Amendment No.7

Date: 16/11/2013

Subject: Amendment to the tender Enquiry Document

Ref:Tender Enquiry No.: HLL/PCD/PMSSY/32/13-14 dated 29/04/2013

The pre-bid meeting for the referred tender enquiry was held on 08/05/2013. Based on pre-bid discussions following amendments are being incorporated in the referred tender enquiry document.

Section VII
Technical Specification

Item No: 2

REFRIGERATED CENTRIFUGE (TABLE TOP)

1. Existing Specification:

Para: 4. Have ECO shut-off function turns compressor off ***after eight hours idle automatically to reduce energy consumption.***

Read as:

Para: 4. Should have ECO shut off function for turns compressor off.

Item No: 12

BIOLOGICAL SAFETY CABINET CLASS II-A

1. Existing Specification:

Para: 3.2 HEPA/ULPA filters with 99.999% efficiency for particles ^{3} 0.3 micron (H14 class according to ENI 822)

Read as:

Para: 3.2 HEPA/ULPA filters with 99.999% efficiency for particles ^{3} 0.3 micron (H14 class according to ENI 822 **or equivalent**)

2. Existing Specification:

Para: 3.3 Automatic speed compensation systems against clogged main HEPA/ULPA filter Pre-filtration unit with retention of 10 to 15 micro meter.

Read as:

Deleted.

3. Existing Specification:

Para: 3.9 Noise level <58dBA, Elapsed hour counter.

Read as:

Para: 3.9 Noise level <**65**dBA, Elapsed hour counter.

4. Existing Specification:

Para: 3.12 On/Off switch with key lock

Read as:

Para: 3.12 On/Off switch**.**

5. Added Para:

i. UV light and Front Door interlocking with Fluorescent Tube backed by an alarm.
ii. Life meter of UV tube and HEPA filter and alarm when there life is over.
iii. Onsite particle counting facility/ device should be provided.
iv. In order to preserve safety to the user and the environment, the exhaust blower on the cabinet must continue operating when the supply blower stops working. If the exhaust blower fails, the supply filter also be turned off.

Item No: 18

Automated Slide Stainer

1. Existing Specification:

Para: 3.1 Should hold atleast **80 slides** per basket.

Read as:

Para: 3.1 Should hold atleast **30 slides** per basket.

2. Existing Specification:

Para: 3.2 Basket chemical **capacity 750-1000ml.**

Read as:

Para: 3.2 **Minimum basket chemical capacity should be 400ml.**

Item No: 28

Dental Chair (High End)

1. Existing Specification:

Para: 3.4. It should have one high speed fiber-optic air-rotor terminal with handpiece.

Read as:

Para: 3.4. It should have one high speed fiber-optic air-rotor terminal with handpiece **Handpiece should be Sirona/Kavo/NSK/W&H make and it should be USFDA or CE approved.**

2. Existing Specification:

Para: 3.5. One fiber optic micro motor with one fiber optic contra angle hand piece with internal spray and one straight hand piece with internal spray.

Read as:

Para: 3.5. One fiber optic micro motor with one fiber optic contra angle hand piece with internal spray and one straight hand piece with internal spray. **Handpieces should be Sirona/Kavo/NSK/W&H make and it should be USFDA or CE approved.**.

3. Existing Specification:

Para: 3.6. It should have LED light cure unit on unit sides (Min. Intensity 1200 mW/cm2)

Read as:

Para: 3.6. It should have LED light cure unit on unit sides (Min. Intensity 1200 mW/cm2). **It should be of 3M/Vivadent/Kavo/Rolence make and it should be USFDA or CE approved**

4. Existing Specification:

Para: 3.7. It should have one in-built Piezon LED (fiber-optic) Ultrasonic Scaler with 4 scaler tips.

Read as:

Para: 3.7. It should have one in-built Piezon LED (fiber-optic) Ultrasonic Scaler with 4 scaler tips. **Scaler should be of EMS/Satelac/W&H/NSK/Bonart/Sirona make and it should be USFDA or CE approved)**

Item No: 29

Mobile ICCU Van Equipment List Advance Life Support

1. Existing Specification:

Para: A. AUTHORIZED EQUIPMENT: Anthulan.cc services must carry equipment and medications as per requirement of Treatment Protocols**,** Ambulance services should not equip ambulances with equipment that is outside of scope of practice of its EMT employees

Read as:

Para: A. AUTHORIZED EQUIPMENT: **Ambulance should have facility to carry equipment and medications as per requirement of various Treatment Protocols**.

2. Existing Specification:

Para: 2. Ambulance cot (Roll in Roll out type). Must be certified to be meeting safety
Specifications as per international standard for Ambulance Supplies specifications like KKK-A-1822 and any amendments thereto.
- **Dual IN. holder**, capable of being cot mounted. Padded wrist and ankle restraints, minimum one complete set.

Read as:

Para: 2. Ambulance cot (Roll in Roll out type). Must be certified to be meeting safety
Specifications as per international standard for Ambulance Supplies specifications like KKK-A-1822 and any amendments thereto.
- **Dual IV. holder**, capable of being cot mounted. Padded wrist and ankle restraints, minimum one complete set.

3. Existing Specification:

Para: 6 - ECG Machine: **Multi-Channel** Portable ECG Machine.

Read as:

Para: 6 - ECG Machine: **Multi-Channel (12 channel)** Portable ECG Machine.

4. Existing Specification:

Para: 31 - Transport Ventilator and Bi PAP - Tidal Volume Control **20m1-1200 ml.**

Read as:

Para: 31 - Transport Ventilator and Bi PAP - Tidal Volume Control **50m1-1500 ml.**

Item No: 31

Colour Doppler Echocardiography System with Advanced 2D Facility

1. Existing Specification:

Para: 2.1 Latest generation Electronic Phased array Colour Doppler system with **Minimum 512 Electronic independent channels**. System should be DICOM ready and capable of being interfaced with HIS/RIS/ PACS.

Read as:

Para: 2.1 Latest generation Electronic Phased array Colour Doppler system with Minimum **30000** Electronic independent channels. System should be DICOM ready and capable of being interfaced with HIS/RIS/ PACS.

2. Existing Specification:

Para: 3.1 Latest generation Electronic Phased array Colour Doppler system with **Minimum 512 Electronic independent channels.**

Read as:

Para: 3.1 Latest generation Electronic Phased array Colour Doppler system with **Minimum 30,000 Electronic independent channels.**

3. Existing Specification:

Para: 3.16 - Cine loop memory- more than **120MB of memory.**

Read as:

Para: 3.16 - Cine loop memory- more than **120MB of memory or equivalent cine loop memory in frames/ sec.**

4. Existing Specification:

Para: 3.18 - ECG and respiration trigger facility.

Read as:

Para: 3.18 - ECG trigger facility**.**

Item No: 32

DEFIBRILLATOR WITH ECG MONITOR

1. Existing Specification:

Para: 2.4 Should work on Manual and Automated external defibrillation (AED) in Bi-phasic mode. The maximum energy delivered by the device should be **at least 200J or more**. In AED mode biphasic shocks should be delivered in escalating strengths with inbuilt trans-thoracic impedance compensation as mentioned below.

Read as:

Para: 2.4 Should work on Manual and Automated external defibrillation (AED) in Bi-phasic mode. The maximum energy delivered by the device should be **upto 200J in manual mode and 150 J in AED mode**. In AED mode biphasic shocks should be delivered in escalating strengths with inbuilt trans-thoracic impedance compensation as mentioned below.

2. Existing Specification:

Para: 3.2 Should monitor ECG through external paddles and monitoring electrodes and defibrillate through external paddles. Should have **automatic lead switching** to see patient ECG through paddles or leads.

Read as:

Para: 3.2 Should monitor ECG through external paddles and monitoring electrodes and defibrillate through external paddles. Should have **automatic/manual switching** to see patient ECG through paddles or leads.

3. Existing Specification:

Para: 3.7 Should have **external paddles with paddles contact indicator- for good paddle contact**. Single adult and paediatric paddles should be available.

Read as:

Para: 3.7 Should have external paddles. Single adult and paediatric paddles should be available.

4. Added under Para: 4 System Configuration Accessories, spares and consumables

Para: 4.8 – CO2 accessories should be supplied for paediatrics and adults – 2 sets each.

Item No: 33

COLOR DOPPLER ECHOCARDIOGRAPHY SYSTEM WITH 3D FACILITY

1. Existing Specification:

Para: 2.1 Latest generation Electronic Phased array Colour Doppler system with **Minimum 512 Electronic independent channels.** System should be DICOM ready and capable of being interfaced with HIS/RIS/PACS.

Read as:

Para: 2.1 Latest generation Electronic Phased array Colour Doppler system with **Minimum 50,000 digital processing channels with LIVE 3D imaging.** System should be DICOM ready and capable of being interfaced with HIS/RIS/PACS.

2. Existing Specification:

Para: 3.1 Latest generation Electronic Phased array Colour Doppler system with **Minimum 512 digital channels**.

Read as:
Para: 3.1 Latest generation Electronic Phased array Colour Doppler system with **Minimum 50,000 digital processing channels with LIVE 3D imaging.**

3. Existing Specification:

Para: 3.16 Cine loop memory- more than **120MB of memory**.

Read as:

Para: 3.16 Cine loop memory- more than **120MB of memory or equivalent cineloop memory in frames/sec**.

4. Existing Specification:

Para: 3.18 ECG and respiration trigger facility.

Read as:

Para: 3.18 ECG trigger facility.

5. Existing Specification:

Para: 4.5 (a) — 3D Probe has to be offered — 01No.

Read as:

Para: 4.5 (a) — 3D Probe **(5 MHz)** has to be offered — 01No.

Item No: 34

IABP (Intra Aortic Balloon Pump) - High End.

1. Existing Specification:
Para: 2.1 Microprocessor / microcontroller based system. System should be complete with Display Control system and pneumatic drive unit.

Read as:

Para: 2.1 Microprocessor / microcontroller based system. System should be complete with Display Control system and pneumatic drive unit. **And it should be automatically locks after 2 minutes of in activity.**

2. Existing Specification:

Para: 3.10 System should be approved for use on Paediatric patients and Paediatric balloons should be supplied with the system.

Read as:

Para: 3.10 System should be approved for use on Adult patients and Adult balloons should be supplied with the system.

3. Existing Specification:

Para: 3.14 Should be capable of removing condensation automatically without user intervention and should be maintenance free.

Read as:

Para: 3.14 Should be capable of removing condensation automatically without user intervention and should be maintenance free. **Also it should have condensation removal system which utilizes Nafion technology preferable. Continually removes water vapour with each inflate/deflate cycle.**

4. Existing Specification:

Para: 4.2 System should be supplied with the following:
ECG cable with Refillable Helium cylinder compatible with the IABP system Qty: 3 Nos.

Read as:

Para: 4.2 System should be supplied with the following:
ECG cable with Refillable Helium cylinder compatible with the IABP system Qty: 3 Nos.
Supplied with 2 Lithium ion batteries which are hot swappable.

5. Existing Specification: Para 4.3 -

Intra Aortic Balloon Catheter for Adults, Size: 30 cc Qty: 2 Nos.

Intra Aortic Balloon Catheter for Paediatrics, Size: 12 cc Qty: 1 No

Intra Aortic Balloon Catheter for Paediatrics, Size: 10 cc Qty : 1 No

6. Read as: Para 4.3 -

Intra Aortic Balloon Catheter for Adults, Size: 30 or 34 cc Qty: 2 Nos.

Deleted.
Deleted

Item No: 35

Heart lung machine with accessories (Advance Version)

1. Existing Specification:

Para: 2.1 BASIC EQUIPMENT will consist of the following unit
1) 5- Pump Console.

Read as:

Para: 2.1 BASIC EQUIPMENT will consist of the following unit
1) 4 - 5- Pump Console.

2. Existing Specification:

Para: 2.1. 3) d) Display of total volume of each infusion along with delivery time.

Read as:

Para: 2.1. 3) d) **Cardioplegia pump should have** display of total volume of each infusion along with delivery time.

3. Existing Specification:

Para: 2.1.4. b). CO2 Blender Optional.

Read as:

Para: 2.1.4. b). CO2 Blender **(Rate to be offered if available).**

4. Existing Specification:

Para: 3.1.1 The unit should have **5-pump** console compactly arranged with separate power supply and control modules. Should have easy access connectors for interchanging the pump.

Read as:

Para: 3.1.1 The unit should have **4 - 5-pump** console compactly arranged with separate power supply and control modules. Should have easy access connectors for interchanging the pump.

5. Existing Specification:

Para: 3.1.2 Each individual roller pump should be capable of running independently **on 180-270 V/50-60 Hz supply.**

Read as:

Para: 3.1.2 Each individual roller pump should be capable of running independently **at available voltage.**

6. Existing Specification:

Para: 3.1.8 Should have **unidirectional** hand crank facility as a critical safety feature hand crank loading should be from top for faster access.

Read as:

Para: 3.1.8 Should have hand crank facility as a critical safety feature hand crank loading should be from top for faster access.

7. Existing Specification:

Para: 3.1.10 Should have variable, changeable tubing holders in each pump head:1/4", 3/8", ½", 5/8" **and double ¼".**

Read as:

Para: 3.1.10 Should have variable, changeable tubing holders in each pump head:1/4", 3/8", ½" and 5/8".

8. Existing Specification:

Para: 3.2 Should have a venous control module with single pole mast with electronic venous line occluder.

Read as:

Para: 3.2 Should have a venous control module with single pole mast with electronic venous line occluder **(Rate to be offered if available).**

9. Existing Specification:

Para: 3.6.6 Water outlet temperature of heat exchanger and blanket **range 0-42° C.**

Read as:

Para: 3.6.6 Water outlet temperature of heat exchanger and blanket **range 0-40° C.**

10. Existing Specification:

Para: 3.6.11 Temperature probe module for the operating **ranges of 0-50° C.**

Read as:

Para: 3.6.11 Temperature probe module for the operating **ranges of 0-40° C.**

11. Existing Specification:

Para: 3.6.13 Optional remote control unit should be capable of taking 9 Temp. Probes and display temperature in digital readouts. Alarm limits setting for at least three probes at crucial sites.

Read as:
Para: 3.6.13 Optional remote control unit should be capable of taking **3** Temp. Probes and display temperature in digital readouts. Alarm limits setting for at least three probes at crucial sites.

12. Existing Specification:

Para: 3.7 MONITORS: TEMPERATURE: **6 temperature displays** for patient monitoring and for cardioplegia monitoring with digital display in Celsius with 6 necessary compatible temperature 6 probes and 6 additional probes (6x2=12 probes) with 3x2 = 6 of them for nasal, rectal and oesophageal use.

Read as:

Para: 3.7 MONITORS: TEMPERATURE: **4 temperature displays** for patient monitoring and for cardioplegia monitoring with digital display in Celsius should be available.

13. Existing Specification:

Para: 3.8 AIR- OXYGEN BLENDER:
To work at 50-60 PSI for membrane oxygenator with water trap attached with necessary hoses and connections of minimum of 5 meters length and with triple flow glass flow meters.

Read as:

Para: 3.8 AIR- OXYGEN BLENDER:
To work at 50-60 PSI for membrane oxygenator with water trap attached with necessary hoses and connections of minimum of 5 meters length.

14. Existing Specification:

Para: 3.10.5 ON LINE MEASUREMENT OF PH, PCO2*& HB FOR NEONATAL CARDIAC SURGERY.

Read as:

Para: 3.10.5 ON LINE MEASUREMENT OF PH, PCO2*& HB FOR NEONATAL CARDIAC SURGERY **(Optional).**

15. Existing Specification:
REMOTE CONTROL MODULE FOR THE TEMPERATURE CONTROL MONITOR
Para: 3.10.2 Optional remote control unit should be capable of taking 9 Temp. Probes and display temperature in digital readouts. Alarm limits setting for at least three probes at crucial sites.

Read as:
REMOTE CONTROL MODULE FOR THE TEMPERATURE CONTROL MONITOR
Para: 3.10.2 Optional remote control unit should be capable of taking **3** Temp. Probes and display temperature in digital readouts. Alarm limits setting for at least three probes at crucial sites.

Item No: 36

ICU Beds - Advanced Model

1. Existing Specification:

Para: 3.4 Base frame & support frame should be made up of **Stainless steel** for long life & prevention from rusting.

Read as:

Para: 3.4 Base frame & support frame should be made up of **Stainless steel or Mild steel with pre treated and finished with power coating** for long life & prevention from rusting.

2. Existing Specification:

Para: 3.5 Should have stepless electrical adjustment for the following:-
Height : 450-84 0 mm
Back section : 0- 50 degrees
Leg Section : 0-30 degrees

Read as:

Para: 3.5 Should have stepless electrical adjustment for the following:-
Height : 450-840 mm **(+/-10%)**
Back section : 0- 50 degrees **(+/-10%)**
Leg Section : 0-30 degrees **(+/-10%)**

3. Existing Specification:

Para: 3.6 Should have stepless **pneumatic** adjustment for **Trendlenburg (25° approx), anti-trendlenburg (15° approx).**

Read as:

Para: 3.6 Should have stepless **pneumatic/ electrical** adjustment for **Trendlenburg (12° approx), anti-trendlenburg (12° approx).**

4. Existing Specification:

Para: 3.9 Should be equipped with large castors **(diameter 150 mm)** with central braking and steering facility.

Read as:

Para: 3.9 Should be equipped with large castors **(diameter 120 - 150mm)** with central braking and steering facility.

5. Existing Specification:

Para: 3.13 Dimensions of bed :
Length : 2200 -2290 mm
Width : 850 -1020mm
Mattress Size : appropriate as per bed size

Read as:

Para: 3.13 Dimensions of bed :
Length : 2200 -2290 mm **(+/-10%)**
Width : 850 -1020mm **(+/-10%)**
Mattress Size : appropriate as per bed size **(+/-10%)**

Item No: 38

Electro Surgical Unit (ESU) with Vessel Sealing System

1. Existing Specification:

Para: 3.12 Simultaneous access to mono and bipolar by 2 or more users.

Read as:

Deleted.

2. Existing Specification:

Para: 4.2 (c) foot switches for **different outputs.**

Read as:

Para: 4.2 (c) foot switches for **monopolar & bipolar outputs.**

3. Existing Specification:

Para: 4.2 (d) reusable and single use neutral electrode for adults and children along with cab le for neutral electrode and fixation device wherever required.

Read as:

Para: 4.2 (d) reusable **(5 Nos. each)** and single use **(200 Nos. each)** neutral electrode for adults and children along with cable for neutral electrode and fixation device wherever required.

4. Existing Specification:

Para: 4.2 (e) sterilisable and disposable electrode handle with and without finger switch with cable for electrode handle.

Read as:

Para: 4.2 (e) sterilisable **(10 Nos.)** and disposable **(100 Nos.)** electrode handle with and without finger switch with cable for electrode handle.

5. Existing Specification:

Para: 4.2 (j) Reusable dedicated instruments for open and laparoscopic monopolar, bipolar and vessel sealing use.

Read as:

Para: 4.2 (j) Reusable dedicated instruments for open and laparoscopic monopolar, bipolar and vessel sealing use **(5 Nos. each).**

Item No: 39

Video Thoracoscope

1. Existing Specification:

Para: 3.1.5. Insertion tube outer diameter of less than **8 mm** with a working length of not less than 250 mms.

Read as:

Para: 3.1.5. Insertion tube outer diameter of less than **6 -10 mm** with a working length of not less than 250 mms.

2. Existing Specification:

Para: 3.1.6. Distal end of less than **8 mm.**

Read as:

Para: 3.1.6. Distal end of less than **6 - 10 mm.**

3. Existing Specification:

Para: 3.1.7. Instrument channel of more than **2.5 mm**.

Read as:

Para: 3.1.7. Instrument channel of more than **2.5 (+/- 0.5mm).**

Para: 4.2.20 - **3 Chips** Camera PAL having Digital Imaging Processor.

Read as:

Para: 4.2.20 - **HD 3 Chips** Camera **with resolution 1280X1024** having Digital Imaging Processor.

4. Existing Specification:

Para: 4.2.21 Cold Light fountain Xenon **175** power supply **100-125 /** 220-240V AC, 50/60 Hz complete.

Read as:

Para: 4.2.21 Cold Light fountain Xenon **175 or 300 Watts** power supply 220-240V AC, 50 Hz complete.

Item No: 40

Sternal saw (Electrically Operated)

1. Existing Specification:

Para: 1. Electrically operated motor control unit with forward and reverse speed motor.

Read as:

Para: 1. Electrically operated motor control unit with forward and reverse speed **and digital display of speed.**

2. Existing Specification:

Para: 3. Should contain a foot control paddles with waterproof and anaesthetic agent proof. 130x200x60 mm.

Read as:

Para: 3. Should contain a foot control **bidirectional paddles with oscillation mode** waterproof and anaesthetic agent proof.

3. Existing Specification:

Para: Para 4. Sternal saw with primary and **redo (Oscillating) blades**, Light weight with blade protector, saw cable connector for both blades.

Read as:

Para: Para 4. Sternal saw with primary and **redo / Oscillating saw (one each)**, Light weight with blade protector, and saw cable connector for both blades. **Sternum saw: Single trigger hand piece.**

4. Existing Specification:

Para: 6. Additional blades **10each of normal and redo (Oscillating).**

Read as:

Para: 6. Additional blades **10each of sternum and redo (Oscillating) saw.**

Item No: 42

LOW TEMPERATURE HYDROGEN PEROXIDE GAS PLASMA/NON PLASMA STERILIZER

1. Existing Specification:

Para: 7.1 - Certified to be in compliance with **ISO/EN 14937**. Standards for sterilization equipments.

Read as:

Para: 7.1 - Certified to be in compliance with **EN ISO 14937**. Standards for sterilization equipments.

Item No: 43

Volumetric Infusion Pump

1. Existing Specification:

Para: 3.8 Flow rate range (piggy back)-0.1 to 99.9 ml/hr,(0.1 ml increments) and 1 to 500 ml/hr (1ml increments).

Read as:

Deleted.

Item No: 45

Ultrasonic cutting and Coagulation device

1. Existing Specification:

Para: 3.1.10 10. Should be capable of sealing vessels **5-7mm** in diameter.

Read as:

Para: 3.1.10 10. Should be capable of sealing vessels **upto 5 mm** in diameter.

2. Existing Specification:

Para 4.1.4.
a. Coagulation shears- 5mm dia, 20cm long or more
b. Dissecting grasper 5mm dia for Coagulation 20 cms. or more

Read as:

Para 4.1.4.
a. Coagulation shears- 5mm dia, **18 - 20cm** long or more
b. Dissecting grasper 5mm dia for Coagulation **18 - 20 cm** or more

Item No: 46

OPERATION TABLE HYDRAULIC

1. Existing Specification:

Para: 3.1. Four section table top (head section, back section, seat section with perineal cut, divided/foldable/detachable leg section with **integrated kidney bridge.**

Read as:

Para: 3.1. Four section table top (head section, back section, seat section with perineal cut, divided/foldable/detachable leg section with **integrated/Manual** ki**dney bridge.**

2. Existing Specification:

Para: 3.4 Should have a manual position selector.

Read as:

Deleted.

3. Existing Specification:

Para: 3.7. Measurements **:(all dimensions are approximate).**

Read as:

Para: 3.7. Measurements **:(all dimensions are approximate +/-10%).**

4. Existing Specification:

Para: 7 a. Height without padding: **700-1050 mm.**

Read as:

Para: 7 a. Height without padding: **650-1100 mm.**

5. Existing Specification:

Para: 7 c. Back section adjustment: 40 degrees to 70 degrees.

Read as:

Para: 7 c. Back section adjustment: 40 degrees **(Up)** to 70 degrees **(Down).**

6. Existing Specification:

Para: 7 j.Weight bearing capacity **125-150 Kg.**

Read as:

Para: 7 j. **Patient** Weight bearing capacity **250Kg or more.**

7. Added under Para 4.2 Accessories should include:

g. Lithotomy position with clamps.
f. Patient restraint clamps.

Item No: 47

Ventilator-Paediatric/ Infant/Neonates

1. Existing Specification:

Para: 3.3 a) Tidal Volume (10 – 2000ml)

Read as:

Para: 3.3 a) Tidal Volume **(5 – 2000ml)**

2. Existing Specification:

Para: 3.4 f) FiO2 **(by paramagnetic cell)**

Read as:

Para: 3.4 f) FiO2 **(by paramagnetic/ galvanic O2 cell)**

3. Existing Specification:

Para: 3.9 a) Good quality compressor compatible with ventilator.

Read as:

Para: 3.9 a) Good quality compressor compatible with ventilator. **Ventilator and compressor should be from the same manufacturer.**

4. Existing Specification:

Para: 3.10 - **Nebuliser** with capability to deliver particle size of < 3 micron & to be used in both Off and On line.

Read as:

Para: 3.10- **Inbuilt Nebuliser** with capability to deliver particle size of < 3 micron & to be used On line.

5. Existing Specification:

Para: Optional item:
1 copnograph
2 pulse Oximeter

Read as:

Para: Optional item **(Price should be quoted separately):**
1 Copnograph
2 Pulse Oximeter

6. Existing Specification:

Para: 6.2 Suitable **UPS and Internal Battery** backup for minimum one hour for ventilator.

Read as:

Para: 6.2 Suitable **UPS or Internal Battery** backup for minimum one hour for ventilator.

7. Existing Specification:

Para: 7.1 Should be **US – FDA / European CE** approved product.

Read as:

Para: 7.1 Should be **US – FDA and European CE** approved product.

8. Added under Para 4 System Configuration Accessories, spares and consumables

Para: 4.11 Flow sensors disposable – 10 Nos or Reusable – 1 no
4.12 Disposable patient circuits – 50 Nos.

Item No: 48

Ventilator-Portable

1. Existing Specification:

Para: 3.4 Should have following settings a. **TV 10 – 1500ml**

Read as:

Para: 3.4 Should have following settings a. **TV 50 – 1500ml**

Item No: 50

ULTRASONIC ASPIRATOR FOR MICRONEUROSURGERY

1. Existing Specification:

Para: 3.3 The hand pieces should be autoclavable and without need to dismantle for autoclaving.

Read as:

Para: 3.3 The hand piece should be autoclavable and **can dismantled completely for cleaning with no inaccessible channels to trap tissue**

2. Existing Specification:

Para: 3.4 The vacuum pump should provide preferable the suction of **> 600mm of Hg.**

Read as:

Para: 3.4 The vacuum pump should provide preferable the suction of **> 580mm of Hg.**

3. Existing Specification:

Para: 3.9 Compatible Hand piece should be light, preferable **20-55 KHz**

Read as:

Para: 3.9 Compatible Hand piece should be light, preferable **20-40 KHz**

4. Existing Specification:

Para: 3.10 The hand piece should be available in the following sizes:-
1. Standard Size Hand Pieces- Angled & Straight (1 each)
2. Micro tipped- Angled hand piece. (1 each)
3. Long- Angled hand piece.(1 each).
4. Hand piece angled for bone cutting.

Read as:

Para: 3.10 Handpiece with changeable tips- standard, micro precision & bone sculpting (short and long angled options) – 1 each All tips.

5. Existing Specification:

Para: 3.11) The irrigation pump should be inbuilt in the unit, the irrigation output **0-65ml/min.**

Read as:

Para: 3.11) The irrigation pump should be inbuilt in the unit, the irrigation **output 0-25cc/min or more.**

6. Existing Specification:

Para: 6.2 Suitable UPS with maintenance free batteries for minimum two-hour back-up should be supplied with the system.

Read as:

Deleted.

Item No: 51
CRANIOTOMY

1. Existing specification:

Para 10: Trephine with adjustable dura guard **(1.5cm x 3cm x 3.5cm) 5.25 cm diameter.**

Read as :

Para 10: Trephine with adjustable dura guard.

2. Existing specification:

Para 1. CUSHING LANDOLT SPECULUM FOR TRANS-SPHENOIDAL HYPOTHYSECTOMY BLACK FINISH SIZE 70MMX15MM SS-2 Nos.

Read as :
Para 1. CUSHING LANDOLT SPECULUM FOR TRANS-SPHENOIDAL HYPOTHYSECTOMY FINISH SIZE 70MMX15MM SS-2 Nos.

3. Existing specification:

Para 2. CUSHING LANDOLT SPECULUM FOR TRANS-SPHENOIDAL HYPOTHYSECTOMY BLACK FINISH SIZE 90MM X 15MMMM SS-2 Nos.

Read as :

Para 2. CUSHING LANDOLT SPECULUM FOR TRANS-SPHENOIDAL HYPOTHYSECTOMY FINISH SIZE 90MM X 15MMMM SS-2 Nos.

4. Existing specification:

Para 3. CUSHING LANDOLT SPECULUM FOR TRANS-SPHENOIDAL HYPOTHYSECTOMY BLACK FINISH SIZE 110MM SS-2 Nos.

Read as :
Para 3. CUSHING LANDOLT SPECULUM FOR TRANS-SPHENOIDAL HYPOTHYSECTOMY FINISH SIZE 110MM SS-2 Nos.

5. Existing specification:

Para 29. RING CURETTE,45 DEG ANGLE **3MM LENGTH** 14.5CM SS-2 Nos.

Read as :

Para 29. RING CURETTE,45 DEG **ANGLE 3/4MM LENGTH** 14.5CM SS-2 Nos.

6. Existing specification:

Para 30. RING CURETTE,45 DEG ANGLE **5MM LENGTH** 14.5CM SS-2 Nos.

Read as :

Para 30. RING CURETTE,45 DEG ANGLE **5/6MM LENGTH** 14.5CM SS-2 Nos.

7. Existing specification:

Para: Aneurysm set

8. YASIRGIL CLIP TEMP 7.0265MM BLADE LG(Titanium)- 6Nos.
9. YASIRGIL CLIP TEMP 11.0MM BLADE LG (Titanium)- 6Nos.
10. YASIRGIL CLIP TEMP 6.5MM BLADE LG (Titanium)- 6Nos.
11. YASIRGIL CLIP TEMP 10.2MM BLADE LG (Titanium)- 6Nos.
12. YASIRGIL CLIP TEMP 6.4MM BLADE LG (Titanium)- 6Nos.
13. YASIRGIL CLIP TEMP 8.0MM BLADE LG (Titanium)- 6Nos.
14. YASIRGIL CLIP TEMP 8.4MM BLADE LG (Titanium)- 6Nos.
15. YASIRGIL CLIP TEMP 13.7MM BLADE LG (Titanium)- 6Nos.
16. YASIRGIL CLIP TEMP 9.0MM BLADE LG (Titanium)- 6Nos.
17. YASARGIL CLIP STANDARD TEMPORARY 6.1MM (Titanium)- 6Nos.
18. YASARGIL CLIP STANDARD TEMPORARY 7.0MM (Titanium)- 6Nos.
19. YASARGIL CLIP STANDARD TEMPORARY 7.0 MM (Titanium)- 6Nos.
20. YASARGIL CLIP STD TEMPORARY 11.4MM (Titanium)- 6Nos.
21. YASARGIL CLIP MINI TEMPORARY 3.0MM (Titanium)- 6Nos.
22. YASARGIL CLIP MINI TEMPORARY 5.0MM (Titanium)- 6Nos.
23. YASARGIL CLIP MINI TEMPORARY 5.0MM (Titanium)- 6Nos.
24. YASARGIL CLIP MINI TEMPORARY 7.0MM (Titanium)- 6Nos.
25. YASARGIL CLIP MINI TEMPORARY 2.8MM(Titanium)- 6Nos.
26. YASARGIL CLIP MINI TEMPORARY 4.7MM(Titanium)- 6Nos.
27. YASARGIL CLIP MINI TEMPORARY 4.0MM(Titanium)- 6Nos.
28. YASARGIL CLIP MINI TEMPORARY 5.2MM(Titanium)- 6Nos.
29. YASARGIL CLIP MINI TEMPORARY 4.0MM(Titanium)- 6Nos.
30. YASARGIL CLIP MINI TEMPORARY 3.9MM(Titanium)- 6Nos.
31. YASARGIL CLIP MINI TEMPORARY 5.0MM(Titanium)- 6Nos.
32. YASARGIL CLIP MINI TEMPORARY 4.0MM(Titanium)- 6Nos.
33. YASARGIL CLIPS STD PERMANENT 7MM(Titanium)- 6Nos.
34. YASARGIL CLIPS STD PERMANENT 11MM(Titanium)- 6Nos.
35. YASARGIL CLIPS STD PERMANENT 6.5MM(Titanium)- 6Nos.
36. YASARGIL CLIPS STD PERMANENT 10.2MM(Titanium)- 6Nos.
37. YASARGIL CLIPS STD PERMANENT 6.4MM(Titanium)- 6Nos.
38. YASARGIL CLIPS STD PERMANENT 8.0MM(Titanium)- 6Nos.
39. YASARGIL CLIPS STD PERMANENT 8.4MM(Titanium)- 6Nos.
40. YASARGIL CLIPS STD PERMANENT 13.7MM(Titanium)- 6Nos.
41. YASARGIL CLIPS STD PERMANENT 9MM(Titanium)- 6Nos.
42. YASARGIL CLIPS STD PERMANENT 6.1MM(Titanium)- 6Nos.
43. YASARGIL CLIPS STD PERMANENT 7MM(Titanium)- 6Nos.
44. YASARGIL CLIPS STD PERMANENT 7MM(Titanium)- 6Nos.
45. YASARGIL CLIPS STD PERMANENT 11.4MM(Titanium)- 6Nos.
46. YASARGIL MINI CLIPS PERMANENT 3MM(Titanium)- 6Nos.
47. YASARGIL MINI CLIPS PERMANENT 5MM(Titanium)- 6Nos.
48. YASARGIL MINI CLIPS PERMANENT 5MM(Titanium)- 6Nos.
49. YASARGIL MINI CLIPS PERMANENT 7MM(Titanium)- 6Nos.
50. YASARGIL MINI CLIPS PERMANENT 2.8MM(Titanium)- 6Nos.
51. YASARGIL MINI CLIPS PERMANENT 4.7MM(Titanium)- 6Nos.

52. YASARGIL MINI CLIPS PERMANENT 4MM(Titanium)- 6Nos.
53. YASARGIL MINI CLIPS PERMANENT 5.2MM(Titanium)- 6Nos.
54. YASARGIL MINI CLIPS PERMANENT 4MM(Titanium)- 6Nos.
55. YASARGIL MINI CLIPS PERMANENT 3.9MM(Titanium)- 6Nos.
56. YASARGIL MINI CLIPS PERMANENT 5MM(Titanium)- 6Nos.
57. YASARGIL MINI CLIPS PERMANENT 4MM(Titanium)- 6Nos.

Read as :

8. YASIRGIL CLIP TEMP 7.0265MM BLADE LG(Titanium)- 2Nos.
9. YASIRGIL CLIP TEMP 11.0MM BLADE LG (Titanium)- 2Nos.
10. YASIRGIL CLIP TEMP 6.5MM BLADE LG (Titanium)- 2Nos.
11. YASIRGIL CLIP TEMP 10.2MM BLADE LG (Titanium)- 2Nos.
12. YASIRGIL CLIP TEMP 6.4MM BLADE LG (Titanium)- 2Nos.
13. YASIRGIL CLIP TEMP 8.0MM BLADE LG (Titanium)- 2Nos.
14. YASIRGIL CLIP TEMP 8.4MM BLADE LG (Titanium)- 2Nos.
15. YASIRGIL CLIP TEMP 13.7MM BLADE LG (Titanium)- 2Nos.
16. YASIRGIL CLIP TEMP 9.0MM BLADE LG (Titanium)- 2Nos.
17. YASARGIL CLIP STANDARD TEMPORARY 6.1MM (Titanium)- 2Nos.
18. YASARGIL CLIP STANDARD TEMPORARY 7.0MM (Titanium)- 2Nos.
19. YASARGIL CLIP STANDARD TEMPORARY 7.0 MM (Titanium)- 2Nos.
20. YASARGIL CLIP STD TEMPORARY 11.4MM (Titanium)- 2Nos.
21. YASARGIL CLIP MINI TEMPORARY 3.0MM (Titanium)- 2Nos.
22. YASARGIL CLIP MINI TEMPORARY 5.0MM (Titanium)- 2Nos.
23. YASARGIL CLIP MINI TEMPORARY 5.0MM (Titanium)- 2Nos.
24. YASARGIL CLIP MINI TEMPORARY 7.0MM (Titanium)- 2Nos.
25. YASARGIL CLIP MINI TEMPORARY 2.8MM(Titanium)- 2Nos.
26. YASARGIL CLIP MINI TEMPORARY 4.7MM(Titanium)- 2Nos.
27. YASARGIL CLIP MINI TEMPORARY 4.0MM(Titanium)- 2Nos.
28. YASARGIL CLIP MINI TEMPORARY 5.2MM(Titanium)- 2Nos.
29. YASARGIL CLIP MINI TEMPORARY 4.0MM(Titanium)- 2Nos.
30. YASARGIL CLIP MINI TEMPORARY 3.9MM(Titanium)- 2Nos.
31. YASARGIL CLIP MINI TEMPORARY 5.0MM(Titanium)- 2Nos.
32. YASARGIL CLIP MINI TEMPORARY 4.0MM(Titanium)- 2Nos.
33. YASARGIL CLIPS STD PERMANENT 7MM(Titanium)- 2Nos.
34. YASARGIL CLIPS STD PERMANENT 11MM(Titanium)- 2Nos.
35. YASARGIL CLIPS STD PERMANENT 6.5MM(Titanium)- 2Nos.
36. YASARGIL CLIPS STD PERMANENT 10.2MM(Titanium)- 2Nos.
37. YASARGIL CLIPS STD PERMANENT 6.4MM(Titanium)- 2Nos.
38. YASARGIL CLIPS STD PERMANENT 8.0MM(Titanium)- 2Nos.
39. YASARGIL CLIPS STD PERMANENT 8.4MM(Titanium)- 2Nos.
40. YASARGIL CLIPS STD PERMANENT 13.7MM(Titanium)- 2Nos.
41. YASARGIL CLIPS STD PERMANENT 9MM(Titanium)- 2Nos.
42. YASARGIL CLIPS STD PERMANENT 6.1MM(Titanium)- 2Nos.
43. YASARGIL CLIPS STD PERMANENT 7MM(Titanium)- 2Nos.
44. YASARGIL CLIPS STD PERMANENT 7MM(Titanium)- 2Nos.
45. YASARGIL CLIPS STD PERMANENT 11.4MM(Titanium)- 2Nos.
46. YASARGIL MINI CLIPS PERMANENT 3MM(Titanium)- 2Nos.
47. YASARGIL MINI CLIPS PERMANENT 5MM(Titanium)- 2Nos.
48. YASARGIL MINI CLIPS PERMANENT 5MM(Titanium)- 2Nos.
49. YASARGIL MINI CLIPS PERMANENT 7MM(Titanium)- 2Nos.
50. YASARGIL MINI CLIPS PERMANENT 2.8MM(Titanium)- 2Nos.
51. YASARGIL MINI CLIPS PERMANENT 4.7MM(Titanium)- 2Nos.
52. YASARGIL MINI CLIPS PERMANENT 4MM(Titanium)- 2Nos.

53. YASARGIL MINI CLIPS PERMANENT 5.2MM(Titanium)- 2Nos.
54. YASARGIL MINI CLIPS PERMANENT 4MM(Titanium)- 2Nos.
55. YASARGIL MINI CLIPS PERMANENT 3.9MM(Titanium)- 2Nos.
56. YASARGIL MINI CLIPS PERMANENT 5MM(Titanium)- 2Nos.
57. YASARGIL MINI CLIPS PERMANENT 4MM(Titanium)- 2Nos.

Added Para:

The name of manufacturer and part number must be mentioned on each instrument. Also it should be mentioned in technical offer.

Item No: 53
High Speed Drill System for Neurosurgery & Spinal Surgery

1. Existing specification:

Para c, Speed selection **up to 100,000** rpm for selected handpieces.

Read as :

Para c, Speed selection **70,000 to 100,000** rpm for selected handpieces.

Item No: 55
Ultrasound Machine

1. Existing specification:

Para 4. The system should have a very high frame rate for B-mode & Colour mode. Maximum frame rate should be greater than **350 fps for B-mode & colour mode.**
Read as :

Para 4. The system should have a very high frame rate for B-mode & Colour mode. Maximum frame rate should be greater than **350 fps for B-mode.**

2. Existing specification:

Para 8. The system should have minimum **three active universal ports & two parking ports**. Active ports can be directly selectable from the control panel.

Read as :
Para 8. The system should have minimum three **active universal ports** & Active ports can be directly selectable from the control panel.

3. Existing specification:

Para 15. The system should have **HD-flow/Advanced dynamic flow to** acquire the blood flow with directions in the deeper region at a very high frame rate.

Read as :
Para 15. The system should have **facility to acquire** the blood flow with directions in the deeper region at a very high frame rate.

4. Existing specification:

Para 5 :The system should be able to support all type of transducers (Convex, Endocavitary, Linear, Phased array and Intraoperative Transducers).**Frequency range of all transducers should be 2-14Mhz.**

Read as :

Para 5 : The system should be able to support all type of transducers (Convex, Endocavitary, Linear, Phased array and Intraoperative Transducers).

5. Existing specification:

Para 25(b): TV/TR probe with frequency range of 5.0-7.5 Mhz. And minimum field of view of **140 degree**.

Read as :

Para 25(b): TV/TR probe with frequency range of 5.0-7.5 Mhz. And field of view **of 120 degree or more.**

6. Existing specification:

Para 9,The system should have scanning depth in the range of **2- 28cms**.

Read as :

Para 9,The system should have scanning depth in the range **of 2- 24cms or more.**

7. Existing specification:

Para 21. The system should have Compound Imaging and Contrast Harmonic Imaging
Read as :

Para 21. The system should have Compound Imaging and Contrast Harmonic Imaging (**please specify type of compound** Harmonic imaging **offered).**

8.Existing Specs Para 26 Essential accessories: Black & White Thermal printer and color laser printer, Suitable UPS with one hour backup, mobile cart with transducer holder, jelly bottle holder and space for printer.
Read As - Para 26 Essential accessories: Black & White Thermal printer and color laser printer, Suitable UPS with one hour backup, **Integrated trolley (To keep all Accessories)** with transducer holder, jelly bottle holder and space for printer.

Item No: 56
High Speed Drill System for Neurosurgery & Spinal Surgery

1. Existing specification:

Para 1. The unit should be compact, lightweight and portable. **Weight upto 11Kg without battery**, Probe & Cart. System should be hand carry.

Read as :
Para 1. 1. The unit should be compact, lightweight and portable. **Weight 7 Kg or less without battery**, Probe & Cart. System should be hand carry.

2. Existing specification:

Para 5. (2) Linear **13 - 6 MHz**. - One Each

Read as :

Para 5. (2) Linear 13 - 6 MHz. – with **variable +/- 1 MHz** One Each

3. Existing specification:

Para 23. In built battery back up should be **at least one hour** or more.

Read as :

Para 23. In built battery **back up of 45 min or more**.

4. Existing specification:

Para. 9. Advanced features such as tissue harmonic imaging with contrast media and **compound imaging Advance dynamic flow / HD flow should be available**

Read as :
Para. 9 Advanced features such as tissue harmonic imaging with contrast media and **compound imaging facility.**

5. Existing specification:

Para. 6 All transducers should be lightweight digital phased array broadband type transducers **with at least 1024 elements.**
Read as :

Para. 6 All transducers should be lightweight digital phased array broadband type **transducers**.

6. Existing specification:

Para 27,The unit offered must be sturdy and should be able to withstand accidental hits and falls during transportation.

Read as :

Deleted

Item No: 57

MOBILE C-ARM IMAGE INTENSIFIER

2. Existing Specification:

Para.1: Generator
Microprocessor controlled High Frequency generator with 2.5Kw or More with integrated beam filters to reduce patient skin radiation dose

Read As
Para.1: Generator
Microprocessor controlled High Frequency generator with 1.4Kw or More with integrated beam filters to reduce patient skin radiation dose. Specify the **technique**/filter to reduce radiation dose.

3. Existing Specification:

Para.3 (a): Fluoroscopy should not exceed 5 mA .

Read As
Para.3 (a):
Fluoroscopy should be **8** mA or less.

4. Existing Specification:

Para. 4: Image Intensifier:
9”or More Dual Mode Image Intensifier with CCD Camera

Read As
Para. 4: Image Intensifier:
9”or More Dual Mode Image Intensifier with CCD/CMOS Camera

5. Existing Specification:

Para. 5(b): Archival memory CD/DVD mode.

Read As

Para. 5(b): Archival memory CD/DVD mode. **Please mention if USB output is available or not.**

6. Existing Specification:

Para.7: System Functionality:
Vertical ,Horizontal and Orbital Travel should be available C arm rotation 135 degree or more

Read As
Para.7: System Functionality:
Vertical ,Horizontal and Orbital Travel should be available C arm rotation 135 degree or more **(+/- 10% variation)**

6. Added Paragraphs:

1. **The system should be CE or US FDA approved for quality of the product.**
2. **Kindly give details of angulation, immersion depth, source to II depth.**
3. **Kindly mention the fluoroscopy time without loss of image quality.**
4. **Kindly give the capacity of internal storage. Maximum will be preferred. State whether the capacity is upgradeable or not**

Item No: 58A & 58B

DIGITAL RADIOGRAPHY-800 Ma

1. Existing Specification:

Para. B1:
Small focus: 0.6mm or less min output 40KW
Tube with anode heat storage capacity 600 KHU or more.

Read As
Para. B1:
Small focus: 0.6 mm or less min output 30 Kw or more.
Tube with anode heat storage capacity 300 KHU or more.

2. Existing Specification:

Para. C6: Tube rotation at vertical axis and horizontal axis + 180 degree.

Read As
Para. C6:
Tube rotation at vertical axis and horizontal axis +/- 135 degree. **(10% variation acceptable in all dimensions).**

3. Existing Specification:

Para. F4: The pixel size must be 140 micrometers or less.
Read As
Para. F4:
The pixel size must be **150** micrometers or less.

4. Existing Specification:

Para. F6: Detector panel should be made of amorphous silicon with CSI or selenium

Read As
Para. F6:
Detector panel should be made of amorphous silicon with CSI or selenium **or gadox scintillator or equivalent.**

5. Added Paragraphs:

1. **System should be CE or US FDA approved.**
2. **Type approval of AERB must be submitted with bid. AERB type approval is must.**

Item No: 59A & 59B

RADIOGRAPHY-FLUOROSCOPY SYSTEM -500mA

1. Existing Specification:

Para: Ceiling mounted 3D column stand

Read As

Floor mounted column stand, One tube is required.

2. Existing Specification:

Para 3b: Dual focus X-Ray tube with anode heat storage capacity 400 kHU or more

Read As

Dual focus X-Ray tube with anode heat storage capacity **200** kHU or more

3. Existing Specification:

Para. 5c: Serial exposures of 4 frames / sec or more for fast serial acquisitions.

Read As

Serial exposures of **5** frames / sec or more for fast serial acquisitions.

4. Existing Specification:

Para.6a: Vertical Bucky travel at least 150 cm

Read As

Vertical Bucky travel at least **120** cm or more

5. Added Paragraphs

1. **System to be European CE or US FDA approved.**
2. **AERB type approval to be submitted with bid.**

Item No: 60

X-Ray Machine with CR system

Schedule no. 60 should be read as Schedule 60a. X-Ray Machine and Schedule no: 60b. CR System

Bidders are free to quote Schedule 60a and 60b separately. Evaluation will be carried out separately.

For :

Sl.No	Equipment Name	Total Qty	EMD
60	X-Ray machine with CR System	1	Rs.90,000

Read as:

Sl.No	Equipment Name	Total Qty	EMD
60(a)	X-Ray machine	1	Rs.30,000
60(b)	CR System	1	Rs.60,000

Schedule 60a – X-Ray Machine

Specifications

State of Art High Frequency microprocessor controlled X-Ray machine. It should have the following features:

1. Generator:

a. Generator should be high frequency(**200 KHz** or more) for constant output.
b. Output 50 kW or more
c. KV Range 40 KV to 150 KV in steps of 1 KV
d. mA range should be **10 to 620 mA** or more
e. Output at 100 KV should be 500 mA or more,
f. It should have automatic exposure control device
g. Exposure time 0.001 sec to 5 secs
h. It should have digital display of all parameters with independent parameter setting
i. Anatomical programming radiography(APR) should be possible (Minimum 100)
j. It should have overload protection

2. X-Ray tube and Tube mount:

a. Tube should be suspended by a 3D column to support full range of general radiographic application
b. The X-Ray tube should be rotating anode (9000 RPM or more)
c. Dual focus x-ray tube Focal spot of 1.2/1.2 mm or better and 0.6/0.6 mm or better

d. Tube anode heat storage capacity **600 KHU** or more
e. HT cable of adequate length
f. Auto tracking / centering with vertical bucky and table bucky should be available and offered as standard. **Autotracking to be mentioned if available**.
g. Auto-positioning should be available
h. Tube mount should have digital display of SID and tube angle
i. Column should support up and down movement of tube with electromagnetic locks
j. Multi-leaf collimator should have halogen light with auto shut off
k. Should have auto collimation and adjust automatically to the size of the inserted cassette

3. X-Ray Table:
a. Table should have motorized elevation with foot pedals and offer a floating table top
b. It should have minimum patient weight capacity of 200 kg
c. The table top should be carbon fibre type
d. It should be provided with bucky which can hold all standard sizes of cassettes up to 14" X 17". It should have a grid ratio of 10:1 or better
e. Should have automatic sensing of cassette size
f. It should have AEC with **3 field Ion chambers** as standard

4. Vertical Bucky Stand:
a. The unit should be provided with tiltable vertical bucky with vertical movement of 110 cm or more with electromagnetic lock
b. Stationary focused grid with 10:1 and 100 lines per inch or more

c. Should have automatic sensing of cassettes

d. It should have AEC with **3 field Ion chambers** as standard

5. Accessories:

Suitable KVA servo stabilizer for the complete unit.
View box with variable Lumin and area size 14X17 -02No.

6. Approval:
The system should have AERB approval for the whole system. The bidder to provide any other certificate (eg. BIS) required to import the machine in case of any imported equipment

7. Warranty:
Warranty of 2 years for complete system including X-Ray tube and accessories

8. CMC:
Year-wise CMC charges for 8 years after warranty period including labour cost and all spares including X-Ray tube for whole equipment including accessories supplied with the unit.

9. Spares:
Company should give undertaking from principal manufacture availability of spares of the quoted model for the next 10 years.

10. Installation:
Type approval by AERB is mandatory. System type approval by AERB to be submitted. Site & System to be ready for functioning as per AERB guidelines to be done by vendor with the help from consignee.

11. Datasheet:
The bidder should enclose the original product data sheet, brochure and compliance sheet, without which the bid will be rejected. Computer generated data sheet and brochure will not be accepted. The

serial number of specifications must be indicated against the relevant portion of the compliance sheet and data sheet.

12. Turnkey – As per the site requirement

The suppliers of X-Ray and CR should coordinate with each other for integration of X-Ray and CR units

Schedule 60b – CR System

CR System CR Digitizer & Imager

Specifications for State of the art Latest Generation Computed Radiography (CR) system for high resolution Digital radiography. Should be compatible with the X-ray system.

Features Remarks

1 Technical Requirements - CR system configuration shall include:

a) Imaging plates (IP)
b) Image reader system
c) CR workstations
d) RIS interface
e) Remote ID and Preview stations
f) Accessories and consumables
g) Laser Imager / **Dry Imager**

2 CR Compatible imaging plates (Unit cost of each CR plate to be Quoted)

Following sizes are required -

a) 35 cm x 35 cm - 1 2Nos.
b) 24 cm x 30 cm - 12 Nos.
c) 18 cm x 24 cm - 12 Nos.
d) 15 cm x 30 cm - 6 nos.
e) 35 cm x 43 cm – 6 nos.
f) 30 cm x 37.5 cm – 6 nos.
g) 18 cm x 24 cm - 04 Nos. (Mammography)
h) 24 cm x 30 cm - 2 Nos. (Mammography)

3 Image plate storing Rack- one

4 Image reader shall meet the Functional requirements:

Various image-processing protocols available for the respective regions of the body
IP processing rate should be **70 plates / hour** or more
Mechanism for accepting exposed Imaging Plates with out patient demographics, for Causality /Trauma workflow requirement
Mechanism for Re-routing the newly acquired Images to the preconfigured CR workstation
Capability of retrieving (Service Intervention) at least last 10 scanned images, as part of contingency plan.
Capability for quick check of the image and exam data of at least the last 4 Imaging Plates scanned at the x- ray room
Protocol for verifying the connectivity status of configured image destinations
Spatial resolution of the digital image shall preferably be 2kx2kx16 bits for optimal resolution.
Identification and Preview
System Functional requirements:
Capability of interfacing to HL7, Non-HL7, Proprietary, DICOM Work list or user defined Windows/DOS /Linux based interface protocols to HIS/RIS.
Mechanism for retrieving Demographics of at least last 10 patients identified on a particular Identification Terminal.
Customizable Graphic User Interface (GUI) in Identification station with facility of selecting DICOM print & Storage destination.
Indication of Over Exposure on the preview module.
Mechanism for User release from Preview terminal in case of Auto-routing Images to Predefined DICOM Destinations.
Customizable Graphic User Interface (GUI) for Preview terminal.
Solution for storing patient demographic data for multiple exams in RIS/non RIS environment.
It should be possible to put a custom configurable data field in the demographic information of the patient linked with the image.

5 **Software**

System should include the following Software applications:

Please list all the optional software(s) which are available with you for enhancing the workflow and service in the Digital Radiology environment for the following

i Advanced Processing Software
ii Application Software
iii Connecting Software
iv Visual Output Software
v Quality Monitoring Software

6 The system should include the following SW applications as standard:

i Full Leg/Full spine image processing.
ii Quality Control software.
iii Software, which enables to see in the preview terminal the deviation from normal exposure and with the details of the deviation on the CR workstation.
iv Software masking of the collimation areas.
v Special attention should be placed on pediatric applications.
vi Software for storing images on any DICOM 3 (or newer versions) compliant stations.
v Software for printing on any DICOM printer.

7 CR Workstation

System configuration requirements:
Accept images from CR Reader without any loss of data Capable of Archiving & Printing selected image to a standard DICOM destination in DICOM
3.0 Format.
Storing images in the local disk for pre-defined period.
Mechanism for accepting New images when the local disk is full
Should include 21" antiglare flicker free TFT/LCD color monitor (1.2K X 0.78K resolution)
Should include 21" Monochrome antiglare flicker free Medical Grade TFT/LCD monitor with at least 2k X 2k resolution.
DVD Burner
240 GB or more on board storage

8 System Functional requirements:

a) Support DICOM Work list or user defined Windows/Dos based interface to HIS/RIS
b) Mechanism for retrieving Demographics of atleast last 10 patient identified on that Terminal.
c) Customizable Graphic User Interface with facility of selecting DICOM print & storage destination.
d) Indication of Over Exposure on the preview module.
e) Mechanism for User release in case of Auto-routing Images to Pre-defined DICOM Destinations.

Functional requirement for CR workstation:
Built in routine for using predefined image processing parameters for image quality enhancement.
Mechanism for storing the Patient image based on name, date, exam, etc.
Capability of storing user defined image processing parameters.
Capability of overwriting predefined image parameter with user-defined parameters & storing these two images separately.
Correcting typographically in Patient Demographic module, in case the RIS connection was down and manually data entry was done.
Capability of changing W/l, Flipping, Rotating, Zooming, Collimating Annotating incoming image.
Auto-routing incoming image to predefined DICOM Store (SCP storage) or Print Destination (SCP Print Destination)

h) Mechanism for printing Multiple Images in one film, with the possibility of slide and True Size printing
i) Compatible DVD Writer along with relevant software to be quoted separately.

9 Laser Imager / **Dry Imager** System Configuration requirements:

Print Images from CR Workstation Capable of Printing Images in DICOM 3.0 format Mechanism to print images 14x 17,11X14, 8 x 10 film sizes simultaneously.
Resolution should be 500 dpi or more Capable of handling mammography plates.
Functional requirement for Laser Imager:
Capable of Printing images in High quality
Mechanism for printing images in 14 x 17,11X14 and 8 x 10 film sizes simultaneously.
Mechanism for Printing Multiple Images in one film, with the possibility of slide printing.
Provision for Distributed CR System should be present. Please quote price separately for additional workstation image reader preview stations and image planes.
Warranty/AMC: All items and accessories should covered under warranty

Please list all the Optional software's, which are available with you for enhancing the workflow and services in the Digital Radiology environment.

10 Price for On line UPS with one hour back up for complete system should be quoted. System should have CE/FDA approval

11 Review station at key areas – qty 04 nos. (in OPD, OR, DOCTOR'S room etc.) (Unit Price of review stations to be quoted separately)

PC based DVD reader image manipulating software and high definition monitor (1.2K ×0.78K) (approx.). Acceptance tests as per International Standard should be carried out at manufacturing facility as well as installation site (including all Safety and QA tests)

The suppliers of X-Ray and CR should coordinate with each other for integration of X-Ray and CR units.

Item No: 61

Mobile X-Ray unit (High End)

1. Existing Specification:

Para Generator: (4) mA range: 300 mA or more

Read as:

Para Generator: (4) mA range: **200** mA or more

2. Existing Specification:

Para 2.1 X-Ray Tube: Rotating anode with at least 2500 rpm and focal spot size should be 1 mm. or less. 3Light Beam Collimator of multi leaf type with auto cut off switch

Read as:

X-Ray Tube: Rotating anode with at least 2500 rpm and focal spot size should be **1.5** mm. or less. 3Light Beam Collimator of multi leaf type with auto cut off switch

3. Existing Specification:

Para 3. The exposure release switch should be detachable with a cord of sufficient length as per ICRP recommendation

Read as:

The exposure release switch should be detachable/strechable with a cord of sufficient length as per ICRP recommendation. Mention the switch is detachable or stretchable

Points Added:

The quoted model must be European CE or USFDA approved. The system should be AERB type approved. Copy of certificate to be submitted along with bid.

Item No: 62

Mobile c-Arm Image Intensifier with DSA

1. Existing Specification:

Para: 12 Suitable and compatible Table should be supplied with the system

Read as:

C-Arm compatible Table should be supplied with the system

2. Existing Specification:

3. a) Fluoroscopy should not exceed 5 mA .

Read as:

3.a) Fluoroscopy should be **8mA or less.**

3. Existing Specification:

Para: 7 System Funcationality:
Vertical, Horizontal and Orbital Travel should be available C arm rotation 135 degree or more.

Read as:
Vertical, Horizontal and Orbital Travel should be available C arm rotation 135 degree or more. **(10% variation may be allowed in all the dimensions)**

4. Existing Specification:

Para:8 The system should perform DSA with acquisition of 6 frames per second or more, real time and peak hold , road mapping, annotation, re-masking and multi image display.

Read as:
The system should perform DSA with acquisition of 6 frames per second or more, real time and peak hold , road mapping, annotation, re-masking and multi image display. **In addition specify other post processing options.**

5. Existing Specification:

Para:1 Microprocessor controlled High Frequency generator with 2.5Kw or More with integrated beam filters to reduce patient skin radiation dose.

Read as:
Microprocessor controlled High Frequency generator with **1.4Kw** or more with integrated beam filters to reduce patient skin radiation dose.(Specify techniques)

6. Existing Specification:

Para:4 Image Indensifier:
9”or More Dual Mode Image Intensifier with **CCD Camera.**

Read as:

Image Indensifier:
9”or More Dual Mode Image Intensifier with **CCD/CMOS Camera.**

Item No: 63
URODYNAMIC SYSTEM (HIGH END)

1. Existing Specification:

Para: 3.5. The pressure transducers should be of long life **Statham transducer** so as to last for more than 8-10 years.

Read as:
Para: 3.5. The pressure transducers should have long life **reusable transducer** so as to last for more than 8-10 years.

Existing Specification:
Description of Function:

1.1 The Urodynamic system should have multi channel (minimum 6 channel) microprocessor based compact system with a high resolution color monitor for the Urodynamic study for Neurovesical and erectile dysfunctionThe equipment should be modular design and should be able to carryout different tests like Uroflowmetry, Cystometry (CO2 & H2O), Electromyography (EMG), Urethral pressure profile (UPP), Pressure flow study (PFS), Video Urodynamics, Bladder/Valsalva leak point measurement & Cavernosometry.

Read as:

1.1 The Urodynamic system should have multi channel (minimum 6 channel) microprocessor based compact system with a high resolution color monitor for the Urodynamic study for Neurovesical and erectile dysfunction(Non-Invasive technique).The equipment should be modular design and should be able to carryout different tests like Uroflowmetry, Cystometry (CO2 & H2O), Electromyography (EMG), Urethral pressure profile (UPP), Pressure flow study (PFS), Video Urodynamics, Bladder/Valsalva leak point measurement & Cavernosometry/**Non-Invasive technique.**

Item No: 68
Extracorporeal Shock Wave Lithotriptor (E.S.W.L) High End

1. Existing specification:

Para 3.2 Focal Spot Sizes: **Dual**: 0.3/0.6 or 0.6/1.2/1.5

Read as :

Para 3.2 Focal Spot Sizes: **single**: 0.3/0.6 **or** 0.6/1.2/1.5

All other terms and conditions of the tender enquiry remain unaltered.