April 14, 2025.

TECHNICAL PROPOSAL FOR:

City Council AV Upgrade Castroville, TX





COMPANY OVERVIEW AND HISTORY

WHAT WE DO

NBCP Communications Systems is a San Antonio based company specializing in the implementation of Audio Visual (AV) systems tailored to meet the mission demands of our customers. For 18 years, we have provided solutions to just about every branch of the Federal, State and Local client, delivering 3,500+ projects on time and on budget across the globe. NBCP has designed and deployed custom built solutions to 17 states as well as to Germany, Japan, Qatar and Brazil.

Since 2016, NBCP has delivered custom built solutions for local Clients and General contractors building 50+ AV projects for Bexar County alone as well as designing and implementing City Public Service's (CPS) entire new AV infrastructure.

THE NBCP ADVANTAGE

- 1. NBCP's headquarters is located in the city of San Antonio for the fullest support possible of our Texas clients (not a satellite "office", not a couple of service members).
- 2. A 18-year history of delivering multi-million-dollar projects on time and on budget across the world.
- 3. An <u>all-in-house</u> team of AVIXA, Crestron, Biamp, and Cisco certified Programmers and System Engineers.
 - a. NBCP has more Project Managers, Engineer/ Programmers and Electricians onstaff in San Antonio than any other major AV vendor in the city and, than most AV vendors have on their entire staff in the state!
- 4. An <u>all in-house</u> team of trained installers equipped, experienced and efficient in all things from fiber terminations to low-voltage cabling; from high-voltage work to complete ceiling work.
- 5. A 7,000-sf facility housing a state-of-the art research and development (R&D) lab for:
 - a. custom fabrications/ pre-deployment rack builds/wiring,
 - b. software development and testing
 - c. equipment testing and repair.
- 6. A 2-tiered warehouse that carries an ample bench stock of common AV systems repair items, accessories and loaner equipment enabling our team to routinely make same day repairs.

WHY NBCP IS THE BEST CHOICE

- 1. Local Office Support.
 - 1. An all in-house team of AVIXA, Crestron, Biamp, Shure, Cisco, Shure certified Programmers and System Engineers within 10 minutes' driving distance.
- 2. <u>Uninterrupted Installation</u>. Our team has a plan to work around the mission to cause as few interruptions as possible. The team will work very closely with the facility POCs to schedule the room updates to minimize interruptions.



- 3. <u>No use of Sub-contractors</u>. 100% of the work will be accomplished by the same inhouse installers, electricians, and engineer/ programmers and key personnel (KPs). No one unfamiliar with the installation will ever show up to provide support.
- 4. <u>Post-Installation Uninterrupted Technical Support</u>. The same key personnel (KPs) that will manage, install and commission all of the systems will provide phone, email and on-site support.
- 5. <u>1-Hour Tier 2 (engineer) Warranty Support.</u> As part of this proposal a 12-month warranty on all labor as well as a 1-Year Premium Support Coverage will be provided. This service will include:
 - A. <u>Unlimited Phone & Email Support</u>. The same centralized phone number and email addresses will continue to be provided to all client points of contact. During normal business hours response times will be as follows:
 - B. <u>Initial phone response</u>: immediate
 - C. <u>Tier 2 escalation</u>: within 1 hr.
 - D. Routine On-site support: Within 24-48 hrs. when necessary.
 - E. <u>Same-</u>day emergency on-site support when needed.
- 6. <u>On-going Service Support Plans</u>. Available at a large discount if requested.

CLARIFICATIONS

- 1. <u>Price Duration.</u> Due to current AV industry supply constraints and sporadic price volatility, pricing for this proposal is valid for 60 days from day of submittal.
- 2. <u>Taxes.</u> taxes were not included in this proposal.
- 3. <u>Extraneous Equipment Licensing</u>. None requested and none included herein.
- 4. <u>Work Hours</u>: Normal work hours will be M-F 07:00-5:00.
- 5. <u>Trash removal</u>. Is included in this proposal.

NOTE: Please feel free to clarify any assumptions or interpretations made above. We will be happy to provide a revised plan with your preferences.

This proposal includes all "ancillary items and supplies" (mounts, wires, cables, connectors etc.) and qualified labor necessary to integrate and install the items and deliver per the requirements. Any further assumptions, inclusions, and exclusions as typical for the work contemplated have also been clearly stated herein.

CERTIFICATIONS AND CONTRACT VEHICLES

SOCIO-ECONOMIC CERTIFICATIONS

- South Central Texas Regional Certification Agency (SCTRCA) Cert # 221056247. TX HUB, DIBE, ESBE, HABE, MBE, SBE, VBE
- SBA Small Business and Service Disabled Veteran-Owned Small Business (SDVOSB)



CONTRACT VEHICLES

- **GSA- GS-03F-063BA** (Audio Visual), Category MAS 335911, 335999, 541990AV, OLM Professional Audio/Video Services
- **TIPS CONTRACT**: 220704, and 230101 Technology Solutions Products and Services (24,000 + items)
- **BuyBoard CONTRACT**: 678-22 Scoreboard Signage Digital Displays

OUR STAFF

Employing **in-house** senior project managers and manufacturer certified engineers, programmers and technicians, NBCP will use all of its experience, resources and emphasis on exceptional customer satisfaction to give the same excellent project approach used to date to achieve Contractor Performance Assessment Reporting System (CPARS) ratings of no less than 96%.

TABLE 2. CERTIFICATIONS

Manufacturer Certs	Manufacturer Certs	
Biamp Tesira Forte	Kramer Dealer	
Cisco Partner	Planar Video Wall Installer	
Cisco Network	Planar VideWallG3 Installer	
Extron Programming	Vaddio MatrixPro	
Extron Install	Vaddio MatrixMix	
Harman/ AMX Control Professional	Crestron Programming	
Harman/ AMX Design Crestron Design		
Harman/ AMX Advanced Programming Shure Advanced		
Holocom	RGB Spectrum	
Freeport	QSC	

Sample professional certifications also attached separately include:

- AVIXA CTS, CTS-D, CTS-I
- Dante
- ComptiaA+
- FOA Fiber Optic Technician
- BIM
- Visio



SCOPE OF WORK

INTRODUCTION

AVIXA certified Design Engineers and Programmers assessed the bid documents, developed a solution that best conforms to the effort needed, and devised a project plan that will integrate and support that solution. The following documents were reviewed prior to submitting this proposal:

ASSUMPTIONS/ CLARIFICATIONS/ CORRECTIONS

CLARIFICATIONS

- 1. <u>Price Duration.</u> This proposal is valid for 60 days from day of submittal.
- 2. <u>No Optional Hardware Licenses Or Coverages Requested</u>. No optional licenses (i.e. multi-site, SMART, extended hardware warranties, etc.) were included in this proposal as none were requested.
- 3. <u>Equipment Delivery Delays.</u> Only after a purchase order is received can accurately lead times be ascertained. Contract POP must be of at least 6 months. We pledge to do our best, but our company cannot receive punitive actions (nor be pressured to give discounts) if ANY of the equipment is unavailable for extended amounts of time or if the client cannot make the rooms available as necessary. <u>Client Furnished</u>
- 4. <u>Work hours</u> will be M-F **07:00-18:00** daily during the on-site installation period.
- 5. <u>Site Travel Costs Included.</u> It is hereby clearly stated that this proposal covers the costs of work done in as single continual installation process. Therefore, the Client must have all work spaces available one after the other for work NOT to have a stoppage that will require installation crews to sit idle for ANY period of time besides that of normal weekends.
- 6. <u>High Voltage, Network and Phone Connections</u>. Will be provided by the vendor at their proper location.
- 7. <u>Network Configurations</u>. The customer shall be responsible for gathering the correct information regarding the network services/configuration for codecs (i.e., Network address, gatekeeper, gateway, etc.) BEFORE the room is scheduled for commissioning and testing.. Mistakes in network configurations will **not** cause a delay in invoicing.
- 8. <u>Systems Demonstration & Training: NBCP will provide a fully documented and structured user training regimen that will include:</u>
 - 1. Full functionality demonstration and training.
 - 2. Hands-on training on system use, maintenance, and troubleshooting.
 - 3. Testing and re-training when necessary. There is no limit on the number of users that can be trained. At least 2 hrs. of training will be provided and more if needed at any time during the first year after installation.



- 9. <u>OPTIONAL On-Going Service Support Coverage.</u> Unlimited Phone & Email Support (M-F 08:00-17:00) is offered at additional cost. A centralized phone number and email address will be provided to all client points of contact. During normal business hours response times will be as follows:
 - 1. Initial phone.(8:00 AM 5:00 PM CST) Immediate.
 - 2. Email response: Within 1 hr.
 - 3. Tier 2 escalation: within 1 hr.
 - 4. Preventive visits. Two (2) included with the on-going coverage.
- 10. <u>Partial Invoicing</u>. It is hereby agreed upon that partial invoicing will be allowed under any resulting contract.

IMPORTANT:

By accepting this proposal the Client certifies that it understands and abides by these realities.

NOTE: Please feel free to clarify any assumptions or interpretations made above. We will be happy to provide a revised plan with your preferences.

This proposal includes all "ancillary items and supplies" (mounts, wires, cables, connectors etc.) and qualified labor necessary to integrate and install the items and deliver per the requirements. Any further assumptions, inclusions, and exclusions as typical for the work contemplated have also been clearly stated herein.

OPERATIONAL SUMMARY

The team will provide all necessary parts, tools, hardware, and skilled labor to install a state-ofthe-art AV system in support of the effort.

Our company will:

- Provide a project manager to act as the main point of contact for the duration of the project.
- Deliver and install all audiovisual equipment in the room within the time specified within this proposal after contract award. All hardware will conform to the design/parts list included in this proposal and follow the intent and functionality of the direction/hardware outlined in the bid requirements. Installation practices will meet AVIXA AV industry standards.
- Whenever possible, equipment racks will be pre-built, custom wired and tested BEFORE delivery for in-site integration.
- Provide pre-deployment testing and post-installation testing to ensure 100% system functioning.



- Provide structured systems training to include unlimited hands on practice to ensure 100% user proficiency as well as unlimited follow on training for 1-year.
- Provide full system documentation (manuals, engineering As-Built drawings, How to Tutorials, etc.

TECHNICAL SYSTEM DETAILS

OBJECTIVE: Remove and replace existing AV system and install a new state of the art, digital, AV system to support video capture for live video and audio streaming and high-definition presentations.

Assumptions:

- Wall mounted displays will be able to be mounted. Walls will be free of obstructions, obstacles, and can support the mounting of the displays.
- Wall mounted cameras will be able to be mounted. Walls will be free of obstructions, obstacles, and can support the mounting of the cameras.
- Room calculations are made utilizing an 11' ceiling height.
- It is assumed that the existing room speaker cutouts in the ceiling will accommodate the replacement speakers.
- It is assumed in this plan that the AV equipment rack will be installed in the council chamber room. The labor charges account for the work required to complete this room. In the event that the location of the equipment rack changes, additional labor charges will be applied to account for the distance and difficulty of re-running the cable.
- It is understood that the chambers may be experiencing potential internet connectivity issues, as indicated by recent reports of latency and intermittent freezing during live streaming. NBCP does not have control over client-side telecommunications infrastructure and, therefore, cannot guarantee uninterrupted streaming from a network connectivity perspective.
- Necessary electrical circuits for system operation will be provided by the client.
- All GFE equipment is in working order in accordance with manufacturers' specifications and verified to be on-site. NBCP will make the best effort to integrate GFE hardware or software. If hardware is deemed unserviceable by NBCP, hardware will need to be repaired or replaced at the expense of the government.

Video:

- One **75" LED** room display.
 - \circ One display will be mounted on the front wall behind the dais.
- Eight 22" monitors for the dais.
 - Each monitor will be mounted in front of each seating location.
- One high definition USB AV Bridge appliance will be installed to allow the ability to live the stream audio and video via clients preferred platform.
 - AV Bridge unit will be connected to the room PC running the streaming software.



- A wireless presentation sharing device will be installed in the system.
 - System will have two dongles for use between multiple computers.
- Two High definition PTZ cameras.
 - One PTZ camera will be mounted on the front wall to view podium and attorney table.
 - One PTZ camera will be mounted on the back wall to view full dais panel.
- An AVoIP Matrix solution for switching and routing all video signals.
 - o Input Sources:
 - I HDMI input from the wireless sharing device.
 - Output Destinations:
 - 1 HDMI outputs to **75**" LCD displays.

Audio: The team will provide and/or integrate:

- An AVB equipped digital signal processor will be utilized to receive, process, and distribute audio signals.
- Two wireless handheld microphones will be provided for room use.
- Eight dais mounted, cardioid, gooseneck, condenser microphones will be added for each speaker at the dais.
- One lectern mounted, cardioid, gooseneck, condenser microphone will be added for speaker at podium.
- Ceiling recessed speakers will be integrated into the new system.
- Audio amplifiers will be installed.

Control: The team will provide and/or integrate:

- A control processor for control over Audio visual devices.
- One 10" wired touch panel will be provided at the dais to control room functions including: System power, volume control, camera control, and other functions.
- Network switch for control, and AVB audio traffic.
- USB extension hardware will be provided.
 - USB will be extended to the room PC at the dais from the equipment rack closet.

Other: The team will provide and/or integrate:

- Equipment will be integrated into a new in-room equipment rack to be housed in the same location inside the room as current.
- Mounting hardware for PTZ cameras will be provided.
- Display mounts.
- Uninterruptible power supply.



GENERAL

Installation: The team will provide and install all low voltage wiring between the displays, sources, switcher, microphones, amplifier, speakers, and a touch panel as applicable. An engineer will conduct all commissioning and testing ON SITE.

Programming: All Control system, and DSP programming code will be constructed, installed and validated by OUR COMPANY engineer/ programmers.

NOTE: One or more meetings will be required with organization personnel to ensure they understand and approve touch panel layouts and code operation.

Miscellaneous: The team will provide and integrate all necessary miscellaneous hardware to ensure a working system according to the provided preliminary drawings and this proposal.

Equipment Certification. Our Team certifies it is an Original Equipment Manufacturer (OEM) Registered Partner as of the date of the submission of this offer, and that we have the certification/ specialization level required by the OEM to support design, install and support all products in the proposed solutions. OUR COMPANY will source all products directly from the OEM or through the US authorized distribution channels only.

Products will be warranted, licensed, and supported by the OEM. Customer will be the original licensee of all OEM software. OUR COMPANY will install them as best as possible to meet user requirements within limits of a given product's technical specifications, manufacturer guidelines, and safety considerations.

OUR APPROACH TO PROJECT FULFILLMENT

- 1. Project Kick Off. Project Manager (PM) will arrange a kick-off meeting within 5 days of award to:
 - a. Introduce the project team
 - b. Ensure client has an understanding of the system to be installed as well as the installation plan laid out by our company.
 - c. Ascertain access requirements to ensure a smooth and efficient start to all work operations.
 - d. Provide a list of all personnel working on the site.
 - e. Provide a draft work schedule to include general milestones and work phase duration.
 - f. Conduct a thorough investigation of pathways, ceilings and infrastructure to be modified in the rooms.
- 2. Work stages include:
 - a. Design finalization accomplished after input from the project kickoff meeting.
 - b. Equipment procurement phase
 - c. Pre-installation phase (at NBCP HQ)
 - i. Rack build
 - ii. Control code build



- iii. Rack testing
- iv. Touch panel layout finalization with input from the end-user.
- v. Coordination with base COMM group to ensure system registration (i.e. MAC addresses added to Client VLAN, GVS registrations, firewall rules, Unified communications wavers, etc.) are completed before the next phase.
- d. Physical installation (on site)
- e. Testing, commissioning and user training. Only in-house engineer/programmer will be used and will be physically on-site during the entire testing phase to ensure expedience and efficiency of commissioning/testing.

PROJECT MILESTONES

The chart below lists proposed major milestones for the Project. This chart is comprised only of major project milestones such as completion of a project phase. There may be smaller milestones which are not included on this chart. If there are any circumstances on the Client side that will result in scheduling delays which may impact a milestone or delivery date, the project manager must be notified immediately so proactive measures may be taken to mitigate slips in dates. Any approved changes to these milestones or dates will be communicated to the project team by the project manager.

Milestone	Description	Date
Project Award	Contract awarded and signed.	TBD
Project Team Kickoff Meet	First virtual meet. Team introduction, preliminary schedule and general details discussed.	5 days ARO
Designs and Implementation Plans Submitted	Design plan drawings and Implementation Plans submitted for approval.	10 days ARO
Contractor Project Management Plan (CPMP) Submitted	The first draft of the project plan is delivered to the COR.	14 days ARO
Designs and Implementation Plans Approval	Design plan drawings and Implementation Plans approved by COR.	14 days ARO
Equipment Purchased	Equipment is purchased and lead times are established	Within 1 week of Designs approval
Purchasing	Purchasing and logistics planning phase begins. Equipment lead times are ascertained and conveyed to the Client for future planning.	Within 1 week of Designs approval



Installation Start	On-site work begins. Will depend on equipment	TBD
	lead times and site availability.	
Installation	Installation (demolition, ongoing replacement,	No more
	periodic sub-system testing and cleanup). Expected	than 15
	work hours 7:00 – 16:00 Monday – Friday.	working days
System Test Plan	Final Testing Phase. All functionality tested and all	No more
	identified errors corrected.	than 2 days
User System Training	Coordinated with COR and on-site users.	Immediately
Plan		after testing

DELIVERY AND EXPECTED LEAD TIMES

Timeframes

On-site installation time will not exceed 2 weeks. However, equipment lead times can only be firmed up after a contract is received. All deliverables will be submitted in electronic format to the designated Project Manager:

Project Schedule

We understand the importance of the timely implementation of this project. In the process of preparing this proposal, we expended time up-front in researching and investigating several critical design issues to minimize overall risk. This level of preliminary design completed to date will allow us to fast-track this project in order to meet schedule requirements. Please note that once a contract is awarded we can get firmer delivery dates from our manufacturers and we will be better positioned to schedule the resources required to deliver this project.

Following contract award, the Contractor will submit a complete project schedule within 10 calendar days outlining all project tasks to include: a project kickoff meeting, second site survey, project design submittals, delivery/unpacking of equipment, physical installation tasks, testing, Client acceptance, etc. This project schedule will identify all major milestones, and project tasks/sub-tasks associated with delivering this turn-key solution.

We will provide all personnel, materials and other resources necessary to perform the tasks specified herein, including the appropriate management activities to ensure timely and economical execution of our defined responsibilities. This schedule is open for discussion and or changes depending on PO issue date and requested timeline, below is a proposed project schedule for reference:



STANDARDS AND REFERENCES

Our Team will provide and comply with the following standards and references:

Installation work will conform to equipment manufacturer specifications and follow standard installation practices as determined by AVIXA standards, ANSI/TIA/EIA standards, IEEE standards, electric codes, local/national codes, and standard industry practices.

Provide and install all wiring, connectors and hardware, as required to complete the work. All wiring will be installed in a neat and professional manner. Plastic and Velcro tie-wraps will be used to secure cabling at a minimum. All cables will be labeled with source/destination at both ends with wrap around machine made labels.

Cable numbers can be used only if a master cable index is provided. Labels will be permanent and clearly readable. Cables are to be distributed in a manner that enables user identification and aesthetic/ functional operation. Cable termination and connectors will ensure all applicable engineering standards are adhered to; including but not limited to maintenance loops, cable stress relief, and power/signal separation. All cabling and termination practices are subject to approval by customer.

• Label all patch panels, amplifier controls, audio and/or video mixer inputs/outputs and switcher/router inputs/outputs. Labels will be used to identify the patch panel information, the respective end equipment, equipment jacks, their related wall plates or other fiber optic patch panels at the distant end to include building, room number, and other termination specifications. All cable references will be to cable destination. Contractor will use mechanically printed labels and affix to the front of equipment cabinet.

• Use qualified personnel to perform all contract requirements in accordance with established standards of good workmanship for this type of contract, and in accordance with governing federal guidelines of OSHA for safety and health of personnel in accomplishing contract requirements.

• Confine operations at the site to areas permitted by law, ordinances, permits, and the contract documents and will not encumber the site with any materials or equipment without prior written authorization.

• Repair and clean-up. Any items touched will be repaired to their original conditions, to include, but not limited to patch holes, seal wall penetrations, touch-up paint, clean areas (vacuum, wipe clean desks), replace ceiling tiles, etc.

• Remove and properly dispose of all garbage, cardboard and other trash resulting from delivery of all associated Contractor provided equipment, materials, and supplies, or other items used by the Contractor while onsite. This includes general cleanup of material, packaging, and work areas conducted during job progress (at the end of each day as a minimum) to minimize unacceptable appearance of job site.

• Remove all old equipment they have taken down as part of the installation and obtaining a large trash container for transport and disposal off the work site.

• Plan operations so as to keep temporary work from blocking access to adjacent building facilities. If, however, conflict with normal personnel access occurs, he will coordinate a temporary bypass routing with building manager, until such temporary work is completed.

• Coordinate all utility outages through the designated Project Manager. Provide written notification of requested outages at least 20 working days in advance. The Project Manager will coordinate with local building occupants and base civil engineering squadron and will grant written approval for the outage.



• Request a final inspection upon completion of work. The Client will inspect all work before acceptance. All work identified during the final inspection not meeting the criteria specified by this statement of need will be repaired or replaced by the Contractor at no additional cost to the Client.

• Maintain and/or exceed acceptable quality levels. Audio/Visual equipment quality levels are defined as follows: Consumer, which includes equipment, aimed to the home market, industrial which is designed for mid-grade or small commercial use (church, boardroom, small auditoriums, etc.) and professional or broadcast which is designed for large scale theater/auditoriums or video production facilities. Professional equipment or better will be provided for the video components as well as professional equipment for all audio components. This contract requires professional and or broadcast quality components.

INCLUSIONS

The following items are INCLUDED in the project scope of work:

- All equipment, wire, and accessories required for a fully functional audio and video system.
- Non-union labor associated with turnkey engineering, installation, programming, testing, and training.
- Documentation package including as-built system CAD diagrams and Manufacturer's Operation manuals.
- Coordination and cooperation with building owner in regards to installing the system.
- User training on system operation.
- Where applicable, the owner's architect will provide the teams engineering department with all required architectural floor, reflected ceiling, building elevation, and section plans in AutoCAD® format at no charge to team.

EXCLUSIONS

Unless specified, the following items are EXCLUDED from the project scope of work:

- Any and all high-voltage work or hardware (unless specifically quoted).
- Voice/data cabling, IE analogue phone lines, ISDN lines, network ports, etc.
- Concrete saw cutting and/or core drilling
- Fire wall, ceiling, roof and floor penetration, patching, removal or fire stopping
- Necessary sheet rock replacement, ceiling tile, T-bar replacement and/or repair
- Any and all millwork (moldings, trim, etc.). All millwork or modifications to project millwork to accommodate the AV equipment is to be provided by others, unless otherwise noted in this proposal
- Painting, patching or finishing of architectural surfaces
- Permits (unless specifically provided for elsewhere in the contract)

- HVAC and plumbing relocation
- Rough-in, bracing, framing or finish trim carpentry for installation
- Cutting, structural welding, or reinforcement of structural steel members required for support of assemblies, if required
- Owner furnished equipment or equipment by others that is integrated into the systems (as described above) is assumed to be current, industry acceptable and in good working order. If it is determined that this equipment is faulty upon installation, additional project charges may be incurred.

DESIGN REVIEW AND APPROACH METHODOLOGY

Included in our quality control procedures is a methodical design review to ensure functionality and constructability. Our Lead Project Engineer will be responsible for internal design review, development, and coordination of engineering documentation as well as providing oversight of testing and commissioning.

During this phase, the information acquired during the needs analysis is developed into a technically sound and functional system design. The Project Engineer, along with the Team's Project Manager will perform a feasibility study. During the engineering and design process, the selection of the appropriate equipment, hardware and software is accomplished. The result of the engineering and design process is a system designed specifically to meet the requirements and environmental conditions that are unique to your application.

The goals for this phase of the project are:

- Verify initial design concepts
- Verify location of all devices
- Validation of the design's performance and concepts
- Provide any value engineering and performance enhancement recommendations
- Convert concept drawings to schematic, "build to" shop drawings
- Submit final shop drawings and hardware list for approval prior to procurement and construction.
- The documents created by the Systems Group engineering team include but are not limited to:
- Rack Elevations
- Patch Bay Elevations
- Lighting fixture locations
- Custom assembly details
- Panel details
- Verification of Conduit Requirements
- Verification of Junction Box Requirements
- Creation of Fabrication Documentation including wire numbers
- Verification of Wire Types
- Speaker Cluster Rigging Design
- Creation of accurate hardware/bill of quantities (BOQ) list
- Create cut sheet books for hardware items
- Provide other submittals as required



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Following the physical site survey, our Team will submit design review of all solution proposals (annotated shop drawings in MS Visio). The designated Client Project Manager will have 5 business days to review and provide comments. Our Team will then make corrections/address concerns and submit to the Project Manager for concurrence and approval within 5 business days from receipt of Project Manager Comments. <u>No installation will begin until designs are approved</u>.

TEST PLAN METHODOLOGY

The Team's Project Manager will develop a systems acceptance test plan (SAT) document with assistance from the Delivery Engineer that outlines standards to which the system will be tested, and will be provided with the design plan. The intent of the document is to provide the testing procedures that will be performed by our Team and witnessed by the Client staff for equipment acceptance. The tests will demonstrate the consistency between system design, functionality, and system installation performance of all the components adhering to requirements outlined in paragraph 3.03 (testing and Adjustments) in the RFP.

The Systems Acceptance Testing (SAT) Plan defines the methodology by which our Team will comply with the installation of devices and systems installation and functionality described in project specifications. It also includes visual inspection of all devices that verify proper assembly, leveling, mounting, fit and finish, and conformance to standard industry installation practices.

Test results, as-built drawings, equipment lists will include make/model/manufacturer/serial number and equipment layout drawings. This information will be delivered to the designated Project Manager during final acceptance. Equipment lists will be submitted in MS Excel and drawings (rack elevation face diagrams and system logical view) submitted in MS Visio.

The SAT Plan will be conducted in three stages:

- Pre-installation Component Test
- System Acceptance Test
- Final Acceptance Test

Tests will be performed after the system is placed into service and prior to system acceptance. The Team will provide an acceptance test report of the results of the testing accomplished under the acceptance test plan. Documentation will be provided and system will be accepted when tests have been completed, demonstrating that the system performs as specified in the RFP. It will also include visual inspection of all devices that verify proper assembly, leveling, mounting, fit and finish, and conformance to standard industry installation practices.

Our project manager will coordinate with the project team as required to complete successful testing and tuning of the system. Our factory trained service engineers' travel to the job site to commission the system. All installation work is thoroughly checked prior to "turn on". Errors or problems are corrected as detected and all equipment is adjusted for optimal performance in accord with the project specifications. The result of this work is the shortest possible final punch list. Our projects typically have short punch lists due to:



- Adherence to our quality assurance program
- Correcting site specific problems as they are detected
- Installation of fully tested and "burned in" electronic hardware
- Termination into fully tested and verified cabling and far end connections

PROJECT MANAGEMENT

The Project Manager, Nathan Wells, has the overall authority and responsibility for managing and executing this project according to this Project Plan and its Subsidiary Management Plans. The project team will consist of personnel from the installation group, engineering and programming group, quality control/assurance group and technical writing group. The project manager will work with all resources to perform project planning. All project and subsidiary management plans will be reviewed and approved by the project sponsor. All funding decisions outside of the scope of this project will be made by a designated Client Representative. Any delegation of approval authority to the project manager should be done in writing.

SCHEDULE MANAGEMENT PLAN

Project schedules for the AV System Replacement Project will be created and monitored by the Project Manager starting with the deliverables identified in the project's Work Breakdown Structure (WBS). Activity definition will identify the specific work packages which must be performed to complete each deliverable. Activity sequencing will be used to determine the order of work packages and assign relationships between project activities. Activity duration estimating will be used to calculate the number of work periods required to complete work packages. Resource estimating will be used to assign resources to work packages in order to complete schedule development.

Once a preliminary schedule has been developed, it will be reviewed by the project team and any resources tentatively assigned to project tasks. The project team and resources must agree to the proposed work package assignments, durations, and schedule. Once this is achieved the Client Project Representative will review and approve the schedule and it will then be base lined.

QUALITY MANAGEMENT PLAN

All members of the AV System Replacement Project team will play a role in quality management. It is imperative that the team ensures that work is completed at a top level of quality from individual work packages to the final project deliverable. The following are the quality roles and responsibilities for the AV System Replacement Project:

The Project Manager is responsible for quality management throughout the duration of the project. The Project Manager is responsible for implementing the Quality Management Plan and ensuring all tasks, processes, and documentation are compliant with the plan. The Project Manager will ensure acceptable quality standards. The Project Manager is also responsible for communicating and tracking all quality

standards (ie. Quality Control and Assurance Logs) to the project team and Client Project Representative.

RISK MANAGEMENT PLAN

The approach for managing risks for the AV System Replacement Project includes a methodical process by which the project team identifies, scores, and ranks the various risks. Every effort will be made to proactively identify risks ahead of time in order to implement a mitigation strategy from the project's onset.

RISK QUALIFICATION AND PRIORITIZATION

In order to determine the severity of the risks identified by the team, a probability and impact factor is assigned to each risk. This process allows the project manager to prioritize risks based upon the effect they may have on the project. The project manager utilizes a probability-impact matrix to facilitate the team in moving each risk to the appropriate place on the chart.

The most likely and highest impact risks are added to the project schedule to ensure that the assigned risk managers take the necessary steps to implement the mitigation response at the appropriate time during the schedule. Risk managers will provide status updates on their assigned risks in weekly project team meetings.

The risks for this project will be managed and controlled within the constraints of time, scope, and cost. All identified risks will be evaluated in order to determine how they affect this triple constraint. The project manager, with the assistance of the project team, will determine the best way to respond to each risk to ensure compliance with these constraints.

PRICING

Please see bid form for and for pricing. <u>Price quote is valid for 90 days from the submission date. This</u> proposal includes only hardware and services specifically outlined and detailed herein.

Please contact me with any questions.

We look forward to exceeding your expectations!

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