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SUPPLY CHAIN MANAGEMENT  
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DATE: 09/11/2022

**RE: ADDENDUM NO. 2 TO TENDER NUMBER KUTRRH/TNDR/G/046/SICET/2022-2023, SUPPLY, INSTALLATION, AND COMMISSIONING OF ENDOSCOPY TOWER.**

The above is to provide clarification on the following:

Clarification/Amendment:"

1. The below is additional information for the above tender.

*Clarification:*

**Technical Specifications DIGITAL C-ARM X-RAY MACHINE to be used with Endoscopy**

		Marks	
1.	Application	Orthopaedics: osteopathy, displaces, nailing, Spine. Surgery: Peripheral Vascular, Urology, General Surgery, removing foreign body, implanting pacemaker, interventional therapy, partial radiography, local photography, and other work.	5 Marks
2.	Features	<ul style="list-style-type: none"><li>✓ Should be compact appearance, and easy to operate.</li><li>✓ Should have base electric auxiliary support arm design, it's more security for using.</li><li>✓ Should have unique hand-held controller design, convenient to operate.</li><li>✓ Should have a high-quality knockdown X-ray generator to reduce radiation.</li><li>✓ Should have a Perspective KV, MA automatically track fluoroscopy to make the image brightness and clearness optimum.</li><li>✓ Should have Image acquisition and processing workstation</li></ul>	

		<ul style="list-style-type: none"> <li>✓ Must have easy registration, medical records, Worklist</li> <li>✓ Should have Start collection; prepare video, reset, horizontal mirror, vertical mirror, window adjustment, magnifying glass, negative image, edge enhancement, recursive noise reduction</li> <li>✓ Should have four windows, nine windows, sharpening, horizontal mirror, vertical mirror, text annotation, length measurement report: save, preview, expert template</li> <li>✓ Must have enabled Dicom browsing, web service</li> <li>✓ Should have Automatically track fluoroscopy to make the image brightness and clearness optimum</li> <li>✓ Should have Automatic dynamic motion detection when fluoroscopy to avoid movement-related blurring, no silhouette</li> </ul>	
3.	X-ray Tube	<ul style="list-style-type: none"> <li>• Grounded Anode X-ray Tube</li> <li>• Rotating anode X-ray tube</li> <li>• Power: – 10 to 50 kW</li> <li>• Tube voltage in steps of 1kV - 40 - 125 kV</li> <li>• mA range – 1.0 to 320 mA</li> <li>• mAs range - 0.1 - 500 mAs</li> <li>• Anode heat storage capability - Approx 100 kJ (140 KHU)</li> <li>• Dual Focal spot (small/large) - 0.3 to 2.0</li> </ul>	10 Marks
4.	Generator	<ul style="list-style-type: none"> <li>• Maximum performance frequency: 40 – 60 Khz</li> <li>• Maximum output KV: 40 to 125KV</li> <li>• Power: - 40 KW to 70 KW</li> <li>• mAs range - 0.1 - 500 mAs</li> <li>• mA range – 1.0 to 500 mA</li> </ul>	10 Marks
5.	Fluoroscopy parameters (Continuous / Pulsed Fluoroscopy, & Digital Spot)	<ul style="list-style-type: none"> <li>• Fluoroscopic Voltage: 40 KVP to 120 KVP</li> <li>• mA for Low dose Fluoroscopy: 0.25 to 3.0 mA</li> <li>• mA for High-Definition Pulsed Fluoroscopy: 1 to 320.0 mA</li> </ul>	6 Marks

6.	Flat Panel Detector	<ul style="list-style-type: none"> <li>Type – CMOS Flat Detector of size 20 to 35 cm or bigger</li> <li>CMOS - complementary metal-oxide semiconductor detector</li> <li>Active Matrix: 1200 to 1600 x 1200 pixels to 1600 pixels</li> <li>Pixel Pitch: 100.0 µm to 200.0 µm or better</li> </ul>	10 Marks
7.	Monitor Image	<ul style="list-style-type: none"> <li>Touch screen monitor LCD/LED</li> <li>21" to 34" Ultra high definition (UHD) Color Display - 4K</li> <li>Touchscreen interface with anti-reflection, anti-fingerprint</li> <li>Monitor should be mounted on an articulating arm</li> <li>Minimizes the effect of metals on image sharpness or quality</li> <li>Automatically adjusts brightness and contrast and allows user to adjust sensitivity levels for optimum image quality when metal is present in the imaging field</li> </ul>	5 Marks
8.	Smart Metal software	<ul style="list-style-type: none"> <li>Minimizes the effect of metals on image sharpness or quality</li> <li>Automatically adjusts brightness and contrast and allows user to adjust sensitivity levels for optimum image quality when metal is present in the imaging field</li> </ul>	1 Mark
9.	Smart Window software	<ul style="list-style-type: none"> <li>Dynamically senses the collimator position and automatically adjusts image brightness and contrast</li> </ul>	5 Marks
10.	Power Failure Protection	<ul style="list-style-type: none"> <li>Images Software Protected</li> </ul>	1 Mark
11.	C-arm	<ul style="list-style-type: none"> <li>Depth: 15 to 26" or better</li> <li>Free Space: 14" or better</li> <li>Orbital Rotation: 100- 150° or better</li> <li>Horizontal Travel: 18 to 26° or better</li> <li>Vertical Travel: 15" to 25" or better</li> <li>Pivot Rotation: 50 to 400° or better</li> <li>Panning Motion: 50 to 360° or better</li> <li>C-Arm must have brakes</li> </ul>	5 Marks
12.	Image Storage	<ul style="list-style-type: none"> <li>Image storage - up to 8,000 images Capacity or better</li> <li>Hard Disk 1 TB or better</li> <li>Able to integrate with Hospital HMIS</li> </ul>	2.5 Marks

13.	Removable Data Storage	<ul style="list-style-type: none"> <li>• USB Port</li> <li>• CD/DVD-RAM Drive</li> </ul>	1 Mark
14.	Operating System	<ul style="list-style-type: none"> <li>• Microsoft® Windows 10 or better</li> </ul>	2.5 Marks
15.	Image Acquisition	<ul style="list-style-type: none"> <li>• 30 -90 Frames/sec (max) or better</li> <li>• Cine Video Recording</li> </ul>	2.5 Marks
16.	Pen (Digital)	<ul style="list-style-type: none"> <li>• Able to Draw lines on image display for planning or educational purposes</li> </ul>	2.5 Marks
17.	Cine Images	<ul style="list-style-type: none"> <li>• Automatic image playback</li> <li>• Play/pause and forward/back at recorded speed and half speed</li> <li>• Frame by frame or multiple frame review, including touchscreen slider</li> <li>• Trim Cine to desired frame sequence before exporting</li> </ul>	2.5 Marks
18.	Radiation Report	<ul style="list-style-type: none"> <li>• DAP (Dose Area Product)</li> <li>• Paper Print and DICOM Send</li> </ul>	1 Mark
19.	Laser Alignment Light	<ul style="list-style-type: none"> <li>• Green Lasers or Red Lasers</li> <li>• On-off or 60 sec Timed</li> </ul>	1 Mark
20.	Footswitch Options	<ul style="list-style-type: none"> <li>• Wired Triple Function Footswitch</li> <li>• Wireless Triple Function Infrared</li> <li>• Configurable Save/Tag</li> </ul>	2.5 Marks
21.	DICOM Option	<ul style="list-style-type: none"> <li>• Modality Worklist</li> <li>• Print</li> </ul>	2.5 Marks

		<ul style="list-style-type: none"> <li>• Store</li> <li>• Storage Commitment</li> </ul>	
22.	Connectivity	<ul style="list-style-type: none"> <li>• Ethernet Wired</li> <li>• Wireless</li> <li>• The vender must integrate the unit with HIMMS at no extra cost</li> </ul>	1 Mark
23.	Power Requirements	<ul style="list-style-type: none"> <li>• 100 - 240 VAC</li> <li>• 50/60 Hz Input; 400 - 1000 W</li> </ul>	5 Marks
24.	Accessories	<ul style="list-style-type: none"> <li>• A pair of Goggles -4 pcs, Gloves medium &amp; Large size – 2pcs each, Surgeon's apron – 4 pcs, Hyoid collar – 4 pcs.</li> </ul>	2.5 Marks
25.	Training	<ul style="list-style-type: none"> <li>• Operator's Application Training for Radiologist and radiographer for at least 5 days</li> <li>• Factory Biomedical Training, Application, Trouble shooting &amp; Maintenance for at least 5 Days</li> </ul>	5 Marks
26.	Manuals	<ul style="list-style-type: none"> <li>• Technical Service manual hard &amp; soft copy (in English) must be provided.</li> </ul>	1 Mark
27.	warranty	<ul style="list-style-type: none"> <li>• Equipment must be a BRAND-NEW unit &amp; under warranty including spare parts for at least <b>2years after Installation &amp; commissioning.</b></li> <li>• Supplier must bind itself to conduct preventive maintenance on a quarterly basis at its own expense (including labour and cost of spare parts.</li> </ul>	5 Marks
28.	Safety & std	<ul style="list-style-type: none"> <li>• CE MARK &amp; FDA</li> <li>• IEC, 60601-1-3, IEC, 60601-2-28, IEC, 60601-2-43.</li> </ul>	1 Mark
29.	Country of Origin	<ul style="list-style-type: none"> <li>• Must have traceability of country of origin (Quality certificate)</li> </ul>	1 Mark

Pass marks 85 %

All other terms and conditions remain unchanged.

**END OF TENDER ADDENDUM**



**AHMED DAGANE, RN, BA, BSN, MBA-HCM**  
**CHIEF EXECUTIVE OFFICER**

JM/pn

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