

TECHNICAL BID PROFORMA

Item Name: AR & VR Equipment

1.0 Bidder Eligibility Criteria:

I	Bidder Eligibility Criteria-I (Public Procurement – Preference to Make in India)	Class I / Class II	Local Content value	Reference, Page No.
I	Only 'Class-I local suppliers' and 'Class-II local suppliers', as defined under DIPP, MoCI Order No. P-45021/2/2017-PP (BE II) dated 16 th September 2020 and other subsequent orders issued therein.			
2.0	Bidder Eligibility Criteria-II	Compliance (Yes/No)	Reference Page No.	Remarks, If any
1	The bidder/OEM should have supplied at least 5 similar items to IITs, NITs, IISERs, CSIR Labs or other Govt. R&D organizations in the last 10 years, PO copies or installation certificates along with contact details of end user need to be submitted as the proof of supply. IIT Madras reserves its right to verify the claims submitted by the bidder and the feedback from the previous customers will be part of technical evaluation.			

3.0 Technical Compliance:**III. TECHNICAL SPECIFICATION FOR AUGMENTED REALITY HEADSET (Holographic Lenses)**

S.No	Specifications	Complied/ Not complied	Reference page No
1	General: a. Untethered b. Support for popular augmented reality development platforms to create mixed reality experiences.		
2	<u>Display</u> a. Optics: See-through holographic lenses (waveguides) b. Resolution: 2k 3:2 light engines c. Holographic density: >2.5k radiants (light points per radian) d. Eye-based rendering: Display optimization for 3D eye position		
3	<u>Sensors</u> a. Head tracking: 4 visible light cameras b. Eye tracking: 2 IR cameras c. Depth: 1-MP Time-of-Flight (ToF) depth sensor d. IMU: Accelerometer, gyroscope, magnetometer Camera: 8-MP stills, 1080p30 video		
4	<u>Audio and speech</u> a. Microphone array: 5 channels b. Speakers: Built-in spatial sound		
5	<u>Human understanding</u> a. Hand tracking: Two-handed fully articulated model, direct manipulation		

	<ul style="list-style-type: none"> b. Eye tracking: Real-time tracking c. Voice: Command and control on-device; natural language with internet connectivity d. Windows Hello: Enterprise-grade security with iris recognition 		
6	<u>Environment understanding</u> <ul style="list-style-type: none"> a. 6DoF tracking: World-scale positional tracking b. Spatial Mapping: Real-time environment mesh c. Mixed Reality Capture: Mixed hologram and physical environment photos and videos 		
7	<u>Compute and connectivity</u> <ul style="list-style-type: none"> a. SoC: Qualcomm Snapdragon 850 Compute Platform HPU: Second-generation custom-built holographic processing unit b. Memory: 4-GB LPDDR4x system DRAM c. Storage: 64-GB UFS 2.1 d. WiFi: Wi-Fi: Wi-Fi 5 (802.11ac 2x2) e. Bluetooth: 5 f. USB: USB Type-C 		
8	<u>Fit</u> <ul style="list-style-type: none"> a. Single size b. Fits over glasses 		
9	<u>Software</u> <ul style="list-style-type: none"> a. Windows Holographic Operating System d. Microsoft Edge e. Dynamics 365 Remote Assist f. Dynamics 365 Guides g. 3D Viewer 		
10	<u>Power</u> <ul style="list-style-type: none"> a. Battery life: 2–3 hours of active use b. Charging: USB-PD for fast charging c. Cooling: Passive (no fans) d. Contains lithium batteries 		
	Number of Units Required		1

Technical Specification for Standalone Virtual Reality Headset - 256GB

S.No	Specifications	Complied/ Not complied	Reference page No
1	Generic Name : Virtual Reality Headset		
2	VR Gaming without Cables or a PC		
3	Included Components : (a) VR Headset, (b) 2 Touch Controllers , (c) Charger.		
4	Storage - 256 GB		
5	Fast-Switch LCD Display		
6	1832 x 1920 Resolution Per Eye		
7	60, 72, 90 Hz Refresh Rate Supported		
8	Glasses Compatible		
9	Qualcomm Snapdragon XR2 Platform		
10	Cinematic 3D positional audio		
	Number of Units Required		2

Technical Specification for AR+VR Headset

S.No	Specifications	Complied/ Not complied	Reference page No
1.	<u>General Specs:</u> a. VR headset that can also function as AR headset b. Open platform such that raw data from the sensors is available		
2	<u>Display:</u> a. Optics 4-fold catadioptric free form prism b. Resolution - Dual 1600x1600LCD@90Hz c. FoV/PPD - 90°(circular)/18(with superresolution)		
3	<u>Sensors:</u> a. Positional tracking - 2B&W cameras b. Hand tracking – 2 IRcameras c. RGB Cameras – 2 visible light cameras d. IMU - Accelerometer,gyroscope		
4	<u>Audio:</u> a. Speakers - 2stereospeakers b. Microphone array - 2channels c. Audio connector - 3.5mmTRRSJack		
5	<u>Tracking:</u> a. 6DoFtracking – SLAM with world anchors b. Handtracking – Powered by Ultraleap		
6	<u>Processing System:</u> a. SoC - Qualcomm®Snapdragon™XR2Gen1 b. Memory – 8GB LPDDR5 c. Storage – 128GB,extensible with microSDcard d. Software Platform - Android12,Unity3D,OpenXR		
7	<u>Connectivity:</u> a. Wi-Fi - Wi-Fi6(802.11ax) b. Bluetooth - 5.0 c. USB - USBType-C		
8	<u>Power:</u> a. Battery Life – Upto 3 hours of active use b. Cooling - Active		
	Number of Units Required	2	

Technical Specification for 4K 3D 360 Spherical VR Camera

S.No	Specifications	Complied/ Not complied	Reference page No
1.	<u>Operation:</u> a. Processors - Two Ambarella A9 video processors b. Controls - Single button operation and remote control mobile application c. Indications- Colorful LED indications d. IP rating - IP65 (Dust tight, water jet proof)		

	e. Operating ambient temperature - 0 - 40°C		
	f. Operating ambient humidity - Under 95% RH		
	g. Battery type - Li-ion 3,700 mAh (3.8V) (non replaceable, rechargeable)		
	h. Battery life - About 2 hours recording		
	i. Motion tracking - Inertial measurement units (IMU), Accelerometer, Gyroscope, Compass		
	j. WiFi - IEEE 802.11b/g/n 2.4 GHZ		
	k. USB port - USB 2 (for charging and data connection)		
	l. Memory - Removable Micro SD card, compatible with UHS 3		
2.	<u>Video/Image:</u> a. Spherical Resolution 4K (per eye) b. Frame rate 30fps for 3D or 60fps for 2D c. 360 Video Format mp4 (over-under for 3D) d. Video Compression H.264 e. 360 Photo Format JPEG (over-under for 3D)		
3.	<u>Optics:</u> a. Sensors 8 Sony FHD image sensors imx408 b. Lenses 8x F/2.4 fisheye lenses c. Media FOV 360°x180° (Full Spherical) d. ISO 100-1600		
4.	<u>General</u> a. Camera weight ~ 460 g b. Camera dimensions ~ 120x120x30 mm c. Package dimensions - 240x160x60 mm d. Camera colors - Black		
5.	<u>Includes:</u> Hard Case, Mini Handle, Mini VR Glasses, USB Cable, USB Power Adapter, Cleaning Cloth, Rubber Protective Cover, Limited 1-Year Warranty		
	Number of Units Required		2

Technical Specification for Workstation:

S.No	Specifications	Complied/ Not complied	Reference page No
1	64-bit eight core CPU		
2	64 GB RAM		
3	GPU: 2080Ti		
4	Hard Disk - SSD - 1TB		
5	OS: Windows 11 Pro		

Note: Bidder should mandatorily quote for all the items. Partial bidding Not allowed.