



Notice Inviting e-Tender

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Supply and Commissioning of 01(One) unit of C-ARM Fluoroscopic machine for the
Urology Department at NRS, Kolkata

(Submission of Bid through *online*)

(2nd call of Bid Reference No.: WBMSCL/NIT-1078/2025, Dated-30.12.2025)

Bid Reference No.: WBMSCL/NIT-362/2026

Dated-26.05.2026

AMENDMENT-I

Revised Technical Specification **of Flat Panel C-Arm Mobile X-ray System**

Microprocessor controlled C-arm machine with FPD should provide the excellent image quality at low radiation, ideally suited for general surgeries in many application fields and special application such as orthopedics, urology, Gastroenterology, Neurology and pain management procedures

X-Ray Tube/Tube Head Specifications

Should be rotating anode X-ray tube

Should have a dual focal spot of size 0.3/0.6 or less

Should have tube target angle of 10-12°

Should have Nominal X-ray tube Voltage of 110kV or more

Should have maximum anode heat content of 200 KHU or more

X-Ray Generator Specifications

Should have microprocessor-controlled high-frequency (100 KHz or more) generator

Should have an X-ray generator output of 6 KW or more

Should have a generator/tube housing heat capacity of 2000 KHU or more

Should have total filtration of 2.5mm Al or more

Pulsed Fluoroscopy

Should have a kV Range of 40-110kV in Steps of 1 kV

Should have mA range for pulsed fluoroscopy of 2 mA to 60 mA or more

Should have pulse rate Max (FPS) 15 or more

Pulse Width (fixed Anatomy based): 10-30 mS or better

Should have pulse rate (PPS) 2-15 per second or better

Digital Radiography/Snapshot

Should have a kV Range of 40-110kV in Steps of 1 kV

Should have mA range for fluoroscopy of 2 mA to 60mA

Power Requirement

Input voltage range should be 230V RMS $\pm 10\%$, 50Hz Single Phase

Input current should be 15A @230V

Backup power supply Up to 2 minutes continuous fluoroscopy or minimum 100 nos Snapshot during power failure

Digital Flat Panel Detector

The detector should be the latest technology with amorphous silicon (aSi)

Conversion Screen should be of CsI

The detector X-ray active area should be 21x21 cm or more

The detector resolution should be 1.5K x1.5K or better

Motorized Collimator Specifications

The Collimation Type should be an asymmetric rectangular blade / ultrafast preview collimeter and Motorized selectable Cu filters - 0 to 0.4 mm thickness

Should have Hard Shutter Attenuation 80%, accuracy < 5%

Should have One Soft Shutter: Soft Shutter Attenuation 40-50% @ 70kV

Collimator rotation should be $\pm 90^\circ$ anatomical view

Mechanical Specifications

C-Arm Unit

Should be mobile unit with steering control

Should have a source to image distance 1000 mm or more

The depth of the C-Arm should be 680 mm or more

The free space of the C-Arm should be 800 mm or more

Vertical travel of the C-Arm should be 400 mm or more

Horizontal travel of the C-Arm should be 210 mm or more

The orbital motion of the C-Arm should be -45° to $+90^\circ$ degrees or more

Angulation (C- Rotation) of the C-Arm should be $\pm 190^\circ$ degrees or more

The wig-Wag Motion (Swivel range) of the C-Arm should be $\pm 12.0^\circ$ or more

Should have locks for all the movements

Should have side laser provision on both (detector and tube)

Electrical operation protection: Manual/Electrical Emergency switch provision at the workplace should be provided

Should have a push handle at the rear side for mobility on the ground

Anti-Scatter Grid: Tool-free removal provision for anti-scatter grid should be provided

Workstation

Should be mobility with small footprint

Monitor: Should be 32" or more single LED Monitor, Medical Grade, DICOM Compliant

The monitor should have a resolution of 1920 x 1080 pixels

The monitor should have a brightness of 650 cd/m² or more

The monitor should have a contrast of 1000:1 or more

The workstation should have USB, HDMI, Ethernet, Mains Input, and mains switches

Should have the following Image Processing Features

Last Image Hold

Virtual Collimation

Edge Enhancement

Image Enhancement

Annotation

High-Definition images

Zoom and Pan

Invert Function

Image Math Processing

Histogram Equalization

Image Rotate

Image Flipping

Image Save/Backup

DICOM

Renal angiography and Embolisation (These feature must be demonstrated during the physical demonstration)

Should have parameter display-workstation with following

Should have dose display of Air-Kerma, Dose Rate, and accumulated DOSE display for procedure

Should have parameter display of kV and mA, Window width and length parameters, Frame tags like frame ID and number of frames or type of exposure

Console Specifications

Should have graphic 15" HMI TFT touch console display with pixels of 1200 x 800 or more

Console Viewing Angle: Horizontal Viewing Angle adjustable for $\pm 270^\circ$ from Normal

DSA, Trace & Roadmap features as standard

Should have the following console functions

C-Arm UP/Down motion: Vertical Motion Control

Collimator Functions: Hard shutters and Rotation

kV setting: Fluoroscopy: Increase/Decrease functions at 1kV step

mA setting: Increase/Decrease function at 1mA

Auto Kv/mA (Auto Technique): Enabling and Disabling Exposure Control Parameters for Optimized Image Quality

Image Flip -Vertical/Horizontal: Image Flip on LIVE monitor

Image Swap: Exchange current LIVE and PASSIVE monitor functions

Brightness control- Increase / Decrease: Brightness Increase and Decrease function of LIVE monitor

Auto B/C: Auto Control Function of Brightness/Contrast Levels on Live Monitor

INV: Image Inverse Function on LIVE Monitor

Reset: RESET Rotation, Flip, Inverse to default levels on LIVE monitor

Safety Specifications

Over Voltage Protection: Limit set at 110-kVp +10%

Leakage radiation (in 1hr at a distance 2: 1 mtr) should be \leq 1mGy (100mR)

Should have an emergency switch to stop mechanical C-Arm vertical movement

Environmental Specifications

Operating Temperature: 20°C to 35°C

Storage and transport temperature: -10°C to +50°C

Operating Humidity Range: 20% to 80% non-Condensing

Storage & Transport Humidity Range: 20% to 95% non-Condensing

The user Console System should be IPX1 or better

X-ray source & Detector should be IPX1 or better

The foot Switch should be IPX7 or better

Certifications

The quoted model should have AERB-type approval. AERB-type approval certificate should be uploaded with a technical bid

The quoted model should have CDSCO certification. CDSCO manufacturing and import license document should be enclosed with technical bid

ACCESSORIES

LEAD APRON (.35mm- 6 pcs and .5mm-6 pcs), Qts-12

HEAD GUARD, Qts-12

THYROID GUARD, Qts-12

GOGGLES, Qts-12

Gonad guard - 6 pcs

LEAD APRON STAND (Hanger type) - 2 pcs