

## **Amendment – II**

INVITATION FOR BIDS FOR SUPPLY, INSTALLATION, TESTING &  
COMMISSIONING OF MEDICAL EQUIPMENTS AND CSSD EQUIPMENTS FOR  
200 BEDDED  
NEPAL- BHARAT MAITRI EMERGENCY AND TRAUMA CENTRE (NBMETC),  
KATHMANDU, NEPAL

**Bid No.:** *BID REFERENCE: IFB No. HSCC/PUR/NEPAL/2013-14/1 Dated 06.07.2013*

Bidders are requested to note the following amendment after the pre bid meeting held on 18.07.2013

### **Commercial Conditions:**

<b>Existing Bid condition</b>	<b>Amended by MEA/HSCC</b>
Ref Clause SCC IV	Pneumatic High Speed Spine Drill supply will not be considered in past performance for High Speed Electric Motor(Items No. 10)
Ref Clause GCC 12	Any type of ISO Certification may not be insisted

### **Additional Points:**

- Performance /end user certificate submitted by the bidder should be duly notarized.
- The Warranty of the equipment should be as per the bid GCC clause 26 irrespective what is written in the specification.

**Bid sale, submission and opening date are amended as per following:**

<b>Item No.</b>	<b>Last date of Sale of Bid Document</b>	<b>Last date &amp; time of submission of bids</b>	<b>Opening of bid</b>
1 to 16	29.08.2013	30.08.2013 by 1430 hrs.	30.08.2013 from 1500 hrs.
17 to 32	30.08.2013	31.08.2013 by 1430 hrs.	31.08.2013 from 1500 hrs.

### **Technical Specification Amendments:**

**For Item No. 6, 7 & 8 following is also part of specification:**

**“Items Manufactured to International Standard (equivalent to AO type Specification) by reputed Multinational Firms”**

**Item no: 9 Mini Instrument Set and Implants 1Units**

**The technical specification given earlier stands replaced with the following specification:**

Instruments for insertion of mini screws (2.7, 2.0, 1.5 mm) of A.O. type in sterilization case with trays consisting of following items:

- Drill bits 2.7/2.0/1.5/1.1 mm 2 each
- Double drill sleeves 1.5/1.1, 2.0/1.5,2.7/2.0 1 each
- Taps for 2.7/2.0/1.5mm screws 2 each
- Instruments for insertion of screws including small screws driver, Taps, bending Iron and plier, retractors, holding clips, reduction forceps, counter sink etc. **Total 25 instruments**
- Cortex screws of assorted sizes
  - 2.7mm 50 nos.
  - 2.0mm 32 nos.
  - 1.5mm 36 nos.
- Washers 6 nos.
- Assorted Plates (quarter tubular, Mini L,Mini- T, Mini Condylar) 51 nos.
- Kirschner wires assorted 50 nos.

The instruments should be made of bio compatible, high quality stainless steel with proven safety and efficacy (imported).

**Item No. 10- High Speed Electric Motor (Spine & Neuro Surgery)**

S.NO.	Existing Tender Specification	Amended by MEA/HSCC
3.1 1	Should have a screen console	Should be a touch screen
2	Motor Speed should be at least 80000 RPM and above	Motor speed Should be 75000 RPM or above

**Item no: 12 X Ray Machine**

**The technical specification given earlier stands replaced with the following specification having two types of X ray Machine:**

**(a) Digital Flat Panel Fluoroscopy cum Radiography System - One**

High powered X-Ray unit with digital flat panel for various fluoroscopy and radiography examinations.

The unit should be completely integrated system (integrated X ray generator and image acquisition control console) having the following specifications:

**Generator**

- 1000 mA unit with microprocessor controlled high frequency X-Ray generator with power output of 80 KW or more
- Exposure kV range should be 40-150
- System should have facility for pulsed fluoroscopy
- Generator should have minimum exposure time of at least 1ms
- System should have multiple user defined programs (Vendor defined programs )

- There should be provision for automatic exposure control (AEC). It should be possible to override AEC if required

#### **Table**

- Floor mounted table with carbon fiber table top, scratch resistant surface
- System should have motor driven longitudinal, and horizontal table top movements. Please specify the range of movements.
- Table should have angulations from longitudinal to head down positions. (Vertical +90 degrees to Trendelenburg -20 degrees)
- Table should support patient weight upto 160kgs
- System should have well designed foot switch for releasing fluoroscopy and acquisition
  - System should have provision for collision protection
  - Table should have integrated bucky unit for flat panel general radiography and fluoroscopy
  - Intercom system must be available to communicate with patients.

#### **X ray Tube:**

- One X ray tube which is Over couch
- The X-Ray tube should have dual focal spots.
- X-Ray tube rating should be compatible with X-ray generator output.
- Small focal spot power rating should be in the range 30-50 kW
- Large focal spot power rating should be in the range 70 to 90 kW
- Size of focal spots should be specified.
- Anode heat storage capacity should be 700 KHU or more.
- Mention the heat dissipation rate.
- Should have provision of electromagnetic locks with collision protection sensors

#### **Direct Digital imaging System for fluoroscopy**

- Field of view of at least 40cms or more
- Collimator may be rectangular or iris type
- System should have real-time optimization techniques to maintain constant brightness at the lowest allowable dose to the patient
- Should have Cine loop facility and last image hold facility during fluoroscopy
- Acquisition matrix should of at least 1024X1024 at 10 bit rate
- Digital fluoro system in standard continuous fluoroscopic operating mode from single image display to serial exposures with varying frame rates upto 15 fps. In pulsed fluoroscopy mode it should be at least 6 frames per second

#### **Detector System :**

- Single Digital flat panel detector, using selenium detector with TFT convertor
- Detector must be at least 40X40 cms or more
- Image matrix size 2k X 2K pixels or more
- Pixel size should be 200 micron or less.
- Should allow centered/de-centered collimation

#### **Image display system**

- Monochrome monitors of 19" to be provided in examination and console rooms with resolution of 1 Mega pixel or more.
- Post acquisition image processing, viewing, reprocessing, hard copy documentation and onward transmission should be possible while doing fluoroscopy or radiography.

**Control Console**

- All system movements of table shall be controlled by the operator at the table in the examination room and also at the console
- The system should have facility for edge enhancement, positive/negative image display, windowing, contrast/brightness, electronic shuttering, image/pixel shifting, vertical and horizontal image reversal, zoom functions.
- The system should have fast and direct access to all series, single images, in both examination (Remote controlled) and console room
- System should have angle/distance measurement, image labelling and patient positioning facilities.
- System should have on line dosimeter on the console to display actual radiation dose.

**Image storage and Transmission**

- Image storage capacity of at least 30,000 images in 1024 x 1024 matrix at 10 / 12 bits on the main system disk.
- The systems should support storage of images on compact discs/DVD.
- The system should be DICOM 3.0 (or higher version) ready (like send, receive, print, record on CD/DVD, acknowledge etc.) for connectivity to any network, computer/PC etc. in DICOM format.
- Vendor should connect this with any laser cameras already existing in the department without any extra cost
- Easy integration and networking should be possible with RIS/PACS.

**Accessories**

1. One Dry Chemistry, Multiport, multiple films (14"x17", 11"X 14" and 8"X 10") camera with resolution of 500 DPI or more, DICOM ready and online. At least three size film trays should be active. The vendor should connect this camera with other existing cameras in department of Radiodiagnosis
2. DICOM Software with fast speed DVD Combo (Reader and Writer separately).
3. Lead glass 100x 150 cm for console room.
4. Two light weight 'zero lead' aprons, two thyroid shields, paediatric gonadal shields (All sizes both for male and female).
5. Radiation protection flaps
6. Suitable UPS with complete back up for the computer system for at least 30 minutes.
7. Minimum necessary furniture like chairs, table etc.
8. Fire extinguisher system to be connected to central system by vendor.
9. Hand grip
10. Foot step
11. Patient fixing belts and compression device (for performing excretory urography)

**Installation**

- All site approval, layout approval from the regulatory board in Nepal/AERB shall be the responsibility of the supplier. Following commissioning, permission to operate should also be the responsibility of the supplier.
- Complete turnkey project: The cost of alteration and preparation in a specified built in area on turn key basis which will include civil, electrical and air conditioning is to be borne by the firm.
- This work should be done in consultation with the Department of Radio-diagnosis and Engineering Section of the hospital.
- Power supply and AC requirements to be clarified and approved.

- Internal finishes: Flooring and skirting of branded antiskid ceramic (vitrified) tiles of reputable firm (option of epoxy flooring to be kept); walls-POP with plastic emulsion paint; GI powder coated ceiling system and brick wall partition between radiography room and console with lead glass.
- Lead lining of the walls and doors as required.
- Changing room with powder coated aluminum section of required size.

#### **Warranty/After Sale Service**

- Comprehensive on site warranty of entire system (Spares and labour) including X-ray tube, civil, electrical and air conditioning works and all accessories (including dry chemistry camera, UPS etc.) shall be as per tender terms.
- Downtime penalty clause would be applicable as per the tender terms.

#### **Essential certification**

- Radiation safety certificate: The offered model must have a valid NOC and AERB type approved certificate (equivalent certificate from country's regulatory board/organization) at the time of submission of tender.
- Quality certification: CE (Europe), USA FDA.

#### **Instruction to the supplier**

- The tender should be in two bids. Technical and price bid should be provided in separate sealed covers.
- All the information in the tender document must be supported by original product data sheets. All information asked must be provided under heading give above. Incomplete and haphazard information will not be accepted.
- The supplier must ensure the availability of expertise service and maintenance at Kathmandu.
- Uninterrupted availability of spare parts and repair of next ten years must be assured.
- On site Training should be provided.
- The number (with addresses and phone numbers) of installations of quoted unit to be mentioned.

#### **(b) Digital flat panel Radiography unit with one flat panel detector - One**

High powered X-ray unit with one digital flat panel for various radiography examinations for the department of Radiology.

The Unit should be completely integrated system (integrated X-ray generator and image acquisition control console) having the following specifications:

##### **1. Generator**

- 1000 mA unit with microprocessor controlled high frequency X-ray generator with power output of 80 KW or more
- The exposure range should be 40-150KV
- The minimum exposure time should be 1ms or less.
- There should be provision for automatic exposure control.

##### **2. X-Ray Tube**

- Should be ceiling suspended
- Should have dual focus tube
- Small focal spot should be 0.6 or less and large focal spot should be 1.25 or less
- Tube loading should be at least 30 KW for small and at least 80 KW for large focus.
- Should have motorized movement of ceiling suspended tube.

- Should have electromagnetic locks with collision protection sensor.
- Field size programming should be possible.
- Anode heat storage capacity should be 300 KHU or more
- X ray tube and collimator section should have automated image shuttering and cropping facility in collimator.
- All the movements of the overhead tube suspension (3D column stand) should be fully motorized. It should be possible to override it manually.
- There should be auto positioning of the overhead tube suspension against both the vertical detector and the table detector. This should be possible through selected protocol from both the console as well as from wall stand control.
- Overhead tube suspension (3D column stand) should also have a screen with display of important parameters and controls.
- Horizontal and vertical tube rotation should be +/- 180°
- Should have motorized copper filter to avoid unwanted radiation

### **3. Horizontal Bucky Table**

- Motor driven, adjustable height floating table top of carbon fibre.
- Compact bucky table with wireless detachable digital flat panel detector.
- Foot switches for adjusting height, longitudinal/side to side movements, locking.
- Detector movement should be synchronized with movement of the X-Ray tube.
- Removable grid for SID of 100cms for horizontal table applications
- Automatic exposure control should be available

### **4. Vertical Bucky (Wall stand)**

- Motorized, counter balanced adjustable height vertical Bucky.
- Should be possible to tilt the Vertical detector system (-15° to + 90°) and should travel from 1' to 6 ½' above floor level.
- Detector movement should be synchronized with movement of the X-Ray tube.
- Removable grid for SID of 180cms for vertical bucky applications
- Automatic exposure control should be available

### **5. Detector System**

- Detector material should be made of amorphous silicon with CSi scintillator
- One wireless digital flat panel detector which can be mounted both within the table and the vertical bucky stand.
- Minimum size of detector should be 40cms X 40 cms or more.
- Image matrix size 2k x 2k pixels or more.
- Pixels size should be 200µm or less
- Image resolution should be 2.5 lps/mm or more
- DQE of detector system should be 65% or more at 0 lps
- Tube assembly movement to be automatically synchronized with both the horizontal and vertical detectors movement
- Should allow centered/de-centered collimation

### **6. Operating (acquisition) Station**

- Should have a high resolution TFT/LCD monitor of minimum 19" size or more (fully flat) with minimum 1024x1024 or more display matrix and antireflective front screen.
- Image acquisition matrix should be minimum of 2k x 2K

- System should have auto protocol select
- Operating console should have facility for patient identity entry, viewing and processing images, documentation.
- Preview image should be ready in 5 sec or less.

#### **7. Image Viewing, Post –Processing and reporting Station and Documentation**

- Should have independent monitor of high resolution TFT/LCD monitor of 19” or more.
- Image display matrix should be of high resolution, minimum of 1.5 K x 1.5 K
- Post acquisition image processing, viewing, reprocessing, hard copy documentation and onward transmission should be possible.
- Image processing functions like rotate, mirroring, zoom, move, and windowing filter should be possible.
- There should be facility for measurements.
- It should be possible to create alphabetical, date wise and exam based, work list
- Work list should be auto refreshing

#### **8. Image Storage and Transmission**

- Hard disc storage capacity should be of 5000 or more images
- The systems should support storage of images on compact discs and DVD
- The system should be DICOM 3.0 (or higher version) ready (like send, receive, print, record on CD/DVD, acknowledge etc.) for connectivity to any network, computer/PC etc. in DICOM format.
- Easy integration and networking should be possible with any other existing/future networking including other modalities, HIS and RIS and PACS. Vendor will connect it to existing/future network without extra cost.
- The equipment should be connected to any dry laser camera existing in the department.

#### **9. Accessories**

- Suitable UPS for the computer with 30 minute backup
- Lead glass of size 100x 150 cm or more for console room.
- Vendor to install mike system for calling patients who are waiting outside
- Two light weight ‘zero lead’ aprons
- A lead screen on wheels with two panels.

#### **10. Upgrading requirement:**

A free comprehensive software upgrade (compatible with the existing platform) guarantee for 6 years after installation.

#### **11. Furniture :**

- Cupboard for storage – one
- Godrej swivel chairs with arm rest –Two
- Film viewing panel for X ray films – 3 in 1 of 12”X15” size – Two (LCD type)
- Table with storage space– one
- Examination stool - one
- Footstep for patient: one
- Gonadal shields for boys and girls of all age groups – one set
- Stand for lead aprons and Gonadal shields
- Emergency light - one

- Wall fans – two

**12. Warranty/After Sale Service**

- Comprehensive on site warranty of entire system (Spares and labour) including X-ray tube, civil, electrical and air conditioning works and all accessories (including dry chemistry camera, UPS etc.) shall be as per tender terms.
- Downtime penalty clause would be applicable as per the tender terms.

**13. Installation and Turnkey**

- All site approval, layout approval from the regulatory board in Nepal/AERB shall be the responsibility of the supplier. Following commissioning, permission to operate should also be the responsibility of the supplier.
- Complete turnkey project: The cost of alteration and preparation in a specified built in area on turn key basis which will include civil, electrical and air conditioning is to be borne by the firm.
- This work should be done in consultation with the Department of Radio-diagnosis and Engineering Section of the hospital.
- Power supply and AC requirements to be clarified and approved.
- Internal finishes: Flooring and skirting of branded antiskid ceramic (vitrified) tiles of reputable firm (option of epoxy flooring to be kept); walls-POP with plastic emulsion paint; GI powder coated ceiling system and brick wall partition between radiography room and console with lead glass.
- Lead lining of the walls and doors as required.
- Changing room with powder coated aluminum section of required size.

**14. Essential Certification**

- Radiation safety certificate – offered model must have a valid NOC and AERB type approved certificate (equivalent certificate from country’s regulatory board/organization) at the time of submission of tender.
- Quality certificate – CE (Europe), USA FDA

**15. Important instructions to supplier**

- The supplier must ensure the availability of expert service and maintenance. Uninterrupted availability of spare parts and repair of next ten years must be assured.

**Item no: 13 Ultrasound Machine**

Sr. No.	Existing Tender Specification	Amended by MEA/HSCC
Point no: 01 & 3	The system should be capable of high resolution 2D, PW, 3D with Multiplanar Reformatting, M Mode, Color Flow imaging and power Doppler angio imaging	angio imaging <b>deleted</b>
Point no: 02 & 04	are the duplicate on digital processing channels	20,000 digital processing required



**Item no: 14 Multi Channel Analyser**

	<b>Existing Tender Specification</b>	<b>Amended by MEA/HSCC</b>
<b>Point No 1.</b>	System: discrete, multi-channel, fully automatic and computerized machine, truly random access, open system with on board washing of reaction cuvettes. If not completely open, please indicate how many channels (and parameters) are closed in the equipment and cannot use internationally branded reagent from reputed firm.	System: discrete, multi-channel, fully automatic and computerized machine, truly random access, open system with on board washing of reaction cuvettes
<b>Point No 2.-</b>	Must be on-site upgradable to a higher throughput system for photometric and immunoassays	Deleted
<b>Point No 06</b>	Throughput: 800 and more tests/hr (photometric) more than 1500 with ISE.	Throughput: 800 and more tests/hr (photometric) more than 1200 with ISE.
<b>Point No 15</b>	Samples: 250 and more positions.	Minimum 80 samples with continuous loading
<b>Point No 25</b>	More than two types of reagent bottles should be adaptable into the system,	2 or more types of reagent bottles should be adaptable into the system.

**Item No. 15- Blood Gas Analyzer**

	<b>Existing Tender Specification</b>	<b>Amended by MEA/HSCC</b>
<b>Point 1</b>	<b>Measured Parameters :</b> pH, pCO <sub>2</sub> , pO <sub>2</sub> , Ionized calcium, lactate	<b>Measured Parameters :</b> pH, pCO <sub>2</sub> , pO <sub>2</sub> , Ionized calcium, lactate, Na <sup>+</sup> and K <sup>+</sup>
	<b>Additional Requirement</b>	US-FDA certificate required

**Item no: 21 Operating Microscope**

<b>Sr. No.</b>	<b>Existing Tender Specification</b>	<b>Amended by MEA/HSCC</b>
	<b>"ILLUMINATION SYSTEM"</b> Co axial Xenon illumination 300W  Provision for emergency back up Illumination"	Co axial Xenon illumination 300W or 180 W

**Item No: 22 Catery OT**

**The technical specification given earlier stands replaced with the following specification:**

- The machine should have bipolar generators designated to produce simultaneous bipolar and monopolar outputs, and simultaneous dual user monopolar outputs.
- The machine should be microprocessor based and should offer atleast separate cutting and coagulation modes with digital display of the outputs.

- The machine should have automatic check on the different impedances, thus there should be facility to control excess power being delivered to the soft tissue
- The machine should have standby button to disable the monopolar use, without attachment of the patient plate
- The machine should be suitable for underwater cutting and offer integrated cooling system
- The finger switch should be sterilisable in the autoclave
- Cable should be heat resistant
- The machine should have self diagnostic software with visual/ acoustic alarm displaying the cause of the fault. So that the fault is removed by the user only
- The machine should have ready reference card to give guidance regarding the basic setup and fault condition
- The machine should have following features
  - Isolated patient circuits, to ensure patient and operating team safety
  - Patient voltage monitor-which prevents burns to the patient
  - Plate attachment monitor-which ensures proper attachment of the electrodes
- There should be visual indicator to indicate high voltage coagulation mode in use
- The machine should comply with EN60601-1:1990 and IEC 60601-2:2:1998 standards
- Manufacture should approved by CE or FDA in accordance with medical device directive (93/42/EEC)
- The machine should be supplied along with 3 sets each of the following
  - Metal foot switch
  - Active electrode handle with cable and plug
  - Earthplates with adapters
  - Single footswitch with cable and plug for bipolar coagulation
  - Bipolar Cable
  - Bipolar forceps approximately 0.6mm pointed tip, approx 15 cm
  - Custom made trolley
  - Microdissection needle approximately 2 x 12cm length, straight and angled

## Item No. 24 – OT Table Neurosurgery

Existing Tender Specification	Amended by MEA/HSCC
<p>The table should be mobile, electrically controlled with battery powered <b>hydraulic</b> drive. Table top should be divided into segments, topped with integral foam padding which is both radio translucent and electrically conductive. The table should rest on easy-rolling castors and should be fitted with brakes.</p>	<p>Both or either options of drive to be provided</p>
<p><b><u>The Table</u></b></p> <ol style="list-style-type: none"> <li>2. Should have a powered longitudinal slide for <b>400-600mm.</b></li> <li>3. Should be <b>electro-hydraulic</b> with facility for various positions such as sitting, spine, prone and lateral positions under the microscope.</li> <li>4. Should have a top that can be adjusted from 50-100 cm.</li> <li>7. Should have a table top which can rotate towards the right and left by 20-30° each.</li> <li>1. Should have headboard break 15° up, 90° down with manual and electro-hydraulic operation.</li> <li>11. Should have current leakage less than 70U/AAC (0.07 m Amp)</li> <li>12. Should be able to take intraop X-Rays of skull &amp; Spine. Table Top should be radiolucent.</li> <li>14. Back plate drop : 50 deg.</li> </ol>	<ol style="list-style-type: none"> <li>2. Should have a powered longitudinal slide for <b>250mm or more</b></li> <li>3. Should be powered with facility for various positions such as sitting, spine, prone and lateral positions under the microscope</li> <li>4. Should have a top that can adjust from 70-105 cm.</li> <li>7. Tilt 20-30°</li> <li>8. Should have headboard break 45° up and 45° down with manual operation.</li> <li>11. Deleted</li> <li>12. Should be able to take intra operative C-Arm images of skull &amp; spine. Table Top should be radiolucent</li> <li>14. Back plate drop : 40 deg. - 50 deg</li> </ol>
<p>15. Accessories for Neurosurgery</p>	
<ul style="list-style-type: none"> <li>• Mayfield skull clamp with necessary adapters</li> </ul>	<ul style="list-style-type: none"> <li>• Mayfield skull clamp with necessary ADULT and CHILD adapters</li> </ul>
<ul style="list-style-type: none"> <li>• Arm Board</li> </ul>	<ul style="list-style-type: none"> <li>• Arm Board- One Pair</li> </ul>
<ul style="list-style-type: none"> <li>• Wristlet</li> </ul>	<ul style="list-style-type: none"> <li>• Wristlet -One Pair</li> </ul>
<ul style="list-style-type: none"> <li>• Wrist support</li> </ul>	<ul style="list-style-type: none"> <li>• WRIST-REST- Support</li> </ul>
<ul style="list-style-type: none"> <li>• Accessories for prone and knee chest position</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Wilson frame for supine positioning and Prone and Knee-Chest position for Laminectomy, using support pads and</b></li> </ul>

Existing Tender Specification	Amended by MEA/HSCC
	gel pads for clear access for anterior, posterior and lateral imaging required

### Item No. 25 OT Table Orthopedic

Existing Tender Specification	Amended by MEA/HSCC
Detachable pads made of foam core, approx. 80 mm thick, Radiolucent Electrically conductive	Detachable pads made of foam core, approx. 50 mm or above thick, Radiolucent Electrically conductive
<b>Electro Hydraulic Adjustment:</b> Height Adjustment : 810 – 1175mm	Min-700-800mm & Max-1100-1200mm
<b>Special Accessories</b> Thoracic and pelvic plaster cast	<b>DELETE</b>
Additional Certification required	OT TABLES SHOULD BE MEETING US-FDA / EUROPEAN CE with UL Listing/ ICE 60601 GUIDELINES

### Item no: 26 OT Table - General

**The technical specification given earlier stands replaced with the following specification:**

1. Multipurpose, powered, mobile table with divided leg section suitable for all major surgical procedures, with 5cm mattress and corded handsets. Table should be completely oil-free
2. Table top sections should be powered for enabling c-arm access from the shoulder line to the feet
3. Full length radio-translucent top with integral x-ray cassette tunnel, accessible from either end
4. a) Table top should be made of scratch resistant, easy to clean surface.  
(b) The table top should have translation facility controlled by remote.
5. It should be seamless acrylic capped with antibacterial surface that prevents fluid ingress and easy to clean
6. Base column cover should be made of 100% stainless steel or any other superior material
7. Removable and interchangeable head and leg sections with an auto-locking mechanism to suit different functions
8. Exact kidney bridge position should be obtainable without having to move the patient, thru remote control by using extension/ break function
9. Achieving zero level position by pressing single button from the handset
10. Should have a dual battery system (main and back up)
11. Table should also feature an integrated electronically operated stand by panel for controlling the movements in case of hand set loss or battery failure and should be situated on the column
12. Separate port should be available for the purpose of diagnostics and servicing
13. Table should not have any uneven surface including screws etc. for ensuring proper cleaning and patient safety. Table top /base should not have welding and should be joint free
14. Mattress must be mouldable, antistatic, seamless and easy to fix without crevices.

15. Mattress should be of good quality that spans table top, breakable for improved patient support
16. The handset should be durable and multiple functions control eg. trendelenburg, lateral tilt etc
17. Brakes, wheels for 360degrees rotation and castors should be controlled by two feet paddle located at both ends of table base
18. Table should have a base which allow optimum access and greater stability
19. Table should be able to carry heavy patients 250kg
20. Manufacture should be approved by ISO or CE or FDA in accordance with medical device directive (93/42/EEC)

### **TECHNICAL**

Length	2000-2200mm
Width across side bars	500-600mm
Minimum height with 5cm mattress	700-800mm
Maximum height with 5cm mattress	1000-1200mm
Minimum lateral tilt	15-20deg, either side
Minimum trendelenburg	25 deg
Minimum reverse trendelenburg	25 deg
Head section adjustment	± 40-45deg
Leg section adjustment	+50-55deg, -90-110deg
Flexion	80-90deg
Extension	200-250deg
Chair position approx	90deg (without any accessory addition should be possible)

Table should be provide with the following accessories

- Arm board 2
- Anaesthesia screen 1
- Body strap 1
- Lateral brace kit, with 1 circular and 2 rectangular supports – 1
- Instrument table with detachable tray- 1
- Shoulder support – 1pair
- Direct placement leg holder ‘lift assisted type’- 1
- Carter brain forearm support kit – 1

Company should provide cost of individual articles separately

### **Item No: 27 OT Light**

**The technical specification given earlier stands replaced with the following specification:**

#### **OT LIGHT WITH CAMERA WITH MONITOR**

Description: Dual Dome LED Surgical Lighting System with one dedicated Spring-Arm Suspension for Progressive Scan HD Flat Panel with an Integrated In-Light Camera System.

#### **A. OT Light**

Operating Room Surgical Lighting System should provide an ideal combination of brightness, maneuverability, and shadow resolution without sacrificing color accuracy through a consistent LED based technology with a unique faceted reflector design technology.

Such Lighting System should have the following technical specifications:

Number of Light heads : Two per suspension

Number of LEDs	:	minimum 90 LEDs
Color Temperature	:	4000 - 5000 K
Field Size Diameter Depth	:	6 inch – 12 inch
Depth of Field	:	30 - 35 inch
Illumination Level	:	minimum 160,000 Lux
Controls	:	Wall Control, Touch – Panel, Voice Capable
Rotation	:	360 degrees
Vertical Adjustment Range	:	+ 20 inch - 25 inch
Sterilizable Handle	:	Yes
Lighthouse Diameter	:	22 – 30 inch
Mounting Type	:	Ceiling
Supply Voltage	:	100-230VAC 50/60Hz
Bulb Type	:	LED
Dimming Range	:	30% - 100%
Operating/Storage Humidity	:	10-95%
Life of Light Source	:	>30,000 Hrs

### **B. Camera System**

Description : Integrated In-Light Camera System should be integrated at the centre of one of the domes of this lighting system in order to capture images & video sequences of the open cases. Such a camera should have the following specifications:

Signal to Noise Ratio (S/N Ratio)	:	<50 dB.
Minimum Illumination	:	<3 lx
Optical Zoom	:	25 - 30x.
Digital Zoom	:	12-15X
Power Supply	:	Through Light / max. 12W.
Relative Humidity	:	<90%.
Video Output	:	S-Video & Composite Video
White Balance & Gain	:	Automatic/Manual

Such Surgical Light System Should be compliant with relevant European/US standards

Such Light and Integrated Camera should have a control through Touch Panel of the control equipment placed inside the operating room at documentation station / nurse works station.

### **C. Flat Panel Monitor**

Should be 26” High Definition Progressive Scan Flat-panel Monitors with ceiling mounted spring arm suspension to support high-definition/HDTV progressive Scan images and should be able to support and display DVI/HDTV, RGBHV, S-Video, Composite video signals.

The flat Panel suspension should be ready with the cables for integration of High Definition Digital (DVI/HDTV), RGBHV( High Resolution), SVHS(S-Video), Composite video signals to travel from the various sources of video like endoscopic camera, room camera, in light camera, high definition flat panel monitors, while assuring native resolution / signal.

Such Monitor should at least meet the following technical criteria:

Resolution	:	1600 dots x 1200 dots, Progressive Scan
Display Colors	:	16 Million Colors
Inputs	:	DVI, RGBHV, S-Video, Composite Video

Synchronization	: 2.5 – 5.0 Vpp separated sync
Response time	: < 25ms
Travel	: 330o - 340o
Forward Tilt	: 30o - 40o
Backward Tilt	: 45o- 50o
Cable Kit for Integration	: DVI, Fiber Optic, RGBHV, S-Video, Composite

**Item No. – 30 Anesthesia Work Station**

Existing Tender Specification	Amended by MEA/HSCC
<b>Anesthesia Machine:</b>	
Machine should have at least one hour battery backup	Back up time should be 45min & more
Graphic and Numerical Display of the Respiratory Parameters like Flow, Pressure, Inspired and expired Oxygen, Nitrous Oxide & End Tidal Vapour with a 12” TFT Screen.	Graphic and Numerical Display of the Respiratory Parameters like Flow, Pressure, Inspired and expired Oxygen, Nitrous Oxide & End Tidal Vapour with a 12” or more TFT / LED display
<b>Ventilator:</b>	
Ventilator shall be capable of at least 120 L/min peak flow to facilitate rapid movement through physiologic “Dead Space” in the Pressure Control Mode.	Ventilator shall be capable of at least 100 L/min or more peak flow to facilitate rapid movement through physiologic “Dead Space” in the Pressure Control Mode.
<b>Monitor:</b>	
Spo2, ECG Lead & cables, NMT, NIBP Cuff ETC	Spo2, ECG Lead & cables, NMT, NIBP Cuff ( Adult large & small, Pediatric, Neonatal) 1 each / machine plus extra 2 of each
Provision of Automatic Identification and measurement of Anaesthetic Agent, CO2 & N2O	Automatic Identification and measurement of Anaesthetic Agent, CO2 & N2O required
Additional Certification for the Equipment	US FDA approved product with a valid certification.

**Item No. – 31 Rapid Sterlizer ( Flash Autoclave) Quantity -1**

**The technical specification and quantity given earlier stands replaced with the following specification:**

1. Portable high speed, Microprocessor controlled, rapid autoclave suitable for sterilization for unwrapped instruments using moist heat technique.
2. It should be top/ front loading
3. Cabinet should be of zinc-coated stainless steel; stove enamelled for easy cleaning and should be insulated to prevent high temperature on external surfaces.
4. Chamber should have for maximum heat conductivity and door and trays should be of stainless steel.
5. It should have auto air purging facility.

- i. It should have display of stage of Cycle, temperature and pressure
6. Should have the following safety features:-
  - Safety lock of door
  - Full safe pressure and temperature lock door.
  - Overheat protection through forced air cooling.
  - Door interlock switch.
  - Alarm indicator for error situation.
  - Pressure safety valve
7. It should be supplied with essential accessories like a set of interment trays and wire basket.
8. Other technical specifications:
  - i. Chamber capacity : 20-25 Litres.
  - ii. Load capacity :5 kg (Approx)
  - iii. Chamber size : 18 to 22 inches (Approx.)
  - iv. Sterilization Temperature : 134 degree C. (Approx.)
9. The product should conform to IS/BS/International standards
10. It should have facility for use of regular tap water.
11. The firm should clearly indicate in the technical bid itself that the prices of all standard accessories included in the quoted price.
12. The firm will give rate list of all possible spares, accessories & consumables if any, as part of financial bid. If price of any spare is not mentioned & is required for repair in life time of equipment/instrument, then the firm will be obliged to give it free throughout life cycle of the equipment.
13. If firm does not provide such list (as part of financial bid separately) then the bid of the firm will be rejected summarily.
14. Uptime & Penalty for delays in repair & maintenance: The firm will ensure uptime of 345 days in year during warranty period & AMC period.
15. Whenever there is breakdown the firm will carry out the repair within 48 hours of receipt of such information (either by telephone or by any other means).
16. If there is delay beyond 48 hr. Then the firm will be penalized at the rate of 1% of the cost of product per day.



17. This financial penalty can be waived off on recommendation of the user dept. If the reasons of delay are genuine the same are recorded & endorsed by the concerned dept.
18. If the down time is exceeded in a year from 20 days then the warranty shall stand extended by double the no. of days machine was out of order.
19. The firm should supply original operating manual /Brochure while supplying the system.

**Item No. – 32 Automatic Steam Sterilizer**

**Quantity -1**

**The technical specification and quantity given earlier stands replaced with the following specification:**

1. The Autoclave should be able to sterilize wrapped instruments, unwrapped instruments, linen, glassware, autoclaveable rubber and plastics.
2. The autoclave shall be designed to operate on various pre select programs such as Pre-Vacuum Cycle by 134°C, Pre – Vacuum by 134°C with intensive drying for porous loads, Pre – Vacuum by 121°C for heat sensitive materials and two standard Bowie Dick Tests and Vacuum Leak Cycles. The operating pressure should be 20 psi at 121°C and 33 psi at 134°C.
3. **CHAMBER CONSTRUCTION:-**
  - i. The Chamber, door and jacket should be made of heavy duty AISI 316 Ti Stainless steel. Certificate of the said steel quality must be provided by the manufacturer.
  - ii. All the pipes and valves in touch with steam should be made of AISI 316 Ti stainless steel
  - iii. It shall be provided with safety features like Safety valves for chamber and jacket, electrical current over load relays and contactors for vacuum pump and also there should be at least 120mm thick glass wool insulation or equivalent on chamber covered by steel sheets for easy cleaning.
  - iv. The Chamber shall have horizontal rectangular Design with automatic single horizontal sliding door, a trolley, a carriage, and a dedicated air compressor. Trolley shall be of 316 grade Ti stainless steel and should have foot locking mechanism. Chamber shall be provided with two rails for movement of carriage.
  - v. The steam sterilizer should have self contained inbuilt boiler (approved by appropriate authority, and the certificate for the same should be provided) for steam generation for the sterilization process. The supplier should also provide water purification and storage system to feed the sterilizer with desired quality and quantity of water to run it smoothly.
  - vi. The autoclave shall be provided with appropriate air compressor so as to enable pneumatic operations.
  - vii. It shall be provided with vacuum Pump which can work on three Phase supply (440 volts) for pre-vacuum stage and drying stage. The vacuum pump must be equipped with a water saving system. The vacuum pump should have silent operation with maximum 65 db noise level.
  - viii. The frame, main construction parts & external covers should be made from AISI 304 stainless steel.
  - ix. All the pipes should be insulated with indicator of warm & cold pipes by different colors.

- x. The chamber floor should be pre-heated to evaporate any remaining condensate during the cycle and it should have inclined bottom to enable condensates TO drain out immediately and perfectly during the cycle to ensure perfect drying condition.
- 4. CONTROLS**
- i. A dual microprocessor control system which is mounted away from exposure to steam and heat. It shall have the provision to document required parameters in detail. There shall be facility to save sterilization cycles in the memory of the steam sterilizer (it should be capable to store at least minimum 25000 sterilization cycles).The Sterilizer should have minimum 10 inch touch screen display for preselect program information. The information must include cycle stage, chamber temperature, chamber pressure, jacket pressure along with the information about failures and interruption.
  - ii. Controls must document the following minimum cycle alarms:
    - a) Under Temperature / Pressure Alarm
    - b) Over Temperature/ Pressure Alarm
  - iii. The system is provided with a real time printer which prints the real time events during the progression of cycle such as time in hour, minute and seconds along with date, load No., Operator etc. Any failure is indicated via audio- visual alarm and a print out documenting complete message. The sterilizer should enable direct printing on external printer on A-4 format.
  - iv. The standard operation must be automatic. The system should have manual operation/control system, too, in order to facilitate maintenance works and enable opening of the door in case of power failure. The manual control must be located in an easily accessible and safe location for usage.
  - v. The sterilizer should have the provision of code protected program changes.
  - vi. The controller should be equipped with the following connections: Ethernet, USB, COM port. The sterilizer should enable direct online remote diagnosing.
- 5. DOOR:** The autoclave door should be designed with several independent mechanical control features that provide for safety:
- i. Control lock-out switch in the door that prevents starting a cycle if the door is not closed and locked appropriately.
  - ii. Mechanical Steam Pressure Lock: Chamber pressure should ‘activate’ a mechanism engaging the lock mechanism which prevents the operator from opening the door if pressure exists in the chamber.
- 6. The sterilizer should be supported on a steel stand, appropriately coated for corrosion protection.
  - 7. The firm manufacturing the autoclave sterilizer should have ISO 9001: 2000 Certification and the autoclave should have any of these certification viz93/42/EEC & 97/23/EC or EN 285 or US FDA.
  - 8. The firm should provide the operating manual/Brochure and the circuit diagrams while supplying the systems.
  - 9. Turnkey work pertaining to Civil, Electrical, Plumbing, sanitary, furniture, servo stabilisers, U.P.S. etc. required for successful installation testing and commissioning of the system will be the responsibility of the bidder.

All other terms and conditions of the bid document shall remain unchanged.

S/d

Joint Secretary –DPA (III)  
Ministry of External Affairs,  
New Delhi