

## **GEM BoQ Technical Specifications**

### **1. Large Screen (65") 500 nits Wall Mount LED Displays**

<b>Sno</b>	<b>Feature</b>	<b>Specifications / Parameters</b>	<b>Compliance (Yes/No &amp; remarks)</b>
1	Display	Size : 65 inches (165 cm) diagonal or higher	
2		Aspect Ratio : 16:9	
3		Brightness (typ) : 500 cd/m2 (NITS) or higher	
4		Resolution : 3840*2160 pixels (4K UHD) or better	
5		Refresh Rate : 60Hz or higher	
6		High Haze : Haze > 20%	
7		Contrast ratio : Static, Static, 4000:1 or higher for VA Static, 1200:1 or higher for IPS	
8		Life Time : ≥ 50000 hours	
9		Display Orientation : Landscape & Portrait, selectable or auto-sensor.	
10		Viewing angle : 178° (H) / 178° (V)	
11		Operation Time : 16/7 or higher Duty Cycle	
12	Connectors / Interfaces	HDMI IN : At least 3 (HDMI 2.0)	
13		Audio Output : At least 1 x 3.5mm audio port	
14		At least 2 x USB 2.0 or better	
15		WiFi : 2.4GHz/5GHz, 802.11 n or better built-in WiFi Adaptor/Client	
16		LAN : At least 1 no. x 10/100 or higher RJ45 Ethernet IP port.	
17	Operating System	System Version : Android 9 or Web OS or equivalent or higher.	
18		Quad core ARM Cortex- A54 or equivalent or better	
19		GPU : ARM Mali-T820 DualCore (650MHz), concurrent multi-core processing, or equivalent or better	
20		RAM : 2GB or higher	
21		Blue tooth : Bluetooth 5.0. Shall support BLE. iBeacon desirable.	
22		Built-in WIFI Access Point : 2.4GHz/5GHz, 802.11 a/b/g/n/ac	
23		Built-in Miracast & Apple Airplay : Required	
24		ROM : 16GB or higher	

<b>Sno</b>	<b>Feature</b>	<b>Specifications / Parameters</b>	<b>Compliance (Yes/No &amp; remarks)</b>
25		RTC : Support continuous power-off clock for at least 7 days. RTC feature shall work for at least 3 years without change of battery.	
26	Audio	Speaker Type : Built-in Speakers	
27		Power : 2 x 10W or higher	
28	Power	Power Requirements : 100-240V~ 50Hz	
29		Standby Power : ≤ 0.2W or better	
30		Overall Power(nominal power) : 150W (Typical or lower)	
31	Environmental	Operation Temperature : 10degC - 40degC	
32		Operation Humidity : 20% -80%	
33		Electronic Circuits / Components to be surface-coated for conformal protection against environmental degradation.	
34	Certification	BIS : Yes	
35	Signage Software Compliance	Built-in Signage Media Player/App shall be fully compliant with features of Signage CMS Software to be supplied as part of this tender.	
36	Installation	Successful Bidder/OEM shall undertake installation and mounting of the display as required. Wall Mount Kit and any other accessories that may be required for successful completion of installation shall be in the scope of the successful bidder/OEM. (Power socket and Network port for connectivity necessary for commissioning shall be provisioned by IIST.)	
37	Warranty	The Display Monitors quoted shall carry an on-site free-repair / replacement warranty against failures/failures for 5 years from the date of installation.	

## 2. Large Screen (55") 500 nits Wall Mount LED Displays

Sno	Feature	Specifications / Parameters	Compliance (Yes/No & remarks)
1	Display	55 inches (139.7cm) diagonal or higher	
2		Aspect Ratio : 16:9	
3		Brightness (typ) : 500 cd/m <sup>2</sup> (NITS) or higher	
4		Resolution : 3840*2160 pixels (4K UHD) or better	
5		Refresh Rate : 60Hz or higher	
6		High Haze : Haze > 20%	
7		Contrast ratio : Static, Static, 4000:1 or higher for VA Static, 1200:1 or higher for IPS	
8		Life Time : ≥ 50000 hours	
9		Display Orientation : Landscape & Portrait, selectable or auto-sensor.	
10		Viewing angle : 178° (H) / 178° (V)	
11		Operation Time : 16/7 or higher Duty Cycle	
12	Connectors / Interfaces	HDMI IN : At least 3 (HDMI 2.0)	
13		Audio Output : At least 1 x 3.5mm audio port	
14		At least 2 x USB 2.0 or better	
15		WiFi : 2.4GHz/5GHz, 802.11 n or better built-in WiFi Adaptor/Client	
16		LAN : At least 1 no. x 10/100 or higher RJ45 Ethernet IP port.	
17	Operating System	System Version : Android 9 or Web OS or equivalent or higher.	
18		Quad core ARM Cortex- A54 or equivalent or better	
19		GPU : ARM Mali-T820 DualCore (650MHz), concurrent multi-core processing, or equivalent or better	
20		RAM : 2GB or higher	
21		Blue tooth : Bluetooth 5.0. Shall support BLE. iBeacon desirable.	
22		Built-in WIFI Access Point : 2.4GHz/5GHz, 802.11 a/b/g/n/ac	
23		Built-in Miracast & Apple Airplay : Required	
24		ROM : 16GB or higher	
25		RTC : Support continuous power-off clock for at least 7 days. RTC feature shall work for atleast 3 years without change of battery.	

<b>Sno</b>	<b>Feature</b>	<b>Specifications / Parameters</b>	<b>Compliance (Yes/No &amp; remarks)</b>
26	Audio	Speaker Type : Built-in Speakers	
27		Power : 2 x 10W or higher	
28	Power	Power Requirements : 100-240V~ 50Hz	
29		Standby Power : ≤ 0.2W or better	
30		Overall Power(nominal power) : 150W (Typical or lower)	
31	Environmental	Operation Temperature : 10degC - 40degC	
32		Operation Humidity : 20% -80%	
33		Electronic Circuits / Components to be surface-coated for conformal protection against environmental degra-tion.	
34	Certification	BIS : Yes	
35	Signage Software Compliance	Built-in Signage Media Player/App shall be fully compliant with features of Signage CMS Software to be supplied as part of this tender.	
36	Installation	Successful Bidder/OEM shall undertake installation and mounting of the display as required. Wall Mount Kit and any other accessories that may be required for successful completion of installation shall be in the scope of the successful bidder/OEM. (Power socket and Network port for connectivity necessary for commissioning shall be provisioned by IIST.)	
37	Warranty	The Display Monitors quoted shall carry an on-site free-repair / replacement warranty against failures/failures for 5 years from the date of installation.	

### 3. Digital Floor Mount Standee with Trolleys for Mounting/Display of 55" LED Displays in Portrait mode

S.No.	Features	Specifications / Parameters	Compliance (Yes/No & remarks)
1	Model	Shall be a Free Standing Floor Mount Digital Signage Standee	
2	Dimensions	Shall be suitably built to mount and operate 55 inch LED Display quoted as part of this bid, in portrait mode.	
3	Material	Shall be made of Steel or Aluminium Alloy.	
	Coating	Shall be surface-treated for corrosion proofing, and painted/powder-coated in black.	
	Finish	Shall be scratch-resistant and have aesthetic finish.	
4	Base	Shall have thick, flat rectangular heavy base, having adequate mass and dimensions to hold weight of the 55 inch display while mounted in portrait orientation	
		Shall continue to remain stable against unexpected physical shocks that tend to move or push or fall the signee from its floor mounted position.	
5	Removable Base Wheels	Shall have removable heavy-duty roller/castor wheels with brakes on four corners of rectangular base, with option to fix/remove for position adjustments and movement on floors.	
		Fully assembled signee, along with display monitor mounted on the frame and fixed with wheels shall remain stable against unexpected physical shocks that tend to move or push the signee from its floor mounted position.	
6	Frame	Shall safely and securely accommodate the 55 inch display in portrait orientation, and shall protect bezel edges of the display device against physical shocks and damages.	
7	Edges	Top corner and side edges of the frame shall be smoothed in curves similar to smart-phones, to avoid sharp edges and injuries.	
8	Rear Panel	Shall be provided to protect the rear side of the display device, and allow air ventilation as required by the display device.	
9	Front Panel	Shall be a made of toughened highly-transparent glass of app. 4 mm thickness, covering full area of display.	

<b>S.No.</b>	<b>Features</b>	<b>Specifications / Parameters</b>	<b>Compliance (Yes/No &amp; remarks)</b>
10	Aesthetics	Fully assembled signee, mounted with display monitor on the frame and fixed with base/wheels shall have high aesthetic appeal and appear together as an attractive floor-standing signage.	
11	Conformance to Display Warranty	Shall conform to the warranty specified by the OEM for the 55 inch Display TV quoted. Warranty of the Display shall not be affected or become void due to mounting on the Trolley Frame	
12	Power	Shall have power distribution box, with at least 2 nos. inbuilt 230V AC power sockets (one for display, one for connecting any media player in future).	
13	Connector Face Plate	The signage enclosure / standee shall be a faceplate either at the rear or sides, and having at least 1 USB port, 1 HDMI port and 1 RJ45.	
14	Warranty	Shall have warranty against manufacturing defects arising out of quality of workmanship that may evolve over a period of 5 years.	

**4. On-Premises based Digital Signage (CMS) Software Server (perpetual license / subscription with updates) and Client Media Player Software Application**

<b>S.No.</b>	<b>Features</b>	<b>Specifications / Parameters</b>	<b>Compliance (Yes/No &amp; remarks)</b>
1	<b>CMS System</b>	On-premise CMS system shall include the following :	
2	<b>Software Server</b>	(i) central application software server (including operating system) that shall facilitate storage, upload and download of contents and schedule and drive displays connected across the signage network. [Server hardware / Server Virtual Machine necessary for the installation in VM-mode shall be made available by IIST for the purpose.]	
3	<b>Media Player Application</b>	(ii) fully compatible media player software applications that's installed in the LED Displays that are connected through an IP LAN network.	
4	<b>External Set-top Media Player Device</b>	(iii) fully compatible external set-top media player devices that shall connect through the IP network to the central software server, and display contents on non-compatible LED Displays.	
5	<b>System Architecture</b>	Shall preferably be built on Free & Open Source Operating System platform using suitable micro-services architecture for performance, easy updates and upgradation.	
6	<b>Licenses</b>	Licenses, if required for installation or operation of the CMS software server, media player applications installed in the LED display, and external set-top media player devices, shall be included and provided as part of the CMS Software system.	
		Licenses for operation of the CMS software shall preferably be perpetual for all displays. Alternatively, licenses provided shall be valid for at least 5 years.	
7	<b>Additional Licenses</b>	Licenses required for additional external set-top media player/devices, if applicable, shall be provided, and its costs quoted and included as part of cost of the additional external set-top media player devices,	
8		OEM shall provide regular software maintenance, including updates and upgrades for a period of at least 5 years as part of the licenses supplied.	
9		Licenses shall be in the name of IIST, and verifiable at any point of time for audit purposes. If not perpetual, the licenses supplied shall be renewable after expiry of the period.	
10	<b>Scalability</b>	Shall be scalable to support display of content in least 500 LED display monitors/media players within the network.	
11	<b>Server mode</b>	Server shall support operation as virtual and physical instance, in load balancing and replication modes etc.	

<b>S.No.</b>	<b>Features</b>	<b>Specifications / Parameters</b>	<b>Compliance (Yes/No &amp; remarks)</b>
12	<b>Clustering &amp; Load Balancing</b>	Shall have clustering and load balancing features that allows content to be replicated on secondary servers to create multiple nodes for content distribution resulting in load balancing & high availability failover mechanism.	
13		Clustering/load balancing shall be implemented in an additional server/virtual Machine that shall be provided by IIST, without requirement of additional license or costs, as part of the system.	
14	<b>Web Based Remote Management</b>	Shall be able to control the signage display devices / media players / external set-top media player devices via web interface through any PC-based browser within the signage network without installing any additional software from any remote or central location.	
15		Shall also be able to perform the above over the network using mobile and tablet browsers	
16	<b>Integration</b>	Shall integrate together as a one-stop solution for the proposed Digital Signage System, fully supported by the System Integrator and the OEM.	
17	<b>Inter-Operability</b>	Shall support future inter-operability with LED displays of multiple brands/OEMs through external set-top media player devices for display of all contents pushed by the Signage CMS Software.	
18	<b>Offline Synchronisation</b>	Displays shall have feature to synchronise media and schedule content offline through USB when not connected to the Signage Network.	
19	<b>Signage Dashboard</b>	Shall have a dashboard view of all display device status, network connectivity status between the media players and the central server, user summary, errors, warnings, notifications etc.	
20	<b>Display Modes</b>	Shall display in Portrait & Landscape Modes	
21	<b>Display Resolution</b>	Shall support display upto 4K pixels	
22	<b>Content Support</b>	Shall support playback of all popular media formats	
23		Supported Video Formats shall include : wmv, avi, mpg, mpeg, flv, mov, mp4, mkv, vob, 3gp	
24		Supported Image Formats shall include : jpg, bmp, png, gif, tiff,tif	
25		Shall support display of Pdf documents	
26		Shall support display of Text: Show static as well as scrolling text (Tickers)	
27		Audio formats supported shall include: mp3, wav	
28	<b>Preview</b>	Shall have provision to preview content (layout) before scheduling	
29	<b>Content Scheduling</b>	Shall schedule content to single display.	
30		Shall schedule content to multiple displays.	
31		Shall schedule content to play in future date/time.	



S.No.	Features	Specifications / Parameters	Compliance (Yes/No & remarks)
32		Shall have location based user rights to upload the content to a particular display	
33		Shall be capable of running specific no. of occurrences of any content/campaign during any specific time schedule, daily, weekly, monthly or customized	
34		Shall recursively schedule for repetitive display in future on hourly, daily, weekly or monthly basis	
35	<b>Schedule Dynamic Sources / Data</b>	Shall schedule and display Live video-streaming of Local Content from Camera or other sources from streaming encoder to all the displays on the network, utilising standard UDP/HLS protocols	
36		Shall schedule and display video-feed of live events received via a streaming server or from any HDMI source like set-top box, DVD or Blu-ray player.	
37		Shall support schedule and display RSS (Really Simple Syndication) Feed with changeable interval based updating.	
38		Shall schedule and display HTML / HTML5 + Javascript Webpages	
39	<b>Playback Schedule</b>	Shall have provision to schedule multiple layouts simultaneously along with their order of playback	
40	<b>Local Playback</b>	Shall download, store and play content & schedules locally on the media player	
41	<b>Display ON/OFF Schedule</b>	Shall be capable of Scheduled Turn Display On / Off of LED Displays	
42	<b>Text Scroll / Image Scroll</b>	Shall support texts in multilingual character set – Unicode	
43		Shall support formatting of Font Colour, Font size, Bold, Italic etc	
44		Shall support right to left, left to right, top to bottom and bottom to top Scroll Directions.	
45		Shall support addition of Image along with text	
46		Shall support Image Transitions	
47	<b>Transparency</b>	Shall support Image Transparency	
48		Shall support Video Transparency	
49		Shall support Text / Scroll Transparency	
50	<b>Display Regions/Zones</b>	Shall be able to divide the display screen into as many regions as required and populate with multi-media images, videos etc in these regions using drag-and-drop interface	
52	<b>Touch-Interactive Mode</b>	Shall be capable of driving touch-interactivity mode on a custom-made webpage when scheduled and displayed as the initial signage content. If touch interactivity is not sensed/performed, shall display normal signage content after elapse of pre-configured time.	

<b>S.No.</b>	<b>Features</b>	<b>Specifications / Parameters</b>	<b>Compliance (Yes/No &amp; remarks)</b>
53	<b>Extensibles</b>	Shall be able to add gadgets like clock, calendar etc as extensibles	
54	<b>Audio Files</b>	Shall have option to play/mute audio for each media file in the playlist. Shall also be able to add background audio file.	
55	<b>Content Download</b>	Shall be able to stop / resume downloads in case of connectivity issues. Shall divide bigger files into smaller chunks for transfer to display devices in order to prevent full repeat of download cycle. In case of connectivity issues only the last chunk is lost.	
56		Shall display Progress Bar for content download	
57		Data transfer of content between server and player through network shall be done over a 1024 bit encrypted connection	
58		Shall support download of content during predefined intervals	
59		Server shall be able to push content to display when content for the display changes and is re-scheduled.	
60		Media players shall download content from server at predefined intervals	
61		Shall download content to one display node and distribute locally to other media players	
62	<b>Bandwidth management</b>	Shall be able to manage display wise bandwidth limits during content transfer for remotely connected low-bandwidth locations.	
63	<b>Security</b>	Shall employ File hash (MD5) validation before playback	
64	<b>Emergency/Instant Messages</b>	Shall override scheduled data & current playback on the displays with emergency messages	
65	<b>Play Multiple Screens in Sync and Time Syncing</b>	Shall have ability to play content in sync across multiple screens. CMS Software automatically checks the lag and adjusts itself to get in sync with other screens. Each player shall keep its system time in sync with server	
66	<b>USB Support / Offline Mode</b>	Shall support sync of media, schedule content, report, etc through USB for displays without connectivity.	
67	<b>Access Levels and User management</b>	Shall have capability to create any number of users based on need.	
68		Role-based Access configurable for any number of users as content creator or approver or both based on needs. Shall have customisable approval levels.	
69		Shall have inbuilt supervisory media approval mechanism to allow supervisors to approve the content before publishing to the players	
70		Administrator shall have rights to create users/ user-groups and assign rights to multiple users.	
71	<b>Live Monitoring</b>	Shall be able to view content being played on any display in real time from any remote location.	

S.No.	Features	Specifications / Parameters	Compliance (Yes/No & remarks)
72		Shall have capability to schedule the screenshot event for any screen, which will upload screenshots of that screen to the central server taken at the pre-defined interval	
73	<b>Remote Media Player Management</b>	Shall be able to upgrade and update software and patches remotely from the central server to the media players	
74		Shall provide technical email alert for any media player that fail to get updated to newer version of app,	
75		Shall have provision to view active media players connected in the signage network and enable or disable any media player on the network at any time.	
76		Shall manage display storage remotely. Shall have provision to manually delete content on any player remotely via server. If the display storage crosses the assigned storage limit, it can smartly delete the content that is archived.	
77		Shall provide technical email alert if there is certain limit of space is available at the media player.	
78		Shall have provision to set different shutdown time and reboot time for all days of a week for remote players. Shall also have reboot on a button click available	
79		CMS Application should be capable of showing the real time number of online & Offline devices and report can be fetched with the device detail	
80		Shall have ability to change all display specific settings from signage server	
81	<b>Reporting, Logs &amp; Audit Trail</b>	Shall log and provide proof-of-play plus comprehensive report of content/media being played on the displays, at what time and for how much duration.	
82		Shall log and provide report for each display to get the information about its online and offline duration.	
83		Shall keep track of user activity on the CMS	
84		Shall log and report about problems or issues occurring in media player.	
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86	<b>Watchdog</b>	CMS keeps track of player status and restarts it or reboots the system if required in case the system hangs	
87	<b>Notifications and Alerts</b>	CMS shall be equipped with auto generated mails & notifications for Device ON-OFF Status, Content Playback, App Updates, Thresold Storage Alert, Content Download etc.	
88	<b>Security</b>	Shall have AES 256 encryption- for data at transit. Rest over SSL based encryption	

S.No.	Features	Specifications / Parameters	Compliance (Yes/No & remarks)
89	<b>Service Support</b>	OEM of the CMS Software Solution shall provide helpdesk support as a 8x5 service on request over mail, phone or web-portal, during office hours, any day of the week. Support shall include :	
90		1) On-boarding of devices on CMS software - defining the names and location of the end devices in the software	
91		2) Signage Display Layout creation	
92		3) Schedule layouts as per customer required then and send them for approval from the approval authority	
93		4) Generation of reports (If/when required)	
94		OEM of the CMS shall have required service support facility and trained personnel available in Kerala, preferably in Thiruvananthapuram, for helpdesk support or on premises service.	
95		OEM of the CMS shall provide the details of the facility and service support manpower available in Kerala along with the bid.	
96		OEM of the CMS / Solution Provider should provide one stop solution that fully integrates with the display quoted, the media player/media player devices, cables, CMS software.	
97	<b>Installation</b>	OEM of the CMS Software / Solution Provider shall undertake installation and maintenance of the entire system in order to achieve complete compatibility of hardware and software and seamless SITC services, including upgrades / augmentations at a later stage.	

## **5. Additional Terms & Conditions to be appended in GEM Tender**

<b>S.No.</b>	<b>Additional Terms &amp; Conditions</b>	<b>Compliance (Yes/No &amp; remarks)</b>
<b>1</b>	Bidder shall be Original Equipment Manufacturer (OEM) or Authorized System Integrator / Sales/Service Partner of the OEM of the Signage Display and Signage Software quoted.	
<b>2</b>	Bidder shall be a registered firm/company existing in India for the past 3 years, and shall submit proof of incorporation/audit etc. of financial/technical performance.	
<b>3</b>	Bidder shall have successfully executed at least 3 similar signage projects in the last 3 years in any of travel / hospitality / manufacturing / higher-education / research segments.	
<b>4</b>	Signage Display and Signage Software quoted by the bidder shall be preferably from the same OEM. Manufacturer's Authorization Form (MAF) from the OEM, specific to this Tender, should be submitted by the bidder along with the bid.	
<b>5</b>	OEM of the Signage Display quoted shall have ISO 9001 & ISO 14001 Certification for its manufacturing facility in India.	
<b>6</b>	OEM of the Signage Display shall have an installation base of at least 1000 numbers in India for each of the signage display using the signage software quoted.	
<b>7</b>	The Signage Display quoted shall be in the current manufacturing range of the OEM. The detailed product specification of the item quoted should be available as a web-page or brochure in the official internet website of the OEM for reference/download at the time of evaluation of bids. The OEM web site address should be provided along with the bid. Technical Bids that do not comply to this shall be excluded from further evaluation without requests for further clarification.	
<b>8</b>	The Signage Software quoted shall be the fully tested version currently developed by the OEM. The detailed product specification of the item quoted should be available as a web-page or brochure in the official internet website of the OEM for reference/ download at the time of evaluation of bids. The OEM web site address should be provided along with the bid. Technical Bids that do not comply to this shall be excluded from further evaluation without requests for further clarification.	
<b>9</b>	OEM shall have its local office/service engineer stationed in Kerala, preferably at Thiruvananthapuram (Kerala), and having adequate stock of necessary spares, tools, etc. for installation, and for	

	repair/replacement during and after expiry of warranty. The name, address and the contact details of the office/engineer shall be provided in the bid document. Technical Bids that do not furnish details and comply to this shall be excluded from further evaluation without further clarification.	
<b>10</b>	OEM of the Signage Display shall provide free onsite repair/replacement for Display system, LED panel and accessories, against faults, degradation of quality/performance and manufacturing defects during warranty period.	
<b>11</b>	Bidder shall ensure the correctness and completeness of the bids submitted and shall strictly comply to the tendered specifications, terms and conditions etc. Technical Bids that do not contain Detailed OEM Specification Sheets and Technical Compliance Sheets shall be considered as non-responsive, and shall be excluded from further evaluation and rejected.	