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National Technology Centre for Ports Waterways and Coasts

Record notes of the discussion held on June 7, 2019

June 10, 2019

Tender Reference no: OED/KMUR/009/2019

Name of the Item: Supply and commissioning of Immersive Projector Based Visualization System

Part-I: Clarifications to vendors in person and through email

Sl. No	Points raised by Vendor	IITM Clarification
1	Extension of the bid submission date given the timeline is too short after pre-bid	Refer the revised timeline stated below.
2	Supply of projectors in 30 days to extend to 6 – 8 weeks' time.	Tender condition prevails. Delivery schedule non-negotiable.
3	Description of the screen shape that is required. Description of material of screen.	Tender condition prevails. As per the industrial standards best suited for clear display and as per OEM's recommendations.
4	Details about the facility where the projectors will be deployed.	Project site was shown. General arrangement is illustrated in tender.
5	Is it mandatory to get every page of the tender document to be signed?	Tender condition prevails.
6	Is it acceptable to propose a better projection system that is being specified in the tender specs. If it's the case based on the room dimensions, the resolution, aspect ratio that has been mentioned in the tender document will not be sufficient. Is it acceptable to propose a suitable dimension for the better projection system?	Tender condition prevails.
7	Is it acceptable to use 3 rd party tools for blending and warping capability to be supplied along with the projector?	Tender condition prevails.

8.	Clarification to queries received through email a. Will IIT consider a longer delivery period?	Tender condition prevails. Delivery schedule non-negotiable.
	b. Can we be provided with more details of the alternate site for the shift? Can that site be visited?	The diagram with dimensions is already provided in the RFP. The site is under construction and not available for visit.
	c. Are motion trackers required?	No
	d. Does floor projection mean the projectors are to be mounted on the floor or the image needs to be projected on the floor?	Tender condition prevails.

Part-II: Amendments on technical specifications:

1. **IMPORTANT DATES** -CHRONOLOGY OF EVENTS, appearing on pg.11 of original tender shall be read as.

Item description	Existing	Amended
Date of submission of bids	11.06.2019	14.06.2019
Eligibility & Technical bid opening	11.06.2019	17.06.2019
Date of announcement of qualified bidders	13.06.2019	18.06.2019
Date of Technical Presentation	17.06.2019	21.06.2019
Date of opening of financial bid (followed by the presentation)	17.06.2019	21.06.2019

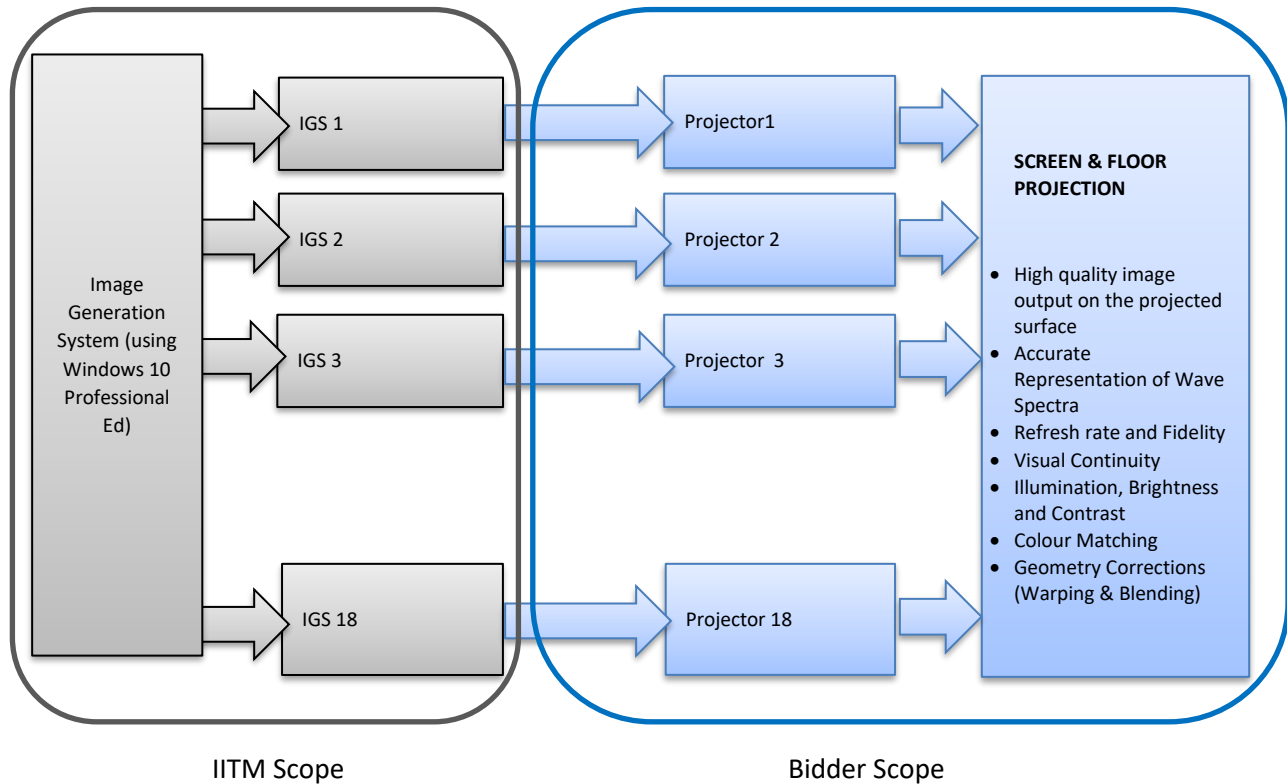
2. The following amended provisions shall supersede the existing tender clauses wherever they are in variance.

Existing	Amended
<p>3.1.4.2. <i>The threshold criteria for acceptance of the projector is listed below:</i></p> <ul style="list-style-type: none"> • <i>Image brightness: > 6000 Lumens</i> • <i>Contrast Ratio: > 50,000:1 Laser technology</i> • <i>Resolution: WUXGA (1920 X 1200)</i> • <i>Remote Control for Brightness, Contrast, Colour Adjustment, Control of offset for horizontal and vertical lens (Motorized), Control of zoom and focus adjustment (Motorized)</i> 	<p>3.1.4.2. The threshold criteria for acceptance of the projector is listed below:</p> <ul style="list-style-type: none"> • System shall be DLP based. • Image brightness: > 6000 Lumens • Contrast Ratio: > 50,000:1 Laser technology • Resolution: WUXGA (1920 X 1200) • Remote Control for Brightness, Contrast, Colour Adjustment, Control of offset for horizontal and vertical lens (Motorized), Control of

<ul style="list-style-type: none"> • <i>Use case: UHD 3D visualization in a cylindrical projection environment</i> • <i>Lens Type: as required</i> • <i>No. of projectors: As per Fig.1. RFP</i> • <i>Details of mounting arrangements</i> • <i>Remote control: the projection system should be able to be controlled by a remote control.</i> • <i>The projector resolution requirement is: WUXGA (1920 X 1200) and the “Use case: UHD 3D visualization in a cylindrical projection environment” should be read as: “Use case: 3D visualization with inbuilt warping and edge blending functionality for a cylindrical projection environment”</i> 	<p>zoom and focus adjustment (Motorized)</p> <ul style="list-style-type: none"> • Use case: UHD 3D visualization in a cylindrical projection environment • Lens Type: as required • No. of projectors: As per Fig.1. RFP • Details of mounting arrangements • Remote control: the projection system should be able to be controlled by a remote control. • The projector resolution requirement is: WUXGA (1920 X 1200) and the “Use case: UHD 3D visualization in a cylindrical projection environment” should be read as: “Use case: 3D visualization with inbuilt warping and edge blending functionality for a cylindrical projection environment”
<p>3.1.4.4. <i>Bidders need to indicate the details of power consumption, heat dissipation, temperature requirements and weight.</i></p>	<p>3.1.4.4. In normal operating condition, the projectors shall comply with:</p> <ol style="list-style-type: none"> i. Power consumption shall not be more than 700W. ii. Heat generation shall not be more than 100W. iii. Audible Noise shall not be more than 40 db. iv. Operating temperature up to 40 deg C v. Weight shall not be more than 20 kg without lens. vi. Lens weight to be provided separately by the bidder so that IITM can calculate the total load and the localised load based on mounting positions and arrangement provided in bidders drawings. <p>Note: The above details are the basic threshold criteria and bidders need to confirm the above and/or indicate their modified specifications, if any. In any case, the bidder shall submit a certificate from OEM for the specifications of projectors being bid.</p>

<p><i>Under section 3.4</i></p> <p><i>The portion of the clause detailed here under is alone amended (all other provisions of this clause remain unchanged).</i></p> <p><i>Quote:</i></p> <ul style="list-style-type: none"> <i>Demonstration by the bidder of clear understanding of the underlying technologies and engineering required for the solution (Bidders are free to demonstrate the solution with 2 or 3 projector set-up on a temporary screen setup which may be on a smaller scale & the necessary GPU etc.).</i> <p><i>Unquote:</i></p>	<p>Under section 3.4</p> <p>The portion of the clause detailed on the left side is alone amended as.</p> <p><i>Quote:</i></p> <ul style="list-style-type: none"> Demonstration by the bidder of clear understanding of the underlying technologies and engineering required for the solution. Eligible and qualified <u>Bidders will have to compulsorily demonstrate the solution with 2 projector set-up</u> with associated computing infrastructure on a temporary screen setup which may be on a smaller scale. IITM will provide 2 channels from their existing IGS system (in the form of HDMI output for this purpose. The bidder shall bring all the necessary hardware / GPU, cables, projectors, screens etc for the purpose of proper and full demonstrating their solution. IITM will want the demonstration to be on similar projectors as will be supplied, especially the blending and warping capability. <p><i>Unquote:</i></p>
<p>3.5.1. The bids which does not meet the minimum threshold requirements or are technically flawed in approach/ solutioning will be rejected at the first stage itself. Only those bidders who score a minimum score of 50 Points on items 1,3 and 4 as evaluated by the documentation will be considered for item 2 i.e. Implementation Methodology, Technical Presentation & Demonstration with Q&A etc.</p>	<p>3.5.1. The bids which does not meet the minimum threshold requirements or are technically flawed in approach/ solutioning will be rejected at the first stage itself. Only those bidders who score a minimum score of 50 Points on items 1,3 and 4 as evaluated by the documentation will be considered for item 2 i.e. Implementation Methodology, Technical Presentation & Demonstration with Q&A etc. In the technical demonstration the bidder needs to score minimum of 80% to qualify for opening of the price bid.</p>

Part III. The following provisions shall be read in conjunction with clause 3.1.2 of original tender.



- **FORMAT of TECHNICAL DEMONSTRATIONS & PRESENTATION**

- PPT Presentation -10 min.
- Technical Demonstration – 30 min.
- Q&A -5 min.

Technical Demonstration: Required to demonstrate following, using 2 projectors.

1. The visual content shall need to be seamlessly synchronized over multiple display channels. The refresh rates of the display system need to display the visual content with the required fidelity taking into consideration movement of simulation entities and reducing perceptible image smearing due to image retention and eye motion.
2. Screen transition: For the purposes of simulation, there should be no loss of content across the display channels. The visual transition from the human perspective should give the perception of “visual continuity” of what is being seen.
3. Demonstrate that the Geometry correction for the transformation on the rectilinear render surface to the final target cylindrical surface should be accurate.
4. Demonstrate the colour matching across display channels so that the perceptible differences are minimized by calibration of colour wise settings including the saturation, hue and gain settings.
5. Demonstrate the capability wherein Illumination, Brightness and Contrast will need to be set very precisely, not only across the principal display area, but also across the overlap zones that need to be manipulated to minimize the aberrations that may be perceived by the human eye.
6. Demonstrate the Display device (i.e. Projector/ Screen) firmware including updates, must be able to be controlled by an API, to allow for initial and in-use calibration and in cases run time too.