

Notice Inviting e-Tender

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**SUPPLY OF X-RAY MACHINES & COMPUTED RADIOGRAPHY ATTACHMENT IN THE
HOSPITALS AND MEDICAL COLLEGES OF THE GOVERNMENT OF WEST BENGAL.**

(Submission of Bid through *online*)

Bid Reference No.: WBMISCL/NIT-55/2014

Dated- 20.08.2014

Date of issue: 01.09.2014

Amendment – IV

2. Revised Technical Specifications

SCHEDULE - I

X-Ray Machine for CCU

- a) **Description & Function**
- i) Mobile X-Ray unit is required to perform X-Ray studies in emergency & trauma departments & at bed side in wards & ICU.
- b) **Operational Requirements**
- i) Compact, lightweight, easily transportable mobile radiographic unit suitable for bed side X-Ray in Emergency, ward, ICU, Operation Theater & also in the radiology Department for conventional radiography.
- ii) The unit must have an effective breaking system for parking, transport & emergency breaking. The tube stand must be fully counterbalanced with rotation in all directions.
- iii) It must have an articulated arm/counter balanced arm for maximum positioning flexibility in any patient position.
- iv) All cables should be concealed in the arm system.
- v) Exposures with remote control (wired or wireless) should be possible.
- vi) The unit must have cassette storage facility for all size of cassettes.

c) Technical Specification

i) The Generator

- Must be microprocessor controlled high frequency, output 4 KW or more to give a constant output suitable for radiography.
- It should have a digital display of mAs & kV.
- KV range - 40kV to 100kV.
- mA range - 10mA to 65mA or more.
- mAs - 200 or more
- Shortest exposure time 10 ms.

ii) X-Ray tube

- Output should match the output of the generator.
- Stationary anode with focal spot size 1.8 mm X 1.8 mm or less.
- Heat storage capacity of the anode atleast 30,000 J.
- Collimator-manually adjustable collimator.
- The exposure release switch should be detachable with a cord of at least 5 meters.
- Remote control operating distance > 3 meters.
- Remote control operating radius- 180°

iii) System configuration Accessories Spares and Consumables

- Main Unit with high frequency Generator and tube as specified - 01
- Remote control kit - 01
- Lead aprons - 02 (Weight should be declared)
- Grid (ratio 6:1) of following sizes should be provided - 01 each -14" x17"
- Weight ≤ 150 Kg

iv) Environmental Factors

- Operating temperature 10 - 40°C
- Storage Temperature - 20-55°C
- Operating Humidity - 30%-80%
- Storage Humidity - 10% -100%

v) Power Supply

- Power input to be 220 - 240VAC.50Hz fitted with appropriate Indian Plug.
- Resettable Over current Breaker shall be fitted for protection.

vi) Standards & safety

- Should be US FDA/CE/BIS Approved Product.
- Safety aspects of radiation dosage leakage should be spelt out.
- Should comply with AERB/BIS Guidelines for radiation leakage & X-Ray equipment.

- Protection against electrical shock: Class I, Type B, According to IEC 601-1.
- Log Book with instruction for daily, weekly, monthly & quarterly maintenance checklist. The job description of the hospital technician and company engineer should be clearly spelt out.

vii) Documentation

- User manual in English.
- Service manual in English.
- List of important Spare parts & accessories with their part number & costing should be available for at least 10 yrs.
- Certificate of calibration & Inspection from Factory

All the items should be under warranty for 5 year followed by 5 years CMC. Warranty and CMC includes everything in specification of the equipment including X-Ray tube and all other accessories. The Prices of CMC shall be considered for the evaluation. The service & spares will be available beyond the completion of 5 year warranty & 5 years CMC.

DESIRABLE PARAMETERS**Desirable Parameter versus allotted marks**

Parameters	Maximum allotted marks	Range versus allotted marks		Marks obtained
		Range of parameters	Allotted marks for individual parameters	
Frequency of the Generator	10	Up to 50 KHz	5	
		51 to 100 KHz	7	
		101 to 200 KHz	10	
Output Power of Generator	10	Up to 4 KW	5	
		4.1 KW to 6 KW	7	
		Above 6.1 KW	10	
Focal Spot Size of X- Ray tube	5	Up to 1 mm ²	5	
		1.1 mm ² to 2 mm ²	3	
		Above 2 mm ²	2	
Heat Storage Capacity of Anode	5	> 30,000 J	3	
		≤ 50,000 J	5	
KV range	10	40 -125 KV	10	
		40 – 100 KV	5	
mA range	10	10 -100 mA	10	
		10 – 80 mA	7	
		10 – 65 mA	5	
mAs range	10	300 mAs	10	
		250 mAs	7	
		200 mAs	4	
Shortest exposure time	10	Up to 2 ms	10	
		2 ms to 5 ms	7	
		Above 5 ms	5	
User Friendliness in terms of area occupied by the machine, weight, quality of wheels, movability, weight of lead apron etc.	10			
Quality of image evaluated by Team of Radiology expert	20			
Total	100			

SCHEDULE - II

Technical Specification of Computed Radiography (CR) attachment for SNCUs X-ray

[This system will be attached to X-Ray Machine of bid reference no. WBMSC/NIT-35/2014 (SCHEDULE - I) dated 23.05.2014.

1. The system should comprise of:
 - a. Image recording system (Image plate/cassette)
 - b. Image reader
 - c. Image processing work station
 - d. Accessories and consumables
2. Should be of Single cassette speed – 55 cassette/hr or more.
3. Acquisition of image at monitor after insertion of the cassette: 40 sec or less.
4. **Cassettes:** Should provide the following cassettes;-
 - i) 10" X 12" cassette – 2 nos.
 - ii) 8" X 10" cassette – 2 nos.
5. Standard resolution of 10 pixel/mm.
6. **Image reader should be capable to read all types of cassettes.**
7. Console with 17" monitor – 1 no.
8. The camera should be of dry type with a resolution of minimum 500 DPI or more.
9. Dry Imager printer with 2 online tray.
10. One Separate additional work station to be provided.
11. UPS from reputed manufacturer having at least 30 minute back up with appropriate KVA.
12. The equipment should be new and unused.
13. **Standard & Safety**

Should be of US FDA / CE ("Conformité Européene").
14. **Warranty & CMC**

Warranty and CMC includes everything in specification of the equipment and all other accessories.

All the items should be under warranty for 5 year followed by 5 years CMC. The Prices of CMC shall be considered for the evaluation. The service & spares will be available beyond the completion of 5 year warranty & 5 years CMC.