recorded simultaneously for each session.
 - 2. Feeds shall be capable of being selected natively in the simulation software without the need of a 3rd party control system.
- F. Latency
 - 1. Acceptable latency shall be less than 750 ms.
- G. Simultaneous Recordings
 - 1. A minimum of 12 simulation sessions shall be capable of being recorded simultaneously.
 - 2. The maximum number of simulation sessions capable of being recorded simultaneously as specified, without need for additional equipment, shall be indicated in the bid response.
- H. IP KVM
 - 1. Shall be capable of being used with an IP KVM system where computers and servers are in a different location than the control room recording station and vitals computer.

PART 3 – EXECUTION

3.1 GENERAL CONDITIONS

- A. Work shall be carried out in conformance with applicable Building and Electrical Codes, the requirements of OSHA and the applicable provisions of Underwriters Laboratories (U.L.), ANSI, Electronic Industries Association and National Fire Protection Association. All work shall be in accordance with all applicable codes, local, state and national.

3.2 PROJECT MANAGEMENT

- A. The involvement of the Consultant in this project ends after construction is substantially complete. At that time, the Contractor shall communicate and coordinate directly with the Owner or Owner's representative(s), Architect and other trades. Complying with all requirements as defined under Scope of Work and elsewhere is mandatory to fulfill all requirements of this Specification. System commissioning is the responsibility of the contractor.

3.3 DESIGN REVIEW AND SUBMISSIONS– ***Not used on this specification.***

3.4 STAGING

- A. Before delivery to the jobsite, the system shall be staged completely in the successful simulation audiovisual bidder's shop. A test of the Simulation Recording and Simulation AV system, with peripheral equipment and working control system programming shall be scheduled, and the owner may elect to inspect the staging. A written report will be prepared and signed by the winning simulation audiovisual contractor.

3.5 WORKMANSHIP

- A. The contractor is responsible for keeping the jobsite clean, and removing all rubbish at the end of each day. The contractor must cooperate with building officials to keep the disruption to the jobsite at a minimum, and shall be responsible for all damages and marring of finishes caused by the installation.

3.6 OPERATOR TRAINING

- A. The system shall include criteria-based training of designated operators. That is, besides written instructions, there is a formal presentation with Power Point handouts, and each "system operator" specified by the owner shall demonstrate a basic proficiency in using the system in all of its designed functionality. Successfully trained operators shall then issue certificates by a qualified instructor directly employed by the software vendor, certifying that the individuals were successfully trained.

3.7 DOCUMENTATION

- A. Four sets of as built drawings, operator instructions, and training materials shall be delivered before training and acceptance. Documentation also shall include the data files for drawings, system operator instructions, equipment user manuals and peripherals, usernames and passwords, AV LAN IP addresses, DSP files, and control system files including uncompiled source codes and touch panel layouts on CD or USB memory stick.

3.8 ACCEPTANCE

- A. At the time of training, when the documentation is handed over and the system is well exercised, the successful contractor shall certify that: all work has been completed on the Sim Software AV Recording System; it is fully in compliance with the specification and that there are zero defects in the system; all engineering, fabrication, installation, testing, and checkout of the Sim Software AV Recording System are complete; documentation drawings and manuals have been turned over and training with the designated operators has been performed.

3.9 WARRANTY AND PREVENTATIVE MAINTENANCE

- A. All work shall be guaranteed for one year from acceptance against defects in materials and workmanship. If manufacturers' warranties exceed one year, these warranties will apply. The specified system is mission-critical communications for an enterprise. As such, the warranty period shall include unlimited telephone support, online support, on-site service, and one predictive maintenance visit as part of the base contract. These visits include a review with a designated representative, a complete function check, where detailed inspection takes note of any system deterioration, cleaning of air filters, surfaces, etc., noting of projector lamp hours (as applicable), and other maintenance tasks in accordance with a prescribed checklist. A complete maintenance history shall be maintained, and an engineering review shall take place at the end of the period.

PART 4 – ADD/ALTS

4.1 WIRELESS CONNECTIVITY

- A. The end users would like the option of running a simulation from within the simulation training room, or in the general area of the room utilizing a wireless device. The wireless network required to accomplish this shall be OFE. List all additional equipment, software, licenses, etc. and associated labor that will be necessary to accomplish this.
- B. The end users would like the option of running a debriefing from within the simulation training room, or in any available room with wireless connectivity on the same network, utilizing a wireless device. The wireless network required to accomplish this shall be OFE. List all additional equipment, software, licenses, etc. and associated labor that will be necessary to accomplish this.