BIDS AND AWARDS COMMITTEE FOR GOODS, SUPPLIES, AND SERVICES

November 29, 2021

Bid Bulletin No. 1
Modification in Technical Specification

This Bid Bulletin no. 1 is issued to modify or amend items in the Bidding Documents for project "**Re-Bidding: Supply, Delivery, and Installation of Sound System for E-Library Building**" with reference no. **G-2021-33**. This shall form an integral part of the said Bidding Documents.

I.   Section VII. Technical Specifications

Please see attached "new form" for the Technical Specifications

This Supplemental/ Bid Bulletin no. 1 is issued this 29th day of November, 2021 for guidance and information of all concerned.

Dr. DOLLY P. MAROMA
Chairperson, BAC for Goods, Supplies & Services

Received by the Bidder:

_____
Signature over printed name/ Company
Date and time: _____

Section VII. Technical Specifications

Item	Description	Qty./ unit	Statement of Compliance
SOUND SYSTEM			Bidders must state here either "Comply" or "Not Comply" against each of the individual parameters of each Specification stating the corresponding performance parameter of the equipment offered. Statements of "Comply" or "Not Comply" must be supported by evidence in a Bidders Bid
1	**THEATER HALL**	**1/lot**	
	I. VIDEO SYSTEM		
	Video Projector	**1/unit**	
	• 15K lumens WUXGA Laser 3LCD Projector		
	• Contrast ratio: 2,500,000:1		
	• Aspect ratio: 16:10		
	• Native Resolution: 1920 x 1200		
	• HD Images with 4K Enhancement; Flexible 360° installation		
	WARRANTY: Five (5) years		
	Middle Throw Zoom Lens	**1/unit**	
	• WUXGA: 2.68-4.10		
	• Zoom Ratio: 1-1.5		
	• Screen size 60" to 500"		
	• Focal Length: 55.43mm-83.3mm		
	• F-Number: 1.81-2.4		
	WARRANTY: Five (5) years		
	4X4 4K HDMI Matrix Switch	**1/unit**	
	• Supports 4K resolutions up to UHD (3840 x 2160) and DCI (4096 x 2160)		
	• Refresh rates: 30 Hz (4:4:4) and 60 Hz (4:2:0)		
	• Multiple Control Methods – system management via front-panel pushbuttons, IR remote and RS-232 control		
	• Supports Dolby True HD and DTS HD Master audio		
	• Signaling rates up to 3.4 Gbits for flawless 4K output		
	WARRANTY: One (1) year		
	Motorized Projector Screen	**1/unit**	
	• 400" Diagonal		
	• 16:10 Aspect Ratio		
	• Viewing Area 8616mm x 5385mm		
	• Product Height 6560mm		
	WARRANTY: One (1) year		
	HDMI Extender	**2/unit**	
	• HDMI Cat 5 Extender		
	• Uses Cat 5e cable to extends the distance between HDMI source and display		
	• Extend 1080p by 40 m; extend 1080i (HDTV) by 60 m		
	• HDMI (3D, Deep Color); HDCP Compatible		
	• 8 segment equalization adjustment switch optimizes display quality		
	WARRANTY: One (1) year		
	II. AUDIO SYSTEM		
	A. DIGITAL MIXER, DIGITAL STAGEBOX, POWER CONDITIONER AND EQUIPMENT RACK		
	Digital Mixing Console	**1/unit**	
	• 48-Channel Digital Mixer		
	• 25 motor faders (24 channels + 1 master)		
	• 48 input mixing channels (40 mono + 2 stereo + 2 return)		
	• 20 Aux (8 mono + 6 stereo) + Stereo + Sub buses		
	• 8 DCA groups with Roll-out		

	• 24 analog XLR/TRS combo mic/line inputs + 2 analog RCA pin stereo line inputs	
	• 16 analog XLR outputs	
	• 34 x 34 digital record/playback channels via USB 2.0 + 2 x 2 via a USB storage device	
	• 1 expansion slot for audio interface card	
	WARRANTY: Five (5) years	
	I/O Rack	**1/unit**
	• Dante-equipped I/O rack with 16 microphone/ lineinputs and 8 line outputs	
	• Digital stage box	
	• 16 high-quality mic preamps are controllable from your console	
	• Connect up to 3 simultaneously for 48 inputs and 24 outputs	
	WARRANTY: Five (5) years	
	Digital Interface Card	**1/unit**
	• Dante interface card	
	• Allows you to connect to Tio1608-D stage boxes for up to 48 inputs and 24 outputs	
	• Supports up to 128 channels (64-in/64-out) of uncompressed 24-bit/48kHz audio	
	WARRANTY: Five (5) years	
	Power Conditioner with voltmeter and ammeter and rack lighting	**3/unit**
	• Central power supply with 8 switchable IEC sockets	
	• Unswitched convenience socket on the front	
	• Resettable circuit breaker on the front panel	
	• 2 pull-out LED rack lights with dimmer	
	• LED gooseneck lamp with USB connection for the lighting of the rack	
	• Volt and ammeter with easy-to-read display	
	WARRANTY: One (1) year	
	Rack Cabinet	**1/unit**
	• 19" rack cabinet - 18 units	
	• Dimensions 600 x 918 (988) x 600 mm (W x H (incl. feet) x D)	
	• Unit height 18 HE	
	• Max. usable depth 540 mm	
	• Color Black	
	• Weight 52 kg	
	• Static load capacity (adjustable feet) 800 kg	
	• Dynamic load capacity (transport castors) 400 kg	
	• Standard keylock for both doors	
	• Integrated ventilation grid on top	
	• 50 mm Wheels + leveling feet included	
	• Removable sides for easy installing & cabling	
	• Punched square holes for use with snap-in cage nuts	
	• Tempered glass door with keylock	
	• Reversible door position	
	WARRANTY: Three (3) years	
	Cooling Fan	**1/unit**
	• 19" cooling roof fan unit	
	• Dimensions 450 x 50 x 363 mm (W x H x D)	
	• Noise < 51 dB	
	• Power 2 x 20 W	
	WARRANTY: Three (3) years	
	B. MAIN SPEAKER AND AMPLIFICATION	

and cross-referenced to that evidence. Evidence shall be in the form of manufacturer's un-amended sales literature, unconditional statements of specification and compliance issued by the manufacturer, samples, independent test data etc., as appropriate. A statement that is not supported by evidence or is

Loudspeaker - Narrow Coverage	**8/unit**	
• 2-way 10" passive enclosure		
• Narrow coverage for projection up to 35 m(10° enclosure)		
• Maximum SPL 140 dB		
• Usable bandwidth (-10 dB) 66 Hz - 20 kHz		
• Nominal Directivity: 10° Enclosure , L-Fins: 70° / 110° symmetric or 90° asymmetric		
• Transducers - LF: 1 × 10" cone driver / HF: 1 × 2.5" diaphragm neodymium compression driver		
• Nominal impedance 8 Ω		
• IP55 weather resistant		
WARRANTY: Five (5) years		
Loudspeaker - Wide Coverage	**2/unit**	
• 2-way 10" passive enclosure		
• Extended coverage(30° enclosure)		
• Maximum SPL 137 dB		
• Usable bandwidth (-10 dB) 67 Hz - 20 kHz		
• Nominal Directivity: 30° Enclosure , Fins: 70° / 110° symmetric or 90° asymmetric		
• Transducers - LF: 1 × 10" cone driver / HF: 1 × 2.5" diaphragm neodymium compression driver		
• Nominal impedance 8 Ω		
• IP55 weather resistant		
WARRANTY: Five (5) years		
Flying frame for vertical deployment	**2/unit**	
WARRANTY: Five (5) years		
Subwoofer	**3/unit**	
• High power compact subwoofer: 1 × 21"		
• Low frequency limit (-10 dB) 29 Hz		
• Maximum SPL 138 dB		
• Nominal directivity: Standard or cardioid configurations		
• Transducers 1 × 21" neodymium cone driver		
• Acoustical load Bass-reflex, Vents		
• Nominal impedance 8 Ω		
• IP55		
WARRANTY: Five (5) years		
Flying frame for vertical deployment	**1/unit**	
WARRANTY: Five (5) years		
Amplified Controller	**3/unit**	
• 4-input by 4-output amplified controller architecture		
• Universal SMPS with Power Factor correction		
• Can be operated in three connectivity mode such as "a la carte, fully active & conventional"		
• DSP: Sharc 32 bit, floating point, 96kHz sampling rate		
• Output Power EIA (1%) THD, 1kHz, all channels driven : 4 x 1000 W RMS (at 8ohms) or 4 x 1000 W RMS (at 4ohms)		
• Distortion THD+N (20 Hz – 10kHz) : <0.05%, at 8 ohm, 11db below rated power		
• Frequency response 20 Hz - 20 kHz : +/- 0.25 dB at 8 ohms		
• Physical Data Protection rating : IP3x		
WARRANTY: Five (5) years		
C. STAGE MONITOR		
12" Active Stage Monitor	**4/unit**	

subsequently found evidence presented will render the Bid under evaluation liable for rejection. A statement either in the Bidders statement of compliance or the supporting evidence that is found to be false either during Bid evaluation, post-qualification or the execution of the Contract may be regarded as fraudulent and render the Bidder or

	• Low/mid driver dimensions 12 "	
	• Woofer size 304 mm	
	• Woofer type coaxial loudspeaker	
	• HF driver dimensions 1 "	
	• HF Driver Voice Coil 1"	
	• Amplifier Class A/B	
	• Dispersion (H x V) 75 x 75	
	• RMS 250 W	
	• Peak power 1000 W	
	• Frequency response 80 - 20000 Hz	
	• Crossover frequency 2200 Hz	
	• SPL (1W/1m) 100 dB	
	• Max. SPL (continuous) 116 dB	
	• Max. SPL (peak) 124 dB	
	WARRANTY: Five (5) years	
	D. MICROPHONE SYSTEM AND ACCESSORIES	
	Public Address Podium	**1/unit**
	• Public Address Podium with one Gooseneck Mic and one lamp, two wireless handheld mics	
	• 60W rated power output	
	• 1 aux input, 2 MIC inputs, 1 line output and 1 REC output	
	• Power consumption: 100W	
	• Frequency Response: 100Hz-16000Hz	
	• Rated Power: 60W	
	WARRANTY: One (1) year	
	Narrowband Dual-Channel True Diversity Receiver	**5/unit**
	• Frequency Range UHF 480~934 MHz	
	• Bandwidth 24 MHz	
	• Preset Frequency 104 preset channels.	
	• Group 1 – 6: 8 compatible channels in each group	
	• Group 7 – 8: 12 compatible channels in each group	
	• Group 9 – 10: 16 compatible channels in each group	
	• Receiving Mode True diversity	
	• Receiving Antenna Rear Panel. Detachable.	
	• Oscillation Mode PLL Synthesized	
	• Stability <= ±0.005% (-10 –+60 deg C)	
	• Sensitivity 6 dBμV at S/N > 80 dB	
	• S/N Ratio > 105 dB(A)	
	• T.H.D. < 0.5% @ 1 kHz	
	• Frequency Response 50Hz - 18kHz, with high-pass filter	
	• Dual-squelch circuit	
	• Max. Output Level +16dBV / 0dBV / -6dBV	
	WARRANTY: Five (5) years	
	Narrowband Handheld Transmitter	**5/unit**
	• Frequency Range - UHF 480~934 MHz	
	• Bandwidth - 24 MHz	
	• Channel Set-Up - ACT Sync (switchable)	
	• RF Output Power - 10mW / 50mW switchable	
	• Spurious Emissions - -60 dBc	
	• Oscillation Mode - PLL Synthesized	
	• Frequency Stability - ±0.005% (-10 – +60)	

the Bidder or supplier liable for prosecution subject to the provisions of ITB Clause 3.1(a) (iii) and/or GCC Clause 2.1(a) (ii).

• LCD Display - group, channel, frequency, AF gain, frequency band, RF power, mute mode, battery status and error codes	
• Gain Setting - +6 dB, +3 dB, 0 dB, -3 dB, -6 dB (5 settings) 0 dB = input microphone sensitivity	
• Max. SPL - 142 dB	
WARRANTY: Five (5) years	
Narrowband Bodypack Transmitter	**5/unit**
• Frequency Range - UHF 480~934 MHz	
• Bandwidth - 24 MHz	
• Channel Set-Up - ACT Sync	
• RF Output Power Deviation - 10 mW / 50 mW switchable	
• Spurious Emissions - -55 dBc	
• Oscillation Mode - PLL Synthesized	
• Frequency Stability - ±0.005% (-10 – +60)	
• LCD Display - group, channel, frequency, AF gain, frequency band, RF power, mute mode, battery status and error codes	
• Gain Setting - +12dB, +6dB, 0dB, -6dB, -12dB (5 settings) 0 dB = input microphone sensitivity	
• Max. Input Level - 0 dBV	
WARRANTY: Five (5) years	
Omni-Directional Headworn Microphone	**5/unit**
• Capsule - Ø 4.5 mm omni-directional condenser microphone	
• Frequency Response - 40 Hz – 20 kHz ± 3 dB	
• Capsule Impedance - 200 Ω	
• Sensitivity - -49 dBV ± 3 dBV / Pa (0 dB = 1 V / Pa)	
• Maximum SPL - 135 dB (typical, 1% T.H.D.)	
• Capsule-shaft holder - Dual - left and right side	
• Plug - 4-pin mini-XLR plug or TA4F	
• Color – Skin tone	
• Cable Length - 150 cm / 59.1"	
WARRANTY: Five (5) years	
Microphone Stand	**10/unit**
• Microphone Stand with Folding Tripod Base and 2-Point Adjustment Telescoping Boom	
• Tubing material - Steel	
• Tubing color - Black	
• Tubing surface - Powder Coated	
• Min. height 1030 mm	
• Max. height 1690 mm	
• Transport length 1050 mm	
• with height adjustment	
• Base type - Tripod	
• Base material - Zinc die-cast	
• Boom model - 2-point adjustment	
• Boom length - 880 mm	
• Interchangeable rings 1x25 mm, 2x15 mm, 4x20 mm	
• Black ring pack included	
WARRANTY: Three (3) years	
E. WIRELESS ANTENNA SYSTEM AND ACCESSORIES	
Wideband 4-channel Auto Gain-Control Antenna Divider	**1/unit**
• Frequency Range - UHF 470~850 MHz	
• IIP3 - +32 dBm	

	• RF Output Gain - +1.0 dB ± 1 dB.	
	• Input/Output Gain - +1.0 dB ± 1 dB	
	• Output Port Isolation - >18 dB at 400 – 1000 MHz	
	• Filter Selection - Low sideband >/= 35 dB ; High sideband >/= 30 dB	
	• Input / Output Connectors - 2 sets of 1-to-4 active divider outputs; 2 sets of 1-to-1 active outputs. TNC female. 50 Ω impedance.	
	• Antenna Input Power Supply - Antenna A/B input port supplies bias 8.3 V DC, 230 mA max. to booster	
	• Signal Loss Detection - Detects the signal loss of cables automatically	
	• Power Supply - 12-15 VDC	
	• Current Consumption - Approx. 242 mA at 12 V DC Input	
	• Dimension (W × H × D) - 420 × 44 × 180 mm |16.5 × 1.7 × 7.1"	
	WARRANTY: Five (5) years	
	Wideband Transmitting and Receiving Log Antenna	**2/unit**
	• Type - Additional Antenna	
	• Frequency Range - UHF 470 ~ 1,000 MHz	
	• Antenna Gain - 4 ~ 6 dBi	
	• 3-dB Beam Width. - 75° Vertical; 130° Horizontal	
	• Booster Gain - RX Connector: 0 ~ 12 ± 1 dB gain adjustable; TX/RX Connector: 0 dB	
	• Power Consumption - RX Connector: 1.3 W / 8 V DC; TX Connector: 0 mW	
	• Impedance 50 Ω	
	• Connector 2 × TNC female	
	• Power Supply 8 ~ 15 V DC bias is required for RX connector	
	• Dimensions (W × H × D) 319 × 270 × 25 mm / 12.5 × 10.6 × 1 "	
	WARRANTY: Five (5) years	
	III. LIGHTING SYSTEM	
	A. FRONTAL LIGHT	
	• 12 x 10 W Tri-LED STUDIO PAR with variable White Light and Dim-to-Warm Control	**12/unit**
	• 12 x 10 watt Tri-LEDs 3-in-1 Cool White, Warm White and Amber	
	• Full white temperature control from Tungsten to CW (1,600 - 6,800 K)	
	• CRI 97 @ 2,800 K for natural color rendering	
	• Dim-to-Warm (DTW) technology to emulate halogen style dimming	
	• 4 Selectable 16-bit dimming curves	
	• Unique Sound-to-Light and stand-alone functions for retro lights looks	
	• RDM enabled	
	• 7 DMX modes plus sound activation	
	• Flicker free for use in TV and film applications	
	WARRANTY: Five (5) years	
	Barn Doors for Studio PAR	**12/unit**
	• Color - Black	
	• Weight - 0.8 kg	
	• 4 adjustable leaves	
	WARRANTY: Five (5) years	
	B. SIDELIGHT	
	LED PAR Lighting	**6/unit**
	• 18 x 8 W Ultra High Power QUAD RGBW LEDs	
	• Type - Indoor	
	• Number of LEDs - 18, LED type 8 W QUAD Color	
	• LED type - 8 W QUAD Color	
	• Refresh rate - 5000 Hz	

	• Dispersion - 25 °	
	• DMX input/output - XLR 3-pin male/female	
	• DMX mode 2-channel , 3-channel , 4-channel , 7-channel	
	• DMX Functions - color fade , color jump , master dimmer , RGBW , sound control , strobe	
	• Standalone modes - color fade , color jump , slave mode , sound control , static color	
	• Controls - Enter , Mode , Value Down , Value Up	
	• Indicators - LED Display	
	• Operating voltage - 110 V AC - 250 V AC	
	• Power consumption - 170 W	
	• RGBW for perfect mixing of solid and pastel colors	
	• Operated via DMX, in master/slave mode or standalone mode	
	• Double brackets included as standard	
	• Sturdy metal housing	
	WARRANTY: Five (5) years	
	C. BACKLIGHT	
	3 in 1 Strobe, Blinder and Wash Light	**4/unit**
	• Strobe, Blinder and Wash Light in a single fixture	
	• 648 RGBW SMD LEDs 0.2 W	
	• Massive total output of 6,700 lm	
	• Strobe adjustable from 1 to 30 flashes/sec	
	• DMX, sound activation and manual control	
	• Standalone and master/slave operation	
	• Blue & white power twist connectors for professional power linking, powerCON compatible	
	• 4-button color LCD for easy menu navigation and configuration	
	• Rugged all-metal housing with universal mounting bracket	
	• Number of LEDs - 648	
	• LED type - 0.2 W	
	• Dispersion - 100 °	
	• Refresh rate - 1-30 Hz	
	• DMX input/output - XLR 3-pin male/female	
	• DMX mode - 1-channel , 2-channel 1 , 2-channel 2 , 3-channel 1 , 3-channel 2 , 4-channel 1 , 4-channel 2 ,7-channel 1 , 7-channel 2	
	• DMX Functions - color macro , Dimmer , Flash duration , Flash rate , sound sensitivity	
	• Power consumption 160 W	
	WARRANTY: Five (5) years	
	Compact, Universal DMX Controller	**1/unit**
	• Capable of handling all the complexities of today's lighting fixtures	
	• Easily control up to 8 intelligent lights with up to 16 channels each	
	• Increase design flexibility with 128 channels of DMX control	
	• Enhance light shows with 6 sets of chase effects containing 999 steps each	
	• Sequential linking of chases	
	• Grab any fixture on the fly and set it to automatic or sound-activated mode	
	WARRANTY: Five (5) years	
2	**FUNCTION HALL**	**1/lot**
	I. VIDEO SYSTEM	
	A. VIDEO PROJECTION SYSTEM AND ACCESSORIES	
	Video Projector	**3/unit**
	• 5000 lumens WUXGA Z-Phosphor Laser Light Source Projector	

	• Display System - 3 LCD system	
	• Size of effective display area - 0.76" (19.3 mm) x 3	
	• BrightEra LCD Panel, Aspect ratio: 16:10	
	• Number of pixels - 6,912,000 (1920 x 1200 x 3) pixels	
	• Projection lens focus - Manual	
	• Zoom Ratio - Approx. x 1.45	
	• Throw ratio - 1.28:1 to 1.88:1	
	• Lens shift - Manual	
	• Lens shift - Range Vertical: +20% to +55%,	
	• Lens shift - Range Horizontal: +/- 10%	
	• Light source - Laser diode	
	• Filter cleaning / replacement cycle (Max.) - 20,000 H	
	• Screen size - 40'' to 300'' (1.02 m to 7.62 m)	
	• Light output (Mode: Standard / Middle) 5,000 lm /4,000 lm	
	• Color light output (Mode: Standard / Middle) 5,000 lm/ 4,000 lm	
	• Contrast ratio (full white / full black) ∞ : 1	
	• Speaker - 16 W (monaural)	
	• Keystone correction (Max.) - Horizontal: +/- 30 ° and Vertical: +/- 20 °	
	WARRANTY: Five (5) years	
	Motorized Projector Screen	**3/unit**
	• 150" Diag., / 16:10 Aspect Ratio	
	• Viewing Area 3231mm x 2019mm	
	• Product Height 2544mm	
	• Black Drop 300mm	
	• Lower Border 80mm	
	• Left/Right 50mm	
	• Product length 3505	
	• Endcap Height 145mm / Endcap Width 137	
	WARRANTY: Three (3) years	
	HDMI Extender	**3/unit**
	• HDMI Cat 5 Extender	
	• Uses Cat 5e cable to extends the distance between HDMI source and display	
	• Extend 1080p by 40 m; extend 1080i (HDTV) by 60 m	
	• HDMI (3D, Deep Color); HDCP Compatible	
	• 8 segment equalization adjustment switch optimizes display quality	
	WARRANTY: One (1) year	
	B. VIDEO MATRIX AND CONTROLLER EXPANSION BOX	
	4X4 4K HDMI Matrix Switch	**1/unit**
	• Supports 4K resolutions up to UHD (3840 x 2160) and DCI (4096 x 2160)	
	• Refresh rates: 30 Hz (4:4:4) and 60 Hz (4:2:0)	
	• Multiple Control Methods – system management via front-panel pushbuttons, IR remote and RS-232 control	
	• Supports Dolby True HD and DTS HD Master audio	
	• Signaling rates up to 3.4 Gbits for flawless 4K output	
	WARRANTY: One (1) year	
	HDMI Extender	**2/unit**
	• HDMI Cat 5 Extender	
	• Uses Cat 5e cable to extends the distance between HDMI source and display	
	• Extend 1080p by 40 m; extend 1080i (HDTV) by 60 m	
	• HDMI (3D, Deep Color); HDCP Compatible	

	• 8 segment equalization adjustment switch optimizes display quality	
	WARRANTY: One (1) year	
	II. AUDIO SYSTEM	
	A. DIGITAL MIXER, DIGITAL STAGEBOX, POWER CONDITIONER AND EQUIPMENT RACK	
	Digital Mixing Console	**1/unit**
	• 40-Channel Digital Mixer	
	• 17 motor faders (16 channels + 1 master)	
	• 40 input mixing channels (32 mono + 2 stereo + 2 return)	
	• 20 Aux (8 mono + 6 stereo) + Stereo + Sub buses	
	• 8 DCA groups with Roll-out	
	• 16 analog XLR/TRS combo mic/line inputs + 2 analog RCA pin stereo line inputs	
	• 16 analog XLR outputs	
	• 34 x 34 digital record/playback channels via USB 2.0 + 2 x 2 via a USB storage device	
	• 1 expansion slot for audio interface card	
	WARRANTY: Five (5) years	
	I/O Rack	**1/unit**
	• Dante-equipped I/O rack with 16 microphone/ line inputs and 8 line outputs	
	• Digital stage box	
	• 16 high-quality mic preamps are controllable from your console	
	• Connect up to 3 simultaneously for 48 inputs and 24 outputs	
	WARRANTY: Five (5) years	
	Digital Interface Card	**1/unit**
	• Dante interface card	
	• Allows you to connect to Tio1608-D stage boxes for up to 48 inputs and 24 outputs	
	• Supports up to 128 channels (64-in/64-out) of uncompressed 24-bit/48kHz audio	
	WARRANTY: Five (5) years	
	Power Conditioner with voltmeter and ammeter and rack lighting	**2/unit**
	• Central power supply with 8 switchable IEC sockets	
	• Unswitched convenience socket on the front	
	• Resettable circuit breaker on the front panel	
	• 2 pull-out LED rack lights with dimmer	
	• LED gooseneck lamp with USB connection for the lighting of the rack	
	• Volt and ammeter with easy-to-read display	
	• Reliable protection against over-voltage and impulse voltage	
	• Effective high frequency filter against interference	
	WARRANTY: One (1) year	
	Rack Cabinet	**1/unit**
	• 19" rack cabinet - 18 units	
	• Dimensions 600 x 918 (988) x 600 mm (W x H (incl. feet) x D)	
	• Unit height 18 HE	
	• Max. usable depth 540 mm	
	• Color Black	
	• Static load capacity (adjustable feet) 800 kg	
	• Dynamic load capacity (transport castors) 400 kg	
	• Standard keylock for both doors	
	• Integrated ventilation grid on top	
	• 50 mm Wheels + leveling feet included	

	• Removable sides for easy installing & cabling	
	• Punched square holes for use with snap-in cage nuts	
	• Tempered glass door with keylock	
	• Reversible door position	
	WARRANTY: Three (3) years	
	Cooling Fan	**1/unit**
	19" cooling roof fan unit	
	• Dimensions 450 x 50 x 363 mm (W x H x D)	
	• Weight 2.300 kg	
	• Noise < 51 dB	
	• Power 2 x 20 W	
	WARRANTY: Three (3) years	
	B. MAIN SPEAKER AND AMPLIFICATION	
	Loudspeaker - Narrow Coverage	**2/unit**
	• 2-way 10" passive enclosure	
	• Narrow coverage for projection up to 35 m(10° enclosure)	
	• Maximum SPL 140 dB	
	• Usable bandwidth (-10 dB) 66 Hz - 20 kHz	
	• Nominal Directivity: 10° Enclosure , L-Fins: 70° / 110° symmetric or 90° asymmetric	
	• Transducers - LF: 1 × 10'' cone driver / HF: 1 × 2.5'' diaphragm neodymium compression driver	
	• Nominal impedance 8 Ω	
	• IP55 weather resistant	
	WARRANTY: Five (5) years	
	Loudspeaker - Wide Coverage	**2/unit**
	• 2-way 10" passive enclosure	
	• Extended coverage(30° enclosure)	
	• Maximum SPL 137 dB	
	• Usable bandwidth (-10 dB) 67 Hz - 20 kHz	
	• Nominal Directivity: 30° Enclosure , Fins: 70° / 110° symmetric or 90° asymmetric	
	• Transducers - LF: 1 × 10'' cone driver / HF: 1 × 2.5'' diaphragm neodymium compression driver	
	• Nominal impedance 8 Ω	
	• IP55 weather resistant	
	WARRANTY: Five (5) years	
	Subwoofer	**2/unit**
	• High power compact subwoofer: 1 × 18''	
	• Low frequency limit (-10 dB) 232 Hz	
	• Maximum SPL 138 dB	
	• RMS handling capability 700 W	
	• Components LF: 1 x 18'' weather-resistant, (4'' coil, aluminum die-cast basket, vented magnet design)	
	• Acoustical load Bass-reflex, Vents	
	• Nominal impedance 8 Ω	
	• IP55	
	WARRANTY: Five (5) years	
	Amplified Controller	**1/unit**
	• 4-input by 4-output amplified controller architecture	
	• Loudspeaker amplification, 96 kHz/32 bit DSP, Ethernet network	
	• 4 x 4 Architecture with analog, AES and AVB	

• Green SMPS power supply with PFC		
• 4 x 1000 W power at 8 or 4 ohms for 200 ms		
• EQ station with 11 EQ (IIR/FIR) filters and 1000 ms delay per output		
• Air absorption compensation filter		
• 5 s start-up time		
• With drive system protection		
• NETWORK MANAGER software for remote control & monitoring		
WARRANTY: Five (5) years		
Flying Frame for vertical deployment	**2/unit**	
WARRANTY: Five (5) years		
Multi-system Flying Bumper	**1/unit**	
WARRANTY: Five (5) years		
12" Active Stage Monitor	**2/unit**	
• Low/mid driver dimensions 12 "		
• Woofer size 304 mm		
• Woofer type coaxial loudspeaker		
• HF driver dimensions 1 "		
• HF Driver Voice Coil 1"		
• Amplifier Class A/B		
• Dispersion (H x V) 75 x 75		
• RMS 250 W		
• Peak power 1000 W		
• Frequency response 80 - 20000 Hz		
• Crossover frequency 2200 Hz		
• SPL (1W/1m) 100 dB		
• Max. SPL (continuous) 116 dB		
• Max. SPL (peak) 124 dB		
WARRANTY: Five (5) years		
Public Address Podium	**1/unit**	
• Public Address Podium with one Gooseneck Mic and one lamp, two wireless handheld mics		
• 60W rated power output		
• 1 aux input, 2 MIC inputs, 1 line output and 1 REC output		
• Power consumption: 100W		
• Frequency Response: 100Hz-16000Hz		
WARRANTY: One (1) year		
Wideband 4-channel Auto Gain-Control Antenna Divider	**1/unit**	
• Frequency Range - UHF 470~850 MHz		
• IIP3 - +32 dBm		
• RF Output Gain - +1.0 dB ± 1 dB.		
• Input/Output Gain - +1.0 dB ± 1 dB		
• Output Port Isolation - >18 dB at 400 – 1000 MHz		
• Filter Selection - Low sideband >/= 35 dB ; High sideband >/= 30 dB		
• Input / Output Connectors - 2 sets of 1-to-4 active divider outputs; 2 sets of 1-to-1 active outputs. TNC female. 50 Ω impedance.		
• Antenna Input Power Supply - Antenna A/B input port supplies bias 8.3 V DC, 230 mA max. to booster		
• Signal Loss Detection - Detects the signal loss of cables automatically		
• Power Supply - 12-15 VDC		
• Current Consumption - Approx. 242 mA at 12 V DC Input		
• Dimension (W × H × D) - 420 × 44 × 180 mm |16.5 × 1.7 × 7.1"		
WARRANTY: Five (5) years		

		Wideband Transmitting and Receiving Log Antenna	**2/unit**
		• Type - Additional Antenna	
		• Frequency Range - UHF 470 ~ 1,000 MHz	
		• Antenna Gain - 4 ~ 6 dBi	
		• 3-dB Beam Width. - 75° Vertical; 130° Horizontal	
		• Booster Gain - RX Connector: 0 ~ 12 ± 1 dB gain adjustable; TX/RX Connector: 0 dB	
		• Power Consumption - RX Connector: 1.3 W / 8 V DC; TX Connector: 0 mW	
		• Impedance 50 Ω	
		• Connector 2 × TNC female	
		• Power Supply 8 ~ 15 V DC bias is required for RX connector	
		• Dimensions (W × H × D) 319 × 270 × 25 mm / 12.5 × 10.6 × 1 "	
		WARRANTY: Five (5) years	
	3	**CONFERENCE HALL**	**1/lot**
		I. VIDEO SYSTEM	
		A. VIDEO PROJECTION SYSTEM AND ACCESSORIES	
		Video Projector	**2/unit**
		• 3100 lumens WXGA 3LCD Compact Projector	
		• Size of effective display area: 0.59"(15mm) x 3 LCD Panel Aspect ratio: 16:10	
		• Contrast Ratio - 20,000:1	
		• Number of pixels - 3,072,000 (1280x800 x 3) pixels	
		• Zoom Ratio - Approx. x 1.3	
		• Throw ratio - 1.37:1 to 1.80:1	
		• Light source - Ultra High Pressure Mercury Lamp	
		• 3:1 Manual Zoom Lens	
		• Filter cleaning / replacement cycle (Max.) - 10,000 H	
		WARRANTY: Five (5) years	
		Motorized Projector Screen	**2/unit**
		• 120" Diag., / 16:9 Aspect Ratio	
		• Viewing Area 2656mm x 1494mm	
		• Product Height 2114mm	
		• Black Drop 400mm	
		• Lower Border 80mm	
		• Left/Right 50mm	
		• Product length 2890	
		• Endcap Height 110 mm / Endcap Width 110	
		WARRANTY: Three (3) years	
		TV Monitor	**2/unit**
		• 55" 4K UHD SMART TV	
		• 4K HDR Processor	
		• Live Color Technology	
		WARRANTY: Three (3) years	
		HDMI Extender	**4/unit**
		• HDMI Cat 5 Extender	
		• Uses Cat 5e cable to extends the distance between HDMI source and display	
		• Extend 1080p by 40 m; extend 1080i (HDTV) by 60 m	
		• HDMI (3D, Deep Color); HDCP Compatible	
		• 8 segment equalization adjustment switch optimizes display quality	
		WARRANTY: One (1) year	
		B. VIDEO MATRIX AND CONTROLLER EXPANSION BOX	

	4X4 4K HDMI Matrix Switch	**1/unit**
	• Supports 4K resolutions up to UHD (3840 x 2160) and DCI (4096 x 2160)	
	• Refresh rates: 30 Hz (4:4:4) and 60 Hz (4:2:0)	
	• Multiple Control Methods – system management via front-panel pushbuttons, IR remote and RS-232 control	
	• Supports Dolby True HD and DTS HD Master audio	
	• Signaling rates up to 3.4 Gbits for flawless 4K output	
	WARRANTY: One (1) year	
	HDMI Extender	**2/unit**
	• HDMI Cat 5 Extender	
	• Uses Cat 5e cable to extends the distance between HDMI source and display	
	• Extend 1080p by 40 m; extend 1080i (HDTV) by 60 m	
	• HDMI (3D, Deep Color); HDCP Compatible	
	• 8 segment equalization adjustment switch optimizes display quality	
	WARRANTY: One (1) year	
	II. AUDIO SYSTEM	
	A. DIGITAL MIXER, AUDIO NETWORK EXPANDER, POWER	
	CONDITIONER AND EQUIPMENT RACK	
	Mixing Console	**1/unit**
	• 8-channel mixer with 100 digital effects presets	
	• 4 microphone channels and 3 stereo line inputs	
	• Effective 3-band EQ	
	• Sliding adjustable compressor	
	• Master, Monitor and headphone outputs	
	• Securely fastening external power supply	
	• Mono Mic/Line Input Frequency Range : 10-45000 Hz	
	• Amplification Range Mono Mic/Line Input - 0-50 dB	
	• Mono Mic/Line Input S/N Ratio - 113 dB	
	• Mono Channel Equalizer High : +/- 15 dB @ 12000 Hz	
	• Mono Channel Equalizer Mid : +/- 15 dB @ 2500 Hz	
	• Mono Channel Equalizer Low : +/- 15 dB @ 80 Hz	
	WARRANTY: Five (5) years	
	Power Conditioner with voltmeter and ammeter and rack lighting	**1/unit**
	• Central power supply with 8 switchable IEC sockets	
	• Unswitched convenience socket on the front	
	• Resettable circuit breaker on the front panel	
	• 2 pull-out LED rack lights with dimmer	
	• LED gooseneck lamp with USB connection for the lighting of the rack	
	• Volt and ammeter with easy-to-read display	
	WARRANTY: One (1) year	
	Rack Cabinet	**1/unit**
	• 19" rack cabinet - 12 units	
	• Dimensions 600 x 636 (722) x 600 mm (W x H (incl.feet) x D)	
	• Unit height 12 HE	
	• Max. usable depth 540 mm	
	• Color Black	
	• Static load capacity (adjustable feet) 800 kg	
	• Dynamic load capacity (transport castors) 400 kg	
	• Integrated ventilation grid on top	
	• 50 mm Wheels + leveling feet included	

	• 1 x Allen key	
	• 4 x Key for front/back door	
	WARRANTY: Three (3) years	
	Cooling Fan	**1/unit**
	• 19" cooling roof fan unit	
	• Dimensions 450 x 50 x 363 mm (W x H x D)	
	• Noise < 51 dB	
	• Power 2 x 20 W	
	WARRANTY: Three (3) years	
	B.SPEAKER SYSTEM AND AMPLIFICATION	
	Ceiling Speaker	**10/unit**
	• 2-way 6.5" ceiling speaker with grill	
	• Color - White	
	• Max. Power 60 W	
	• RMS Power 30 W	
	• Sensitivity (1W/1m) 88 dB	
	• Speaker type 2-way coaxial	
	• Impedance 8 Ω	
	• Connectors Multi-tap connections	
	• Sound Pressure (Max. W/1m) @ 100 V 103 dB	
	• Frequency Response (± 3 dB) 55 Hz - 20 kHz	
	• Frequency Range (-10 dB) 45 Hz - 20 kHz	
	• Dispersion - Conical 150°	
	• Drivers : HF 1" and LF 6.5¼"	
	WARRANTY: Five (5) years	
	Power Amplifier	**1/unit**
	Dual-channel power amplifier 2 x 240 W 100 V	
	Signal / Noise > 100 dB	
	THD+N (@ 1 kHz) < 0.3% (1/2 Rated Power)	
	Crosstalk (@ 1 kHz) < 80 dB	
	Technology Class-D	
	Common mode rejection ratio 70 dB	
	Protection DC Short circuit, over-heating, over load, signal limiting	
	Cooling Temperature controlled FAN	
	Operating temperature 0° ~ 40° @ 95% Humidity	
	Frequency Response (± 3 dB) 50 Hz - 22 kHz	
	Power Supply - Switching mode	
	Source 230 ~ 240 V AC / 50 Hz	
	Inputs Sensitivity (1W/1m) -0.5 dB ~ 10.5 dB	
	Impedance 10 kΩ balanced	
	Connector XLR female with male link through	
	Outputs Voltage / Impedance 100 V / 42 Ω	
	Connector 4-pin Euro Terminal Block (Pitch - 5.08 mm)	
	WARRANTY: Five (5) years	
	C. MICROPHONE FOR PRESENTOR AND AUDIENCE	
	Public Address Podium	**1/unit**
	• Public Address Podium with one Gooseneck Mic and one lamp, two wireless handheld mics	
	• 60W rated power output	
	• 1 aux input, 2 MIC inputs, 1 line output and 1 REC output	
	• Power consumption: 100W	

	• Frequency Response: 100Hz-16000Hz	
	WARRANTY: One (1) year	
	Narrowband Dual-Channel True Diversity Receiver	**2/unit**
	• Frequency Range UHF 480~934 MHz	
	• Bandwidth 24 MHz	
	• Preset Frequency 104 preset channels.	
	• Group 1 – 6: 8 compatible channels in each group	
	• Group 7 – 8: 12 compatible channels in each group	
	• Group 9 – 10: 16 compatible channels in each group	
	• Receiving Mode True diversity	
	• Receiving Antenna Rear Panel. Detachable.	
	• Oscillation Mode PLL Synthesized	
	• Stability <= ±0.005% (-10 –+60 deg C)	
	• Sensitivity 6 dBµV at S/N > 80 dB	
	• S/N Ratio > 105 dB(A)	
	• T.H.D. < 0.5% @ 1 kHz	
	• Frequency Response 50Hz - 18kHz, with high-pass filter	
	• Dual-squelch circuit	
	• Max. Output Level +16dBV / 0dBV / -6dBV	
	WARRANTY: Five (5) years	
	Narrowband Handheld Transmitter	**2/unit**
	• Frequency Range - UHF 480~934 MHz	
	• Bandwidth - 24 MHz	
	• Channel Set-Up - ACT Sync (switchable)	
	• RF Output Power - 10mW / 50mW switchable	
	• Spurious Emissions - -60 dBc	
	• Oscillation Mode - PLL Synthesized	
	• Frequency Stability - ±0.005% (-10 – +60)	
	• LCD Display - group, channel, frequency, AF gain, frequency band, RF power, mute mode, battery status and error codes	
	• Gain Setting - +6 dB, +3 dB, 0 dB, -3 dB, -6 dB (5 settings) 0 dB = input microphone sensitivity	
	• Max. SPL - 142 dB	
	WARRANTY: Five (5) years	
	Omni-Directional Head Worn Microphone	**2/unit**
	• Capsule - Ø 4.5 mm omni-directional condenser microphone	
	• Frequency Response - 40 Hz – 20 kHz ± 3 dB	
	• Capsule Impedance - 200 Ω	
	• Sensitivity - -49 dBV ± 3 dBV / Pa (0 dB = 1 V / Pa)	
	• Maximum SPL - 135 dB (typical, 1% T.H.D.)	
	• Capsule-shaft holder - Dual - left and right side	
	• Plug - 4-pin mini-XLR plug or TA4F	
	• Color – Skin tone	
	• Cable Length - 150 cm / 59.1"	
	WARRANTY: Five (5) years	
	Microphone Stand	**2/unit**
	• Microphone Stand with Folding Tripod Base and 2-Point Adjustment Telescoping Boom	
	• Tubing material - Steel	
	• Tubing color - Black	
	• Tubing surface - Powder Coated	
	• Min. height 1030 mm	

	• Max. height 1690 mm	
	• Transport length 1050 mm	
	• With height adjustment	
	• Base type - Tripod	
	• Base material - Zinc die-cast	
	• Boom model - 2-point adjustment	
	• Boom length - 880 mm	
	• Interchangeable rings 1x25 mm, 2x15 mm, 4x20 mm	
	• Black ring pack included	
	WARRANTY: Three (3) years	
	TELECONFERENCE ROOM	**1/lot**
	I. VIDEO SYSTEM	
	A. VIDEO DISPLAY AND ACCESSORIES	
	TV Monitor	**1/unit**
	• 86 Ultra High Definition 4K LED Digital Signage Display	
	• Brightness(Typ.) : 350 cd/m²	
	• Bezel : 21.9 mm (Even)	
	• Depth : 93.3 mm	
	• Interface : HDMI(3), USB 2.0(2), RS232C In/Out, RJ45 In, IR In, Audio Out	
	• Built-in speaker	
	• Compatible with One:Quick Share	
	WARRANTY: Three (3) years	
	HDMI Extender	**1/unit**
	• HDMI Cat 5 Extender	
	• Uses Cat 5e cable to extends the distance between HDMI source and display	
	• Extend 1080p by 40 m; extend 1080i (HDTV) by 60 m	
	• HDMI (3D, Deep Color); HDCP Compatible	
	• 8 segment equalization adjustment switch optimizes display quality	
	WARRANTY: One (1) year	
	B. CONTROL PROCESSOR, VIDEO SWITCH AND RACK	
	Control Processor System	**1/unit**
	• Supports various interface connections: 6 x Serial port, 4 x IR/Serial port, 4 x Relay channel, 4 x I/O channel, 1 x Ethernet port	
	• 4 x DC output for power supply connections	
	• 1 x USB port for easy profile upload	
	• IR Learning function for adding IR device drivers	
	• Easily configure system settings via web GUI	
	• LED indication for hardware status and active messages	
	• SSH tool to monitor the input and output signals of the Control Box	
	• Rack-mountable	
	WARRANTY: One (1) year	
	4X4 4K HDMI Matrix Switch	**1/unit**
	• Supports 4K resolutions up to UHD (3840 x 2160) and DCI (4096 x 2160)	
	• Refresh rates: 30 Hz (4:4:4) and 60 Hz (4:2:0)	
	• Multiple Control Methods – system management via front-panel pushbuttons, IR remote and RS-232 control	
	• Supports Dolby True HD and DTS HD Master audio	
	• Signaling rates up to 3.4 Gbits for flawless 4K output	
	WARRANTY: One (1) year	
	Rack Cabinet	**1/unit**
	• 19" rack cabinet - 12 units	

	• Dimensions 600 x 636 (722) x 600 mm (W x H (incl.feet) x D)	
	• Unit height 12 HE	
	• Max. usable depth 540 mm	
	• Color Black	
	• Static load capacity (adjustable feet) 800 kg	
	• Dynamic load capacity (transport castors) 400 kg	
	• Integrated ventilation grid on top	
	• 50 mm Wheels + leveling feet included	
	• 1 x Allen key	
	• 4 x Key for front/back door	
	WARRANTY: Three (3) years	
	Cooling Fan	**1/unit**
	• 19" cooling roof fan unit	
	• Dimensions 450 x 50 x 363 mm (W x H x D)	
	• Noise < 51 dB	
	• Power 2 x 20 W	
	WARRANTY: Three (3) years	
	C. WIRELESS PRESENTATION, HMIS EXTENDER AND EXPANSION BOX	
	Multimedia Wireless Projection System	**1/unit**
	• Wireless Collaboration System	
	• Easy full screen layout in multiscreen display: support 4:3, 16:9, 16:10	
	• Easy audio output setup: can be switched among different content sources	
	• Remote Desktop control from 10 points finger touch on touch panel	
	• Supported OS - Windows 7 above 32/64 bits, Mac OS X 10 above, Android 4.0 above, and iOS 10 above	
	• Up to 30 fps	
	• Output Resolution - HDMI 1920x1200	
	• Input Resolution - Up to 1920x1080	
	• Video Out - HDMI, VGA output	
	• Audio Out - HDMI, 3 mm Audio Jack	
	• User on Display - 2	
	• Standby Users - 16	
	• Access Point Mode - Supported	
	• IEEE 802.11n / 802.11ac	
	• Wireless Speed - Up to 867 Mbps	
	• WiFi Range - 30 meters	
	• Frequency Band - 2.4 GHz & 5 GHz	
	WARRANTY: One (1) year	
	HDMI Extender	**2/unit**
	• HDMI Cat 5 Extender	
	• Uses Cat 5e cable to extends the distance between HDMI source and display	
	• Extend 1080p by 40 m; extend 1080i (HDTV) by 60 m	
	• HDMI (3D, Deep Color); HDCP Compatible	
	• 8 segment equalization adjustment switch optimizes display quality	
	WARRANTY: One (1) year	
	D. TOUCH PANEL CONTROL SYSTEM	
	Touch Panel	**1/unit**
	• 10.1" Touch Panel	
	• Capacitive multi-touch TFT LCD screen	
	• Supports Power over Ethernet (PoE)	

• Flexible installation and available for the additional tabletop kit and compatible for any standard 75 x 75 mm mounts	
• Resolution - 1280x800	
• 16:9 Aspect Ratio	
• Color Depth - 8 bit	
• 800:1 Contrast Ratio	
• LED Backlight	
• Viewing Angle - ± 85° (H), ± 85° (V)	
• Ethernet Interface 1 x RJ-45 Female, 10 / 100 / 1000 BaseT	
• 1 x USB Type A	
WARRANTY: One (1) year	
Table Top Kit	**1/unit**
• 75mm x 75mm	
• Provides adjustable hinges, the tabletop stand allows the Touch Panel to be adjusted at different angles and heights for comfortable viewing.	
• Compatible with 10.1" Touch Panel	
WARRANTY: One (1) year	
E. PTZ CAMERA	
Professional PTZ Camera	**1/unit**
• Image Sensor 1/2.7" CMOS	
• Output Resolution 1080p 60/50 fps	
• Optical Zoom 20X	
• Pan Rotation -170° (left) +170° (right)	
• Tilt Rotation -30° (down) + 90° (up)	
• Video Output 3G-SDI, HDMI, CVBS, Ethernet (RJ45)	
• Network Protocol RTSP/RTMP/ONVIF	
• PoE (IEEE 802.3at)	
• Remote Control RS-232/485/Ethernet	
• Lens Focal Length f=4.42mm~88.5mm	
• Pan Control Speed 1.7°~ 100°/sec	
• Tilt Control Speed 1.7°~ 69.9°/sec	
• Iris F1.8 (wide) ~ F2.8 (tele)	
• Minimum Illumination 0.5 lux (F1.8, AGC ON)	
• Audio Input Line In	
• Network Video Compress Format H.264, H.265, MJPEG	
WARRANTY: Three (3) years	
F. LIVE STREAM & VIDEO CONFERENCING SYSTEM	
Video Mix and Capturing Device	**1/unit**
• Dual HDMI to USB-C UVC Video Capture	
• Video In - 2 x HDMI Type A Female	
• USB Port - USB 3.2 Gen1 Type-B Male	
• Video Output - 1 x HDMI Type A Female	
• Video Input - 2160p30/25/24, 1080p60/50/30/25/24, 720p60/50, HDMI 1.4b support	
• Video Out - 1080p60/50/30/25/24, 720p60/50, HDMI 1.4b support (unencrypted)	
• Mix and capture two unencrypted 4K live videos at 1080P UVC format on PC or mobile device via USB 3.x interface with seamless transition	
• Intuitive Android/iOS App control – set up your camera gear and direct your show from anywhere	
• Supports real-time HDMI program video preview	
• Easily identifiable chroma keys – can make the video look like you are anywhere by changing the background	

	• Provides audio mixer with additional dual analog audio inputs	
	• Supports protected video (encrypted) switching mode for regular event usage	
	• Compatible with USB & Thunderbolt 3 (USB-C)	
	WARRANTY: One (1) year	
	Cat 5 Extender	**1/unit**
	• 4-Port USB 2.0 Cat 5 Extender over LAN	
	• Extends USB transmission over a Gigabit Ethernet	
	• Local Area Network (LAN)	
	• Supports transparent USB 2.0 signals and true plug-and-play (no software or drivers required)	
	• Pre-paired networked configuration through MAC Address for simple installation. No pairing action required	
	• Supports automatic connection link between Local and Remote units through DHCP	
	• Up to 100m between extender and switch and between switches over CAT 5e/6/7 cables	
	• Operates with all USB peripherals - fl ash drives, keyboards, mice, webcams, interactive whiteboards, and more	
	• Works with all major operating systems: Windows, OS X, and Linux	
	• USB Specification - USB 2.0 High/Full/Low Speed	
	• Network Protocol - 10/100/1000BASE-T Ethernet	
	WARRANTY: One (1) year	
	G. RECORDING AND REMOTE CONTROL SYSTEM	
	Computer Laptop	**1/unit**
	• Intel Core i5-8250U Processor (6M Cache, up to 3.40 GHz)	
	• 4GB onboard + 8 GB SODIMM	
	• 128 GB SSD + 1TB SATA HDD	
	• 2GB AMD RADEON 535 GDDR5	
	• 15.6" FHD (1920x1080) IPS	
	• Windows 10	
	WARRANTY: One (1) year	
	Tablet	**1/unit**
	• 7.9" Display with True Tone	
	• A12 Bionic Chip	
	• Memory - 256GB	
	• Camera - 8MP Back Camera	
	• 7MP HD Front camera	
	WARRANTY: One (1) year	
	II. AUDIO SYSTEM	
	A. MAIN DIGITAL AUDIO PROCESSOR, INTERFACES, POWER CONDITIONER & EQUIPMENT RACK	
	Digital Audio Server with Audio Video Bridging	**2/unit**
	• 128 x 128 channels of AVB	
	• 12 mic/line level inputs, 8 mic/line level outputs	
	• Gigabit Ethernet port	
	• Up to 8 channels of configurable USB audio	
	• RS-232 serial port	
	• 4-pin GPIO	
	• 2-line OLED display with capacitive-touch navigation	
	• Frequency Response: 20Hz to 20kHz	
	• Sampling Rate: 48 kHz	
	• Input Gain Range: 0 to 66 dB	

	• A/D to D/A Converters: 24-bit	
	• Rack mountable (1RU)	
	• System configuration and control via Ethernet	
	• Internal universal power supply	
	• Fully compatible with servers, expanders and controllers (AVB model)	
	• CE marked, UL listed and RoHS compliant	
	WARRANTY: Five (5) years	
	12-Channel Modular Expander	**1/unit**
	•Up to three I/O cards in any combination: EIC-4, EEC4, EOC-4 and EIOC-4	
	• Up to 12 channels total of analog audio	
	• AVB connection to Tesira system for audio networking, configuration and control	
	• Front panel LEDs for device status indications	
	• Internal universal power supply	
	Rack mountable (1RU)	
	• CE marked, UL listed and RoHS compliant	
	• Frequency Response: (20Hz~20kHz @ +4dBu): +0/-0.25dB	
	WARRANTY: Five (5) years	
	Expander Card with 4 Analog Input Channels	**1/unit**
	•4 channels of balanced mic or line level input	
	• Plug-in barrier strip connectors	
	• 0 – 66dB gain, adjustable in 6dB increments	
	• Clip indicator	
	• +48V Phantom Power	
	• -100dB to +12dB fader range for level	
	• Signal invert for reverse polarity	
	• RoHS compliant and AES grounded	
	• Frequency Response (20Hz~20kHz @ +4dBu): +0/-0.25dB	
	WARRANTY: Five (5) years	
	Expander card with 4 analog input channels that includes AEC (Acoustic Echo Cancellation)	**1/unit**
	• Plug-in barrier strip connectors	
	• 0 – 66dB gain, adjustable in 6dB increments	
	• Clip indicator	
	• +48V Phantom Power	
	• -100dB to +12dB fader range for level	
	• Signal invert for reverse polarity	
	• RoHS compliant and AES grounded	
	WARRANTY: Five (5) years	
	Logic Control and Interface Expander	**2/unit**
	• 16 total logic connections can be used as inputs or outputs	
	• Four of the 16 connections can be used as voltage control inputs	
	• Inputs can control actions within the software including: presets, mutes, ducking, room combining, paging functions, and much more	
	• Outputs can trigger status relays, indicators or provide logic input to other controllable equipment	
	• Serial port for the output of command strings	
	• Connects to Server over Ethernet	
	• Powered by PoE	
	• Plug-in barrier strip connections	
	• Front panel LEDs for device status indications	
	• Half-rack chassis	

WARRANTY: Five (5) years		
Ethernet Switch		**1/unit**
• 5-Port AVB Ethernet Switch (Note: the five AVB ports can also be used for Ethernet)		
• Operational bandwidth 10 / 100 / 1 Gigabit		
• Front panel 12 x activity LED		
• Power 8-18V DC • 0.5A • tip positive		
• Length: 5 ½ in / 14 cm		
• Width: 3 ⅝ in / 9.2 cm		
• Height: 1 ⅛ in / 2.7 cm		
• Industry standard IEEE 802.1 AVB Ethernet switch.		
• Use standard CAT-5e or CAT-6 Ethernet cables up to 100 meters.		
• Bridging to standard Ethernet for internet and Wi-Fi.		
WARRANTY: One (1) year		
Power Conditioner with voltmeter and ammeter and rack lighting		**1/unit**
• Central power supply with 8 switchable IEC sockets		
• Unswitched convenience socket on the front		
• Resettable circuit breaker on the front panel		
• 2 pull-out LED rack lights with dimmer		
• LED gooseneck lamp with USB connection for the lighting of the rack		
• Volt and ammeter with easy-to-read display		
WARRANTY: One (1) year		
B. SPEAKER SYSTEM & AMPLIFICATION		
Ceiling Speaker		**6/units**
• 2-way 6.5" ceiling speaker with grill		
• Color - White		
• Max. Power 60 W		
• RMS Power 30 W		
• Sensitivity (1W/1m) 88 dB		
• Speaker type 2-way coaxial		
• Impedance 8 Ω		
• Connectors Multi-tap connections		
• Sound Pressure (Max. W/1m) @ 100 V 103 dB		
• Frequency Response (± 3 dB) 55 Hz - 20 kHz		
• Frequency Range (-10 dB) 45 Hz - 20 kHz		
• Dispersion - Conical 150°		
• Drivers : HF 1" and LF 6.5¼"		
WARRANTY: Five (5) years		
Power Amplifier		**2/unit**
• Dual-channel power amplifier 2 x 240 W 100 V		
• Signal / Noise > 100 dB		
• THD+N (@ 1 kHz) < 0.3% (1/2 Rated Power)		
• Crosstalk (@ 1 kHz) < 80 dB		
• Technology Class-D		
• Common mode rejection ratio 70 dB		
• Protection DC Short circuit, over-heating, over load, signal limiting		
• Cooling Temperature controlled FAN		
• Operating temperature 0° ~ 40° @ 95% Humidity		
• Frequency Response (± 3 dB) 50 Hz - 22 kHz		
• Power Supply - Switching mode		
• Source 230 ~ 240 V AC / 50 Hz		

	• Inputs Sensitivity (1W/1m) -0.5 dB ~ 10.5 dB	
	• Impedance 10 kΩ balanced	
	• Connector XLR female with male link through	
	• Outputs Voltage / Impedance 100 V / 42 Ω	
	• Connector 4-pin Euro Terminal Block (Pitch - 5.08 mm)	
	WARRANTY: Five (5) years	
	C. MICROPHONE - FOR PRESENTER AND AUDIENCE	
	On-Table Boundary Microphone	**16/unit**
	• Toggle on/off	
	• Programmable On, On/Off, PTT, PTM Modes	
	• Cardioid Polar Pattern	
	• Dimensions - 85 x 100 x 25 mm (WxDxH)	
	• Frequency response - 40 Hz – 20 kHz	
	• Sensitivity - 10 mV/Pa	
	• Max. sound pressure level - 140 dB	
	• Impedance - 200 ohms	
	• Dynamic Range - 111 dB A-Weighted	
	• Equivalent Noise Level - 29 dB A-Weighted / 39 dB CCIR	
	• Transducer principle - pre-polarized condenser microphone	
	WARRANTY: Five (5) years	
5	**AUDIO / VISUAL ROOMS (AVR 1 & AVR 2)**	**1/lot**
	I. VIDEO SYSTEM	
	A. VIDEO PROJECTION SYSTEM AND ACCESSORIES	
	Video Projector	**2/unit**
	• 5,000 lumens WUXGA 3LCD Basic Installation projector	
	• Display system - 3 LCD system	
	• Size of effective display area - 0.64" (16.3 mm) x 3 LCD Panel, Aspect ratio: 16:10	
	• Number of pixels - 6,912,000 (1920 × 1200 × 3) pixels	
	Projection lens	
	• Focus - Manual	
	• Zoom Ratio - Approx. x 1.45	
	• Throw Ratio - 1.5:1 to 2.2:1	
	• Lens shift Powered/Manual - Manual	
	• Lens shift Vertical Range +/- 5%	
	• Lens shift Horizontal Range +/- 4%	
	• Light source - Ultra high pressure mercury lamp	
	• Wattage - 280 W	
	WARRANTY: Five (5) years	
	Motorized Projector Screen	**2/unit**
	• 120" Diag., / 16:9 Aspect Ratio	
	• Viewing Area 2656mm x 1494mm	
	• Product Height 2114mm	
	• Black Drop 400mm	
	• Lower Border 80mm	
	• Left/Right 50mm	
	• Product length 2890	
	• Endcap Height 110 mm / Endcap Width 110	
	WARRANTY: Three (3) years	
	HDMI Extender	**2/unit**
	• HDMI Cat 5 Extender	

	• Uses Cat 5e cable to extends the distance between HDMI source and display	
	• Extend 1080p by 40 m; extend 1080i (HDTV) by 60 m	
	• HDMI (3D, Deep Color); HDCP Compatible	
	• 8 segment equalization adjustment switch optimizes display quality	
	WARRANTY: One (1) year	
	II. AUDIO SYSTEM	
	A. ANALOG MIXER, POWER CONDITIONER AND EQUIPMENT RACK	
	Mixing Console	**2/unit**
	• 8-channel mixer with 100 digital effects presets	
	• 4 microphone channels and 3 stereo line inputs	
	• Effective 3-band EQ	
	• Sliding adjustable compressor	
	• Master, Monitor and headphone outputs	
	• Securely fastening external power supply	
	• Mono Mic/Line Input Frequency Range : 10-45000 Hz	
	• Amplification Range Mono Mic/Line Input - 0-50 dB	
	• Mono Mic/Line Input S/N Ratio - 113 dB	
	• Mono Channel Equalizer High : +/- 15 dB @ 12000 Hz	
	• Mono Channel Equalizer Mid : +/- 15 dB @ 2500 Hz	
	• Mono Channel Equalizer Low : +/- 15 dB @ 80 Hz	
	WARRANTY: Five (5) years	
	Power Conditioner with voltmeter and ammeter and rack lighting	**2/unit**
	• Central power supply with 8 switchable IEC sockets	
	• Unswitched convenience socket on the front	
	• Resettable circuit breaker on the front panel	
	• 2 pull-out LED rack lights with dimmer	
	• LED gooseneck lamp with USB connection for the lighting of the rack	
	• Volt and ammeter with easy-to-read display	
	WARRANTY: One (1) year	
	Rack Cabinet	**2/unit**
	• 19" rack cabinet - 12 units	
	• Dimensions 600 x 636 (722) x 600 mm (W x H (incl.feet) x D)	
	• Unit height 12 HE	
	• Max. usable depth 540 mm	
	• Color Black	
	• Static load capacity (adjustable feet) 800 kg	
	• Dynamic load capacity (transport castors) 400 kg	
	• Integrated ventilation grid on top	
	• 50 mm Wheels + leveling feet included	
	• 1 x Allen key	
	• 4 x Key for front/back door	
	WARRANTY: Three (3) years	
	Cooling Fan	**2/unit**
	• 19" cooling roof fan unit	
	• Dimensions 450 x 50 x 363 mm (W x H x D)	
	• Noise < 51 dB	
	• Power 2 x 20 W	
	WARRANTY: Three (3) years	
	B.SPEAKER SYSTEM AND AMPLIFICATION	
	Wall Speaker	**4/unit**

	• Vertical and horizontal mounting (rotatable logo)	
	• Multi-tapping 100V line transformer	
	• 1" Dome tweeter	
	• 6" Low frequency loudspeaker	
	• 100V and low impedance connection possibility	
	• Stunning designed and elegant looking ABS enclosure	
	• Speaker type - Full range	
	• Max. Power 120 W	
	• RMS Power 60 W	
	• Impedance 8 Ω	
	• Sensitivity (1W/1m) : 89 dB	
	• Connectors - 6-pin Custom Terminal Block	
	• Drivers - 1" Dome Tweeter / 6" MF / LF Woofer	
	WARRANTY: Five (5) years	
	Subwoofer	**2/unit**
	• 10" 200-watts Ceiling/In-wall Subwoofer super slim design	
	• Max. Power 200 W	
	• RMS Power 100 W	
	• Impedance 8 Ω	
	• Sound Pressure (Max. W/1m) 108 dB	
	• Frequency Response (± 3 dB) 50 Hz - 250 Hz	
	• Range (-10 dB) 28 Hz - 300 Hz	
	• Crossover Frequency 250 Hz	
	• Type Passive built-in	
	• Dispersion - Horizontal 180° / Vertical 180°	
	• Drivers LF 10"	
	WARRANTY: Five (5) years	
	Amplifier	**2/unit**
	• Quad-channel Class-D amplifier 4 x 250W	
	• Lightweight class-D amplifier	
	• Energy-star certified	
	• Standby energy saving mode	
	• Convention cooled	
	• Terminal block output connections	
	• XLR input connections with crossover operation mode switch	
	• Signal / Noise > 90 dB	
	• THD+N (@ 1 kHz) < 0.1%	
	• Crosstalk (@ 1 kHz) > 70 dB	
	• Class-D Technology	
	• Protection : DC Short circuit, Over heating, Over load, Signal limiting	
	• Convection cooled	
	• Operating temperature 0° ~ 40° @ 95% Humidity	
	• Frequency Response (± 3 dB) 20 Hz - 20 kHz	
	WARRANTY: Five (5) years	
	C. MICROPHONE FOR PRESENTOR AND AUDIENCE	
	Public Address Podium	**2/unit**
	• Public Address Podium with one Gooseneck Mic and one lamp, two wireless handheld mics	
	• 60W rated power output	
	• 1 aux input, 2 MIC inputs, 1 line output and 1 REC output	
	• Power consumption: 100W	

	• Frequency Response: 100Hz-16000Hz	
	WARRANTY: One (1) year	
	Narrowband Dual-Channel True Diversity Receiver	**2/unit**
	• Frequency Range UHF 480~934 MHz	
	• Bandwidth 24 MHz	
	• Preset Frequency 104 preset channels.	
	• Group 1 – 6: 8 compatible channels in each group	
	• Group 7 – 8: 12 compatible channels in each group	
	• Group 9 – 10: 16 compatible channels in each group	
	• Receiving Mode True diversity	
	• Receiving Antenna Rear Panel. Detachable.	
	• Oscillation Mode PLL Synthesized	
	• Stability <= ±0.005% (-10 –+60 deg C)	
	• Sensitivity 6 dBµV at S/N > 80 dB	
	• S/N Ratio > 105 dB(A)	
	• T.H.D. < 0.5% @ 1 kHz	
	• Frequency Response 50Hz - 18kHz, with high-pass filter	
	• Squelch "PiloTone & NoiseLock" dual-squelch circuit	
	• Audio Output level accurately pre-adjusted to equal to the microphone capsule sensitivity	
	• Max. Output Level +16dBV / 0dBV / -6dBV	
	WARRANTY: Five (5) years	
	Narrowband Handheld Transmitter	**2/unit**
	• Frequency Range - UHF 480~934 MHz	
	• Bandwidth - 24 MHz	
	• Channel Set-Up - ACT Sync (switchable)	
	• RF Output Power - 10mW / 50mW switchable	
	• Spurious Emissions - -60 dBc	
	• Oscillation Mode - PLL Synthesized	
	• Frequency Stability - ±0.005% (-10 – +60)	
	• LCD Display - group, channel, frequency, AF gain, frequency band, RF power, mute mode, battery status and error codes	
	• Gain Setting - +6 dB, +3 dB, 0 dB, -3 dB, -6 dB (5 settings) 0 dB = input microphone sensitivity	
	• Max. SPL - 142 dB	
	WARRANTY: Five (5) years	
	Omni-Directional Head Worn Microphone	**2/unit**
	• Capsule - Ø 4.5 mm omni-directional condenser microphone	
	• Frequency Response - 40 Hz – 20 kHz ± 3 dB	
	• Capsule Impedance - 200 Ω	
	• Sensitivity - -49 dBV ± 3 dBV / Pa (0 dB = 1 V / Pa)	
	• Maximum SPL - 135 dB (typical, 1% T.H.D.)	
	• Capsule-shaft holder - Dual - left and right side	
	• Plug - 4-pin mini-XLR plug or TA4F	
	• Color – Skin tone	
	• Cable Length - 150 cm / 59.1"	
	WARRANTY: Five (5) years	
	Microphone Stand	**2/unit**
	• Microphone Stand with Folding Tripod Base and 2-Point Adjustment Telescoping Boom	
	• Tubing material - Steel	
	• Tubing color - Black	

	• Tubing surface - Powder Coated	
	• Min. height 1030 mm	
	• Max. height 1690 mm	
	• Transport length 1050 mm	
	• with height adjustment	
	• Base type - Tripod	
	• Base material - Zinc die-cast	
	• Boom model - 2-point adjustment	
	• Boom length - 880 mm	
	• Interchangeable rings 1x25 mm, 2x15 mm, 4x20 mm	
	• Black ring pack included	
	WARRANTY: Three (3) years	
6	**PROJECT ENGINEERING AND MISCELLANEOUS EXPENSES**	
	A. HARDWARES, MISCELLANEOUS AND ACCESSORIES	**1/lot**
	a. Roughing-ins, Flexible host, junction box, rigging support speaker, projector, lighting batten and other miscellaneous to complete the installation.	
	b. Audio/Video/patch panels, audio and video connectors	
	c. Connection/Tapping to power source including separate breaker per room and separate panel per floor.	
	B. PROJECT ENGINEERING AND SUPERVISION, LABOR & INSTALLATION, PROGRAMMING, TESTING, COMMISSIONING AND TECHNICAL TRAINING OF END-USERS	**1/lot**
	a. Labor cost of required technical personnel, installers and manpower to complete the installation of all proposed equipment	
	b. Complete system and equipment set-up, programming and commissioning	
	c. Training of technical personnel/sound system technicians/end-users (lecture and hands-on) covering equipment orientation/familiarization, proper operation and usage and equipment maintenance procedures.	
	e. Technical and coordination meetings, ocular inspections and verifications of project site conditions.	
	f. Preparation and submittal of system design, drawings, diagrams and other required technical documents.	
	g. Required project supervision works of engineers within the duration of project installation.	
	h. Mobilization/demobilization and delivery/transport of all equipment, hardware and logistics	
	i. Processing of work permits & other required documents for the execution of the work, as required	
	Compliance:	
	Warranty Certificate	
	Certificate of Product Authenticity as applicable	
	Brochure / catalogue of the item being offered	
	Manufacturer's Authorization Form or Certificate as Authorized Distributor/Reseller or Certificate of Registration as Manufacturer/Fabricator	
	Contract Implementation:	
	The supplier must advise the Supply Office of the delivery schedule at least three (3) calendar days before the actual delivery.	

Prepared by:

ENGR. OLIVER R. MARIANO
Technical Working Group

MR. ARSENIO CABALLERO
Technical Working Group

I undertake to comply and deliver all the above requirements are true and correct, otherwise, if found false either during evaluation or post-qualifications, he same shall give rise to automatic disqualification of our bid:

Company Name   :   _____

Address   :   _____

AUTHORIZED REPRESENTATIVE:

Signature   :   _____

Complete Name   :   _____

Date   :   _____