मिरा भाईंदर महानगरपालिका

स्व. इंदिरा गांधी भवन, मुख्य कार्यालय, छत्रपती शिवाजी महाराज मार्ग,
भाईंदर (प.), ता.ठाणे-४०११०१ दुरध्वनी क्रं.२८१९२८२८

बांधकाम / विद्युत विभाग

जा.क्र. मनपा/साबां/विद्युत/ १६९२ /2023-24
दि. १५/ १२ /2023

प्रति,
सिस्टीम मॅनेजर
माहिती तंत्रज्ञान विभाग तथा जनसंपर्क अधिकारी
मिरा भाईंदर महानगरपालिका

विषय :- जाहीर सुचना वृत्तपत्रात व महानगरपालिकेच्या संकेतस्थळावर प्रसिध्द करणेबाबत.

महोदय,

उपरोक्त विषयांकित **मौजे घोडबंदर येथील किल्ल्याच्या शेजारील मोकळया भुखंडावर शिवसृष्टी उभारणे** कामी सोबत जोडण्यात आलेली कोटेशन नोटीस महानगरपालिकेच्या अधिकृत संकेत स्थळावर तसेच स्थानिक वृत्तप्रत्रांमध्ये प्रसिध्द / upload करण्यात यावी.

(नितिन मुकणे)
कार्यकारी अभियंता (साबां/वि)
मिरा भाईंदर महानगरपालिका

PC-03/23-24/PJ/L-511

मिरा भाईंदर महानगरपालिका

स्व. इंदिरा गांधी भवन, मुख्य कार्यालय, छत्रपती शिवाजी महाराज मार्ग,
भाईंदर (प.), ता.ठाणे-४०११०१ दुरध्वनी क्रं.२८१९२८२८

बांधकाम / विद्युत विभाग

जा.क्र. मनपा/साबां/विद्युत/ १६९२ /2023-24
दि. २५/ १२ /2023

// जाहिर नोटीस //

मिरा भाईंदर महानगरपालिका क्षेत्रातील मौजे घोडबंदर येथील किल्ल्याच्या शेजारील मोकळया भुखंडावर शिवसृष्टी उभारणे कामी चालु जिल्हा दरसुचीमध्ये दर उपलब्ध नसल्यामुळे खुल्या बाजारातुन दरपत्रक मागविण्यात येत आहे.

सदर कामाकरिता दि.26/12/2023 रोजी संध्या 4.00 वाजेपर्यंत मिरा भाईंदर महानगरपालिका, मुख्य कार्यालय, विदयुत विभाग, 4 था मजला येथे स्वारस्य असलेल्या कंत्राटदाराने सोबत जोडलेल्या दरपत्रकातील बाबींकरीता दर भरुन देण्यात यावेत.

(नितिन मुकणे)
कार्यकारी अभियंता (साबां/वि)
मिरा भाईंदर महानगरपालिका

PC-03/23-24/PJ/L-510

MIRA BHAINDAR MUNICIPAL CORPORATION

PWD / Electric Department
Indira Gandhi Bhavan, Chhatrapati Shivaji Maharaj Marg,
Bhaindar (W) 401101,
Tal. Dist – Thane, Ph. 28192828

// RATE FORM //

Name of Work :- Rate for material require for BEAUTIFICATION AND DEVELOPMENT OF SHIVSRUSHTI AT GHODBANDAR FORT, IN MBMC AREA.

Name and address of Contractor :-

B-2 FORM

Sr. No.	Description	Qty	UNIT	RATE
	AR EXPERIENCES			
1.	Supply and installation of Accessories with specifications mentioned below and as per direction of Engineer-in-charge. 7000 Lumen Epson Projector MR EPSON 7905 Projection System High-aperture Epson 3-chip, 3LCD technology LCD Panel 0.79" Poly-silicon TFT Active Matrix Color Light Output 7,000 lumens White Light Output 7,000 lumens LCD Image Resolution WUXGA, 1920 x 1200, 16:10, Colour Reproduction 30 bits, 1.07B Color (10+10+10), Throw Ratio 1.44 – 2.32 ,Lensing Standard Optical : f1.7-2.3 | 24.0mm - 38.2mm Zoom Zoom 1 - 1.6	1	no.	
2.	Supply and installation of Processor Intel Core i7 8700 (8th Generation) with specifications mentioned below and as per direction of Engineer-in-charge:Mainboard Gigabyte B310M Motherboard, RAM 16 GB Kingston DDR4 HyperX RAM Storage 256 GB SSD, Display Adapter Nvidia GTX 1660 6GB VRAM Network Adapter Gigabit Ethernet LAN 10/100/1000 HID Dell USB Keyboard + Mouse Combo MR	1	no.	
3.	Supply and installation of Camera with specifications mentioned below and as per direction of Engineer-in-charge. Camera Logitech Briostream Ultra HD 4K	1	nos.	

	Streaming Edition, 1080p/60fps Hyper-Fast Streaming MR			
4.	Supply and installation of Speakers with specifications mentioned below and as per direction of Engineer-in-charge. Brand and Model QSC AC-S6T Acoustic Coverage™ Description 6.5-inch 2-way, 130° conical Surface Mount speakers Components LF : 165 mm (6.5-inch) Polypropylene woofer with 25 mm (1-inch) voice coil HF: 25 mm (1-inch) Aluminium dome tweeter with 25 mm (1-inch) voice coil Frequency Response 60 Hz–20 kHz Rated Noise Power / Voltage 30 watts / 15.5 volts rms Max O/P 101 dB SPL LTC / 107 Db, SPL Peak, Impedance 8Ω, Broad-band Sensitivity 86 dB SPL, Coverage Angle 130° conical (500 Hz–5 kHz), Directivity Factor, RΘ (Q) 6, Directivity Index, Di 8 dB MR	1	no.	
5.	Supply and installation of Amplifier with specifications mentioned below and as per direction of Engineer-in-charge. Brand and Model Crown XLS 1502 Description Two-channel, 525W @ 4Ω Class D Power, Amplifier, Sensitivity 1.4Vrms, Frequency Response +0dB, -1dB, Signal to Noise >103dB (at .775Vrms, 6dB lower) Inter modulation Distortion < 0.3%, Damping Factor > 200 THD < 0.5%, Crosstalk At 1kHz: > 85dB, At 20kHz: > 55dB MR	1	no.	
6.	Supply and installation of Licenses with specifications mentioned below and as per direction of Engineer-in-charge:Windows 10 Professional (OEM License) MR	1	nos.	
7.	Projector Mount Supply and installation of Projector Mount with specifications mentioned below and as per direction of Engineer-in-charge: MR	1	no.	
8.	Cables / Connectors for the zone Refers to the various wire/connectors needed for the optimum functioning of the hardware with specifications needed and as per direction of Engineer-in-charge. MR	1	set	
9.	Technical Architecture Design :It refers to the high level	1	no.	

	structures of a software system and the discipline of creating such structures and systems. Each structure comprises software elements, relations among them, and properties of both elements and relations. It functions as a blueprint for the system and the developing project, laying out the tasks necessary to be executed by the design teams.It is about making fundamental structural choices which are costly to change once implemented. Software architecture choices include specific structural options from possibilities in the design of software. For example, the systems that controlled the space shuttle launch vehicle had the requirement of being very fast and very reliable. Therefore, an appropriate real-time computing language would need to be chosen. Additionally, to satisfy the need for reliability the choice could be made to have multiple redundant and independently produced copies of the program, and to run these copies on independent hardware while cross-checking results. MR			
10.	Software Programming : It is the process of designing and building an executable computer program for accomplishing a specific computing task. Programming involves tasks such as: analysis, generating algorithms, profiling algorithms' accuracy and resource consumption, and the implementation of algorithms in a chosen programming language (commonly referred to as coding). The source code of a program is written in one or more languages that are intelligible to programmers, rather than machine code, which is directly executed by the central processing unit. The purpose of programming is to find a sequence of instructions that will automate the performance of a task (which can be as complex as an operating system) on a computer, often for solving a given problem. The process of programming thus often requires expertise in several different subjects, including knowledge of the application domain, specialized algorithms, and formal logic. It interfaces all the pages of the book in a interactive way, pages are combinations of static images and videos. MR	1	no.	

11.	Asset Integration MR asset integration refers to the compiling/placing/integration/optimsation for AR of the various elements (graphics/cgi) needed to from the front end of the desired application/installation	1	no.	
12.	Testing / Compilation : It is an investigation conducted to provide stakeholders with information about the quality of the software product or service under test.Software testing can also provide an objective, independent view of the software to allow the business to appreciate and understand the risks of software implementation. Test techniques include the process of executing a program or application with the intent of finding software bugs (errors or other defects), and verifying that the software product is fit for use. MR	1	no.	
13.	3D Animation , VFX, Sound Refers to the computer generated imagery needed for the visuals of the specific installation.The further included various post production process /sound engineering /editing /animation and the final output . MR	1	sec	
14.	Integration / Installation This includes the setting up of the physical installation of AR including mointing of the projectors /screens/and loading and executuin of the required software/licenses MR	1	no.	
	VIRTUAL REALITY (VR)			
15.	Oculus Go:Oculus Go Standalone Virtual Reality Headset Hardware to showcase and play 360 envoirments. MR	1	nos.	
16.	Router: Supply and installation of router with specifications mentioned below and as per direction of Engineer-in-charge:Router:Dlink MR Dlink Switch 24 Port: MR Brand and Model Dlink DGS-1210-28 Description 24 Port Web Smart Switch Ports 24 10/100/1000Base-T ports + 4 SFP ports	1	no.	
17.	TouchScreen Display:10inch Touch Display MR Supply and installation of router with specifications mentioned below and as per direction of Engineer-in-charge.Description Touch Screen Interface with Control	1	nos.	

	Hardware Screen Size 10"			
18.	Computer for touchscreen:Asus stickMR Brand and Model Asus RT-AC58UDescription AC1300 Dual Band WiFi RouterNetwork Standards IEEE 802.11a, IEEE 802.11b, IEEE 802.11g, IEEE 802.11n, IEEE 802.11ac, IPv4, IPv6Peak Data Rate up to 867 Mbps (@ 802.11ac)	1	nos.	
19.	Supply and installation of Licenses with specifications mentioned below and as per direction of Engineer-in-charge:Windows 10 Professional (OEM License) MR	1	nos.	
20.	Cables / Mounts: MR refers to the various wire/connectors/mounts needed for the optimum functioning of the hardware with specifications needed and as per direction of Engineer-in-charge.	1	set	
21.	VR Application Development: MR Refers to the development of the virtual reality software spesific to the intallation	1	no.	
22.	Integration / Installation MR This includes the setting up of the physical installation of VR including mointing of the projectors /screens/and loading and executuin of the required software/licenses	1	nos.	
23.	UI / UX MR Refers to the designig of the user interface and the complete user journey of the specific application/installation	1	nos.	
24.	Assets MR Refers to the various elements required of the specific installation.The assets are created in the various required computer software	1	no.	
	TOUCHSCREEN GAMES (CROSSWORD TABLE)	1		
25.	Computer MR Supply and installation of Processor Intel Core i7 8700 (8th Generation) with specifications mentioned below and as per direction of Engineer-in-charge: Mainboard Gigabyte B310M Motherboard RAM 16 GB Kingston DDR4 HyperX RAM Storage 256 GB SSD Display Adapter Nvidia GTX 1060 4GB VRAM Network Adapter Gigabit Ethernet	1	nos.	

	LAN 10/100/1000 HID Dell USB Keyboard + Mouse Combo			
26.	Supply and installation of Licenses with specifications mentioned below and as per direction of Engineer-in-charge: Windows 10 Professional (OEM License) MR	1	nos.	
27.	Samsung 43inch Capacitive Touch Screen Display MR Brand and Model Samsung PM43F-BC Display Type 60Hz E-LED BLU Screen Size 43" Resolution 1920x1080 (Full HD) Active Display Area 1209.6mm (H) x 680.4mm (V) Brightness 350 nit Pixel Pitch 0.49(H) x 0.49(V) Contrast Ratio 3000:1 Viewing Angle 178:178 Colour Depth 10bit Dithering - 1.07Billion | Gamut 72%	1	nos.	
28.	Supply and installation of Speakers with specifications mentioned below and as per direction of Engineer-in-charge. Brand and Model QSC CP8 Configuration Two-way active loudspeaker LF Transducer: 8 in (203 mm), cone HF Transducer: 1.4 in (35.6 mm) compression driver Frequency Response (-6 dB) 56 - 20 kHz Frequency Range (-10 dB) 53 - 20 kHz Nominal Coverage Angle: 90° Axisymetric, Maximum Rated SPL1: 124 dB,AC Power Input: Universal power supply 100 – 240 VAC, 50 – 60 Hz AC Power Consumption (1/8th Power): 100 VAC, 0.75A - 240VAC 0.31A MR	1	no.	
29.	Cables / Connectors for the zone MR refers to the various wire/connectors needed for the optimum functioning of the hardware with specifications needed and as per direction of Engineer-in-charge.	1	set	
30.	Games MR Refers to the various software development process to achieve the desired game for the installation	1	nos.	
31.	Integration / Installation MR This includes the setting up of the physical installation Touch screen Crossword including mointing of the projectors /screens/and loading and executuin of the required software/licenses	1	no.	

	CENTRAL SERVER			
32.	Server: "Supply and installation of Processor Intel Xeon E3-1225 v5 with specifications mentioned below and as per direction of Engineer-in-charge. Chipset Intel C236, RAM 8GB DDR4, Storage 1TB SATA HDD, Network Controller Intel®I219-LM Gigabit Ethernet LAN 10/100/1000", "Supply and installation of Commercial Display with, specifications mentioned below and as per direction of , Engineer-in-charge. Brand and Model Dell E2219HN, Display Type LED-backlit LCD monitor, Screen Size 54.61cm (21.5""), Resolution 1920 x 1080 @ 60Hz (16:9), Brightness 250 cd/m² Pixel Pitch 0.248mm, Pixel Density 102 PPI, Viewing Angle 178° vertical / 178° horizontal, Colour Depth 16.7 Million colors, Input Connections 1 x HDMI v1.4 + 1 x VGA" MR	1	no.	
33.	Supply and installation of Server Rack with specifications mentioned below and as per direction of Engineer-in-charge., Brand and Model WQ India, Size 12 U MR	1	no.	
34.	Supply and installation of Licenses with specifications mentioned below and as per direction of Engineer-in-charge: Windows 2016 Server (OEM License) MR	1	no.	
35.	Display:24inch Dell MR Supply and installation of Commercial Display with specifications mentioned below and as per direction of Engineer-in-charge: Brand and Model Dell E2418HN Display Type In-Plane Switching Panel, Screen Size 60.47 cm (23.8"), Resolution 1920 x 1080 at 60Hz (16:9) Brightness 250 cd/m², Pixel Pitch 0.275 mm x 0.275 mm Pixel Density 93 PPI, Viewing Angle 178° vertical / 178° horizontal, Colour Depth 16.7 Million colors, Input Connections 1 x HDMI v1.4 + 1 x VGA	1	no.	
36.	Supply and installation of accessories with specifications mentioned below and as per direction of Engineer-in-charge: DLink CAT6 Cable (1000 ft) MR	1	nos.	

37.	Supply and installation of Accessories with specifications mentioned below and as per direction of Engineer-in-charge.Brand and Model Dlink DGS-1210-28Description 24 Port Web Smart SwitchPorts 24 10/100/1000Base-T ports + 4 SFP ports:MR	1	nos.	
38.	Networking: This refers to the Networking to be done in the entire premise which includes connecting the network cables, setting up the network switch, setting up the server for the zone and its required applications for the data to flow seamlessly MR	1	nos.	
39.	Central Management System: Development of two independent softwares that will manage multiple installations across technologies (maximum of 30 such installations) spread across total area of approx. 40,000 sq.ft., in total two zones at the leisure park. These softwares also manage the central controls which include switching on, sound decibel management, system tripping, single button activation and power management. MR.	1	no.	
40.	Integration / Installation MR This includes the setting up of the physical installation including mointing of the projectors /screens/and loading and executuin of the required software/licenses	1	no.	
	HOLOGRAM : -			
41.	Supply and installation of Processor Intel Core i7 8700 (8th Generation) with specifications mentioned below and as per direction of Engineer-in-charge: Mainboard Gigabyte B310M Motherboard, RAM 16 GB Kingston DDR4 HyperX RAM, Storage 256 GB SSD, Display Adapter Nvidia GTX 1060 4GB VRAMm Network Adapter Gigabit Ethernet LAN 10/100/1000, ID Dell USB Keyboard + mouse Combo MR	1	no.	
42.	15k Lumen Laser Projector with short throw lense MR Supply and installation of Accessories with specifications mentioned below and as per direction of Engineer-in-charge. Supply and installation of Laser Projector with specifications mentioned below and as per direction of Engineer-in-charge: Brand and Model Epson	1	no.	

	EB-L1505UHNL Light Source 670 W Laser Diode Projection System RGB liquid crystal shutter projection system LCD Panel 1.03-inch (D10), Color Light Output 12,000 lumen, White Light Output 12,000 lumen, LCD Image Resolution WUXGA, 1920 x 1200, 16:10, Colour Reproduction 30 bits, 1.07B Color (10+10+10), Lensing Standard Optical: f1.8-2.3 | 36mm - 57.35mm Powered Focus, Zoom 1 - 1.61 (Optical)			
43.	UST Lens MR Supply and installation of Accessories with specifications mentioned below and as per direction of Engineer-in-charge.Supply and installation of Ultra Short Throw Lens with specifications mentioned below and as per direction of Engineer-in-charge: Brand and Model Epson Ultra Short Throw Lens, ELPLX02, Zoom Ratio 0, Throw Ratio (4.3) 0.35, Throw Ratio (16:10) 0.35	1	no.	
44.	Monitor :- Supply and installation of Accessories with specifications mentioned below and as per direction of Engineer-in-charge. Supply and installation of Commercial Display with specifications mentioned below and as per direction of Engineer-in-charge: Brand and Model Dell E2418HN Display Type In-Plane Switching Panel, Screen Size 60.47 cm (23.8"), Resolution 1920 x 1080 at 60Hz (16:9) Brightness 250 cd/m², Pixel Pitch 0.275 mm x 0.275 mm Pixel Density 93 PPI, Viewing Angle 178° vertical / 178° horizontal, Colour Depth 16.7 Million colors, Input Connections 1 x HDMI v1.4 + 1 x VGA	1	nos.	
45.	Weatherproof Housing for electrical for Commercial Display of 32 inch. With electrical out and complete enclosure to withstand all season wear and tear without water leakage and constructured in metal housing MR	1	no.	
46.	Supply and installation of Speakers with specifications mentioned below and as per direction of Engineer-in-charge. 12" Variable Intensity Speaker,System Type 12" Variable Intensity Loudspeaker Direct-radiating vented-bass fullrange loudspeaker system Components High-efficiency, high-power castframe 305-mm (12-inch) woofer with one 25.4-mm (1.0-inch) exit compression driver mounted to a small format Variably Intentsity |Multi-Angled Housing | Direct-radiating vented	1	nos.	

	Frequency Response 45 Hz - 20 kHz Power Handling 250 W LTC / 1,000 W Peak Max O/P 122 dB SPL LTC / 128 dB SPL Peak Impedance 8Ω (Nominal) | 5.6Ω (Minimum) (17.5kHz) Beam - Long Throw (1-20 kHz) Horizontal : 60° (+38°, -5°) | Vertical : 70° (+35°, -15°) Beam - Short Throw (600Hz-20 kHz) Horizontal : 110° , (+25°, -15°) | Vertical : 90° (+40°, -20°), Directivity Factor, RΘ (Q), 1.2-20 kHz 14.0 (+4.5, -4.0), Directivity Index, Di, 1.2-20 kHz 12.5 dB (+1.5 dB, -2.7 dB) MR			
47.	Supply and installation of Amplifier with specifications mentioned below and as per direction of Engineer-in-charge. Brand and Model Crown XLS 1502, Description Two-channel, 525W, @ 4Ω Class D Power Amplifier, Sensitivity 1.4Vrms, Frequency Response +0dB, -1dB, Signal to Noise >103dB (at .775Vrms, 6dB lower), Inter modulation Distortion < 0.3% Damping Factor > 200, THD < 0.5%, Crosstalk At 1kHz: > 85dB, At , 20kHz: > 55dB MR	1	no.	
48.	RGB Stage Light MR Supply and installation of RGB stage light with specifications mentioned below and as per direction of Engineer-in-charge. Brand and Model : DMX Supported RGB Light	1	nos.	
49.	Stage Light Sspot Supply and installation of Stage light spot with specifications mentioned below and as per direction of Engineer-in-charge: 1. Follow Spot	1	no.	
50.	Holo Surface MR Supply and installation of Holographic Surface with specifications mentioned below and as per direction of Engineer-in-charge. Description Propreitory Semi-Transparent Projection Surface Dimensions 8m x 4m Description Rear Projection Film Dimensions 4' x 8'	1	no.	
51.	LAN to HDMI Converter MR HDMI converters are devices that connect a non-HDMI source to an HDMI display. ... For example, the HDMI signal flows out of your DVD player and into your TV.	1	no.	

52.	Projector Mount MR Supply and installation of Projector Mount with specifications mentioned below and as per direction of Engineer-in-charge:	1	no.	
53.	LG 32inch Commercial Display Supply and installation of Accessories with specifications mentioned below and as per direction of Engineer-in-charge. LG 32inch Commercial Display MR LG 32 Commercial Display: 16:9, Original, 4:3, Vertical Zoom, All-Direction Zoom, Audio output 3W +3W, 6 modes (Standard, Cinema, Clear voice, Cricket, Bollywood, Game), Self Diagnostics (USB), Multi IR Code, IR Out, HTNG/HDMI-CEC, WXHXD/Weight - 734X474X172/4.7kg	1	no.	
54.	Supply and installation of Licenses with specifications mentioned below and as per direction of Engineer-in-charge: Windows 10 Professional (OEM License) MR	1	nos.	
55.	Live Action Shoot MR Undertake test Shoots and Experiments to deduce appropriate camera angles for the specific measurement requirements of the target environment ,Professional Services of the Director, Director of Photography, Camera Crew, Lighting Crew, Sound Recordist, and other sundry shoot crew totalling 40 crew members for mentioned days of shoot.Rent of Lighting Systems for Croma Lighting, subject lighting for camera, and Stage Lighting of the set, for mentioned days of shoot.Professional Services of the Visual Effects Supervisor for mentioned days of shoot	1	nos.	
56.	Writing the complete script MR .This refers to the forming of the story in written form,wherein the idea beind the installtion is visualised and thought of.The same script is then reffered for all cgi creation and further development .	1	no.	
57.	Photorealistic Head Modelling MR Recreating Model Of The Personality Head in three dimension for it to be used in the process ahead. Three-dimensional (3D) models should represent a physical body using a collection of points in 3D space, connected by various geometric entities such as triangles, lines, curved surfaces, etc. Being a collection of data (points	1	no.	

	and other information), 3D models can be created by hand, algorithmically (procedural modeling), or scanned			
58.	Photorealistic Head Texturing MR In this process you would need to create colours, paints and textures for the above model so that it is realistic, for which you will have to use a method called multi texturing. Multitexturing is the use of more than one texture at a time on a polygon. For instance, a light map texture may be used to light a surface as an alternative to recalculating that lighting every time the surface is rendered. Microtextures or detail textures will be needed to add higher frequency details, and dirt maps may add weathering and variation; this can greatly reduce the apparent periodicity of repeating textures. Modern graphics may use more than 10 layers, which are combined using shaders, for greater fidelity. Another multitexture technique is bump mapping, which allows a texture to directly control the facing direction of a surface for the purposes of its lighting calculations; it can give a very good appearance of a complex surface (such as tree bark or rough concrete) that takes on lighting detail in addition to the usual detailed coloring.	1	no.	
59.	Rigging In this process you will be required to put digital joints and muscles so that the above model can be animated realisticlly. This technique is used by constructing a series of 'bones,' sometimes referred to as rigging. Each bone has a three-dimensional transformation from the default bind pose (which includes its position, scale and orientation), and an optional parent bone. The bones therefore form a hierarchy. The full transform of a child node is the product of its parent transform and its own transform. So moving a thigh-bone will move the lower leg too. As the character is animated, the bones change their transformation over time, under the influence of some animation controller. A rig is generally composed of both forward kinematics and inverse kinematics parts that may interact with each other. Skeletal animation is referring to the forward kinematics part of the rig, where a complete set of bone configurations identifies a unique pose.Each bone in the skeleton is associated with some	1	no.	

	portion of the character's visual representation in a process called skinning. In the most common case of a polygonal mesh character, the bone is associated with a group of vertices; for example, in a model of a human being, the 'thigh' bone would be associated with the vertices making up the polygons in the model's thigh. Portions of the character's skin can normally be associated with multiple bones, each one having a scaling factors called vertex weights, or blend weights. The movement of skin near the joints of two bones, can therefore be influenced by both bones. For a polygonal mesh, each vertex can have a blend weight for each bone. To calculate the final position of the vertex, a transformation matrix is created for each bone which, when applied to the vertex, first puts the vertex in bone space then puts it back into mesh space. After applying a matrix to the vertex, it is scaled by its corresponding weight.			
60.	Photorealistic Head Lighting In this Process you will need to match the lighting of the textured model to the shoot for it to look seamless. It refers to the simulation of light in computer graphics. This simulation can either be extremely accurate, as is the case in an application like Radiance which attempts to track the energy flow of light interacting with materials using radiosity computational techniques. Alternatively, the simulation can simply be inspired by light physics, as is the case with non-photorealistic rendering. In both cases, a shading model will be used to describe how surfaces respond to light. Between these two extremes, there are many different rendering approaches which can be employed to achieve almost any desired visual result.	1	no.	
61.	Hologram Head Animation - : MR Computer animation is the process used for generating animated images. The more general term computer-generated imagery (CGI) encompasses both static scenes and dynamic images, while computer animation only refers to the moving images. Computer animation is essentially a digital successor to the stop motion techniques using 3D models, and traditional animation techniques using frame-by-frame animation of 2D illustrations. Computer-generated animations are	1	sec.	

	more controllable than other more physically based processes, constructing miniatures for effects shots or hiring extras for crowd scenes, and because it allows the creation of images that would not be feasible using any other technology. It can also allow a single graphic artist to produce such content without the use of actors, expensive set pieces, or props. To create the illusion of movement, an image is displayed on the computer monitor and repeatedly replaced by a new image that is similar to it, but advanced slightly in time.			
62.	CGI Head Replacement on a Live Action Character and 3D Tracking. This refers to the replacement of the actual human head with the one which is CGI created in a computer software with all the facial animations and lighting.The animated head is then places/tracked freme by frame over the moving human so as to completly overlap the actual head . MR	1	sec.	
63.	Hologram Visual FX / Holographic Imagery MR This refres to creating of various graphical/visual elements in tune with the script/storyboard of the desired intallation in order to enhance the visual story telling .This inolves creation of element in various softwares and then compiling into one visual element .	1	sec.	
64.	Creating and Editing the Sound Effects MR Combining (Mixing) the 4K Output Video, the dubbed voice track, the sound effects, and original music into a single Master Video for playback through the Holographic Projection System	1	no.	
65.	Chroma Keying and Roto MR a photographic compositing technique based on the separation of colors in the original images especially : blue screen sense 1.rotoscoping is the technique of manually creating a matte for an element on a live-action plate so it may be composited over another background	1	sec.	
66.	4K Holographic Rendering MR This refers to the the image compilation of the composited output to form the final image/visual .The process invloves processeing of the various 4k element to be combined to form a single image.	1	frame	

67.	Compositing MR It represents each media object in a composite as a separate layer within a timeline, each with its own time bounds, effects, and keyframes. All the layers are stacked, one above the next, in any desired order; and the bottom layer is usually rendered as a base in the resultant image, with each higher layer being progressively rendered on top of the previously composited of layers, moving upward until all layers have been rendered into the final composite. Layer-based compositing is very well suited for rapid 2D and limited 3D effects such as in motion graphics, but becomes awkward for more complex composites entailing a large number of layers. A partial solution to this is some programs' ability to view the composite-order of elements (such as images, effects, or other attributes) with a visual diagram called a flowchart to nest compositions, or "comps," directly into other compositions, thereby adding complexity to the render-order by first compositing layers in the beginning composition, then combining that resultant image with the layered images from the proceeding composition	1	frame	
68.	Technical Architecture Design :It refers to the high level structures of a software system and the discipline of creating such structures and systems. Each structure comprises software elements, relations among them, and properties of both elements and relations. It functions as a blueprint for the system and the developing project, laying out the tasks necessary to be executed by the design teams.It is about making fundamental structural choices which are costly to change once implemented. Software architecture choices include specific structural options from possibilities in the design of software. For example, the systems that controlled the space shuttle launch vehicle had the requirement of being very fast and very reliable. Therefore, an appropriate real-time computing language would need to be chosen. Additionally, to satisfy the need for reliability the choice could be made to have multiple redundant and independently produced copies of the program, and to run these copies on independent hardware while cross-checking results. MR	1	no.	

69.	Fabrication Design and 3D Visualisation MR This refers to creation of the physical inslation inside of a software program to visualise how its going to look in the real world before the actual onground production	1	no.	
70.	Software Programming MR It is the process of designing and building an executable computer program for accomplishing a specific computing task. Programming will involve tasks such as: analysis, generating algorithms, profiling algorithms' accuracy and resource consumption, and the implementation of algorithms in a chosen programming language (commonly referred to as coding). The source code of a program is written in one or more languages that are intelligible to programmers, rather than machine code, which is directly executed by the central processing unit. The purpose of programming is to find a sequence of instructions that will automate the performance of a task (which can be as complex as an operating system) on a computer, often for solving a given problem. The process of programming thus often requires expertise in several different subjects, including knowledge of the application domain, specialized algorithms, and formal logic. The system splits the media in to two zones , low res for visualisation of the playback in the control room and 4K for the main holographic playback. Also gives turnkey playback system from the control unit.	1	no.	
71.	Asset Integration MR asset integration refers to the compiling/placing/integration/optimsation of the various elements (graphics/cgi) needed to from the front end of the desired application/installation	1	no.	
72.	Hologrom remote operation An additional key based playback control at the entrance so that manager can easily control from the front area as well.	1	no.	
73.	Countdown System Development of the software which will manage the installation with a timed solution linking the time of the show with the external visual system for relaying the schedule based on pre-planned timed shows. This system will also need to be agile for changing the system time based on the new schedule	1	no.	

74.	Testing / Compilation It is an investigation conducted to provide stakeholders with information about the quality of the software product or service under test. Software testing can also provide an objective, independent view of the software to allow the business to appreciate and understand the risks of software implementation. Test techniques include the process of executing a program or application with the intent of finding software bugs (errors or other defects), and verifying that the software product is fit for use.	1	no.	
75.	Installation / Integration This includes the setting up of the physical installation including mointing of the projectors /screens/and loading and executuin of the required software/licenses	1	no.	
76.	UI / UXThis is design balance process it balances technical functionality and visual elements. this is to create a system that is is not only operational but also usable and adaptable to changing user needs.	1	no.	
	PROJECTOR SYSTEM	1		
77.	SITC of Projector with specifications mentioned below and as per direction of Engineer-in-charge. Brand and Model **Epson L1755UNL** or Simillar Projection System: High-aperture Epson 3-chip 3 LCD Native Resolution: WUXGA (1920 x 1200) w/ 4K Enhancement Technology1 Brightness: 15,000 lumens	1	nos.	
78.	Custom made **Weather proof projector casing** to be made in metal powder coating Dimension: 23.1 x 19.4 x 8.3in Waterprooj projector case Power Coated Epoxy finish for waterproofing Rubber sealed IP31 rated Wall, Table or Ceiling Mounting option	1	nos.	
79.	SITC of projectors lens with specifications mentioned below and as per direction of Engineer-in-charge. **Projector Lens ELPLL08** or Simillar Interchangeable lens – for Pro L projectors up to 20,000 lumens and Pro G7000 Series projectors Wide lens shift – for added flexibility High-quality design – up to 1000" screen size support; 1.8 to 2.5 F-number; 119 mm to 165.4 mm focal length Zoom ratio – 1 - 1.4 Weight – 4.9 lbs (2200 g) Up to 8,500-lumen projectors – WUXGA/WXGA 7.21 to 10.11 throw ratio; lens shift – vertical: -67 percent to +67 percent, horizontal: -30 percent to +30 percent 9,000- to 20,000-lumen projectors – WUXGA 5.27 to 7.41	1	nos.	

	throw ratio; lens shift – vertical: -60 percent to +60 percent, horizontal: -18 percent to +18 percent, Native 4K projector – 5.09 to 7.16 throw ratio; vertical: -58 percent to +58 percent, horizontal: -16 percent to +16 percent			
80.	SITC of Computer Intel Core i7 with specifications mentioned below and as per direction of Engineer-in-charge. Brand and Model : Dell or Simillar RAM 16GB DDR4, Storage 240GB SSD, Graphics Card RTX 3060, Windows 11, 24in Monitor, Keyboard mouse	1	nos.	
	AUDIO SYSTEM			
81.	SITC of Speakers with specifications mentioned below and as per direction of Engineer-in-charge **Two way speaker system** **Dimension: 18" x 9" x 10"** Mount Type: On pole Make - Audio Focus or similar RXT108P: Low power Speaker RXT108P: Low Power Speaker	1	nos.	
82.	SITC of Speakers with specifications mentioned below and as per direction of Engineer-in-charge **Two way speaker system** **Dimension: 28" x 14" x 18"** Mount Type: On pole Make - Audio Focus or similar RXT112P: RXT112P: High Power Speaker	1	nos.	
83.	SITC of Speakers with specifications mentioned below and as per direction of Engineer-in-charge **High Power Subwoofer** **Dimension: 18" x 9" x 10"** Mount Type: On Floor Make - Audio Focus or similar RXT118P Subwoofer	1	nos.	
84.	SITC of **Audio Processor** with specifications mentioned below and as per direction of Engineer-in-charge RXT - Audio Control, Audio Processor, 8V to 10V, I2C, SOIC, 28 Pins, -40 °C, MEMS Microphone, 1.6V to 3.6V, HCLGA, 4 Pins,	1	nos.	
85.	SITC of **Amplifier** with specifications mentioned below and as per direction of Engineer-in-charge 4CH class D Amplifier freq band: 10hz to 22khz over current protection DC offset protection output power: 500w/ ch @ 8 ohm	1	nos.	

86.	Supply and Installation of **Speaker wire** with specifications mentioned below and as per direction of Engineer-in-charge. Type: optical fiber or similar Guage: 2.5sq/mm Connector Type: XT30 IPx Gold plated	1	set	
	MISCELLANEOUS	1		
87.	**Software Programming** Generate control signal for DMX to operate Individual Solenoid for nozzle Generate control signal for DMX to operate individual Pressure valve for Nozzles Generate control signal for DMX to operate VFD Generate control signal for DMX to operate LED light Generate control for projector Create a system to map all four projector Create a system to run projector in sync with nozzles	1	nos.	
88.	**4k Video content** : These will be Ultra high Defination Content Specifically Converted in the required format, It will be played on multiple projectors arranged in stack to create a synced and immersive experience.	1	sec	