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DRAFT



LakeCounty



LAKE COUNTY TRAFFIC MANAGEMENT CENTER

BARCO CONTROLLER UPGRADE

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Submitted By:

AVI-SPL

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EXECUTIVE SUMMARY

Lake County is requesting an upgrade solution to replace the existing Barco controller system at the Traffic Management Center located at 600 Winchester Road in Libertyville, IL. Lake County has identified the requirement to support the Windows 10 operating system (OS) on the video wall and the current version of Java 8. AVI-SPL understands that the video wall and TMC supporting technology are part of a larger operation that enhances response times, reduces traffic impacts, and pushes collaboration of vital information. The new Barco controller system will include the hardware necessary to upgrade the Barco CMS software to the most current version CMS 3.1. Also Included is the Barco Software Care to support future updates of Barco and Java for the next three years.

AVI-SPL is recognized as an innovative leader in the collaboration and audio-visual (A/V) industry. Our core value lies in our depth of well-blended expertise, which includes a genuine passion for working with the industry's most advanced collaboration and A/V technologies. Our goal is making complex, advanced audio and video communications solutions easy to use and effective for our clients. The TMC System must be high performing, low maintenance, high reliability, and offers flexibility and expandability for 24x7x365 operations. Through a global network of offices and more than 1,600 employees, AVI-SPL's strong tradition of delivering valuable collaborative solutions continues.

For more than **30 years**, AVI-SPL has focused on excellence by highlighting the importance of positive customer relationships. Headquartered in Tampa, Florida, AVI-SPL has over 34 offices throughout the United States as well as international locations in the United Kingdom, Canada, and Dubai. This coverage provides full service A/V collaboration support with the broadest national footprint and global delivery model. We've steadfastly collaborated with architects, designers and end users, leading to the creation of collaborative environments to deliver exceptional experiences worldwide. We provide design, engineering, service, installation and training, and have an impressive track record for supplying quality product in a timely and professional manner.

PROPOSED BARCO SYSTEM UPGRADE

AVI-SPL is proposing the Barco processors, servers, and collaboration software upgrade for the Lake County TMC as a replacement of the existing video wall controller. The options will be outline herein for Lake County review and consideration.

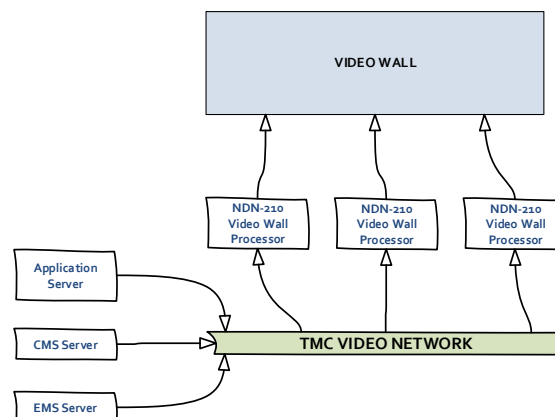


FIGURE 1 – VIDEO WALL SYSTEM DIAGRAM

BARCO VIDEO WALL CONTROLLER UPGRADE

The **Barco Transform-N** hardware and **Control Room Management Suite (CMS)** software create the next generation in video management, distribution, and display technologies. The proposed controller technology refresh includes engineering, procurement, installation, integration, testing and training. This new networked visualization solution will exceed the existing functionality. The Transform-N controller will have the ability to display up to thirty (30) simultaneous sources from the available MPEG-2, MPEG-4, or H.264 video streams and screen-scraped sources.

The concept of the Barco Transform-N solution is simple; digitize (encode) the video content, distribute that content via a multicast enabled network to one or one million endpoints to display the content. The digitized content is provided by Transform-N Input Nodes, software-based screen-scraping, or supported 3rd party encoders. The content is rendered by Transform-N Output Nodes, computers acting as “unmanned displays,” and even directly by the CMS control client.

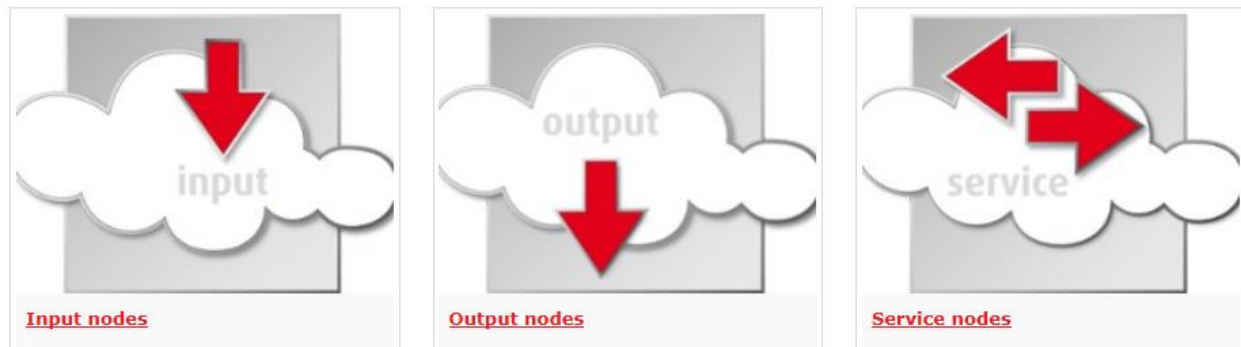


FIGURE 2 – TRANSFORM-N NODES

The *CMS Server* houses the software that delivers the core functionality of the networked visualization system. This software manages all hardware and orchestrates the collaboration and visualization of the information shared between the different displays in a network. **AVI will be providing the latest version of CMS (version 3.1).**

CMS 3.10 offers the following features above the current CMS 2.5.

- Improved Security - Everything has been switched to HTTPS, passwords have been improved, there are substantially fewer vulnerabilities, and enterprise patch management has been adopted.
- Hardware Support - Many more 3rd-party encoders are supported as well as new input and output cards.
- Network Security - fewer and more standard network ports are used for more straightforward firewall configuration.
- Nodes - A new HTML Render Node has been introduced to allow streaming of HTML5 webpages.
- Localization - Many new languages are supported.
- Imaging - Scaling and cropping of video and screen scrape sources has been enhanced.
- Audio - Support for audio encoding and decoding.
- LDAP - LDAP account management.
- OS Support - Windows 10 compatible.
- Compatible with Java 8

The solution has an extensive application programming interface (API) and the distributed functionality can be easily integrated into third-party applications. This API supports an IP based network connection and can define several different high-level functions including layouts. The API protocol is the same protocol used on the current system and will function with the ATMS system as currently set up.

The Application Server is a Windows PC to enable applications and web sources. The desktop of the application server gets screen scraped and is displayed on the NGP display wall. The load on the network is reduced since no video sources are included in the screen scraped content. The NGPs then render the video sources on top of the screen scraped desktop, at the position of the colored rectangles.

The EMS Server is part of Barco's innovative networked visualization solution and replaces the old Barco MGS. This component processes and redistributes up to 64 channels of streaming video. Compatible with a continuously growing list of encoders and cameras, the MGS Streaming Node combines versatility with best in class performance.

EMS-101 will be running on a standard enterprise class Dell R330 1U rackmount server.

Features and benefits

- Manages and harmonizes up to 64 channels and 300 Mbit/s of streaming video
- Pre-processes the streams on the fly and feeds them to Barco's universal decoders, guaranteeing low-latency processing
- Integrated watchdog functionality ensures high availability of the streaming video
- Continuously growing list of compatible encoders/cameras, including support for high frame rate and megapixel images
- Load reporting allowing higher level resource management
- Easy integration into 3rd party video management systems through URI based APIs
- Network stream conversion from unicast to multicast and vice versa
- Seamless touring over multiple sources
- Redundancy: Disk RAID and dual power supply

SYSTEM FUNCTIONALITY

With the new system, operators can define, select and share their own Perspective of a current situation with others. Looking at the same visual information allows for faster and more efficient communication and briefing, and hence for faster and smarter coordinated responses to incidents. Operators using the Sidebar client can view network-based sources directly on their workstation; compose layouts to be “pushed” to the video wall or to other displays throughout the facility. They can connect, control, and collaborate by using a wide variety of Sidebar decoration components.

These Decorators include the source name, dates and time, labels, logos and borders which are automatically detected. The user interface allows the operators to view sources by simply clicking on them, dragging and dropping to the respective display destination. It is easily mastered. Access to specific displays and sources can be controlled via user credentials and CMS supports Active Directory/LDAP integration for easy user management.

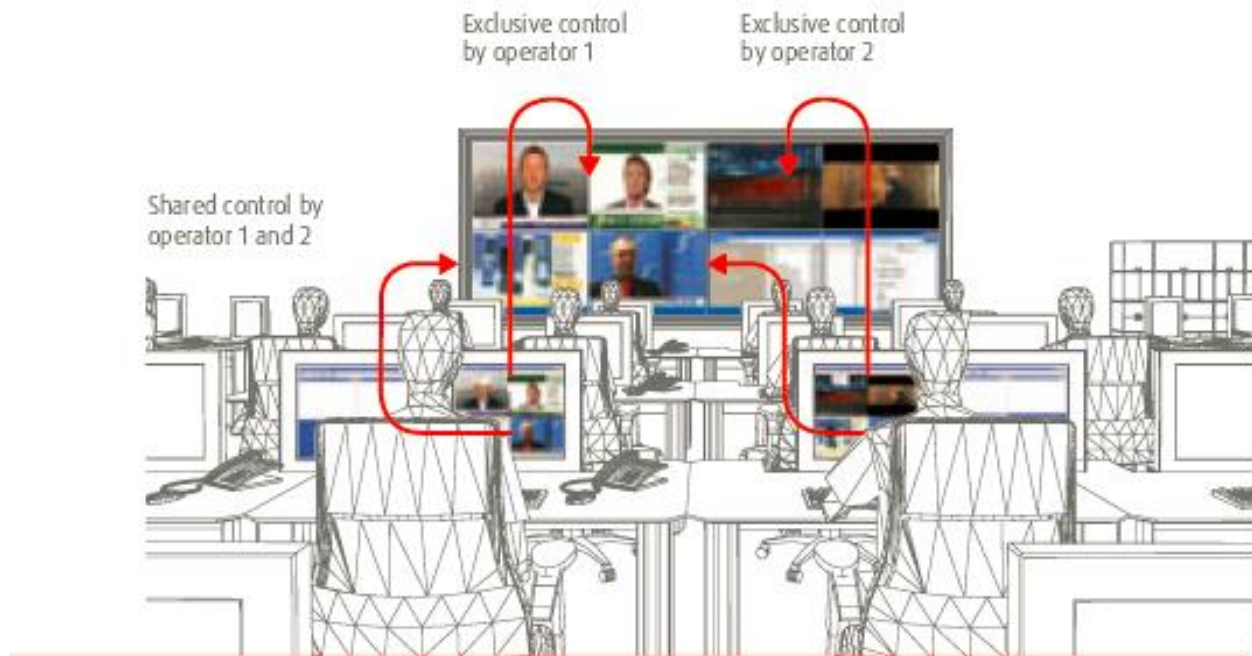


FIGURE 3 – CMS FUNCTIONALITY

The software provides instant access to your network-based sources anywhere in your facility, and removes all limitations to ensure efficient control room collaboration. All available network-based sources can be selected and previewed in full quality from the source list in the Sidebar. Standalone informational displays, or “unmanned displays,” can easily be added to the system with the addition of the display and a computer with access to the network meeting specifications to run the “Display Agent.”

PROJECT MANAGEMENT

AVI-SPL’s Project Manager (PM) will have the overall daily responsibility for the project and will be responsible for the project management and coordination with Lake County and others as necessary, management of time and resources and documentation. The PM will maintain complete and accurate project records in hard and electronic copy of all activities and any other events relating to the contract.

All projects delivered by the AVI-SPL will be managed using the below Methodology Framework which defines the high-level phases through which all projects are managed. The five (5) project phases which comprise the Project Management Methodology Framework are:

- Discovery
- Design
- Planning and Procurement
- Implementation
- Support



Methodology Framework

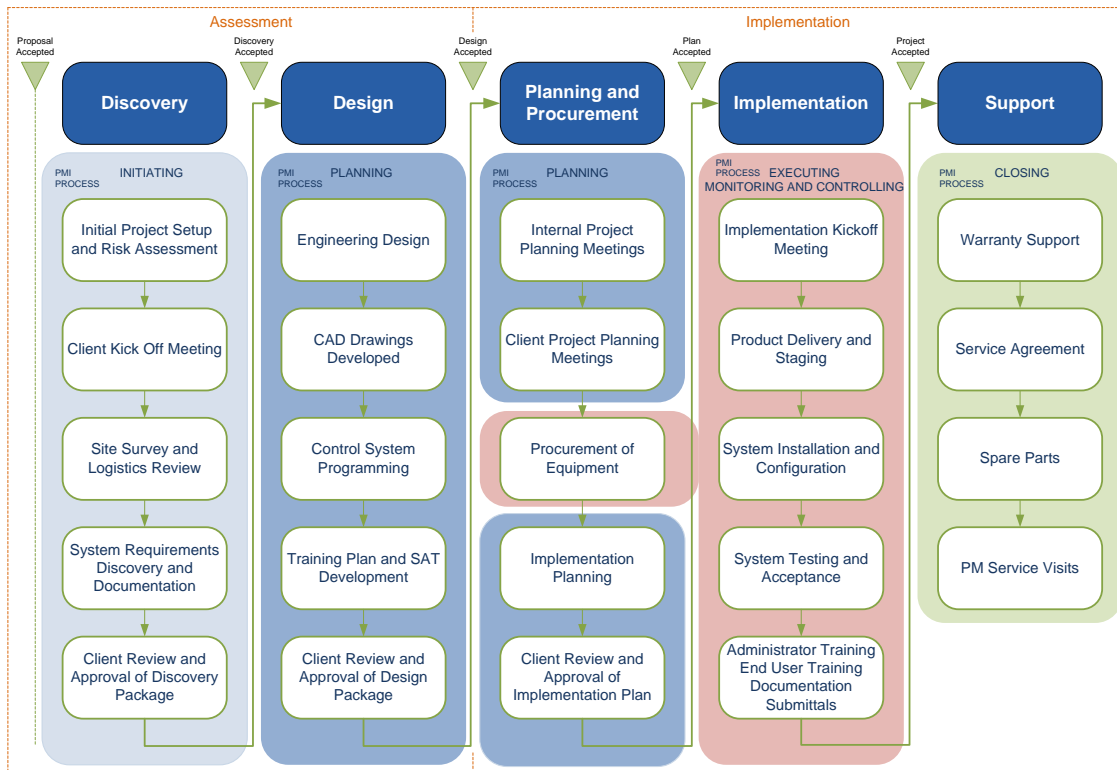


FIGURE 4 – PROJECT MANAGEMENT METHODOLOGY FRAMEWORK

STATEMENT OF WORK

We have assessed Lake County's request and developed the following response that conforms to those needs, and have an implementation plan that will integrate and support a solution meeting those needs. AVI-SPL understands the unique access and connectivity requirements associated with this request, and as such the Barco controller upgrade will be comprised of the following:

1. Coordinate daily activity and downtime of the System
2. Turn the system off, disconnect the existing processor, CMS server, Application server and Media Gateway server, and remove from rack
3. Install the new processors and servers in the rack
 - a. Three (3) NDN-210 Controllers, CMS Server, Application Server and EMS Server.
4. Interconnect the video wall, new processor, and sources
5. Test the system and upon completion, turn over for sign-off
6. Develop a set of installation drawings for this project that will include, but not limited to:
 - a. Title and index
 - b. Power, grounding, signal wiring details and cable labeling
 - c. System functional diagrams/video system flows etc.
 - d. Rack elevations
7. Provide one (1) year warranty after customer sign-off
8. Provide Customer Care Support under the existing contract 4/9/2018 to 4/8/2019

SYSTEM INSTALLATION AND CONFIGURATION

Our team breaks down this task into manageable phases as follows:

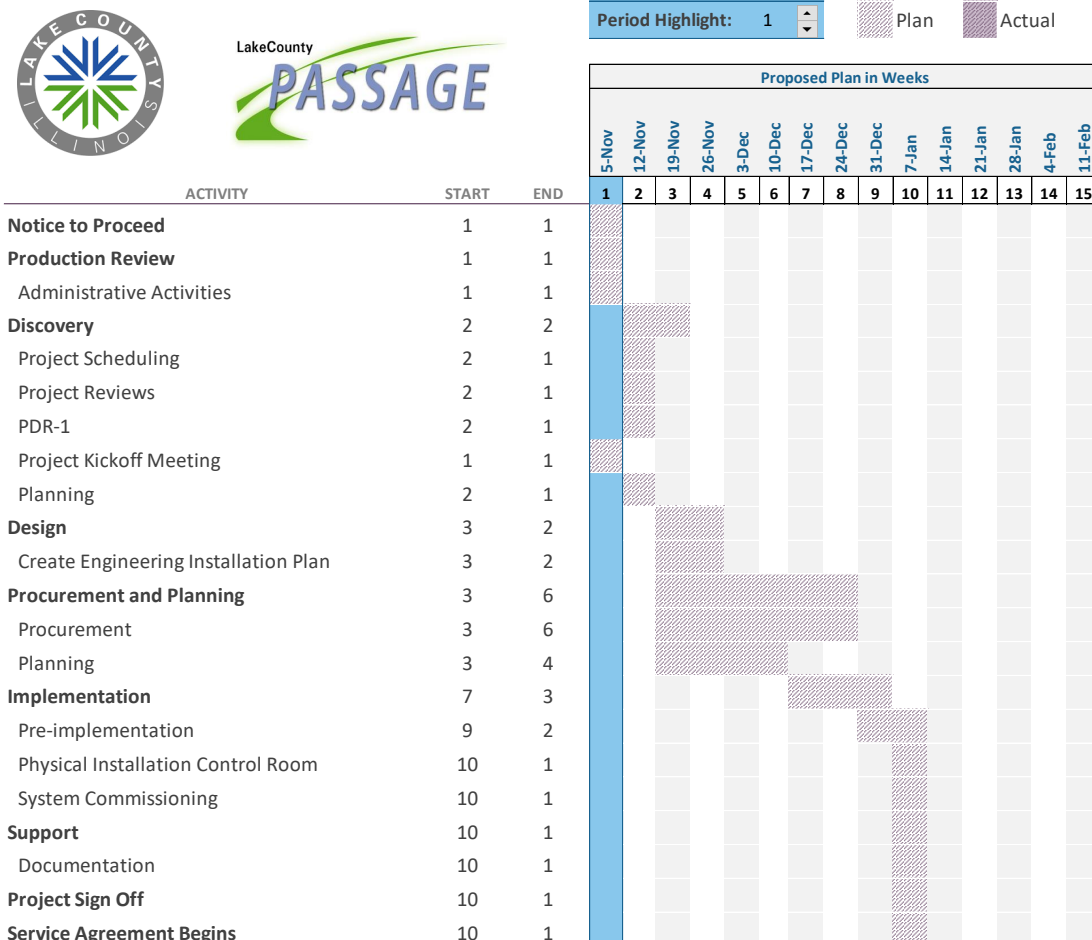
- Video Display System Installation
- A/V Rack Installation
- Interconnectivity and Integration
- System Testing and Training

PROJECT CLOSE-OUT

Our “As-built” package includes the revised/updated Construction Documents with all field changes plus the following:

- “As-built” drawing set in PDF format
- Equipment Manuals
- Support Contacts and Procedure

PROJECT SCHEDULE



TRAINING

We are also including a hands-on training session on operation and maintenance of the video wall system in this proposal. The training will include an overview of the system architecture and operator functionality (use of the system). User manuals and other AVI-SPL developed materials for the training session will be included in the price quotation for the controller upgrade.

SYSTEM ACCEPTANCE TEST PLAN (ATP)

The intent of the System Acceptance Test Plan (ATP) is to demonstrate the consistency between system design, functionality, and system installation performance. In addition, the Test will act as the record for all tests of the systems and sub-systems. This Systems Testing Plan defines the methodology by which AVI-SPL complies with the installation of devices and systems compared to the expected functionality described in the above proposal.

FINANCIAL INVESTMENT

Barco Video Wall Controller Upgrade

Includes controller cables, & connectors to ensure a complete and operational system. Includes one (1) year manufacturer warranties and one (1) year of unlimited phone support. Customer Care Support will be provided under the existing contract from 4/9/2018 to 4/8/2019.

Supervised Installation and Professional Integration Services - Includes documentation, CAD, supervised on-site installation and integration, coordination, testing, checkout, owner training, etc. performed on the Owner's premises. Contractor to provide all fabrication, modification, assembly, and rack wiring, etc., Includes non-equipment or labor costs such as travel expenses. Includes all shipping & insurance expenses.

Barco Video Wall Controller Upgrade - \$ 49,572.88

Manufacturer	Model	Description	Qty	Unit Price	Extended Price
BARCO	BARR9821005B	DISPLAY NODE LITE, TFN NDN-210 GS-35F-0275S	3	\$3,904.51	\$11,713.53
BARCO	BARR983841001	CONTROLLER, TRANSFORM NSD-410 SINGLE DISPLAY GS-35F-0275S	1	\$7,321.23	\$7,321.23
BARCO	BARR7600125	SERVER, TFN R330-D1 GS-35F-0275S	2	\$3,628.77	\$7,257.54
BARCO	BARR9805137	WARRANTY, CMS SOFTWARE CARE to 4/8/2019 Open-Market	1	\$3,413.24	\$3,413.24
AVI-SPL	MISCMATERIALS	MISC MATERIALS Open-Market	1	\$410.81	\$410.81
AVI-SPL	Professional Services	Engineering, Project Management, CAD, Programming, and Technician Labor GS-35F-0275S	1	\$19,456.53	\$19,456.53
Total					\$49,572.88

TERM AND CONDITIONS

Applicable to all quotations by Audio Visual Innovations Inc., herein referred to as the Company.

1. Acceptance of Terms

This quotation shall not be binding upon the Company until signed by the Buyer and accepted in writing by a duly authorized representative of the Company. Any modification, addition to, or waiver of any of the terms and conditions of this quotation shall not be effective unless in writing and signed by an authorized representative of the company, and any different or conflicting terms appearing in Buyer's purchase order or other documents are expressly rejected by Company. Buyer's receipt of the Equipment shall constitute assent to all terms and conditions contained herein. No relaxation, forbearance or indulgence by the Company in enforcing any of the terms and conditions of this agreement or the granting of any time to any other party shall prejudice or restrict the rights and powers of the Company hereunder, nor shall waiver of any breach hereof operate as a waiver of any subsequent or continuing breach hereof.

2. Delivery

The company will use its best efforts to deliver the Equipment, herein defined as the total deliverable as defined in the quotation, in accordance with the Buyer requested delivery date subject to receipt of all necessary information from Buyer. Shipping dates are approximate only, and the Company shall not be liable for delays or for failure to manufacture due to causes beyond its reasonable control or due to compliance with any government regulations.

Any delay shall extend delivery dates to the extent caused thereby. Buyer shall reimburse the Company its additional expenses resulting from any Buyer-caused delay. When delivery of the Equipment is delayed at the request of the Buyer and the equipment has already been shipped to the Company, the Company will place the Equipment in storage and the Company will immediately invoice the Buyer 70% of the price, which will be promptly paid. The buyer shall have no right to cancel or rescind this agreement by reason of an excusable delay as defined herein, and shall accept such delayed performance by the company. The Buyer's receipt of the Equipment shall constitute a waiver of any claims for delay.

3. Payment Terms

Unless otherwise specified herein, the total contract price shall be paid as follows: **50% down payment at time of order, 40% upon delivery at Company; 10% upon completion or first beneficial use.** Unless otherwise specified, equipment is sold F.O.B. origin-Buyer to pay all shipping charges. If this quotation covers equipment for more than one system, room, suite, or location, for purposes of payment in accordance with payment terms stated on the face hereof each room, suite, or location shall be treated as if the subject of a separate sale and payment made accordingly. Company shall not be liable for failures of or delays in manufacture, delivery or installation resulting from any cause or causes beyond its reasonable control.

4. Buyer In Arrears Or Default

In the event Buyer is in arrears with any payment whatsoever due from it to the Company at any time whatever, whether in respect of the purchase price or any other amount due from the buyer to the Company under the terms of this agreement, the amount in arrears shall bear interest at three (3) percent above the prime rate prevailing at the principal New York branch of Chase

Manhattan Bank as from the date each amount falls due, pending actual payment thereof in full, without prejudice to any relief and remedy available to the Company. In the event of Buyer's default, the Company may, without notice, peaceably enter any premises in which the equipment is located and remove, hold and sell it in accordance with applicable law, to satisfy in whole or in part Buyer's obligations.

5. Title, Risk of Loss

Title to the Equipment shall pass to Buyer upon delivery, subject to a purchase money security interest retained by the Company in the Equipment sold and the proceeds thereof until payment of all amounts then due to the Company. The Company shall be entitled to remove the Equipment from the buyer's premises if all payments are not made when due. Buyer agrees to execute financing statements under the Uniform Commercial Code or other documents as the Company requests to protect its security interest. Risk of loss or damage to the Equipment or any part thereof shall pass to the Buyer upon delivery.

6. Installation & Site Preparation

Installation (field assembly, interconnection, equipment calibration and checkout) is to be performed by the Company's trained technical employees. The Company shall be entitled to employ sub-contractors and/or agents to assist in or carry out, in whole or in part, the installation. In the event installation by Company employees is prevented by trade unions, the Buyer shall arrange with the trade unions at its own expense to complete installation. The Company is thereafter liable only for engineering supervision of installation.

The Company shall coordinate and cooperate with other trades to facilitate satisfactory work progress. If the Company's work in progress is impeded by other trades and/or contractors (excluding the Company's own subcontractors) or by scheduling delays due to the Buyer, time delays in the final installation as well as additional charges including labor, travel and reasonable expenses may result.

The Buyer shall be responsible for preparing, at its own expense, the installation site in accordance with the company's instructions, including the requirements specified in the quotation. In no event shall the Company be responsible for any high voltage electrical work, ceiling modifications, structural modifications, or mechanical systems modifications. Unless otherwise specified, Buyer shall provide the Company with source code for any non-Company programmed remote control system required to be modified under the terms of this agreement.

The Buyer shall provide the Company with reasonable access to the installation site before delivery, for purposes of determining site readiness for installation, and shall designate an individual on Buyer's staff to serve as a contact person for all site preparation and installation issues. Buyer shall provide the Company with free access to the installation site for the purpose of preparation for installation. The buyer shall indemnify the Company against any loss, damage or claim arising out of the condition of the storage and installation premises.

Buyer shall obtain at its expense and keep effective all permissions, licenses, and permits whenever required in connection with the installation and/or use of the Equipment and the premises where the Equipment shall be situated.

7a. Warranty

In the event the Equipment is in any way misused or altered or is repaired by someone other than a representative of the Company, which within the sole judgment of the Company results in an adverse effect, including effects upon performance or reliability of the Equipment, the warranty and the Company's obligations hereunder shall terminate without notice to Buyer.

7b. Warranty Service – Chargers

Warranty service will be provided in accordance with the Company's standard service terms. Where such terms are inconsistent with the terms herein, the terms herein will govern. Unless otherwise specified, each installation/system carries a ninety-day warranty covering defects in the installation portion of the sale. Components and materials carry the manufacturer's warranty as described below, which may be greater than the ninety-day listed above. The Company will attempt to reply to warranty service requests received from Buyer prior to 1:00 p.m. within forty-eight hours. In the event service is provided outside of normal working hours, Buyer will be charged for any overtime hours in accordance with the Company's then standard policy on overtime rates. Normal working hours are 9 a.m. to 5 p.m., Monday through Friday, excluding legal holidays.

8. Limitations Of Warranty – Products Of Others

Unless otherwise specified, No warranty whatsoever is provided by the Company hereunder as to products manufactured by other than the Company, including but not limited to, cables, lamps, batteries, glassware, and evacuated devices (including valve, cathode ray tubes, and other special electron tubes).

The Company's sole obligation with respect to any material or part identified in the quotation, literature, or specifications furnished to the Buyer as manufactured or supplied by others, shall be to pass on to the Buyer the applicable manufacturer's warranties, if any.

9. Buyer Responsibilities

Buyer or any user of the Equipment shall (i) notify the Company as soon as any unusual operating peculiarity appears, and (ii) operate the Equipment in a safe and competent manner in strict compliance with established safety operating procedures and applicable laws and government regulations. In the event the Buyer or any user of the Equipment fails to comply with any of the above-stated conditions, the Company's warranties and its obligations hereunder shall terminate without notice to Buyer.

10. Limitation Of Liability

The foregoing warranties are exclusive and in lieu of all other warranties, whether written or oral, implied or statutory. No implied warranty of merchantability or fitness for a particular purpose shall apply; in no event will the company be liable for any damages, other than the allocable charges paid by the buyer for the equipment, whether direct, indirect, special, incidental or consequential, arising from any warranty claims.

11. Taxes

Any and all taxes levied or based on the prices in this agreement, or the Equipment being sold hereunder, exclusive of any taxes based on net income, shall be added to the selling prices set forth in the quotation; otherwise, the Buyer shall provide the Company with a tax exempt certificate acceptable to the taxing authorities.

12. Choice Of Law And Severability

This agreement shall be interpreted in accordance with and governed in all respects by the law of Florida. Venue shall be Hillsborough County, Florida. Should any provision of this agreement be found invalid or unenforceable by a court of competent jurisdiction or by operation of any applicable law, it shall not affect the validity of any other provision contained herein. In the event of litigation relating to the subject matter of this Agreement, the non-prevailing party shall reimburse the prevailing party for all reasonable attorney fees and costs resulting therefrom.

13. Restocking Fees

In the event Buyer wishes to return any Equipment based on reasons outside of the Company's control, Buyer agrees to pay any and all restocking fees.

14. General

The quotation shall be firm for the period shown on the face hereof, subject to withdrawal or change by the Company upon notice at any time prior to acceptance of an order. It supersedes all prior agreements and understandings between the parties relating to the subject matter and is intended by the parties as the complete and exclusive statement of the terms of the quotation and agreement. Any representation, affirmation of fact, course of prior dealings, promise or condition in connection shall not bind the parties therewith or usage of the trade not incorporated herein.

Accepted for **AVI-SPL** by:

Accepted for **Lake County** by:

Signature _____

Signature _____

Print Name _____

Print Name _____

Title _____

Title _____

Date _____

Date _____