



"A Corporate Technology Solutions Company"

PHOENIX

TUCSON

SALT LAKE CITY

PROJECT NAME

City of Flagstaff
Council Chambers Audio Visual System Quote
(Revision #3 01/19/21)



Paul Santana

Scope of Work and Proposal

Due Date:
1/19/2021

Respectfully Submitted By:
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Access Control • Audio/Visual • CCTV • DAS • Fiber Optics • Fire Alarm • Intercom • Nurse Call • Security • Structured Cabling • WiFi

SCOPE OF WORK

Audio System Scope:

CTS will provide and install a new Audio System for the Council Chambers using a Shure Discussion System with Biamp Digital Sound Processor and Crestron Control System. CTS will remove the existing audio components from Council Chambers, with the exception of the existing speakers and cabling. CTS will also remove the existing Presenter Timing System.

Audio:

CTS will install a Biamp TesiraForte DSP digital sound processor in the existing Audio Rack. All microphone inputs and the audio inputs from the Room PC and Presenters PC will be connected to the DSP's inputs as well as the inputs from the conference room. The DSP will be configured to provide (6) separate Audio outputs (Main Room Audio, Dais Discussion Speakers, Conference Room, PC Video Conferencing Audio, Streaming Service Audio and VOIP Transmit Level). The DSP will be provisioned for auto echo canceling mixing so the video conferencing and VOIP calls will not have echoes or feedback from either the far end or the near end. CTS will also provision the DSP for multiple EQ'ing of the mics, inputs and outputs to provide optimal audio levels throughout the audio system and streaming outputs. From the DSP, CTS will install a new Electro-Voice 4 Channel Audio Amplifier replacing the two existing Crest amps to drive the Council Chambers Speakers and the Speakers in the Conference Room.

AT the Dais, CTS will install (16) Shure Discussion Unit Bases / Microphones with Speaker and Speak/Mute Buttons to be installed around the Dais and the Presenters Table as well as the City Clerk Station. Each unit will have a 20" Microphone with LED Indicator of the mute status.

Control:

CTS will install a Crestron Control System that will control the Audio System and allow the volume level adjustments of the Microphones, Inputs and the Volume levels of the room. AT the City Clerk Station, CTS will provide (1) Crestron 15" Touchscreen with Custom programming. This Touchscreen will have control of the audio levels and have control of the Presenters Timer System. This touchscreen will also be the VOIP system interface for making and receiving phone calls.

CTS will install on the Table of the Conference Room (1) 7" Touch Screen that will control the conference room TV and Room Audio Levels.

Timing System:

CTS will program the Crestron Control System to perform the Timing System function replacing the old system at the City Clerks Location. New System will be controlled through the City Clerks new Crestron 15" Touchscreen. Timer functions will be to set speaker timer deration, start and stop and reset. On the Clerks Touch screen there will be buttons for each of these functions with a readout of the current timer state along with the count down timer and led indicators of the yellow 1-minute wrap up light.

In front of the Mayor's seat CTS will remove the existing LED lights and replace it with a 22" Monitor. This screen will be programmed as a display of the timer status and will show the presenters speaking timer count down along with the Wrap up indicators and Time and Date. When Not in use as a timer display it will show Flagstaff Seal and Time and Date. At the Presenters Table, CTS will install another 22' display mirroring timing system and will be installed on the face by the Presenter's location were the Council members can see as they look at the presenters table.

VOIP Telephone:

CTS will provide programming labor to integrate the DSP and Control System into the Cisco VOIP system allowing the Touchscreen to be used to dial calls and the DSP to be used as the for the VOIP SIP Phone so the room microphones and speakers can be used for conference calls in addition to web conferencing.

Video Conferencing:

The room already has this functionality so CTS will just be connecting the audio to and from the PC / Codec to have the audio integrated into the new system.

Streaming:

The room already Streaming functionality so CTS will provide a dedicated line level out to the Streaming Codec.

Training:

CTS will provide up to 6 hours of onsite system training at the completion of the installation. CTS will also be present for the 1st Council Meeting after the installation to insure everything runs smooth and that the Council Members and Clerk are comfortable with the new system.

Optional Services:

Replace Video System Projectors and Switching:

CTS will provide (2) New 82"-86" Consumer Grade Displays with RS232 control capabilities in place of the existing projection screens. CTS will also install (2) 65" Displays for the audience viewing. The two 65's will be installed on tilting pole mounts hanging from the beam structure above the audience.

At the Presenters Table CTS will install new (1) New Crestron 4X2 HDMI Switcher with an 1X4 Distributions amp that will feed HDBT Transmitters that will send signals from the Presenters Table up to the new Displays where CTS will install HDBT Receivers.

CTS will program control and switching functions into the Creston Control System and provide additional programming for the City Clerk location Touchscreen for the control of the Video System.

Add Crestron Flex with MS Teams Integrator Kit to the room

*Please see bottom for complete list of materials

Assumptions

- Existing 120 Volt Power Outlets will be utilized for new AV System
- Existing Pathway between the TV and the Table will be reutilized for new cabling.
- COF IT will provide IP addresses and configuration for system to communicate on.
- COF IT will provide local PoE Network Switch for system to connect to.

Exclusions

- 120V Power Outlets and Conduits
- Painting and Patching or Drywall Repairs

**MAIN AUDIO SYSTEM
PRICING SCHEDULE**

Materials	32,595.00
Labor	11,793.00
S & H	652.00
Sub Total	45,040.00
Tax Rate	9.180%
Material Tax	3052.07
Labor Tax	0.00
Travel	955.00
Total	49,047.07

**VIDEO SYSTEM & FLEX MTR
PRICING SCHEDULE**

Materials	21,622.00
Labor	6,384.00
S & H	433.00
Sub Total	28,439.00
Tax Rate	9.180%
Material Tax	2024.65
Labor Tax	0.00
Travel	655.00
Total	31,118.65

Payment Terms: Net 30

Material: FOB – Project Site

Tax: MRRRA Taxes are included in Project Total

Print Name: _____

Accepted by: _____

Title: _____

Date: _____

P.O. # _____

Billing
Address: _____



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BILL OF MATERIALS LIST

Quote: 19357-AV Rev.3
 Date: 01/19/21
 Estimator: Kevin Livingston
 Sales: Kevin Livingston
 Customer: City of Flagstaff
 Job Name: Council Chambers Audio System

PRODUCT	PART NUMBER	DESCRIPTION	UOM	QTY
SECTION 1	CTS	ROUGH IN/HORIZONTAL		
Windy City	CAT5P-BLK	Cat5E Unshielded Plenum Black	LF	1,000
SECTION 2	CTS	CONNECTIVITY		
Biamp	Tesira EIC-4	4 channel mic/line input card	EA	2
Biamp	Tesira EX-MOD	Modular expander that supports up to 3 expander cards	EA	1
Biamp	TesiraCONNECT TC-5	5-port AVB expansion device	EA	1
Biamp	TesiraFORTÉ AVB VT	DSP with 12 In X 8 Out with AVB USB AEC and 2 VOIP Lines	EA	1
Crestron	CEN-SW-POE-5	5-Port PoE Switch	EA	1
Crestron	CP4N	4-Series Control System With Control Subnet	EA	1
Crestron	DGE-100	Digital Graphics Engine 100	EA	1
Crestron	HD-DA2-4KZ-E	1:2 HDMI Distribution Amplifier w/4K60 4:4:4 & HDR Support	EA	1
Crestron	TS-1542-TILT-B-S	15.6 in. HD Touch Screen, Tabletop Tilt, Black Smooth	EA	1
Crestron	TS-770-B-S	7" Touch Screen, Black Smooth	EA	1
Electro-Voice	CPS4.5 120V	4-Channel Power Amplifier, 4 x 500W into 2, or 4 Ohms, or 70V/100V	EA	1
Planar	PCT2265	Touch Screen 22" LED LCD Full HD Resolution Monitor	EA	2
Pro Co	SMM10	XLR CABLE 10' MALE TO FEMALE	EA	5
Shure	MXC605	Discussion Unit Base with Speaker and Speak/Mute Buttons	EA	16
Shure	DIS-CCU-US	Central Control Unit for DDS 5900 or DCS 6000, US Power Supply	EA	1
Shure	EC 6001-03	10 m black shielded Cat5e U/FTP cable (shielded RJ45)	EA	16
Shure	EC 6001-30	30 m black shielded Cat5e U/FTP cable (shielded RJ45) E	EA	2
Shure	EC 6001-50	50 m black shielded Cat5e U/FTP cable (shielded RJ45) EC	EA	2
Shure	GM 5924	Cardioid 20 inch Gooseneck Microphone With Red Mic Active Indicator LED	EA	16
Shure	SLXD14/85	SLX Series Single-Channel Wireless Bodypack System with WL185 Cardioid Lavalier Mic	EA	2
Shure	SLXD24/SM58	SLX Series Single-Channel Wireless Mic System with SM58 Handheld	EA	2
Shure	UA844SWB	4-Way Antenna Distribution System for SLX Receivers	EA	1
SnapAV	B6-4K-1	Binary B6 Series 4K Ultra HD Premium Certified High Speed HDMI Cable with GripTek - 1M (3.28FT)	EA	2
SnapAV	B8-FIBER-4KHDR-40	Binary™ B8 Series Active 4K Ultra HD with HDR High Speed Fiber Optic HDMI Cables	EA	2
SECTION 3	CTS	CABLE SUPPORT/PATHWAY/CONDUIT		
SECTION 4	CTS	EQUIPMENT ROOM BUILD OUT(S)		
SECTION 5	CTS	FIBER OPTIC AND COPPER BACKBONE SYSTEM		
SECTION 6	CTS	TESTING AND PROGRAMMING		
Labor Only	CTS	Crestron Programming	EA	1
Labor Only	CTS	DSP Programming	EA	1
SECTION 7	CTS	PRECON/PROJECT MANAGEMENT/FINAL DOCS		
Labor Only	CTS	Project Management Hours	EA	1
SECTION 8	CTS	MISC. ITEMS		
CTS-AV	CTS - AV Misc.	Misc - AV Interconnect, Hardware and Materials	EA	1



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BILL OF MATERIALS LIST

Quote: 19357-AV Rev.3
 Date: 01/19/21
 Estimator: Kevin Livingston
 Sales: Kevin Livingston
 Customer: City of Flagstaff
 Job Name: Council Chambers Video System with TV's
 and Crestron Flex MTR

PRODUCT	PART NUMBER	DESCRIPTION	UOM	QTY
SECTION 1	CTS	ROUGH IN/HORIZONTAL		
Crestron	DM-8G-CRIMP-WG	DM-8G-CONN-WG Connectors	EA	10
Crestron	DM-CBL-8G-P-SP1000	DigitalMedia 8G Cable, plenum	LF	1,000
Windy City	CAT5P-BLK	Cat5E Unshielded Plenum Black	LF	200
SECTION 2	CTS	CONNECTIVITY		
Covid	9TBF-0119 -	9-Pin D-Sub Female Connector, Terminal Block Type	EA	8
Crestron	CEN-IO-COM-102	Wired Ethernet Module with 2 COM Ports	EA	2
Crestron	HD-DA4-4KZ-E	1:4 HDMI® Distribution Amplifier w/4K60 4:4:4 & HDR Support	EA	1
Crestron	HD-MD4X2-4K-E	4x2 4K HDMI Switcher	EA	1
Crestron	HD-RX-101-C-E	DM Lite HDMI over CATx Receiver, Surface Mount	EA	5
Crestron	HD-TX-101-C-E	DM Lite HDMI over CATx Transmitter, Surface Mount	EA	5
Crestron	UC-CX100-T	Flex MTR Dual - 10.1" TS 1070, UC Engine, Dual Display Kit, Integrator Audio Solution	EA	1
LG	65UT640S0UA	65" Class UHD Commercial TV	EA	2
LG	82UN8570PUC	82" LED Consumer Display	EA	2
SnapAV	B6-4K-1	Binary B6 Series 4K Ultra HD Premium Certified High Speed HDMI Cable with GripTek - 1M (3.28FT)	EA	6
SnapAV	B6-4K-2	Binary B6 Series 4K Ultra HD Premium Certified High Speed HDMI Cable with GripTek - 2M (5.56FT)	EA	4
SnapAV	SM-CEILING-T-L	Strong™ Ceiling Mount with 1-½" NPT - 37-70" Displays	EA	4
SnapAV	WB-300-IP-3	WattBox® IP Power Conditioner (Compact) with OvrC Home 3 Controlled Outlets	EA	1
snapAV	WB-400-CE-10	WattBox Power Conditioner with Coax and Ethernet Protection 10 Outlets	EA	1
SECTION 3	CTS	CABLE SUPPORT/PATHWAY/CONDUIT		
SECTION 4	CTS	EQUIPMENT ROOM BUILD OUT(S)		
SECTION 5	CTS	FIBER OPTIC AND COPPER BACKBONE SYSTEM		
SECTION 6	CTS	TESTING AND PROGRAMMING		
Labor Only	CTS	Crestron Programming	EA	1
SECTION 7	CTS	PRECON/PROJECT MANAGEMENT/FINAL DOCS		
Labor Only	CTS	Project Management Hours	EA	1
SECTION 8	CTS	MISC. ITEMS		
CTS-AV	CTS - AV Misc.	Misc - AV Interconnect, Hardware and Materials	EA	1
CTS-AMZ	AgriPro Southwire 64817150'	Black Extension Cord	EA	3

CTS STANDARD PROVISIONS

All OSP (outside plant cabling) are estimates only. CTS will verify the actual lengths prior to installation with true tape and provide a credit or cost impact document before the installation.

Any additional work not specified in this scope of work or any additional work request from customer will result in a CTS change order.

This proposal pricing is good for a period of 30 days unless otherwise noted.

Where material prices fluctuate, CTS reserves the right to adjust pricing if there are changes in material pricing. Written documentation from our suppliers to verify this condition can be provided.

Customer is responsible for any freight charges if the customer requests an expedited time frame.

CTS will require a project schedule showing all times the facility will be available. Including but not limited to, facility events, closures or limitations that may affect continuous work. Without a schedule, there is no way for CTS to commit to an end date for completion. Delays in the schedule will delay the completion date. Any requested overtime to improve the completion date will constitute a change order.

Any schedule changes or project delays due to work areas not being available during the scheduled time, and or any other interruptions outside of CTS control, including but not limited to delay by other trades or customer could result in additional cost to customer. Written notification is required 5 days prior to any schedule changes.

This SOW assumes normal day shift of 8 continuous working hours between 5am and 5 pm, unless otherwise specified and agreed to in writing. Any work outside of this time frame may be subject to additional shift premiums.

This SOW includes one mobilization only. Changes that required additional starts and stops may be subject to additional charges via a change order. This would include, but not limited to, storage, equipment rentals, travel expenses, and other expenses incurred.

This quotation assumes that all existing and new conduits are properly sized with pull string installed and that any new conduits, pathways, wire mold, power poles, core holes, sleeves, and floor boxes, not mentioned in the above scope of work, will be provided and installed by other vendors and will be ready prior to cable installation.

Phone Systems, Network Devices, Active Equipment are not included, unless otherwise stated in the scope of work. Any other Control Components are NOT included in this proposal as directed, unless otherwise specified. It is the assumption that the owner will provide its own system to perform the functions as needed.

Patch Cords are not included unless otherwise stated in the scope of work.

All Contracts and/or Purchase Orders will be subject to monthly progress billings.

Retention dollars are to be paid within 60 days after the completion of our original scope of work, regardless of the total job completion.

Any project valued at \$2500 or above is subject to a pre-lien.

Effective Jan 1, 2015, customer is responsible for supplying CTS with Arizona Transaction Privilege Tax Exemption Form (TPT 5000) or Prime Contractor's Certificate (TPT 5005) as applicable.