

DR. B. BOROOAH CANCER INSTITUTE

A Grant- In- Aid Institute of Department of Atomic Energy. Govt. of India
And a unit of Tata Memorial Centre, Mumbai
Gopinath Nagar, Guwahati-781016
GST No.: 18AAALB0017E1ZW

Dated: 09-05-2023

**Sub: Corrigendum of GeM Tender for supply installation & commissioning of IR Set up: C arm with DSA.
GeM Bid No. GEM/2023/B/3216113**

CORRIGENDUM

Dr. B. Borooah Cancer Institute, Guwahati, Assam		Amendment to the technical specifications
Department: Diagnostic Radiology		
High frequency (50kHz) Microprocessor controlled C-ARM machine providing excellent image quality for intervention radiology procedures. The system must be AERB type approved.		High frequency (50kHz) Microprocessor controlled Mobile C-ARM machine providing excellent image quality for intervention radiology procedures. The system must be AERB type approved.
Please quote the model which includes latest state of the art equipment and meets the basic minimum specifications. The quoted model should be latest introduced with end of life not before 10 years from the date of installation at TMC (BBCI).		
	Name of Vendor	
	Make:	
	Model:	
	Year of introduction:	
	Year of up gradation:	
	Expected end of support (H/W & S/W):	
	Work in progress and future models:	

	Parameters	Specifications	
1	C-ARM / Gantry	The system should have a minimum of 84 cm free space within the C-Arm to provide a large imaging space.	The system should have a minimum of 75 cm free space within the C-Arm to provide a large imaging space.
		The C-arm depth should be 73 cm or deeper to provide a large imaging space and C-arm clearance around the patient and imaging table.	This clause is removed from NIT. Supplier may provide as per machine standard .
		The C-arm should have a manual/motorized angulation of ± 220 degrees or more to allow the imaging chain to accomplish angled projections.	The C-arm should have a manual/motorized angulation of ± 180 degrees or more to allow the imaging chain to accomplish angled projections.
		The C-arm field of view should be a square field of view for better ROI coverage.	No change in NIT
		The C-arm should have orbital movement of $+ 93 / - 48$ degrees for better penetration in Crania/Caudal movement.	The C-arm should have orbital movement of $+ 90 / - 30$ degrees or more for better penetration in Crania/Caudal movement.
		The system should have at least 45 cm of motorized vertical C-Arm travel capability to adjust the imaging chain height.	The system should have at least 40 cm of motorized vertical C-Arm travel capability to adjust the imaging chain height.
		The C-arm should provide side to side (wig-wag) and the horizontal travel movements to allow panning during an imaging.	No change in NIT
2	Collimator System	Rectangular lead diaphragm: For concentric and radiation free collimation	This clause is removed from NIT. Supplier may provide as per machine standard .
		Slot lead diaphragm: For symmetrical and asymmetrical, radiation free collimation with unlimited rotation capabilities.	This clause is removed from NIT. Supplier may provide as per machine standard .
3	Generator & X-Ray Tube	The generator should be Micro Processor controlled converter type with output of 25 kW or more and minimum 50 kHz frequency (or higher).	The generator should be Micro Processor controlled converter type with output of 2.5 kW or more and minimum 50 kHz frequency (or higher).
		The system should operate in full capacity on 220 volts AC, 15 amps.	No change in NIT
		Fluoroscopic kVp range : 40 - 125 kVp or more	Fluoroscopic kVp range: 40 - 110 kVp or more
		Fluoroscopic mA range : 3 mA - 250 mA	Fluoroscopic mA range: 0.2 mA - 17 mA
		Radiographic kVp range : 40 -125 kVp or more	Radiographic kVp range: 40 -110 kVp or more

		Radiographic mA range : 3 mA - 250 mA or more	Radiographic mA range: 0.2 mA - 17 mA
		The generator should be capable of providing pulse fluoroscopy with pulse rates up to 30 frames/sec or more.	The generator should be capable of providing pulse fluoroscopy with pulse rates up to 25 frames/sec or more.
		The anode of x-ray tube should be dual focus and of rotating type.	No change in NIT
		The tube should have inherent filtration as per IEC for the stray or scattered radiation: Please specify	No change in NIT
		Focal spot size should be 0.3 mm & 0.5 mm dual focal spots.	Focal spot size should be 0.6 mm & 1 mm dual focal spots.
		Anode heat storage capacity should be 365 kHU or higher	Anode heat storage capacity should be 50 kHU or higher.
		Anode heat dissipation capacity should be 91 kHU/min or higher	This clause is removed from NIT. Supplier may provide as per machine standard .
		The tube housing heat storage capacity should be a minimum of 2565 kHU.	This clause is removed from NIT. Supplier may provide as per machine standard .
		Maximum uninterrupted fluoro time: 40mts at 600W; 60mts at 400W.	This clause is removed from NIT. Supplier may provide as per machine standard .
4	Flat Panel Detector System	The system should have a flat panel detector of CMOS (Complementary metal-oxide-semiconductor)	No change in NIT
		The size of the detector should be of minimum 30 cm × 30 cm.	The size of the detector should be of 20 cm × 20 cm or more.
		The pixel size should be 152 micron or less	This clause is removed from NIT. Supplier may provide as per machine standard .
		Matrix size: 1900 × 1900 pixel or more	Matrix size: 1000 × 1000 pixel or more
		The system should provide last image hold capability.	No change in NIT
		The system should be equipped with touch control panel.	No change in NIT
		The system shall allow the user to change the image orientation on the display screen during a live exposure or using the last image hold.	No change in NIT
		Anti-scatter grid system: Pb15:1, 80lines/cm. f0=115	This clause is removed from NIT. Supplier may provide as per machine standard .
5	Digital System & Image Management	The system should have multi patient data base for handling large quantities of image, including dose management report.	No change in NIT

	The system should automatically select proper imaging parameters like kVp and mA during an imaging, but also provide the user to over-ride these setting manually if required.	No change in NIT
	Real time and automatic brightness and contrast (ABC) should be provided to optimize displayed image.	No change in NIT
	The system should provide a real – time post processing edge enhancement capabilities to get better image quality according to the density of the tissue. An electronic zoom function should be available	No change in NIT
	The system should be capable of saving more than 300000 images to the internal hard disk and retrieve stored images later.	The system should be capable of saving more than 50,000 images to the internal hard disk and retrieve stored images later.
	It should have facility to record on-line fluoroscopy.	No change in NIT
	It should have facility for image and fluoro sequences retrieval on a CD/DVD/Pen drive.	No change in NIT
	System should have facility for DICOM connectivity. All DICOM functions should be offered.	No change in NIT
	Software to enhancement the contrast of image with respect to density of organ should be offered, allowing the contrast of structures to be emphasized without loss of information in bright and dark image areas.	No change in NIT
	System should have digital acquisition with and without subtraction. It should have road map facility for intervention.	No change in NIT
	The system shall include the following packages for dose reduction: <ul style="list-style-type: none"> • Integrated dose measuring chamber with automatic transfer of the accumulated dose into a radiation report. • Radiation-free positioning of primary collimators through graphical display in the LIH image on the image monitor. 	No change in NIT
	System should be provided with an external hard disc/drive of 4TB storage for patient data archive and a system to retrieve them whenever required.	No change in NIT
	Two numbers of 19" TFT premium high brightness color display (medical grade monitors) shall be provided with the system for image viewing purpose with following features: <ul style="list-style-type: none"> • Screen size (Diagonal): 19" • Image display: 1280 × 1024 (pixels) or more 	No change in NIT

		<ul style="list-style-type: none"> • Backlight white LED technology • Protective collision cover • Anti-reflection glass coating • Automatic as well as manual brightness control • Contrast ratio: 900:1 or better 	
6	DSA (Modes)	<ul style="list-style-type: none"> • Image acquisition 3p/s to 30p/s • Image storage: All images. • Subtraction angiography with pixel shift & remask. • Automatic and manual Pixel shift function to correct subtraction runs. • Filtering of mask and fill images for contrast enhancement. • Roadmap technique • Roadmaps on corrected subtraction peak opacification images. • Anatomical land marking from 0% to 100%. 	No change in NIT
		Pointer function that displays an overlay trajectory that helps surgeons to optimally position k-wires or other devices.	No change in NIT
7	Essential Accessories	A UPS shall be supplied with the system for providing backup in case of power failure for at least 15 minutes for the whole system.	No change in NIT
		Radiation protective devices & accessories: <ul style="list-style-type: none"> • CE certification & ISO approved Lead Apron (vest and skirt type) with 3 years of warranty: 10 nos. • CE certification & ISO approved Thyroid shield (lead free) with 3 years of warranty: 10 nos. • Six numbers of gonad shields (all sizes both for male and female) • Lead goggles of light weight: 10 nos. • Wall mounted apron hangers (foldable): 4 nos. • Adjustable and movable radiation protection shield of reputed make: 2 nos. • Ceiling mounted light 	Radiation protective devices & accessories: <ul style="list-style-type: none"> • CE certification & ISO approved Lead Apron (vest and skirt type) with 3 years of warranty: 5 nos. • CE certification & ISO approved Thyroid shield (lead free) with 3 years of warranty: 5 nos. • Six numbers of gonad shields (all sizes both for male and female) • Lead goggles of light weight: 5 nos. • Wall mounted apron hangers (foldable): 2 nos.

	<ul style="list-style-type: none"> • CE certified C-arm compatible (carbon fiber) table with lateral & arm support • ISO and CE certified 2 numbers of lead barriers of size 6ft × 3ft with a viewing window having lead glass. • One calibrated personnel dosimeter (solid state detector) for measuring absorbed dose and dose rate in Sievert unit. 	<ul style="list-style-type: none"> • Adjustable and movable radiation protection shield of reputed make: 2 nos. • Ceiling mounted light. • ISO and CE certified 2 numbers of lead barriers of size 6ft × 3ft with a viewing window having lead glass. • One calibrated personnel dosimeter (solid state detector) for measuring absorbed dose and dose rate in Sievert unit.
	<p>Pressure Injector system:</p> <ul style="list-style-type: none"> • Single head injector system for angiography application in CT as well as in C-Arm unit. • Pedestal mount with manual and automatic injection system having hand and foot switch operation. • Syringe size: 50ml, 100ml & 150ml (disposable). • Flow rate: 0.1 – 30 ml/sec or more. • Pressure: 50-1000 PSI or more. • Warning system for air and blood detection shall be available. 	No change in NIT
	<p>Camera System:</p> <ul style="list-style-type: none"> • A High-Definition digital camera shall be provided for still photography and/or 4K videography with an internal memory of 5 GB or more. • The camera should be of latest model. • Transfer of captured images or videos facility to a PC should be provided. • Optical Zoom: 4-6x • Megapixel: 20 Mega Pixel or more. • Built in LCD monitor 3” or more. 	Camera System is decided to exclude from this bid. So it is not required.
	<p>Vascular Table (C-Arm Compatible):</p> <ul style="list-style-type: none"> • Application: Vascular and Interventional Radiological Procedures. • The table should have Radiolucent Carbon Fiber Table top with patient mattress of minimum absorption of X-ray. • Diving board style for easy C-arm access. 	Vascular Table (C-Arm Compatible) is decided to exclude from this bid. So it is not required.

		<ul style="list-style-type: none"> • The table should have weight bearing capacity of at least 200 kg. • Length of table top: 2 m or more. • Width of table: 22" or more • 2" high quality patient comfort pad. • The table should have motorized up-down movement, floating table in longitudinal and transverse direction. • Facial cutout access. • Easy patient transfers to table. • The table should have all the patient positioning accessories like arm rests, Head holder and hand grips. • Bellows to cover and protect the table motor assembly. • Rotating and lockable caster. • The table top should have electromagnetic lock with table side control to release the lock by the user himself. • Control handle (joystick) for easy table movements. • The table should be either fixed or mobile with locking facility on the floor. • Emergency stop button. 	
8	Warranty and CMC	Five (05) years of warranty plus five (05) years of CMC	No change in NIT
9	Training	Onsite training of Technicians and Doctors for minimum of 2 weeks or till satisfaction.	No change in NIT

BL 19 9/5/23

Chief Administrative Officer
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1. Director, BCCI 2. BCCI Website. www.bbcionline.org 3. GeM Portal