Notice Inviting e-Tender

West Bengal Medical Services Corporation Limited
Swasthya Sathi
GN-29, Salt Lake, Sector-V
Kolkata-700091

Phone No (033) 40340307/320
E mail: procurement@wbmsc.gov.in

Supply and Commissioning of 02 (Two) unit of C ARM machine for dept of Neurosurgery at BIN, Annex-I, IPGME&R-SSKM Hospital, Kolkata

(Submission of Bid through *online*)

Bid Reference No.: WBMSCL/NIT-393/2025	**Dated-16.05.2025**

AMENDMENT-I I

Revised Technical Specification

of C-ARM Machine

State-of-the-Art, Compact, Easily Transportable, Digital Mobile C-Arm X Ray Unit with Flat Panel Detector for Neuro, Ortho, Spine, Trauma & Surgical Procedures.

The system should have the following essential features

System should be able to produce 3 dimensional image by capturing multiple 20 images through motorized movement.

1. Generator and X-ray Tube:

Generator should be microprocessor controlled with the following modes:

1. 2D Normal Fluoroscopy Pulsed Fluoroscopy.
2. 3D Imaging (MPR)
3. Digital Radiography mode (Snapshot)

- X-ray Generator should be minimum 25 KW or more.
- The range of KV should be 40 -120 KV for each mode.
- Tube Current should be upto 200mA or more.

Give details of:

- The Generator should be capable of providing, Pulse Fluoroscopy with Pulse rates up to 20 Pulses/sec or more.
- X-ray tube heat dissipation rate should be minimum of 2.5 MHU or more for protracted procedures

X-ray tube should have a:

1. Dual Focal spot of minimum 0.3 / 0.6 or better
2. Nominal X-ray tube voltage 100 KV or more.
3. Inherent filtration AI equivalent Please mention additional filters available.
4. Automatic Dose Control.

Collimator unit:

1. Shutters / Diaphragm for symmetric radiation free collimation (Virtual Collimator) should be available.

2. C-Arm:

Give details of:

- Angulation: 200 degree or more
- Orbital movement: 135 degree or more
- Horizontal movement: 20 cm or more
- Swivel range: 10 degree or more
- Source to detector distance: 100 cm or more
- Depth of immersion: 65 cm or more
- The C-Arm depth should be 65 cm or deeper and Free space should be 80 cm or more to provide a large imaging space and C-Arm clearance around the patient and the imaging table.
- The C-Arm should provide side to side (wig-wag) and horizontal travel movements to allow panning during an imaging.
- The C-arm should be motorized in orbital, Angular, Horizontal and vertical movement, (please mention the specifications)

3. Flat Detector System

- The system should have a CMOS Flat Panel Detector of 1.9k x 1.9k resolution and minimum noise.
- The size of the detector should be minimum 30 x 30 cm or more
- The pixel size should be 190 micron or less.

4. Monitor Cart:

- The system should be equipped with two medical grade 19" monitor / 32 inch single monitor LCD/TFT monitors with Image matrix at least 1024 X 1024. The bidder must have to supply 55" medical grade single monitor for teaching purpose.

5. Digital System & Image Management:

- Must be Fully Digital Continuous Imaging Chain for Acquisition, Processing, Storage, Archiving & Documentation.

- The system should possible to enter the patient data and for image annotation etc.
- The system should have multi patient data base for handling large quantities of image including Dose Management Report.
- The system should automatically select proper imaging parameters. kVp and mA during imaging, but also provide the user to over-ride these settings manually.
- Should provide anatomical mode for different anatomical parts.
- Real time and Automatic Brightness and Contrast should be provided to optimize displayed image.
- Digital image processing up to 16 bit or more
- Touch screen control panel would be preferable.
- Annotation, measurement of angles and distances.
- Video output.
- Disk storage of minimum of 1,00,000 2D images in at least 1K X 1K matrix, 2 TB external hard disk needs to be provided along with the machine.
- Touch screen control panel should be available in c-arm cart & Monitor cart.
- Multi-Functional foot switch with additional functionality should be available.
- Laser positioning device should be available in Flat Panel detector for dose reduction.

6. 3D Workstation.

Should be providing 3D Workstation with necessary hardware & following software:

- Anatomical program for different anatomy parts.
- 3D Visualization with multiplayer reconstruction (MPR) & Volume Rendering. Slice planes: Axial, Coronal, Saggital should be available.
- 3D volume should be minimum of 15cm cubic or 15cm cylindrical volume. 3D volume resolution should at least 256 voxels or more.
- 3D acquisition time should not be more than 50 seconds.

7. Image Processing:

1. The following options should be available for Live and Post Image Processing.
2. The system should provide a Last Image Hold Capability that the last image is displayed on the active monitor after the termination of an exposure.
3. The system shall allow the user to change the Image Orientation on the display screen during live exposure or using the last image hold. Those functions include image rotation, left to right and top to bottom image reversals.
4. Recursive filters, Edge Enhancement, Windowing Level adjustment, Grayscale inversion, Digital Collimators, Zoom 3 Level
5. Measurement function should be available.

8. Image Documentation:

- The unit should be advanced DICOM enabled.
- Should be possible to archive images on USB port (Format: DICOM & JPEG / TIFF Multimedia.)
- Position Control Center and Distance Control to allow faster and isocentric movement through Joystick control/ Tacit switch.
- Digital subtraction Angiography (DSA) package with features like DSA real time subtraction with re-masking capability, road mapping, Edge enhancement, pixel shifting.

- Single head pressure injector should be supplied with the machine along with 250 CC syringes (10 nos).

9. **Height & Weight:**
   - The system should be minimum weight, compact size & Easy to transport.
10. The system should have dedicated integrated software with minimum of two navigation system. (Suitable Tracker for navigation will be provided by institution)
11. Bidder must provide QA service during the warranty and CMC period.
12. The bidder should submit valid CDSCO Certificate/Registration/License for both the manufacturer(s) and importer(s) as applicable.

Accessories for C-Arm:

- Lead Aprons - 10 Nos.
- Thyroid Shield - 10 Nos.
- Gonadal Shield - 10 Nos.
- Lead Spectacles - 12 Nos.
- Online 10 KVA UPS with battery with 30 minutes back up - 1No.
- Sterile covers for C-Arm, X-ray tube and Flat Panel Detector - 100 set