

REQUEST FOR PROPOSAL #735-17-8166

August 8, 2016



MIDWESTERN STATE UNIVERSITY School of Mass Communication Broadcast Facility Broadcast Systems Integration Request for Proposal

Issued By:

Stephen Shelley
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Midwestern State University
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Wichita Falls, TX 76308



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1 INTRODUCTION

1.1 EXECUTIVE SUMMARY

This Request For Proposal (RFP) has been prepared to describe the scope of work and project responsibilities for broadcast systems integration services required to complete the migration and installation of a new Midwestern State University (hereafter referred to as "MSU") *School of Mass Communications Broadcast Facility*. Your firm has been solicited as a qualified respondent and a potential bidder for this contract.

The new School of Mass Communications ("SMC") Broadcast Facility will be located in the newly renovated building, and broadcast and media production operations spaces shall be located throughout the first and second floors. The new facility shall provide technical operations environments for media acquisition, newsgathering, studio production, post-production and release channel operations required to support MSU-SMC media operations.

This RFP is soliciting a full complement of turnkey services including:

- Project Management
- Documentation Detailing & Wirelisting
- Materials & Equipment Procurement
- Cable Assembly Fabrication
- Owner Furnished Equipment Move & Inventory Management
- System Installation
- Testing, Commissioning & Training

The RFP is based upon the current design philosophy as it has been documented and described in the technical facilities overview, system design documentation, and equipment list included in this RFP package. The facility is envisioned as a future-friendly environment outfitted for an array of current and emerging audio and video program production workspaces, and with reliable, extensible technology platforms that will enable students to become familiar with industry-standard techniques and user interfaces. MSU-SMC's mission is to prepare our students for real world media careers by honing their story-telling skills using tools that they are likely to come across in the professional environment.



1.2 BID RESPONSES

All respondents are expected to provide a comprehensive proposal, including any assumptions where required, in an effort to provide an all-inclusive solution. MSU expects labor and materials costs to be based upon the content of this document, as well as the respondent's experience with projects of similar size, scope and timeframes. Responses shall be considered all inclusive. All respondents are encouraged to clearly define areas that they believe are unclear with descriptions and cost analysis of the impact on the services required to provide a "turnkey" solution. This document uses the terms "Broadcast Systems Integrator" and "Successful Bidder" to mean the company who is awarded the actual contract for media systems integration and migration services (collectively, the "Services"). The term "Respondent" refers to all vendors responding to this RFP.

1. Respondents to this RFP agree that all material provided in their response may be reviewed and used by MSU as deemed necessary by MSU. If any portions of your response are confidential, they must be clearly stated as confidential. MSU prefers that responses not be marked Confidential if at all possible.
2. Respondents to this RFP agree that all material contained in this RFP is confidential and is not to be copied, distributed, reproduced or otherwise transmitted without the prior written consent from MSU.
3. Respondent agrees to the terms and conditions as outlined in the (included) Scope of Work.
4. Respondent understands that all materials sent to MSU will not be returned.
5. Respondent agrees that in the event your bid is selected by MSU, you will make every reasonable effort to complete all contract discussions within thirty (30) days of the notification date.
6. Respondent agrees to submit questions regarding this RFP via electronic mail no later than five days prior to the published proposal due date included in this document.



7. MSU requires that all respondents to this Request for Proposal (“RFP”) prepare their responses regarding the functional requirements detailed in this document using Adobe Acrobat. Responses to this RFP will be provided to MSU in both electronic and paper form. If responses are not received in this manner, they may not be considered.
8. Provide a project team organizational chart and resource plan for project completion, and provide any information that may negatively impact productivity or scheduling.
9. Note any Exceptions or Assumptions that your group may have made in your proposal with alternates and options listed separately and in clear detail.
10. Complete the Budgetary Worksheet (Section 5.1) in full, addressing all hours, rates and pricing requested. MSU reserves the right to disqualify any respondent who fails to complete this worksheet in full.
11. Provide itemized pricing for all line items in the included *Equipment Schedule* in Section 5.2.
12. Provide pricing for all *Add-Alternates* requested in Section 5.4. Clearly communicate each subtotal in your pricing Summary Sheet.
13. Provide a detailed delivery schedule Gantt Chart based upon a start date keyed to an authorized commitment (Purchase Order) from MSU.
14. Provide an overview of your *Commissioning Plan* for the project.
15. Provide an overview of your *Training Plan* for the project.
16. Provide payment terms, warranty conditions, license agreements, maintenance support, and any other information that may take exception to RFP requirements.
17. By submitting a proposal in response to this RFP, each respondent agrees that, where signatures or initials are required, the signatory is authorized to act on behalf of the respondent with which such individual is associated, including, without limitation, having all the necessary authority to sign contracts on behalf of the respondent with which such individual is associated.



1.3 QUESTIONS & RESPONSE DEADLINE

For any and all questions, contact Steve Shelley at stephen.shelley@mwsu.edu.
Deadline for questions will be September 7, 2016.

1. Please E-Mail or send two (2) hard copies of the proposal enclosed in a sealed envelope clearly marked: "Proposal in Response to Broadcast Systems Integration RFP" MSU prefers e-mail. Mail the sealed envelope with the copies of your proposal to:

Stephen Shelley
Proposal RFP #735-17-8166
Midwestern State University
Purchasing/Contract Management Department
3410 Taft Blvd
Wichita Falls, TX 76308
940-397-4110
stephen.shelley@mwsu.edu

All proposals must be delivered by 2 PM Central Daylight Time on Friday, 9/16/16 or sooner. Failure to submit your proposal by the specified date and time to the attention of Steve Shelley may result in your company's disqualification from the RFP process.

All respondents that submit proposals in response to this RFP should be available to meet with MSU (whether by phone or in person) at the MSU's discretion for any follow-up discussions regarding the submitted proposals.

1.4 TERMS & CONDITIONS FOR RFP RESPONSES

1.4.1 IMPORTANT NOTIFICATION

When responding to this RFP please note the following:

1. MSU reserves the right to award a contract for any, all or none of the Services for which you submit your proposal.
2. MSU reserves the right to award one, many, or no contract pursuant to this RFP. Furthermore, MSU reserves the right to negotiate with parties other than those submitting proposals for delivery of some or all Services.
3. MSU reserves the right to request additional information from any respondent submitting a proposal.



4. MSU does not in any way or form guarantee to any respondent any revenue and/or any volume or percentage of Services.
5. MSU reserves the right to withdraw the RFP or base the selection of the respondent or respondents to provide Services on additional or different terms and/or requirements other than the ones specified in this RFP and shall not incur any obligation to respondent or respondents except as agreed by MSU in a written document signed by MSU.
6. MSU reserves the right to make all decisions regarding your proposal, including, without limitation, the right to decide whether any proposal does or does not comply with the requirements of the RFP, the right to accept, reject, or negotiate modifications to any terms of your proposal received, and the right to reject any and all proposals received.
7. MSU reserves the right to communicate with the respondents, individually or collectively, formally or informally.
8. MSU reserve the right to require that a performance bond be included for respondent's proposal. Respondent is required to provide proof of ability to have work bonded.
9. MSU reserves the right to purchase any equipment items required for the project and furnish them to the Successful Bidder for integration. The Successful Bidder shall be responsible for a complete integrated system, and MSU shall provide the equipment items when required to meet project milestones agreed to ahead of time with the Successful Bidder.
10. MSU's IT department shall be responsible for collecting and managing images for all IT hosts (servers, PCs, appliances, etc.) in the broadcast facility. The Successful Bidder shall be responsible for delivering all affected IT equipment and any broadcast system software discs to MSU-IT, and Successful Bidder shall be responsible for proofing any critical interoperability of all broadcast applications on a given host on a sample host. MSU-IT shall then save the host image and administer the rollout of all applications, plug-ins and OSs.



1.4.2 CONTRACT

This RFP is not an offer to contract. Acceptance of a proposal neither commits MSU to award a contract to any respondent, even if all requirements stated in this RFP are met, nor limits our right to negotiate in any way.

At the conclusion of the RFP process and following the selection of the respondent or respondents to provide Services (each such selected respondent, a "Respondent"), the terms of each Respondent's proposal accepted by MSU may, at MSU's option, serve as a contract or be incorporated into a contract between each Respondent and MSU (each, the "Contract"). Notification of our acceptance of your proposal shall not preclude us from withdrawing the Contract prior to its execution by the MSU.

1.4.3 CONFIDENTIAL INFORMATION

The information contained in this RFP and your proposal, as well as information provided or exchanged through other verbal or written communication between you and us concerning this RFP, is confidential and proprietary to us, regardless of any statement contained in or accompanying your proposal or response. If you are not willing to maintain the confidentiality of such information, you are required to notify us immediately and promptly return all copies of this RFP to MSU. You may use the information contained herein only for purposes of responding to the RFP and such information may be disclosed by you only to your employees and agents who need to know such information in order to enable you to respond to this RFP. You agree to return or destroy all copies of this RFP (hard copies and electronic) upon the earlier of our request or final award of the Contract to a respondent other than you. Regardless of any statement contained in or accompanying your proposal or response, MSU shall have the right to retain and use your proposal and all information submitted by each respondent with regard to the RFP without any restrictions or limitations.

1.4.4 COST OF PROPOSALS

Expenses incurred by you in the preparation of proposals in response to this RFP are your responsibility.



1.4.5 PRICES THAT ARE PART OF YOUR PROPOSAL

By submitting a proposal in response to this RFP you agree that prices quoted in your proposal, as well as all other terms of your proposal, shall be valid and binding for 60 days from receipt by MSU, and shall be subject only to changes agreed to by you and MSU in writing.

1.5 RESPONDENT QUALIFICATIONS

1. Respondent must include at least five (5) project references for similar projects including customer name, dates for project, room complement integrated, key system features, total project value and contact information.
2. Respondent must have a minimum of seven (7) years of experience in the successful completion of broadcast systems integration projects of similar size, complexity, and timeframe.
3. Respondent must submit a listing of the key project staff who shall be assigned to the project with a description of their responsibilities and other commitments during the course of this project's duration. This is to include engineering, project management, and installation resources, and a brief resume for each is required. Engineering and project management resources must be staff employees of the Respondent's firm.
4. Respondent must be able to devote the manpower resources necessary to successfully meet the construction schedule, and a projected Resource Schedule is required in your proposal.
5. Should the Respondent be relying upon subcontracted resources, those resources must be identified in your proposal, their qualifications and experience on similar projects listed, and a brief resume for their primary representative must be provided.
6. Respondent must provide to the Owner, prior to beginning any work, proof of Workman's Compensation Insurance and contractor's General Liability Insurance.
7. Respondent must own, as a minimum requirement, the following test equipment and be familiar in its operation:
 - SD/HD/3G-SDI Test Signal Generator



- SD/HD/3G-SDI waveform scope
- L-Band/CATV/ASTC monitor/analyzer
- calibrated multi-tone oscillator
- calibrated audio dB/impedance meter
- calibrated audio loudness/surround monitor
- calibrated sound pressure level meter
- white and pink noise generators
- audio/video/control cable continuity tester and polarity tester
- CAT6 cable continuity tester
- network analyzer with certification data output
- digital multi-meter
- dual trace oscilloscope with probes
- multi-function HDMI test generator

1.6 EVALUATION PROCESS

Upon submittal, initial proposals will be reviewed, clarified and evaluated. MSU, at its sole discretion, will decide if proposal review meetings are necessary for any or all respondents. This RFP includes details adequate to describe the proposed facility requirements. To continue to maintain the proposed in-service dates, MSU is expecting all respondents will reply with their best and final pricing based on the facility described herein.

Selection of the Successful Bidder will be made on the basis of the following (although not necessarily in this order):

- Experience
- Pricing
- Company Stability
- Key Personnel Assigned
- Implementation Plan

Additional directions will be provided, if necessary, and further clarification may occur. Supplementary information supplied to one respondent will be supplied to all.

1.7 IN-SERVICE DATES

MSU considers the respondent's commitment that services will be delivered on time and as promised to be a top priority and a key factor against which



respondent will be judged. The technical facilities must be available for training no later than August 1, 2017. The technical facilities must be completely available for start of classes by August 20, 2017. Respondent is to provide a detailed timeline for integration and testing with these dates in mind.

1.8 RFP TIMETABLE

- RFP Distribution August 10, 2016
- Bids Returned September 16, 2016, 2 PM
- Contract Award October 3, 2016

MSU will answer all questions submitted electronically by bidders in a timely manner. Each bidder question and the appropriate MSU response will be provided to all bidders via e-mail. Please attempt to submit your question or issues in as few submissions as possible.

1.9 MANDATORY PROPOSAL REQUIREMENTS

The respondent shall include in their response the following mandatory items to be considered by MSU:

1. Completed Table of Compliance to General Requirements
2. Completed Budgetary Worksheet
3. Completed Equipment Pricing
4. Implementation Plan & Proposed Timeline
5. Proposed Project Team & Project Team Resumes
6. Percentage of Team Involvement
7. Project, Professional & Financial References
8. Exceptions & Clarifications

1.9.1 TABLE OF COMPLIANCE

Appendix A includes the Table of Compliance for the RFP. All respondents are to complete the table with a "COMPLY" or with an exception statement clarifying the reason for and level of non-compliance.

1.9.2 BUDGERATY WORKSHEET

Appendix B includes the *Budgetary Worksheet* for the RFP. All respondents are to complete the worksheet in it's entirety. The respondent is to break out the hourly rates for all personnel associated with the project, the number of man



hours associated with all elements of the project including, but not limited to design, fabrication, on-site construction implementation, testing and training. A payment schedule will be negotiated as part of the contract award process. Payment shall reflect the achievement of mutually agreed milestones. Pricing quotations must be valid for a minimum of thirty (30) days.

The respondent shall submit a summary of its expense policies indicating how they will handle living expenses, travel, per diem or food expenses, incidentals, and other pertinent and reliable expenses.

The respondent shall supply MSU with a schedule of its charges for additional services or labor by category (e.g. design, project management, administration, installation labor, supervision, etc.) based on hourly rates. The respondent agrees that these are the rates to be used to determine any additional or change order costs.

The respondent shall outline its policies and expectations for additional expenses that it considers would be outside those costs provided for in any other section.

1.9.3 EQUIPMENT PRICING

Appendix C includes the *Equipment Schedule* for the RFP. All respondents are to price all individual items in the schedule or make clear notation as to items NOT being included in their pricing.

1.9.4 IMPLEMENTATION PLAN & PROPOSED TIMELINE

All respondents are to submit a comprehensive implementation plan describing how they will complete the entire project scope under the following schedule:

- | | |
|---------------------------------------|------------------|
| 1. Appointment Successful Bidder | October 3, 2016 |
| 2. Site Ready for Rough-In Work | October 15, 2016 |
| 3. Site Ready for Integration | February 2, 2017 |
| 4. Substantial Integration Completion | May 10, 2017 |
| 5. Go-Live | July 10, 2017 |

All respondents shall submit, as part of its proposal, a Gantt chart indicating both the respondent's and MSU's expected key milestones and the proposed



project completion timetable. All milestones of major significance should be stated on the Gantt chart. The respondent's Gantt chart should include the following milestones at a minimum:

- Start/End of Fabrication & Staging
- Start/End of Installation
- Start/End System Test
- Substantial Completion
- Orientation & Training
- Key Migration Dates

Respondents shall include a description of their production and installation process including all standard quality control and testing procedures.

1.9.5 PROPOSED PROJECT TEAM & TEAM MEMBER RESUMES

All respondents are to present their proposed project team including team structure, team member resumes, and clarification as to whether that team member is fulltime staff or contractor. Please list and describe the work of any outside consultants, sub-contractors, equipment respondents, or vendors you plan to use to perform any of the services required in this scope of work. Any additional recommendations or additional options that the bidder feels may contribute to or improve the overall project are welcome.

1.9.6 PERCENTAGE OF TEAM INVOLVEMENT

All respondents are to provide a chart of team involvement to illustrate the project staffing throughout the course of the project.

1.9.7 PROJECT, PROFESSIONAL & FINANCIAL REFERENCES

All respondents are required to provide three (3) financial references (i.e. bank, respondents, 10k SEC filings, annual reports, etc.)

All respondents are required to provide three (3) customer references for projects of similar size, scope, and timeline complete with specific contacts, phone numbers, and addresses. Selected projects should demonstrate a comparable level of complexity and fast-track nature for which the respondent has been involved within the past three (3) years.



1.9.8 EXCEPTIONS & CLARIFICATIONS

All respondents are to use their experience and ideas to submit exceptions to any of these guidelines or requirements. Each individual exception should be referenced to the section and the item number that it pertains to. The respondent should include a brief statement concerning why it takes exception and its proposed solution. The respondent should include the cost adjustment of each and every item it takes exception to in these specifications.



2 PROJECT OVERVIEW

The following sections of this report give a brief description of the facilities, operations, and personnel expectations for the technical facility, and they are to serve as a general overview of the media operations environment as a whole that are to be accommodated in the new facility.

2.1 FACILITY OVERVIEW

The technical operations of the *MSU School of Mass Communications Broadcast Facility* shall provide a flexible core that shall support current and emerging production standards. Based upon compatibility with the faculty and staff preferred camcorder choice, in-house video production shall primarily be HD-SDI at 1280x720 raster size, p59.94 frame rate and 4:2:2 color space, and in-house media file workflows based upon XDCAM-HD422 @ 50Mbps encoding and .mxf wrapper for typical studio productions while field acquisition will be captured in various HD formats (ex. XAVC or MPEG-4 AVC/H.264 High Profile with .mxf wrapper for ENG newsgathering) and other frame rates (ex. 23.98) for web and film-style post-production projects.

Audio environments in the new facility are to have metering and gain stage balancing standardized on +4dBu analog reference level, -18dbFS AES reference level, and -24LKFS loudness reference level. Audio files shall be standardized on 24-bit 48kHz sampled .wav files, but import of MP.

The facility shall include subsystems for:

- file- and stream-based acquisition
- multi-camera studio production
- audio and video post-production
- transmission of programming

Media acquisition capabilities of the new facility shall allow for feeds from web, campus cable and campus IPTV/signage system sourced linear program ingest, and multiple format (VHS, DVD, DVCAM) videotape ingest. Studio production facilities will allow for as many as three-camera (plus POV shot) productions and integration of in-field reporters or remote experts into productions with long-form story segments (via Skype), archive media integration, and basic branding graphics. Connectivity to the new facility will be put in place to allow control room sourcing from the studio, from fiber-



connected presentation spaces around campus, or from scenic venues in and around the SMC building.

Media delivery shall include live-from-studio and pre-recorded/post-produced program segment playout campus-wide release, plus an assortment of media packaging capabilities including contribution to web portals, promotional segments for other campus entity marketing efforts, long-form pieces for festival competitions, live interview delivery to public and commercial networks, and University administration addresses via on-campus and local station outlets.

2.2 TECHNICAL OPERATIONS ROOM COMPLEMENT

The following sections provide more detailed descriptions of each of the technical spaces, and it is our intent to provide this as an orientation to the specialized operational considerations that each must be able to accommodate.

The following technical room complement is a result of the programming efforts during Schematic Design period, and these rooms will be developed during the architectural Design Development phase in progress:

1st Floor Areas

- TV Studio
- TV Control Room
- Voiceover Booth
- Edit Rooms 1-6
- Broadcast Lab
- Rack Room
- 1st Floor Common Areas

2nd Floor Areas

- Journalism Lab
- Newsroom
- 2nd Floor Common Areas

Additional Areas

- Rooftop

It is expected that the operational capabilities delineated in the following sections shall be made possible through the installation and configuration of the equipment specified in the design documents included in this RFP.



2.3 OPERATIONAL OVERVIEW

The following sections area a room by room overview of architectural, technology, and operational needs and targets for each broadcast operations support room planned for the new facility.

2.3.1 TV STUDIO

The TV Studio shall be the primary television, digital cinema and web video production space to be included in the MSU-SMC facility for news, entertainment, sports and educational efforts. It is anticipated that this space will typically utilize (3) broadcast cameras mounted on manual studio pedestals, as well as (1) "POV box camera" which shall be grid-mounted to provide a POV view for "bump shots".

The TV Studio will typically support (3) static production sets (*Note: Furnish and install of these sets and the associated technology elements listed here are outside the scope of the Successful Bidder, but all connectivity to Studio BSPs, production support equipment listed in the Equipment List, and a cable package for production support to accommodate the initial production setup are to be furnished and installed in the scope*):

Anchor Desk - This set area shall be comprised of an anchor desk with seating and accommodations for four talent positions, along with a technology backdrop inclusive of at least one set-mounted LCD display, each of which are to be fed from production switcher AUX busses or the Core routing switcher via at least two color correction processor channels. The set will also likely utilize a flat screen LCD monitor in the front face of the anchor desk which may be used to display HD graphic or video elements. Color correction shall be available from the Video Control Room camera shading position. The Anchor Desk will be able to rotate to allow varying backdrops.

Stand-Up Area - The stand-up set will have quick access to a white cyc, black drapery, and chromakey green traveler curtain (furnished and installed by the Succesful Bidder) for stand-up weather map chroma-key segments. This set can also serve as a stand-up position for single person remote simulation and to provide a future means of future simple virtual set or augmented reality production. This set will, day one, also include a single vertically mounted



large screen (aka. 65") LCD display fed from a switcher AUX buss or the core routing switcher to allow control of over-the-shoulder images.

Interview Set – The third set will be a simple roundtable interview setup with no technology, but rather a black drapery background or an exterior window view.

Two walls of the studio will accommodate Studio Broadcast Service Panels (SBSPs) accessible from the studio floor, which will provide convenient connection points for:

- (3) Camera Ties (female Triax TriLoc)
- (8) Microphone Ties (female XLR 3-pin)
- (8) Line Level Audio Ties (male XLR 3-pin)
- (12) Video Ties (female BNC)
- (4) Reference Ties (female BNC)
- (4) Data/Control Ties (female RJ45)
- (2) Neutrik Fiber Ties (Opticon 2-strand)
- (4) Intercom Ties (male XLR 3-pin)
- (4) IFB Ties (male XLR 3-pin)

Studio lighting and rigging is to include a 4'x4' schedule-40 static black pipe grid mounted at >13'-0" (Successful Bidder to maximum height given as-built site dimensions) with 20 amp connector strips mounted to it to provide a total of (85) Edison power connections in the air and (11) Edison connections around the perimeter walls. The lighting control system shall provide for the (96) relay switched and breaker protected circuits, (16) DMX outputs in the air and (3) DMX inputs on the walls, and a 40-slider/500-channel DMX control console with DMX cabling to accommodate the full light fixture complement. A complement of light fixtures and grip equipment is to be furnished, assembled to "ready-to-use" state, and hung from the lighting grid by others outside the scope of this RFP for MSU staff and students to execute the lighting design and light plot hang and focus. In addition, a dual-rail curtain track shall be installed around the entire perimeter of the space, with (6) 21' sections of blacks on the inner track and (1) 105' section of gray cyclorama and (1) 25' section of chromakey green curtains on the outer track. All details of this package are included in the Equipment Schedule in Section 5.2 of this RFP,



and all items listed are to be designed, furnished, installed, and commissioned by the Successful Bidder.

The studio shall have "In Use" warning light indication, by means of warning light fixtures mounted at all doors entering the Studio (furnished and installed by others outside this RFPs scope of work). The Video Studio shall support wired microphones and communications (IFB and PL) only. The studio shall accommodate Studio Announce (SA) and Public Address (PA) sound reinforcement, and power amplifiers shall be mounted in BSP racks for Studio floor level control. These systems shall be integrated with the on-air warning light system, to prevent unwanted interruption during operation. Two roll-around studio monitor carts shall be provided with nominal monitoring provisions, clock, etc. to be utilized by the respective talent and guests.

2.3.2 EQUIPMENT STORAGE & CHECKOUT ROOM

The Equipment Storage & Checkout Room is to provide controlled area for secure storage of actively used audio and video production equipment, lighting and grip gear, batteries, field production and editing packages, and storage media. All inventory management system workstations shall be furnished and installed by others outside the scope of this project, but the Successful Bidder is to deliver all field equipment to this room.

2.3.3 TV CONTROL ROOM

The TV Control Room will be the primary audio/video production control environment for multi-camera video productions in the Studio area. The room will be arranged as a 2-tier console layout, and each operating position will be equipped with monitoring and control interfaces to support manual, MOS-automated, or template recall TV productions including preset managed control of microphone selection, switcher compositing, and production graphics branding. At the front of the room there shall be a monitor wall, which will consist of three (3) multi-viewer driven 55" large format "virtual displays" divided into 16:9 HD-SDI windows. Two of the displays shall be driven from the production switcher multiviewer outputs and one display driven from a standalone utility multiviewer. The "virtual monitoring" ability of the monitor wall will provide for maximum flexibility for monitoring layout and sizing requirements. In addition, the multi-viewer will provide tally, source



identification, source audio metering, and several layout presets that can support the various shows scheduled into the room. In addition, the switcher multi-viewer will drive a nearfield 32" display that will service the Audio Operator position such that inputs can be most efficiently fed and any of these control positions can view shared production sources (cameras, remotes, and return feeds for occasions where the MSU control room will go live to air or web). Audio monitoring for the control room (both ambient field room monitoring and nearfield monitoring at the Audio Op position) shall be 2-channel stereo or dual-mono.

The front deck shall provide operating positions for a Director (DIR), a Technical Director (TD), an Associate Director (AD), and a Production Graphics Op (GFX) position.

The Director's position, in addition to being centered on the monitor wall (providing the optimum view of program and preset monitoring), shall have access to the intercom system, local selectable monitoring, and a PC. This will afford the Director access to private or party line (PL) communication to camera operators and other studio floor personnel, as well as point-to-point communication with other technical operations positions. In addition, the Director will have access to a VoIP phone, an up/down timer for segment timing, and a PC on the Newsroom Computer System (NRCS) LAN. The position will also be outfitted with shared access (shared with Technical Director) to two touchscreens that shall allow primary monitoring and control of the Overdrive production automation system. These touchscreens must be mounted on moveable arms to accommodate positioning in front of either TD or Director position. Finally, the Director shall have access to a room audio level control.

To the right of the Director will be the Technical Director (TD). In front of the TD will be the video production switcher control panel, an intercom keypanel, a KVM user station with touchscreen (access to news rundown, maintenance and configuration Graphical User Interfaces, and any PC-based production resources), and a VoIP telephone instrument. The right wing of the TD position shall also provide user interface for the Camera Shading position which shall include two operator control panels for camera base stations and a



router X-Y control panel (production switcher input selection, program monitor selection, camera return routing, video processor insertion, and set monitor source selection), and an intercom keypanel for coordination of camera operations.

To the Director's left will be the Associate Director (AD), outfitted with a dedicated NRCS computer, a teleprompter scroll control and prompter video output (both VGA off the locally mounted prompter PC and analog video output), and a VoIP telephone instrument. The AD will also be able to access a routable A/V monitor mounted between he and the Production Graphics position.

To the left of the Associate Director shall be the Production Graphics position which shall have provisions for LAN connection to, and scan conversion of the DVI output of a PC to the HD-SDI core router for program integration of web graphics (e.g. weather maps, traffic maps, election results) and web sites (for instruction and training productions). The GFX position shall also have a KVM user station that shall allow access to the production graphics engine (character generator, still store, animation player, text crawl functions), the Producer's scan converted PC, or a multimedia PC (located in the Equipment Room) that will allow Skype feed or YouTube web video acquisition and HD-SDI conversion for live or pre-recorded insertion into productions.

The second row production console shall include positions for an Instructor (INSTR), a Producer (PROD), and an Audio Operator (A1).

The Instructor (INSTR) position shall be outfitted with a laptop docking panel that shall provide power, Broadcast-LAN and Campus-LAN access as well as HDMI output to the second input of the Producer position's scan converter which can then be routed to the third multiviewer driven monitor wall display for instructional purposes.

To the Instructor's right will be the Producer (PROD) position, which shall be outfitted as a secondary position for media playback/record control and monitoring functions with a KVM-accessible NRCS computer with attached scan converter, and have access to a VoIP telephone instrument. A local PC will provide management of media ingest, media prep for playout clips, playout stacking in the production playout servers using an Avid Command



client, and file transfers for recorded segments. A local KVM user station shall provide access to web video (YouTube, IPTV) capture, manual record/playout control GUI for video server channels, and access to media loading to various players (production switcher, production graphics animation players, set monitor loop recorders).

The Audio Operator position will be centered on a mixing console control surface with onboard VU/PPM/LKFS metering and phase monitoring, local near-field powered audio loudspeakers, and a 32" multi-viewer driven LCD display for confidence monitoring. Immediately to the right of the Audio Operator position will be a PC with audio editing software and USB audio interface, and audio patching for all BSP patching to the mixing console.

2.3.4 FINISHING EDIT ROOMS 1-6

The Audio/Video Editing Area will also include (6) nonlinear edit rooms that shall each center around a PC workstation with the ability to "edit on the EditSAN" via high-speed CIFS mount to Avid Nexis storage to support large media files (eg. digital cinema files), multiple stream online effects editing, specialized finishing capabilities, and enclosed private spaces for ambient audio monitoring instead of nearfield video and headphone monitoring.

All of the rooms shall be outfitted for multi-stream effects editing and the workstations will be loaded with Adobe Creative Cloud (Premier, AfterEffects, Photoshop), Avid MediaComposer NLE software, Avid Protools and audio editing software, and Black Magic DaVinci Resolve color grading applications, plus effects plug-ins to provide more flexibility. Each room shall also have a multi-card reader for media file import/export and a tactile controller for color grading operations. Each Edit Room shall also have a PCIe video interface for recording linear streams from the core routing switcher, for local broadcast waveform/picture monitoring and for playing out to the core routing switcher (for coordination with other rooms like the VO Booth, or for crash playout to the control room).

The Edit Room nearest the Voice Booth shall include a tactile audio controller, and it shall have window access into the Voice Booth for coordinated narration tracking. This room shall also have mounting positions for powered surround



speakers, and the Successful Bidder is to cable for those devices even though they will not be provided day one.

2.3.5 VOICE BOOTH

A single-person, seated talent Voice Booth is to be positioned immediately adjacent to the audio-enhanced Finishing Edit Room. This room shall be outfitted for self-op announce records, engineer-assisted narration tracking, and isolated interviews directly to shared storage via a local PC with USB interface running Protools. The workstation will allow saving the recorded audio files to an attached removable CF-card media drive, to Nexis shared storage, or to the Protools workstation in the adjacent Audio Finishing Edit Room via a direct line level audio connection from the talent station output. The talent microphone is to be preamplified and embedded into the video output of a POV camera locally before it is available as a source on the core routing switcher to allow tracking to Edit Rooms simulation of "remotes" for newscasts. Audio monitoring in the room shall be through headphones driven by the same talent interface that provides microphone preamplification and interface to the facility's intercom system such that all talent interface is consolidated into the microphone/headphone package.

2.3.6 BROADCAST LAB

A Broadcast Lab on the first floor of the building will provide the capabilities of a classroom and a computer lab for instruction on broadcast applications. This area is to include (23) PC-based NLE workstations (including the Instructor workstation), each with dual 22" display with earbud/headphone jack, that will be used for student post-production efforts. Desktop services shall include Adobe Creative Cloud (Premier, Photoshop, Illustrator, InDesign, Audition, and AfterEffects), Avid MediaComposer NLE, Ross Inception NRCS and Avid Protools DAW licenses for all desktops day one. Each workstation shall also include a license of ACS Softlink screen sharing for collaboration.

All of the host machines in this area shall be patched to Broadcast-LAN Ethernet switches in the Equipment Room, and Ross Inception/Streamline client services as well as FTP traffic shall be routed via 10GbE downlinks to the Nexis storage that resides on the BroadcastLAN. The Successful Bidder



shall be responsible for managing Avid, Ross and MSU-IT resources to successfully implement the touchpoint between the two networks.

2.3.7 NEWSROOM

A Newsroom on the second floor of the building will provide an area for task assignments, newsgathering, workgroup collaboration, and the capabilities of a classroom and a computer lab for instruction on broadcast applications. The Newsroom will include an open area with perimeter workstations for (19) iMacs that will be used for student post-production efforts and online Newsroom functions and an additional iMac that would be used at the Instructor position. The area shall incorporate desktop services, feed monitoring, and an Assignment Desk to accommodate newsgathering, research tooling, and script writing. The Ross Inception Newsroom Computer System (NRCS) shall be deployed on all machines in the Newsroom, and Ross Streamline will also be employed for media management in the MOS based Newsroom workflow from Newsroom to Production Control Room playout. Desktop services shall include Adobe Creative Cloud (Premier, Photoshop, Illustrator, InDesign, Audition, and AfterEffects) for all desktops day one, and each workstation shall also include a license of ACS Softlink screen sharing for collaboration.

All of the host machines in the Newsroom area shall be patched to Broadcast-LAN Ethernet switches in the 1st floor Equipment Room, and Ross Inception/Streamline client services as well as FTP traffic shall be routed via 10GbE downlinks to the Nexis storage that resides on the BroadcastLAN. The Successful Bidder shall be responsible for managing Avid, Ross and MSU-IT resources to successfully implement this touchpoint between the two networks.

Six (6) 32" LCDTVs mounted to perimeter walls shall provide monitoring of news and sports channels, local station newscasts, campus message boards, and any other channels available on the Campus IPTV and Digital Signage systems which shall be made available at all of these displays over structured cabling and access switches that shall be furnished and installed by others outside the scope of this RFP. The LCDTV displays are to be furnished and



installed by the Successful Bidder to wall plates and station drop cabling that shall be furnished and installed by others.

The Newsroom shall also include one large projection system with a campus-standard DLP projector, and a 136" diagonal 16:10 image screen, that will be paired with a campus-standard video capture system consisting of a wall-mounted HDMI output PTZ camera and puck-style audio conference instrument feeding a USB capture interface into one of the Newsroom Assignment Desk PCs that shall host Skype sessions. This rig shall allow audio and/or video conferencing, capture and playback from the Instructor PC. Additional A/V sourcing from BYOD devices shall be through an Extron Sharelink WiFi-enabled interface that shall feed the projector and two powered loudspeakers (via the display audio I/O), and all projector inputs shall be switchable from a handheld infrared remote. All of this A/V equipment shall be furnished by MSU and installed by the Successful Bidder.

2.3.8 JOURNALISM LAB

The Journalism Lab shall support video, print and digital content creation for website maintenance, marketing efforts, and broadcast creative services support.

The area shall include (22) positions each with an iMac workstation running Adobe Creative Cloud (Photoshp, Illustrator, InDesign, Audition, AfterEffects, and Premier), and several other existing or freeware media creation, translation, and file delivery applications currently in use by this team. These workstations shall be connected to the Campus-LAN (for instructional, scheduling and management resources), but a managed route from Campus-LAN to Broadcast-LAN shall be enabled for media file FTP access to the broadcast systems. Each workstation shall also include a license of ACS Softlink screen sharing for collaboration. *(Note: All integration of these workstations beyond confirming FTP access to/from the BroadcastLAN and Campus-LAN connectivity is to be provided by MSU-IT and the Student Media Group outside the scope of this RFP).*



2.3.9 COMMON AREAS

In addition to the broadcast production and post rooms, the Successful Bidder shall be responsible for installing A/V support systems in several areas to aid student collaboration, and to support instructional efforts.

2.3.9.1 1st Floor Open Area Display

In the 1st floor lobby opposite the main entrance to the broadcast facility, the Successful Bidder is to furnish and install (1) 55" LCDTVs to allow monitoring of Campus Cable and Campus Digital Signage. One IPTV set-top box is to be mounted to the back of the display and cabled to the wall jack that shall be furnished/installed by others outside the scope of this RFP, but the Successful Bidder is to confirm functionality at each display with the other groups.

2.3.9.2 1st Floor Collaboration Area Displays

The Successful Bidder is to furnish and install 55" LCDTVs with rear mounted IPTV set-top boxes to allow monitoring of Campus Cable and Campus Digital Signage. IPTV and set-top boxes are to be mounted to the backs of each display and cabled to the wall jacks that shall be furnished/installed by others outside the scope of this RFP, but the Successful Bidder is to confirm functionality at each display with the other groups. In addition, in several locations, an additional wall plate is to be installed below the display to allow laptop and portable equipment A/V access to the display as follows:

- Collaboration Space 121 north wall – 55" display with IPTV STB
- Collaboration Space 121 south wall – 55" display with IPTV STB and wall plate
- Elevator Lobby 126 (next to elevator) – future location of monitor
- Corridor 109 (opposite restrooms) – 55" display with IPTV STB
- Collaboration Space 102 west wall – 55" display with IPTV STB
- Collaboration Space 102 east wall – 55" display with IPTV STB and wall plate

2.3.9.3 2nd Floor Open Area Displays

In the 2nd floor Break Room and in the 1st and 2nd floor lobbies adjacent to the elevator, the Successful Bidder is to furnish and install 55" LCDTVs to allow monitoring of Campus Cable and Campus Digital Signage to be displays. IPTV and set-top boxes are to be



mounted to the backs of each display and cabled to the wall jacks that shall be furnished/installed by others outside the scope of this RFP, but the Successful Bidder is to confirm functionality at each display with the other groups.

- Work Cafe 208 north wall – 55” display with IPTV STB and wall plate
- Work Cafe 208 west wall - 55” display with IPTV STB and wall plate
- Conference/Interview Room 211 west wall – 55” display with IPTV STB and wall plate and Extron ShareLink and wall-mounted powered speakers

2.3.9.4 Office Support

In (2) 1st floor offices, the Successful Bidder is to furnish and install 48” LCDTVs on the wall to allow monitoring of Campus Cable. Set-top boxes are to be mounted to the backs of each display and cabled to the wall jacks that shall be furnished/installed by others outside the scope of this RFP, but the Successful Bidder is to confirm functionality at each display with the other groups. Each of these Instructor Offices shall include a PC-based NLE workstation, each with dual 22” display with earbud/headphone jack, that will be used for instructor scheduling, NRCS access, editing, and media management efforts. Desktop services shall include Adobe Creative Cloud (Premier, Photoshop, Illustrator, InDesign, Audition, and AfterEffects), Avid MediaComposer NLE, Ross Inception NRCS and Protocols DAW licenses. These workstations shall have access to editing on the EditSAN.

2.3.9.5 Collaboration Rooms

In the 1st floor Collaboration Spaces, the Successful Bidder is to furnish and install a 55” LCDTVs on the wall to allow monitoring of Campus Cable, Campus Digital Signage, and WiDi/AllShareCast BYOD access from laptops, tablets and mobile phones. Set-top boxes are to be mounted to the backs of each display and cabled to the wall jacks that shall be furnished/installed by others outside the scope of this RFP, but the Successful Bidder is to confirm functionality at each display with the other groups.

2.3.10 EQUIPMENT STORAGE ROOM

All Field Kit equipment listed in the Equipment Schedule of this RFP are to be furnished by the Successful Bidder and delivered to the 1st floor Equipment Storage Room for student lending. The Successful Bidder is responsible for tagging all equipment with a MSU standard barcode sticker and handing off a comprehensive inventory including model number, serial number and description of each item.



2.3.11 RACK ROOM

The equipment in the five (5) racks of the Rack Room will include the central routing switcher matrix (embedded 1.5Gb/s HD-SDI), playout servers, intercom matrix, all reference and distribution gear, broadcast monitoring and control systems, and all inbound and outbound processing electronics. A VoIP telephone (configured for Direct Inward Dial number) will be furnished and installed by others outside the scope of this RFP, and teledata structured cabling (also furnished and installed by others outside the scope of this RFP) to all station drop multi-jack plates throughout the facility shall patch in this room to support Campus-LAN and Broadcast-LAN connectivity to desktop NLE and Utility computers throughout the technical operations room complement.

There is to be a quality control (QC) station located in this area to include production-grade scoping and monitoring of SD/HD/3G-SDI video signals and analog/AES audio. The QC station is also to include a router X-Y control panel, an intercom keypanel, a KVM station on the KVM matrix, and a local Utility PC (available on house KVM matrix).

Equipment associated with functional pods (Production, Transmission, Comms, etc.) or operator suites (Video Control Room, Radio, etc.) will be clustered together in the elevations to allow intuitive access to components positioned adjacent to jackfields that will aid in troubleshooting efforts. Finally, equipment is to be spaced to accommodate proper airflow in order to meet manufacturer recommendations and avoid thermal failures or adverse RFI or EMI effects. A listing of the equipment pods is as follows:

2.3.11.1 Reference Pod

A single rack shall contain all the master sync/pulse generators and the timecode/clock headend. All reference and test signal distribution will source from this pod. Four timing planes of analog reference black will be sourced, TriLevelSync will be generated, and AES silence will be made available for plant synchronization. Test signals will include analog/SDI/HD-SDI black (with embedded AES silence), analog/SDI/HD-SDI bars (with embedded AES 1kHz tone), analog/SDI/HD-SDI selectable test (with AES selectable tone on CH1-8). Distribution of analog black and AES silence will be via analog equalizing



video distribution amplifiers, and test signals will be via reclocking DAs. No more than (10) distribution modules will be cascaded via passive frame loop-throughs to preserve signal integrity, sources will be scattered in an orderly fashion across multiple cards for redundancy, and timing planes will be grouped as follows:

- T₂ – analog sources that will be A-to-D converted
- T₁ – analog or digital sources with limited timing handles
- T₀ – RS input reference (main reference plane)
- T₂ – QC monitoring reference

In addition, Network Time Protocol (NTP) will be made available on Ethernet for synchronization options on LAN-connected workstations around the plant.

2.3.11.2 MATV Pod

The Campus Cable channel lineup is to be distributed throughout the building by others outside the scope of this RFP. The Successful Bidder shall be responsible for hanging LCDTVs that are listed in the equipment list provided in this RFP, and connecting those displays to wall plates and set-top boxes furnished by others only.

2.3.11.3 Communications Pod

A single rack shall contain the core equipment for the facility intercom system including a 36x36 matrix system (fully populated), (1) 2-4 wire conversion channel (for 2-ch of PL on one connection on both BSPs in the Studio), and (4) IFB channels (for wired IFB connections on both BSPs in the Studio). The Successful Bidder shall be responsible for furnishing and installing all communications cabling, and for programming a complete set of keypanel button assignments and IFB assignments into the matrix system to accommodate point-to-point, PL, SA, and IFB assignments to support typical productions. MSU staff shall define the key assignments and communicate them to the Successful Bidder when required.

2.3.11.4 Broadcast-LAN Pod

A single rack shall support the Ethernet switching, KVM matrix, and teledata patching required to support Broadcast systems.



A dedicated stack of (2) layer-3 ethernet switches shall be segregated into multiple VLANs to support the control, SNMP trapping and configuration access, media file movement, and manufacturer specific segments that will make up the Broadcast-LAN ("BLAN"). A pair of 10GbE optical uplinks will then connect the stack to the Campus-LAN via MSU-IT policy-specific firewalls (Furnished and installed by MSU-IT outside the scope of this RFP) to allow Campus-LAN desktop resources and/or public internet access to select broadcast devices via cross-VLAN routes.

The EditSAN integration requires LAN segments for control and FTP traffic, and this interconnect must be closely coordinated with MSU-ITS. All NRCS and NLE desktops shall be managed under a MSU-ITS managed Active Directory environment that MSU-ITS shall furnish, install and configure outside the School of Mass COmmunications building, and a complement of Campus-LAN and Broadcast-LAN Ethernet access switches shall be installed with specific interconnect as outlined in the broadcast system design documents and as outlined in the following:

- The Broadcast-LAN is to be segregated into multiple VLANs including:
 - CTL VLAN – misc control systems
 - MEDIA VLAN – file based movement via FTP
 - AVID VLAN – NLEs, DAWs and mix surface components
- All NLE workstations in the 1st floor Broadcast Lab, and 2nd floor Journalism Lab and Newsroom shall patch to ethernet access switches in the Broadcast Equipment Room. These access switches are to be stacked, and a pair of 10GbE fiber optic uplinks is to be installed from these switches to the Campus-LAN core switch via MSU-ITS furnished and installed firewalls.
- All Edit Room NLE workstations, Ingest Servers, and proxy encoders are to be patched into a physically segregated AVID-LAN segment for high-bandwidth and secure media file traffic management. This segment shall take the form of (2) Avid-qualified Cisco WS-C4948ES switches uplinked to a WS-C4500X-32SFP+ core switch that shall also support direct 10GbE connection to the Nexis storage and Airspeed record/playback server.



- All Broadcast-LAN switches are MSU-ITS standard layer-3 Enterasys C5K125-48 switches, and several inter-VLAN routes are to be set up to manage IP traffic to and from the Campus-LAN to conform to MSU-ITS standards.
- MSU-ITS shall furnish and install a "MassComm Domain Controller" in the Rack Room, and they shall also furnish and install a secure, dedicated connection from this "MassComm Domain Controller" to the MSU Active Directory domain controller which is in another building. A second port on the "MassComm Domain Controller" shall directly connect to the Broadcast-LAN Control VLAN so that all of the Ross MAMS and servers can connect to the local "MassComm Domain Controller" and a one way trust will be created from the main MSU DC to the MassComm DC for user authentication.

A 20-port KVM matrix shall allow maintenance access to all application and video servers, and it shall allow operator positions (e.g. Production Graphics operator) to access multiple PC-based hosts. All I/O of the KVM switch shall be on CAT6 cabling and all user stations shall be single DVI-D display, mouse, and keyboard only.

2.3.11.5 Routing Switcher & Multiviewer Pod

One rack in the Rack Room shall include the core routing switcher, multiviewer, and conversion/distribution modules.

The core SDI Routing Switcher matrix that shall be equipped for ultra-wideband (3Gb/s) embedded (8-channel embedded audio) 720p video (a 72x72 matrix that shall be loaded 32x32 day one) and its associated control system and jackfields.

The Utility Multiviewer shall be a monolithic 16x1 unit that will feed and be fed from the core routing switcher. The outputs of this multiviewer shall typically be routed to the third display in the Production Control Room monitor wall via the core routing switcher to allow multiviews or instructional sources to be available in this monitor and in monitors on the Studio floor, the Newsroom and Lab projectors, or in displays in several common areas.



1st and 2nd floors so student groups can see all key elements of production operations in a classroom setting.

In addition, this group of racks shall include frames of distribution and conversion modular products to consolidate core source processing and distribution in one patching area, where all RS inputs and outputs, and all modular product utility test points are available on jackfield. Additionally, twelve (4) distribution module slots will be brought to terminated patch to support utility conversion and/or distribution modules as needed, and house reference and test signals will be brought to terminated patch for troubleshooting and calibration applications.

2.3.11.6 Production Support Pod

A functional grouping of three racks of equipment shall support all Video Control Room and Studio equipment including camera base stations, production switcher, production graphics engine, audio mixer, and shared production resources.

A total of (4) Camera Control Units (CCUs) will be cabled for in this area, and two will be populated day one. Each CCU shall be cabled for camera cabling (SMPTE-311M cabling from camera patch), video out to distribution, return video in (from core routing switcher), teleprompter in (from teleprompter distribution), 4-wire intercom (from intercom matrix), reference black (from gunlock distribution), red tally (from production swither tally outputs), and operator control panel (mounted at TD position in PCR).

The production switcher shall be fed from (4) studio cameras, (1) POV camera, (2) channels (2V+2K) of Production Graphics, (4) EditSAN server playout channels, (4) router outputs and (1) HDMI output from a utility PC (for web video and instructional support). Ross Overdrive production automation shall be integrated for all sources, and Inception and Streamline products will be integrated to create a MOS-enabled production workflow that will allow rundown driven playout stacking and prompt script loading.

The Show Patch patchbays will allow camera, microphone, foldback A/V, camera tally, and control resources to be allocated to any BSP from control room resources or from router I/Os.



2.3.11.7 Transmission Pod

Remote feeds to the facility shall be limited to a single Time Warner Cable set-top box (cabling for two to be included) that shall feed the core routing switcher. Outbound transmission is to be limited to a single router fed downconverted and de-embedded analog standard definition dark fiber link to the Campus Televideo facility. The Successful Bidder shall be responsible for configuring the SD 4:3 aspect ratio on video and audio levels, and confirming with MSU-IT and Campus Televideo Services that the signal is reaching the Campus Cable headend.

2.3.11.8 EditSAN Pod

All video assets in the new facility are to be digitized using Avid Airspeed Toolbox, stored as MXF-wrapped media files on an Avid Nexis storage array, and tracked using the Ross Streamline Asset Management System. Adobe Premier NLE clients shall be used to import media files from removable media drives (CF, SD, and P2 cards are typical). Four bidirectional channels of Avid Airspeed encode/decode and Airspeed RemoteConsole™ software shall be utilized for manual linear ingest to Avid Nexis storage, and for manual and simple playlist driven playout control. Ross Streamline shall then be used to browse, tag and trim imported or captured clips. Ross Overdrive shall be used to control playout into productions. Once a tape or edge delivered media asset is ingested, quality inspected, and tagged, it will be saved to a multi-level storage system that includes online full-resolution and proxy spinning disk storage for access from edit facilities.

The online storage of the Avid Nexis storage package includes ~4,000 Hours of 50Mbs encoded media storage, ~20,000hrs of browse-resolution (<1Mbs) storage, and ~200 MB/s of FTP bandwidth for file transfers to and from connected client machines. There is currently no backup/archive system planned as part of this initial installation, but a managed connection to on-campus data center storage may be integrated by MSU-IT for archiving and backup data replication. The Successful Bidder shall be responsible for managing Avid and MSU-IT resources to successfully implement this touchpoint, and to confirm basic production workflows including the following are operable and trained:



- Establishment of media “house ID” naming standards with MSU staff
- media ingest from tape
- media ingest from removable solid state media
- record of production from Video Control Room Media Operator position
- media browse on client desktops
- metadata tagging on client desktops
- cuts-editing on client desktops
- production playback A-B stack creation
- play-to-production from Video Control Room Media Operator position
- play-to-transmission basic playlist creation
- media purge & archiving procedures

In addition to the Grass Valley EditSAN, there shall be a NAS included in the system to provide a share for Print & Digital Media Group image storage, and for media staging for archiving processes.



3 SCOPE OF WORK

3.1 PROJECT EXECUTION

This document contains the overall specifications and details necessary for a respondent to provide a comprehensive bid response. MSU expects that respondents will use their experience in the integration industry to suggest worthy considerations and/or alternatives to MSU in their response to this Request for Proposal.

1. Once selected for the contract, that vendor will endeavor to retain this commitment throughout the design and integration process
2. Under this Scope of Work, MSU is expecting the Successful Bidder to provide, inclusive in its contract, expert systems engineering, project management and design, taking conceptual direction from MSU's Project Director and producing finished documentation ready for complete system integration
3. The Successful Bidder shall provide, inclusive in its contract, all labor, all supervision, and all installation services, for all of the systems, as described herein
4. The Successful Bidder shall include the highest degree of quality control throughout the design and system integration of the project

Project Management is required as part of this contract. Project Management shall include supervision, defined as the scheduling, managing, and quality assurance of all laborers, designers, installers, and is inclusive of any outside contractors (i.e. factory supplied technicians or any external fabricators) employed throughout the entire project.

Respondents must look carefully at all equipment and systems to insure timely installation and minimize time to completion. However, the Successful Bidder must not compromise quality of design and installation. All materials and construction techniques must be able to withstand the day-to-day ongoing operating conditions and production requirements of MSU.

When this document uses the term "shall" and "will" and "must", it is meant as an expectation that MSU requirements are met without exception. When the term "may" or "should" is used, the Successful Bidder is expected to use



their best judgement, subject to approval by MSU's Project Director. In all cases, the Successful Bidder is expected to provide recommendations minimizing the design and implementation time and developing a more cost-effective approach to achieve the goals.

3.2 BROADCAST SYSTEMS INTEGRATOR SCOPE OVERVIEW

MSU and the Successful Bidder will establish a core team of experienced personnel that will work together to:

- confirm all handoff points to/from other disciplines
- respond to and coordinate resolution of construction effort RFIs
- coordinate project management responsibilities with all parties
- execute the fabrication and integration process
- plan and manage the equipment migration
- schedule and manage all manufacturer commissioning efforts

Detailed design, integration, and project management will be based upon MSU supplied documents and the information the Successful Bidder shall obtain from site visits, project meetings, and various other project related communications.

The Successful Bidder shall work with MSU to refine the various systems designs. It can be expected that the operational requirements detailed in the RFP documents must be supported by the commissioned systems. MSU expects the Successful Bidder to provide all necessary resources to successfully implement the design.

3.2.1 PROJECT MANAGEMENT

Project Management will include all applications engineering, purchasing, shipping and receiving, project management and all support services necessary to ensure a timely and thorough completion of the project.

1. The Successful Bidder will designate a single project manager to direct the project team for the duration of the project. This person will be responsible for managing all facets of the project and maintaining timelines and budgets.



2. This person will remain as the full time project manager for the entire duration of the Successful Bidder scope of work.
3. The Project Manager will be expected to participate in weekly project meetings, maintain updated project schedules and provide weekly progress reports.
4. The project management process will remain ongoing from the first planning meeting until the successful completion of the project. As part of the Successful Bidder's role, you will be expected to develop, implement, and manage a comprehensive project management process to ensure all project milestones are met.
5. The Successful Bidder is expected to participate in all required construction, design, and other necessary planning meetings throughout the project period. These meetings will be held at least weekly and will involve MSU engineering staff, and construction management personnel.
6. The Successful Bidder will be required to provide a timely and appropriate summary (e.g. report) of the project meetings to MSU management (specific channels and details of this report will be determined during the initial project stages).
7. The Successful Bidder will be expected to identify critical needs, issues to be resolved, issues that were resolved, issues that are in dispute, and other matters essential to keeping the project on time and on budget.
8. The Successful Bidder will provide a single point of contact and a methodology to MSU that includes an ongoing assessment of the design and integration process using appropriate timeline (Gantt) summaries, budget summaries or variances, and the routine assignment of responsibilities, including assessment of needed changes in any of those areas of responsibilities.
9. The Successful Bidder shall continually refine the needs as the project progresses and advise on the necessity of any Change Orders that would effect completion or budget.
10. The Successful Bidder should use their experience in the industry to discuss design issues, suggest possible options, and to produce



configurations for all areas in detail to maintain the project's fast-track requirements.

11. The Successful Bidder shall compile, review, and refine a preliminary timetable (schedule) for the project completion. This schedule will be maintained over the course of the project

3.2.2 ARCHITECTURAL SUPPORT

1. The Successful Bidder will be responsible for confirming any and all infrastructure required to support broadcast systems installation and performance is in place prior to system installation. This includes:
 - technical power distribution
 - power and heat loading
 - critical lighting for operators areas
 - operators ergonomics
 - cableway and cable density management
 - structural requirements for any hanging equipment.
2. Continuing architectural support and participation in regular construction team meetings is expected. In addition, Successful Bidder responses to construction team RFIs related to all technical operations areas must be covered by the Successful Bidder.

3.2.3 SYSTEMS DESIGN REVIEW

1. The awarded Successful Bidder shall review all concept documentation provided here and produce detailed system design documents, cable run lists and multipin wiring schematics to implement the design within the Successful Bidder's manufacturing SOPs but in line with MSU documentation and installation standards set forth in this document.
2. The Successful Bidder will be expected to keep all working drawings available to MSU in an online environment throughout the course of the project such that the latest system drawing set is always viewable to the MSU Project Director and select staff.
3. Drawings shall be reviewed by MSU in a timely fashion. The MSU Project Manager shall return approved changes for revisions.



4. All construction documents must bear the MSU Project Director's (or the approved designate) signatory before construction commences.
5. The Successful Bidder will use the accompanying MSU equipment list (see Section 5) and its engineering drawings to develop material lists, ordering schedules for vendor supplied materials, staging plans, fabricating and pre-wiring plans, and installation schedules.
6. The Successful Bidder is to provide add-alternate pricing for the hosting of all MSU drawings in native file types in the online environment after project completion.

3.2.4 GENERAL DESIGN PROCESS

1. The Successful Bidder shall follow a prescribed outline for detailed project design according to the following. These steps shall be applied to each of the functional areas of the facility and to the complete overall project as detailed in each of the following sections.
2. Each overall system and each specific sub-system will undergo a design review that will allow both MSU and the Successful Bidder to arrive at a suitable complete and comprehensive design. The accompanying sections are a suggested design review process. The Successful Bidder is encouraged to provide suggestions to MSU that will simplify or expedite this process without circumventing the intent of the process.
3. The Successful Bidder will integrate any revisions into their documentation package and post the revised package for MSU review and final approval.
4. The Successful Bidder shall continually identify to MSU any revisions in any sub-system that would affect any previously designed, submitted, or approved sub-system.
5. Each successive review or revision shall be identified on both the drawing (by date and textual description), and by an accompanying transmittal that defines what that revision addressed and/or incorporated.



6. Each completed design package, by sub-system, shall include all necessary elements so as to provide MSU with a completely defined and detailed system ready for integration.
7. The Successful Bidder shall obtain an approval (e.g. "sign-off") from the designated authorized MSU staff member before construction documents are generated and fabrication or integration begins for that section.

3.2.5 DETAILED DESIGN

Detailed Design will include all detailed documentation required to fabricate and install the technical facilities. These drawings will be approved and signed by the designated MSU representative prior to the fabrication of any systems or sub-systems. A complete set of drawings will be made available by the Successful Bidder to MSU throughout the course of the project, and as-built drawings of the following types shall be submitted to MSU.

3.2.5.1 Floorplans

These will include the final location of all consoles and equipment racks, all access flooring with cutouts for cabling detailed, locations of conduits, wireways, ladders, pull boxes and termination locations for all technical spaces.

3.2.5.2 Functional Wiring Diagrams

These will include individual single line functional diagrams showing all interconnects for each signal type required including video, audio, intercom, timecode, control, triax, etc. as required for the technical facilities. All jackfield locations will be identified and individual cable numbers will be provided and included on the drawings for each cable. These jackfield locations and cable numbers will be the same as those specified in the cable runlist documents.

3.2.5.3 Custom Panel Designs

These will include detailed mechanical designs showing locations and sizes for all cutouts and mountings required for each component of the panel, specifications for each component including manufacturer, part number and any required options and detailed wiring diagrams showing individual interconnects.



3.2.5.4 Detailed Rack & Console Equipment Elevations

These will show individual equipment locations (front and rear) in all racks and consoles. All sub-components will be identified (i.e. individual distribution amplifiers within a mounting tray will be identified and called out as to model and system function). Any required custom mountings will be identified and reference to drawings detailing these custom mountings will be included.

3.2.5.5 Jackfield Layouts

These will identify each jackfield patching position including jack type, ID number of attached cable or cables, normalling scheme, and jackfield strip designation identifying signal path source or destination. These jackfield layouts will be approved by MSU prior to installation.

3.2.5.6 Cable Runlists

These will be provided in Microsoft Excel format and will identify each cable as to source equipment identity (equipment from), terminal (terminal from), source equipment rack or console location, source equipment room location, source equipment connector type, source equipment connector pinouts where applicable, drawing number on which cable appears, cable ID number in format specified by MSU, cable length, cable type, cable color, destination equipment identity (equipment to), terminal (terminal to), destination equipment rack or console location, destination equipment room location, destination equipment connector type, destination equipment connector pinouts where applicable and any specific notes pertaining to each cable.

3.2.5.7 Equipment List

The Equipment List included in this RFP includes all items illustrated in the other design documents. This list includes individual equipment manufacturer, model number, serial number, room location, rack location, quantity, description, unit and extended price, function (i.e. program monitor, preset monitor, etc.) and a "Function" column including pertinent information regarding the piece of equipment. This list also designates any MSU furnished equipment that is to be installed in the facility as "CFE" for Customer Furnished Equipment. This equipment list may continue to evolve as the project progresses, and while the equipment list included with this RFP will be used as the starting point for this process, the Successful Bidder is to maintain the Equipment List throughout the project for completeness.



The Successful Bidder shall:

1. address any usual or unusual code requirements related to the design, construction and operation of this facility
2. detail and/or modify all patch panels, labels, and nomenclature on full scale drawings
3. develop a comprehensive wire run listing per the descriptions and requirements addressed in this document
4. develop detailed fabrication drawings for all custom mechanical panels or modifications to existing manufacturer/MSU provided equipment
5. develop a detailed materials list and sourcing method, which shall include manufacturer, model, color, unit quantities, description, and location of use
6. submit each of the design packages, per the schedule, to MSU for approval and sign off before fabrication or construction begins

IMPORTANT: MSU will not be responsible for any rework the Successful Bidder must provide should any system(s) be constructed without advance MSU approval and sign-off.

3.2.6 DOCUMENTATION

All system documentation is to be submitted for approval to build and in as-built format at the end of the project. This is to include all of the following:

3.2.6.1 Drawings

Two (2) hard copy sets (one set engineering C-size and one set engineering B-size) and one (1) native file copy set on media determined by MSU at the completion of the project of all as-built drawings for the entire project done in AutoCAD Release 2014 will be provided to MSU prior to final acceptance.

These drawings will include but not be limited to:

1. Architectural - Floorplans, showing as-built console plan views, broadcast cableways, power, and teldata service drop positions related to broadcast operations areas. Successful Bidder shall be responsible for keeping these architectural details up to date in architectural drawing set.



2. Elevations - Equipment rack elevations showing positions of all equipment (front and rear) and interconnect panels, console equipment elevations, custom millwork and structures (i.e. monitor walls) elevations showing positions of all equipment, etc.
3. Jackfield Elevations - jackfield layout drawings showing front views (rear views where appropriate) of all jackfields identifying each patching position including jack type, ID number of attached cable or cables, normalling scheme and jackfield strip designation identifying each signal path source or destination.
4. Functionals - These will include all single line functional wiring diagrams including but not limited to video, audio, references, intercom, IPTV, control, tally, timecode, etc. as required. All jackfield locations will be identified and individual cable numbers will be provided and included on the drawings for each cable. These jackfield locations and cable numbers will be the same as those specified in the cable runlist documents.
5. Wiring Details - These will include all applicable wiring detail drawings for interconnect panels, custom manufactured panels, multipin connectors, etc. as required. These diagrams are to include cable part numbers, connecting hardware part numbers, conductor colors, pinout information, twisted pair annotations, and shielding details.
6. Mechanicals - These will include all as-built mechanical drawings for all custom panels and structures. These will include any and all connector types indicating manufacturer, part number and description. The drawings must also include all labeling details (font size and fill), mounting hole sizes and locations, and manufacturing details (edge breaks, finishes, etc.).

3.2.6.2 Administrative Documentation

Two (2) hard copy sets and one (1) native file copy set on media determined by MSU at the completion of the project of all as-built documentation for the entire project done in Microsoft Excel will be provided to MSU prior to final acceptance. This documentation will include but not be limited to:

1. Equipment Schedule - This will be a listing of all of the equipment integrated into the MSU facility. This list will be done in Microsoft Excel



format and will include individual equipment manufacturer, model number, serial number, room location, quantity, description, unit and extended price, function (i.e. program monitor, preset monitor, etc.) and a notes column including any pertinent information regarding the piece of equipment. This list will also include any customer (MSU) furnished equipment installed in the facility.

2. Cable Runlists - These will be provided in Microsoft Excel format and will identify each cable as to source equipment identity (equipment from), terminal (terminal from), source equipment rack or console location, source equipment room location, source equipment connector type, source equipment connector pinouts where applicable, drawing number on which cable appears, cable ID number in format specified by MSU, cable length, cable type, cable color, destination equipment identity (equipment to), terminal (terminal to), destination equipment rack or console location, destination equipment room location, destination equipment connector type, destination equipment connector pinouts where applicable and any specific notes pertaining to each cable.
3. Acceptance Test Document - This will include the results obtained from the systems tests performed in the "Testing and Training" portion of the "Integrators' Services" section. The system acceptance document will include the signal paths used in the tests, the test equipment and signals used, the measurement equipment used, the points in the air path at which measurements were taken and the results of those measurements.

3.2.6.3 Manuals

All equipment manuals, user guides etc. will be organized and provided to MSU for their maintenance library. This can be a complete hard copy deliverable or a DVD with Acrobat file versions of all operations and maintenance manuals supplied by manufacturers.

3.2.7 STAGING, FABRICATION, AND PRE-WIRING

This will include all system fabrication such as system pre-build, sub system rack mounting and packing and shipping.



1. The Successful Bidder shall outline plans and procedures for off site staging and fabrication.
2. Any customized systems, including modifications the Successful Bidder plans to make to manufacturer provided hardware or software, shall be clearly detailed, explained and agreed upon by MSU prior to making those modifications.
3. The Successful Bidder shall be responsible for any modifications it makes to operational hardware per its plans and submissions to MSU. The Successful Bidder shall be responsible for the repair and restoration of all finishes so that the equipment matches and looks consistent with existing hardware.
4. MSU's engineering and/or maintenance departments will *oversee* the removal of all currently operating hardware and television equipment.

3.2.7.1 Cable Fabrication

This will include cutting and preparing all cabling as specified in the cable runlists.

3.2.7.2 Equipment Staging

This will include receiving, unpacking, assembling and installing into racks and consoles where appropriate all equipment provided by Successful Bidder and MSU.

3.2.7.3 Cable Staging

This will include connecting and lacing cabling into racks where appropriate.

3.2.8 PACKING & SHIPPING

Upon completion of the pre-build staging efforts and (at MSU discretion) a demonstration and pre-acceptance by MSU, the Successful Bidder shall be responsible for inventorying and tagging all system components with barcode stickers, packing components, and shipping them all to the installation site. All shipments to the site must be accompanied by a detailed packing list identifying each piece of equipment in the shipment by manufacturer, model number, serial number and location, and MSU shall sign for acceptance at the site. An authorized person designated by the Successful Bidder will accompany each shipment and will be on-site during the delivery and



unpacking of the shipment. It will be this person's responsibility to ensure that all items shipped to the site arrive complete and undamaged.

3.2.9 INSTALLATION

The installation effort shall include on-site receiving, unpacking and installing of systems, sub-systems and equipment as required to provide the completed system. MSU's construction manager has determined that union-represented labor is not required for the The Successful Bidder is responsible for all labor pricing in your proposal scope and project pricing including:

1. Receiving - this will include making prior arrangements at the site as required (i.e. loading dock, elevator, labor, etc.) for receiving, unloading, setting in place and unpacking all deliveries. The Successful Bidder shall be responsible for disposing of packing materials and leaving the area clean and free from debris. The Successful Bidder will be responsible for repairing any damage incurred by them or their sub-contractors during this process. The Successful Bidder will be responsible for sub-contracting a union-represented moving service specializing in moving electronic and computer equipment for the delivery, unpacking and setting in place of all equipment, millwork and materials at MSU.
2. Installing - this will include setting in place, fastening, anchoring, mounting and assembling racks, consoles and any structures required in the assembly of the television systems. This will also include mounting all equipment in racks, consoles, structures as required and hanging or setting in place and running out, lacing (with nylon tywrap or Velcro ties), connectorizing and terminating all cabling. (Note: all consoles are to be furnished by the Successful Bidder with cable management cableways with removable covers to allow neat cable dress, adequate service loops and future additions).
3. Supervision - the Successful Bidder shall provide a person designated as the single point of contact on site at all times during the installation process. This person will be responsible for assuring that the installation goes smoothly and will resolve any disputes or problems occurring during the installation. It will be the responsibility of this person to bring



to the attention of MSU any discrepancies or situations occurring on site which affect their work and which they cannot resolve.

MSU is pursuing a facility that displays a high degree of attention to detail. The Successful Bidder will be expected to provide MSU with the highest caliber of workmanship and a level of "fit and finish" that reflects positively on both the Successful Bidder and MSU.

1. The Successful Bidder shall understand and adhere to all construction, code, and operations regulations of this Wichita Falls, TX site.
2. The Successful Bidder shall be thoroughly familiar with and comply with the regulations and agreements of the various trades and bargaining units (Unions) that it may work with or encounter.
3. MSU and the Successful Bidder will develop an equipment delivery schedule and asset allocation procedure during the early stages of the design. The Successful Bidder shall be responsible for informing MSU what will be delivered to them and when.
4. MSU and the Successful Bidder shall develop a project completion schedule that shall reflect any significant needs for equipment that must arrive at The Successful Bidder's site, for the purposes of pre-wire or custom fabrication.
5. The Successful Bidder shall use their best efforts to keep MSU aware of both continued progress and any potential situations that might alter the projected completion and delivery dates.

3.2.10 QUALITY CONTROL

1. The Successful Bidder shall be responsible for the quality of workmanship, including all labor, all supervision, and all installation, for all of the systems it provides.
2. The Successful Bidder must warranty all workmanship and functionality of all interconnect cabling for a period of at least one year from date of MSU Final Acceptance.
3. The Successful Bidder shall assure MSU that the tools and fixtures it uses are appropriately calibrated and are of high quality. They must



certify that they are using the correct tools for the correct hardware or fittings.

4. The Successful Bidder shall include the highest degree of Quality Control throughout the design and system integration of the project.
5. MSU also reserves the right to conduct facility audits prior to onsite shipments.
6. The Successful Bidder is expected to present MSU with its methods for Quality Control/Quality Assurance (including inspections and tooling calibration).
7. As part of the MSU quality control process, the Successful Bidder shall be expected to permit MSU scheduled vendor-site inspections or visitations.
8. The Successful Bidder shall be responsible for all supervision. Supervision includes the scheduling, managing, and quality assurance of all laborers, designers, installers, and is inclusive of any outside contractors (i.e. factory supplied technicians) employed throughout the entire project.
9. MSU shall be the final authority for Quality Assurance yet expects that the Successful Bidder will assure MSU need not necessarily intervene in this QA process.
10. Workmanship that does not meet MSU's requirements for quality will be rejected and the Successful Bidder will be required to repair or replace those areas affected prior to completion and signoff.
11. The Successful Bidder must assure MSU that no delays due to faults or poor quality of workmanship, whether caused by the Successful Bidder or their subcontractors under the direction of the Successful Bidder, will preclude the on time completion of the project.

3.2.11 TESTING, TRAINING & PERFORMANCE EVALUATION

1. The Successful Bidder shall be responsible for all system testing, alignment, setup, troubleshooting and resolution of problems as a result of design, defective installation, or vendor supplied material. This will



include testing all components, systems and sub-systems of the broadcast facility and assuring that they conform to both the manufacturer specifications as well as industry accepted standards. Upon completion of the testing portion, the Successful Bidder will provide a completed system acceptance document detailing the results of these tests.

2. The Successful Bidder shall track progress of all continuity testing on a 11x17 drawing set using ORANGE highlighter to mark all paths that have been verified until all system cables have been confirmed as continuous and connected to the correct equipment and terminals.
3. The Successful Bidder shall then track progress of all alignment, equalization, polarity, and level testing on a 11x17 drawing set using BLUE highlighter to mark all paths that have been verified until all system cables have been confirmed as fully tested.
4. The Successful Bidder shall then load all pre-approved IP addresses, naming tables and initialization files to bring each system to "basic operation" state. Systems shall then be turned over to manufacturer commissioning agents for system startup verification.
5. The Successful Bidder shall schedule and coordinate all manufacturer and vendor training sessions to maximize MSU staff participation, training session time efficiency, and logical sequencing of sessions.
6. The MSU Project Director and two "super users" will take an active role in the systems testing as a means to learn the facility interconnect and to become familiar with the facility design and operation.
7. MSU personnel will be on hand during the testing procedure and will assist the Successful Bidder in performing these tests. During this acceptance testing phase, the contractor will point out to the on-site MSU representative any problems or inability of any MSU supplied equipment, cable or interconnections to pass the proof of performance.
8. During the testing process and up to the "Go-Live" date, the Successful Bidder will provide on-site system training in the operation and maintenance of the overall system, sub-systems and individual pieces of



equipment as required by MSU personnel. The Successful Bidder will have qualified technicians on hand at all times during this phase to assure that any and all problems and discrepancies identified will be resolved in a timely manner.

9. Throughout this document, references are made to testing and performance of the systems that the Successful Bidder provides for and installs. The Successful Bidder is expected to consider these as "minimum requirements" and will be required to suggest additional, alternative, and supportive tests to assure that its complete design and operational requirements function satisfactorily.
10. MSU and the Successful Bidder will be expected to work together to achieve a complete and thorough set of performance tests. MSU and the Successful Bidder shall agree as to what constitutes a "pass/no-pass" condition. However, MSU will remain the final authority in determining the outcome of actual performance tests, standards, and evaluations.
11. The Successful Bidder will be responsible for supplying on-site test and measurement equipment required to perform final tests for each and every portion of the systems they install or modify.
12. The Successful Bidder will be required to perform all its performance tests prior to hand over to MSU.
13. All systems must be checked for continuity, individual performance of the equipment, sub-system performance, system wide performance, and shall include an 'end-to-end' performance test within the confines of the facility according to the test plans developed jointly between MSU Engineering and the Successful Bidder. MSU and the Successful Bidder shall determine together the demarcation points for purposes of testing and interface.
14. System tests will include detailed performance tests according to the items that follow. These performance tests shall be thoroughly documented according to the test plans developed with MSU.
15. All systems shall be tested using appropriate industry accepted procedures and calibrated test equipment. All video systems shall be



tested for both hostile case and stressed performance—using appropriate pathological test signals as necessary.

16. Hard copy verification of all performance testing shall be provided by the Successful Bidder. The specifics of this report will be determined by both MSU and the Successful Bidder.
17. The Successful Bidder shall be solely responsible for testing all of the systems it provides or installs in advance of MSU's inspection and hand over.
18. The Successful Bidder will be expected to correct any deficiencies MSU finds in its final inspection and testing.
19. All testing must be completed and accepted by MSU prior to the stipulated contract completion date.
20. The Successful Bidder shall be responsible for scheduling, coordinating efforts, and managing completion of all manufacturer commissioning efforts in line with system installation and equipment migration efforts.

3.2.12 SYSTEM ACCEPTANCE & COMPLETION

1. The system acceptance document will include the signal paths used in the tests, the test equipment and signals used, the measurement equipment used, the points in the path at which measurements were taken and the results of those measurements.
2. The Successful Bidder will be expected to make any repairs or alterations, if any, within the scope of the design, in a rapid and efficient fashion.
3. MSU will verify these corrections and upon completion of this review and associated repairs, MSU Engineering will accept the system and the Successful Bidder will be paid for their work.
4. "Completion" is thereby defined as the time after the facility is handed over to MSU, after MSU performs its own acceptance tests (with the assistance of the Successful Bidder), and after the Successful Bidder corrects any deficiencies.



3.2.13 POST "GO-LIVE" SUPPORT

1. The Successful Bidder shall remain on site for a period of not less than 5-days following the "Go-Live" date. During this time the contact person will provide assistance as needed to operational and technical personnel. The contact person will be responsible for resolving any system or equipment problems occurring during this period. During this period the Successful Bidder will be completing and assembling the "As-Built" documentation package. MSU will have thirty (30) days after the presentation of this "As-Built" documentation package to review its contents and ensure that it is complete and accurate before final system acceptance.
2. The Successful Bidder shall not be responsible for supporting equipment it has not furnished, modified or integrated. Should items not furnished by the Successful Bidder malfunction or not operate to manufacturers specifications, the Successful Bidder is to notify MSU as soon as possible.
3. The Successful Bidder, as part of its warranty commitment, will be required, at its expense, to repair any faulty or incomplete installations it provided through the period of the first year following completion.

3.2.14 AS-BUILT DOCUMENTATION

The Successful Bidder will be expected to provide accurate, verifiable 'as-built' documentation including all items addressed throughout this document. That documentation must be complete and available at the time of hand over to MSU. MSU will use this documentation to verify operations and testing. The Successful Bidder will be expected to correct any deficiencies identified by MSU.

3.3 PROJECT RESPONSIBILITIES

3.3.1 COMMUNICATION

1. Communications is essential to the fulfillment of this project. It is preferred that the Successful Bidder supply access to key personnel via a standard Internet email system. The ability to email AutoCAD 2014 (or later) drawings, Excel wirelists and other documents, including progress



reports back and forth between the Successful Bidder and MSU Engineering personnel is essential.

2. Although electronic communication is intended to play a valuable role in the ease of information flow, it is not expected to replace visitations, meetings and inspections.

3.3.2 CONFIDENTIALITY

1. Prior to the submission of a response to this RFP, each Respondent must enter into or be otherwise already bound by a valid nondisclosure agreement with MSU (the "NDA") for the protection of any and all confidential and/or proprietary information exchanged between MSU and Respondent. Additionally, the Successful Bidder will be required to maintain the confidentiality of all generated documentation, contract documents, correspondence, concepts, the overall scope of the project and all other confidential and/or proprietary information of MSU in accordance with the terms of the NDA. All such documentation will become the property of MSU.
2. Each Respondent and the Successful Bidder agree that it shall not cause or authorize the issuance, circulation, publication or dissemination, by any means, of any news stories, articles or other publicity relating, directly or indirectly, to this RFP or the Project without the prior written approval of MSU.

3.3.3 PROJECT MANAGER

1. Due to the nature of this project, and the responsibilities expected of the Project Manager, the Successful Bidder must assure MSU that the assigned Project Manager will remain dedicated to the MSU design, fabrication, installation and testing throughout the entire project cycle.
2. The Successful Bidder will appoint a management team responsible for the coordination, allocation and tracking of all related resources including the appropriate engineering, manufacturing, and installation personnel.
3. The Successful Bidder will provide the full complement of equipment and materials required to complete the project.



4. The Project Manager must have access to all the resources necessary to fulfill the requirements of the project. This person would have no other major responsibilities or projects that might jeopardize the performance of the Successful Bidder or inhibit its path to completion on time and budget.
5. The Project Manager will be solely responsible for reporting to MSU's Project Manager on matters of concern related to schedules, costs, labor disputes, or any other factors that would delay either side from completing the scope of work.
6. The Project Manager shall organize and schedule any meetings that they feel are necessary to the project.
7. In the unlikely event that the selected Project Manager is unable to continue in this role, MSU shall be immediately notified by the Successful Bidder so that a swift transition, agreeable to both parties, can be made.
8. The Successful Bidder will communicate directly with MSU's designated staff regarding all matters of project costing, scheduling, quality control, change orders and the on-site move/installation. Successful Bidder will provide MSU with on going project status reports. These reports will address inventory status, project costs, and any other areas deemed appropriate by Successful Bidder and MSU.
9. The Successful Bidder will procure, under the direction of the Project Manager, all items listed on the Equipment and Materials Schedules as supplied by Successful Bidder. MSU will procure all of the corresponding customer furnished equipment (CFE).
10. Procurement services must include:
 - Purchase Ordering
 - Tracking and Follow-up
 - Material Receiving and Warehousing
 - Material and Equipment QC Control
 - Electronic Bar Coding all equipment items at Successful Bidder Plant
 - On-site Inventory Control



3.3.4 QUALITY OF WORKMANSHIP

1. MSU expects the Successful Bidder to perform extensive quality control inspections at all stages of the project.
2. The Successful Bidder shall maintain that the quality of work shall meet the satisfaction on MSU and deliver a finished product that meets or exceeds MSU's high standards.

3.3.5 MATERIALS PURCHASES, ASSEMBLY & INSTALLATION

1. No equipment, materials, supplies, or other items that are intended for modification and integration shall be procured by the Successful Bidder for the project until MSU has approved of those materials, supplies, or other items.
2. Successful Bidder shall provide all labor and materials, according to specifications, for all custom hardware or custom fabrications as is necessary to implement the systems described.
3. The Successful Bidder shall install all equipment into racks, consoles, fixtures, compartments, and panels.
4. All wiring, wiring methods, connections, and assemblies must meet the current National and Local Electrical Codes. In many cases, the overriding Texas Electrical Code may be far more stringent than the National Electrical Code (NEC). The Successful Bidder shall be responsible for meeting these code requirements for all systems it designs or integrates. All equipment items are to be UL-listed, UL-approved, or stamped by an authorized lab testing authority that satisfies code compliance.
5. Vendor shall assemble and install all cables needed to implement/modify all of the systems described.
6. Vendor shall secure the cabling in a manageable fashion to insure no damage is done to any cable or equipment during normal operations and routine maintenance.
7. Vendor shall provide for adequate service loops so that equipment that is mounted without rear access can be easily removed for service.



8. The Successful Bidder shall be responsible for the cleanup and removal of all vendor created debris from all spaces prior to hand over to MSU.
9. The Successful Bidder shall maintain MSU's facilities and equipment in a clean and orderly fashion at all times.
10. The Successful Bidder is to ensure that all low-voltage broadcast cable paths (conduits, raceways, and in accessible cable ladders) shall have nylon pull cords from end to end at all times during and upon completion of the project in order that MSU can easily add cables after the installation.
11. Upon completion of all broadcast cable pulls, the Successful Bidder is to re-install fire-stopping pillows that have been furnished by others (the Electrical Contractor) in all broadcast cableways that penetrate fire-rated and acoustically rated walls.

3.3.6 CHANGE ORDERS

1. MSU expects the Successful Bidder to provide enough leeway in its pricing proposal and its time schedule to construct the facility systems so that minor adjustments to the Scope of Work can be made without the necessity to generate a Change Order per occurrence (e.g., the quantities of connectors, number of blank panels etc.).
2. MSU and the Successful Bidder will detail an exact Change Order procedure as the project commences and around the time design begins.
3. MSU recognizes that a substantial or significant change to the detailed design made after the sub-system design is approved and construction documents are generated would be considered a condition for issuing a change order.
4. When the Successful Bidder or MSU feels that a Change Order is warranted, the Successful Bidder shall present to MSU the estimated costs, both in labor and materials, for the proposed changes. MSU and the Successful Bidder Project Managers will strive to quickly address the degree of the change and shall determine its validity. Until a Change Order is approved by both MSU's and The Successful Bidder's authorized contact, no work shall commence on the proposed change.



5. At the beginning of the contract, the Successful Bidder and MSU will determine authorized single points of contact that can approve a Change Order. All Change Orders must be in writing in a form mutually agreed upon.
6. MSU shall not be accountable for any charges for materials or work performed that have not received prior written approval.
7. MSU will not unreasonably delay the commencement or continuance of the construction process as a result of the Change Order process.
8. The Successful Bidder understands that the completion date must not change as a result of any proposed Change Order.

3.3.7 INVENTORIES

1. The Successful Bidder shall routinely supply a concise and updated inventory of all materials, equipment, and supplies purchased and delivered to the Successful Bidder for integration.
2. MSU shall supply a shipping report with all items shipped to the Successful Bidder by MSU. Vendor shall keep all reports and make them available for inspection by MSU.
3. The Successful Bidder will provide a complete inventory of all equipment provided by the Successful Bidder. Each equipment item will be tagged with an electronic bar code and cross-referenced to the project equipment list to provide an overall project asset reference.

3.3.8 DELIVERY OF SYSTEMS TO MSU

1. Vendor shall have all manufacturer supplied documentation, spare parts, additional or secondary supplies provided in option packs or as extra materials associated with equipment or materials requisitioned by either MSU or the Successful Bidder, ready for inspection by MSU at the time of completion of the technical facilities.
2. Equipment and spares, not part of the installed systems, shall be stored on shelves, in a designated area by MSU. The equipment and supplies should be repackaged in either the original manufacturer's containers or in appropriate containers provided by the Successful Bidder.



3. The Project Manager shall inform MSU of any undue delays of any nature it experiences throughout the course of the project.
4. Successful Bidder shall repair or replace at their expense all equipment that is lost or damaged while at their premises or en route to the site from their premises to the final satisfaction of MSU.
5. The Successful Bidder shall establish a delivery schedule for the pre-wired, ready to be installed systems to MSU.
6. The Successful Bidder shall use its best efforts to protect and secure MSU's equipment when it begins installation at the MSU facility, but MSU shall take responsibility for equipment received at the site and accepted by the MSU designated representative.
7. Equipment or materials that are damaged while at MSU's site, prior to hand over, shall be immediately called to the attention of the MSU Project Manager for disposition.
8. Lost or stolen equipment or materials shall be reported to MSU security at once.

3.3.9 SCHEDULE

1. The Successful Bidder shall establish a schedule identifying significant milestones for completion during the design phase of the project.
2. MSU personnel shall, in accordance with the milestone schedule provided by the Successful Bidder, perform periodic checks on progress and quality.
3. The Successful Bidder shall be responsible for the maintenance of the schedule and for controlling deviations from it that would affect the completion date.
4. The Successful Bidder shall be responsible for delays to the schedule that are caused by the Successful Bidder's negligence or untimely execution of its responsibilities.
5. The production schedule for MSU programming will affect certain hours that the Successful Bidder or its sub-contractors may work. These hours must be observed as "quiet hours" when the Successful Bidder must



respect and observe the performance requirements of productions associated with, in, or around, the working area for the studio, set, access ways, pre-staging areas, or the actual production control room(s).

3.3.10 DOCUMENTATION

1. The Successful Bidder shall include a listing of all standard materuakls used for the project for MSU future reference during system additions.
2. Documentation standards and conventions illustrated in the RFP documentation set must be maintained throughout the project. This includes and system additions.
3. All "as-built" documentation shall be included in both electronic and hard copy forms. All drawings shall be supplied as AutoCAD Release 2014 (or later) files. Any alternate delivery media shall be discussed and approved by MSU in advance.
4. The Successful Bidder shall supply complete and detailed "as-built" documentation of all the systems it provides at the time of completion. These documents will be updated or corrected for any changes or deficiencies found by MSU during its testing and acceptance period, before final payment is released.
5. Each single line drawing shall indicate location and number of BSP and demarcation panel points, jackfields, equipment locations, wire numbers (cross reference to wire runlist), and connector panel interfaces.
6. All jackfields shall have normal front view drawings. Reverse view shall only be required where absolutely necessary to describe functionality or serviceability.
7. All custom fabricated special cable harnesses or connector assemblies shall be detailed in drawing form.
8. All custom fabricated assemblies including, but not limited to, custom panels, consoles, rack frames, hole punch locations, specialized "one-off" assemblies, etc., shall be documented with drawings. All locations and call outs for assemblies shall be identified on these drawings.



9. Where applicable, connector nomenclature (identification) labels will match the nomenclature of the equipment it connects to.
10. All vendor created documentation, including custom panel, custom electronic sub-systems, software or setup files, third party add-ons, other layouts and wiring shall be included.
11. The project shall not be considered complete until all of the documentation listed herein has been supplied.

3.3.11 SOFTWARE

1. All initial configuration files for routing switcher, production switcher, intercom matrix, VLAN assignments, record/playback servers, audio mixer, production automation touchscreen, and camera base stations shall be saved and submitted to MSU as part of the documentation deliverable.
2. A set of user configurable template files for the production graphics system is to be saved and submitted to MSU as part of the documentation deliverable.

3.3.12 REVIEW OF DOCUMENTS & SPECIFICATIONS

1. The Successful Bidder will be expected to review the MSU architectural documentation package in order to provide a foundation for the overall operational plan.
2. The Successful Bidder shall insure that it identifies and understands clearly the division of responsibilities between MSU and the areas under the Successful Bidder contract.

3.3.13 OUTSOURCE VENDORS

1. MSU demands a strict adherence to quality of workmanship and the selection of all its vendors.
2. MSU requires that any outsourcing the Successful Bidder proposes shall be identified and approved by MSU. In all cases, the Successful Bidder shall be 100% responsible for the workmanship, quality, and timely execution of any vendor contracted outsourcing.



3.3.14 SYSTEM ACCEPTANCE

1. The SI and MSU agree to complete a mutually agreeable final draft of the Acceptance Criteria during early stages of the project kickoff. The Acceptance Criteria shall include a description of the tests MSU and Successful Bidder shall perform to validate the installation, design and integration work required to create the MSU Entertainment Production Center and Master Control.
2. Any changes to the Acceptance Criteria after the parties mutually agree to its content shall only be effective in connection with this Agreement if mutually agreed to by both parties in writing.

3.3.15 ASSIGNMENT OF OWNERSHIP

1. The Successful Bidder, and any of its outsourcing respondents, shall certify and represent that all design documents and all workmanship shall belong exclusively to MSU.
2. No proprietary vendor supplied equipment or materials may be used without a complete release from the Successful Bidder to MSU.
3. The Successful Bidder shall certify and represent that MSU may use any and all of the design, design documents, and any completed workmanship, for whatever legitimate purpose MSU so desires.
4. The Successful Bidder shall relinquish all its claims to the design, design documents, and its workmanship once the product or products are delivered to MSU, and MSU has paid the Successful Bidder for its work.

3.3.16 MSU RESPONSIBILITIES

1. The MSU Project Director shall arbitrate and resolve all disputes between the Successful Bidder and other contractors not under direct contract of the Successful Bidder.
2. MSU will assign a single point of contact that the Successful Bidder shall use for the purpose of final approvals and resolutions of conflict.
3. MSU will identify key personnel and methods of contact for each individual. These MSU staff members will work with the Successful



Bidder throughout the length of the project. The Successful Bidder shall not incur any costs related to MSU engineering support.

1. MSU will provide easy and timely access to the appropriate vendor's staff as well as timely answers to all vendor questions regarding the project.
1. MSU will arrange for and cover the costs for the delivery of all MSU supplied equipment, to the Successful Bidder's selected assembly site, per the delivery schedule developed between the Successful Bidder and MSU.
2. MSU will be responsible for providing the labor that is required outside the Successful Bidder's contractual arrangements with MSU.
3. MSU will strive to provide all outside labor in a timely and efficient manner so as not to jeopardize the Successful Bidder's schedule or budget.
4. MSU expects that the Successful Bidder Project Manager will coordinate the scheduling of its own outside labor forces as necessary.
5. MSU will manage all MSU provided resources that are outside the control of the Successful Bidder. The Successful Bidder should be aware of resource availability and provide assistance to MSU whenever those resources require direct or indirect interaction with the Successful Bidder integration team.
6. MSU and the Successful Bidder will jointly cooperate in the management of all resources wherever possible.

3.4 MATERIALS

3.4.1 GENERAL

1. The Successful Bidder shall use only Wichita, TX Electrical Code accepted and industry standard materials throughout the construction of the technical facilities. Texas local or other applicable codes take precedence over all other codes.
2. The Successful Bidder shall supply all of the assembly materials for the integration of any and all Broadcast Systems.



3. MSU has included a list of its approved or preferred integration materials (manufacturers and part numbers) in Section 8 of this RFP. The Successful Bidder shall prepare, and submit for approval, a list of its proposed materials that are not on the approved MSU materials list. The Successful Bidder shall include manufacturer and part numbers, and expected quantities of parts required, as part of the design process. MSU will indicate its acceptance of those materials before purchases shall be made.
4. No substitutes or deviations from these accepted lists shall be allowed without advance written MSU approval.
5. MSU reserves the right to accept or reject any of all materials whether supplied by the Successful Bidder or MSU, for such reasons as poor workmanship, not meeting specifications, poor quality, misrepresentation of specifications, and/or other reasons.
6. Should any materials be unacceptable, MSU and the Successful Bidder shall, at the time, cooperate to find an acceptable alternative material for the installation.
7. All tools shall be in good working order and meet manufacturer-specified calibrations. The Successful Bidder shall not substitute incorrect tooling under any circumstances. Utilizing incorrect tooling will be rejected by MSU and any additional costs required to correct the deficiency, including time required to re-manufacturer, will be borne solely by the Successful Bidder.
8. Automated or automatic tooling shall be routinely tested throughout the construction and installation process.
9. All pre-manufactured and/or molded cable assemblies shall be tested for continuity and strength.
10. Pre-manufactured cables not supplied with manufacturer delivered equipment must be on the approved materials list.
11. Any cables travelling through a plenum airspace in the facility must be a plenum-rated equivalent of the approved standard cable type.



3.4.2 VIDEO CABLE

1. Video cable must be suitable for 3G-SDI serial digital video systems, shall adhere to length limitations and equalization needs in line with SMPTE 424M, and shall meet or exceed recommended practices for manufacturing.
2. Successful Bidder shall conform to a MSU approved and established color code system of wiring.

3.4.3 AUDIO & CONTROL CABLES

1. Analog Audio cable must be suitable for low-noise systems, and shall include shielded twisted pair construction with a foil wrap and a drain wire. Shielding is to follow the "source shield" standard throughout the facility, and microphone and BSP demarcation panel connections are to pass-through the shield connection.
2. AES 110 twisted pair cable, where applicable, shall meet AES specifications per the guidelines of AES3-1995 Transmission Format for Two (2) Channel Digital Audio.
3. AES digital audio signals that are carried on 75 unbalanced coaxial cable shall conform to the AES 3id-1995 Transmission of AES/EBU Digital Audio Signals over Coaxial Cables.
4. Serial control cables for the project can take several forms including ANSI/TIA/EIA-422-B ("RS422"), TIA-232-F ("RS232"), USITT DMX512-A ("DMX512") and TIA/EIA-568-C.2 ("CAT6 ethernet"). Appropriate cables manufactured or furnished by the Successful Bidder shall adhere to these standards.
5. All audio and control cables shall be consistent throughout the technical facilities.
6. All multiple pair audio cabling must be individually shielded, jacketed, and numbered. Each individual pair of a multiple pair audio or control cable shall have shrink wrap tubing applied where appropriate.
7. All 25-pair (Telco Style) intercom cable shall be 25 pair, 24-gauge solid wire with an overall soil shield and drain.



8. All audio cable shall have shrink wrap tubing applied at the strip or breakout point of the sheath.
9. All connector pins, taper pins, connector cups, and any other 'connector-to-wire' interface must match the wire gauge for the cable used as specified by the connector manufacturer. All tooling used to crimp, insert or remove pins must be approved by the connector manufacturer for that pin.

3.4.4 VIDEO & RF CONNECTORS

1. The Successful Bidder shall identify all video and RF connectors to MSU for approval prior to construction.
2. Each video and RF connector shall be properly crimped, or soldered where appropriate, using the exact manufacturer approved and specified tool, die and/or method.
3. Each center pin shall be tested for proper crimp or solder.
4. Each outside ferrule shall be evenly and completely crimped on all sides.
5. Each cable shall be tested by attaching the cable to a BNC bulkhead panel (or equivalent) and pulling and twisting a sufficient amount to insure that the crimp is effective and does not twist, shift, or break loose.
6. No crimped connector shall rotate or spin about the cable.
7. No stray strands of braid or foil shall be exposed or protrude outside the crimp or ferrule.
8. RF cable connections shall be sweep tested at the appropriate user frequencies.

3.4.5 AUDIO CONNECTORS

1. MSU shall use the following convention for 3-wire balanced audio connections:
 - Pin 1 Ground (shield)
 - Pin 2 Hi ("in phase")
 - Pin 3 Low ("out of phase")



2. All ¼" phone, RCA type, 1/8" phone, mini-phone, and any other vendor supplied cable connector assemblies shall have each wire soldered in place.
3. All audio cable connections shall use shrink wrap tubing to strain relief secure and protect the connection from shorting.
4. All ¼" phone RCA type, 1/8" phone, mini-phone, or other Tip-Ring-Sleeve type connectors shall have steel jacket hoods or shells (expect audio patch cords).
5. All drain wires shall have shrink tubing applied to completely cover and insulate the drain.

3.4.6 DEMARC POINT TO MSU FACILITY-GENERAL

1. A "demarc point" is the point in the facility where cabling and signal flow enters or leaves one area and connects to another. It will typically be a physical barrier (terminal block, BNC feed through, or patch equivalent).
2. The Successful Bidder will be responsible for providing all the cabling, connectors, and wire management up to the designated demarc point(s).
3. The Successful Bidder is expected to make all demarc connections and test their continuity and signal integrity to that demarcation point.
4. On its documentation, the Successful Bidder shall indicate cable numbers for both sides of the demarc point bulkhead or barrier interfaces.
5. All connection up to the demarc points shall be easily accessible, clearly identified, and conform to other wiring practices currently in place at MSU.
6. Each grouping of cabling shall be distinctly separated from one another according to type of signal and type of cabling.
7. MSU will provide guidance in determining the type and number of tie lines between demarc points and patch points; and from demarc points to other portions of the MSU facility.
8. Bulkhead feed throughs for AES audio shall be true 75 ohm connectors.



9. Bulkhead feed throughs for serial digital video shall be true 75 ohm connectors.
10. The Successful Bidder will be responsible for connections to and from the VoIP telephone system via a MSU-furnished and installed gateway interface that shall be installed by MSU-IT in the broadcast system racks.
11. Telephone activation and programming will be the responsibility of MSU.

3.4.7 TERMINATION STRIPS & BARRIER BLOCKS

1. All necessary termination and barrier blocks shall be approved by MSU.
2. All wiring to or from these blocks, barriers, or punch points shall be individually identified with appropriate labels.
3. All blocks, barriers, or punch points shall be protected from accidental cross wiring or shorting in a method designed by the Successful Bidder and approved by MSU.
4. The Successful Bidder shall define its system for wiring to punch blocks, barrier strips, or terminal blocks, including color codes and wire management, before construction begins.
5. No wires shall be attached to screw terminals without appropriate lugs, crimped or soldered according to manufacturer recommendations. All crimp lugs shall be insulated either by the supplied plastic insulator or with heat shrink tubing.
6. Audio blocks, barriers, or punch points shall be supplied with suitable quantity of spare parts or repair kits.
7. No telephone company type "66-blocks" and "100-punch blocks" shall be used for high quality audio terminations.

3.5 LABELING AND IDENTIFICATION

3.5.1 GENERAL

1. The Successful Bidder will provide all material and labor to properly label all cables and equipment using the guidelines outlined in this section.
2. The Successful Bidder shall provide and install engraved labels as designations for all jackpoints and jack fields. Labeling of distribution



equipment, major systems components, or wherever deemed necessary throughout the new technical facilities can be done with Brother P-Touch or other thermal label printing method.

3. All labels shall be made with high contrast, legible fonts that are easily readable in low light conditions.
4. Plastic engraved labels shall be self-adhering with a permanent contact adhesive material or attached with screws.
5. All label identifications shall be called out on the drawings.

3.5.2 CABLE LABELING

1. The Successful Bidder shall label all cables so that there is a clear, consistent scheme throughout.
2. All wiring labels shall be permanent and consistent with industry standards utilizing materials such as the self-adhesive Brady LAT style (or equivalent) laser printed labels.
3. The placement of wire labels shall be uniform and not less than 3" from the end of the prepared wire.
4. Each cable end will be identified with a single label that will identify at least:
 - cable ID #
 - source device and termination descriptions
 - destination device and termination descriptions
 - cross-reference to the associated primary drawing
5. All cable labels shall face the same direction on every cable.
6. Each individual pair of each multiple pair audio cable shall be labeled at both the sheath fan out point and, with a secondary label, at the end where the termination point or connector is located.
7. Multiple pair cables shall also be labeled on the overall outside sheath.
8. The Successful Bidder shall supply a documentation wire run list, in hard copy and native MS-Excel file form, which itemizes the entire wire list.
9. MSU will provide the Successful Bidder with its database fields and record formatting. The Successful Bidder shall supply all the necessary



information to identify the cable runs in a form that can be included in a database or spread sheet format.

10. Each wire listing will include source, destination, type of cable, type of signal, length, and if it is a timed cable.

3.5.3 JACKFIELD LABELING

1. All jackfield patch identification strips be clearly labeled in a fashion consistent with other MSU facility nomenclature. Identification may include information as to source, destination, and/or the name of the signal present on each patch point.
2. As part of the system documentation, the Successful Bidder shall supply a full-scale plot of each patch panel label strip.
3. MSU may provide a color code for grouping identification of signal types or functions.
4. Patch point labels shall be covered with the appropriate manufacturer provided cover strips to protect the type from wear. Patch point front labeling shall be a font style that is uniform and easy to read, such as Arial with a minimum of 6 point size.
5. "Fitted Text" (e.g. text that varies in spacing and kerning) on jackfield panels is not acceptable unless pre-approved by MSU.
6. All jackfield identification labels shall use engraved plastic laminates that are self-adhered to each device as described above.
7. Jackfields shall also be labeled on the back of the unit so as to identify them during maintenance.
8. Successful Bidder shall provide patch point identification (i.e. "1,2,3...") on the rear view of the jackfield to assist personnel in locating a patch point without having to "count patch points" from one end or the other.

3.5.4 EQUIPMENT LABELING

1. All distribution amplifier frames shall be labeled using thermal printed labels that are self-adhered to each Distribution Amplifier tray. These shall identify both the frame and the DA's inside.



2. All installed equipment components shall have a label affixed to the front of the equipment to ID that unit with it's "system name" and with it's IP address (if applicable) for ease of reference in troubleshooting situations.
3. The Successful Bidder will submit for approval to MSU a sample of both the material intended to be used ad the method of documentation for all labeling prior to beginning any equipment labeling process.
4. All added terminal blocks and cross connects shall be labeled using similar labels.

3.5.5 CONTROL PANELS & OTHER LABELING

1. Many custom and manufacturer control panels will require appropriate labeling. The Successful Bidder will be expected to conform and match, where appropriate the existing nomenclatures and appearances of existing MSU schemes.
2. The Successful Bidder will be responsible for labeling all buttons, key caps, overlays, and other necessary identifications in a method agreed upon by MSU.
3. All vendor added monitors, waveform displays, intercom panels, telephone units, etc., shall be labeled and identified on the schematic drawings, on elevation views, and in the inventory data base the Successful Bidder will be supplying.

3.6 EQUIPMENT SUPPORT

3.6.1 GENERAL

1. The Successful Bidder shall provide equipment rack slides for all applicable equipment.
2. Rear support is required for all equipment where applicable.
3. Where applicable, and if necessary, a third set of tapped adjustable rails, may be required on a select basis to support specialized equipment.

3.6.2 CUSTOM FABRICATED PANELS

1. Custom panels shall match the blank panels wherever possible.
2. The finish on both sides of the panels should match.



3.6.3 HARDWARE

1. All rack screws will be cross top or Phillips type suitable for removable by an electric screwdriver (e.g., a Makita type screwdriver and driver bit tool).
2. All racks screws and other hardware shall use black, Nylon type washers wherever contact with equipment is made to protect the front panels from damage during installation.

3.6.4 POWER

1. All plug strips and wire mold strips shall be permanently attached. No "tie wrapping" of power strips to consoles or rack systems is permitted.

3.6.5 FIT AND FINISH

1. The Successful Bidder shall be responsible for the completing of the interior trim, fit, and finish that is associated with installing, fixtures, hanging and support equipment, and any other equipment or furnishings it is supplying. Interior appearance is important and should be emphasized.
2. Functionality and attention to detail is extremely important in all fit and finish of "in-view" equipment and compartments supplied by the Successful Bidder.

3.6.6 WIRE RACEWAY & CABLE TRAY ACCESS

1. The Successful Bidder will not be responsible for providing or installing cable trays or raceways.



4 APPENDIX A - COMPLIANCE

4.1 RESPONDENT BACKGROUND

1. List your company's official registered name, Dun & Bradstreet number, parent company name, if applicable, address, phone and facsimile number, website, and headquarters location (if different than company address).
2. Please provide the following information for your company:
 - a. Describe all the services and products you provide and specify the percent of your firm's revenue each of these services and products represent.
 - b. Name the company or companies you subcontract all or part of Services to (if applicable). Be specific about what part of Services you subcontract to each subcontracting company you list as well as the geographical scope of each subcontracting relationship.
 - c. Please specify the type of your organization (e.g., corporation, partnership, other-explain)
 - d. How long have you been in business? How many years have you been performing Services?
 - e. How many years have you been in business under your present name?
 - f. Under what former names have you operated and for how many years?
 - g. Please provide trade, bank and insurance references we can contact.
 - h. Please provide trade, bank, and insurance references we can contact.
 - i. List names and titles of key personnel and years within your company.
 - j. Is your company bonded? Please provide details.
 - k. Please provide the following litigation* information:
 - i. Detail all litigation* that your company, subsidiaries, and/or parent company have been party to since 2005.

(* Litigation includes, without limitation, matters before courts, federal, state and city agencies, and arbitration panels)
 - l. Has your company or any members of your management team been convicted of a crime? If so, please provide detailed information.
 - m. Has your company, any affiliate, or any of your / their current or former principal owners or officers or managerial employees been convicted of a misdemeanor and/or found in violation of any administrative, statutory, or regulatory provisions in the past five (5) years?
 - n. Has your company, any affiliate, or any of your / their current or former principal owners or officers or managerial employees been convicted of a felony, and/or any crime related to truthfulness and/or business conduct in the past ten (10) years?
 - o. Has your company, any affiliate, or any of your / their current or former principal owners or officers or managerial employees have any felony, misdemeanor and/or administrative charges currently pending?



- p. For the past five (5) years, has your company, or any of your principal owners, officers, or any affiliate had any sanction imposed as a result of judicial or administrative disciplinary proceedings with respect to any professional license held?
- q. Please disclose any relationship that you, your employees, and subcontractors (included in your proposal in response to this RFP), have had with the MSU and/or MSU employee(s) since 2000. Please provide the names and departments of the key MSU employees involved.
- r. Is your company a diverse/minority business? If yes, please detail.
- s. If you are a minority/diverse business, which certifying organization(s) are you certified by?
- t. List names of three current Services clients and provide contact information (name, phone number, email address) so that we will be able to contact them. Please describe the projects you have completed or are in the process of performing. In your project description, include:
 - i. Project name
 - ii. Contact (name, phone number, email address)
 - iii. Location
 - iv. Size (in square feet)
 - v. Duration of project
 - vi. Description of project and scope of work
 - vii. Contract amount
- u. List names and contact information of three former Services clients. Please provide the following information for each of the three former clients:
 - i. Length of time you provided Services to the client
 - ii. Description of Services provided to the client
 - iii. Reason for termination of the relationship
- v. Has your company ever failed to complete any work awarded to it?

4.2 COMPLIANCE MATRIX

Please see separate attachment.



5 APPENDIX B – PROJECT PRICING

5.1 BID SHEET

Please see separate attachment.



5.2 ITEMIZED EQUIPMENT PRICING

The following Equipment Schedule reflects the design for the new School of Media & Communications facility, and it reflects the design documentation included in this RFP package. Please indicate final and best pricing in the spaces. This schedule is preliminary in nature. For pricing comparison purposes of this RFP, it is mandatory for respondents to complete the separate attached equipment pricing as listed.



6 APPENDIX C – PROJECT DOCUMENTATION

Please see separate attachment.