Amendment No. 1

Date: 28/03/2017

Sub: Amendment No.01 to the Tender Enquiry Document

Ref: NIT No.: HLL/PCD/PMSSY/AIIMS-II/26/16-17 dated 08.03.2017.

Ref: (i) Tender Enquiry No.: HLL/PCD/PMSSY/AIIMS-II/26/16-17 dated 08.03.2017.

Section – VII
Technical Specifications

Schedule: 01
Portable Colour Doppler System

Existing Specification:
The offered system be top of the line platform on a worldwide basis.
Read as:
The offered system be top of the line platform on a worldwide basis **and US-FDA approved**.
Existing Specification:
It should be light weight easily portable machine (less than 7 kgs) with proper bag and storage facility.
Read as:
It should be light weight **easily portable machine** with proper bag and storage facility.
Existing Specification:
A separate cart (of the same company) should be provided for moving the portable machine.
Read as:
The portable machine should come with an imported cart with three universal imaging transducer port, mobile on four wheels (trolley) for easy movement, with facility to detach the machine from the cart easily for transportation.
Existing Specification:
Should have a dynamic range of 160 DB minimum.
Read as:
Should have a dynamic range of **200 DB** minimum.
Existing Specification:
Should have a large hard disk capacity to store patient data into the hard drive.
Read as:
Should have a large hard disk capacity **at least 1 TB** to store patient data into the hard drive
Existing Specification:
Should have maximum color Doppler frame rate of 200Hz .Should have an on –board workstation for storage and review of all exams i.e. 2D Doppler, Loops etc.
Read as:
Should have maximum color Doppler frame rate of 750fps .Should have an on –board workstation for storage and review of all exams i.e. 2D Doppler, Loops etc.
Existing Specification:
Adult echo transducer: transducer technology for adult probes should be clearly mentioned in technical bid.
Read as:
Adult transducer with frequency from 1-5 MHz: transducer technology for adult probes should be clearly mentioned in technical bid.

Existing Specification:
Pediatric echo transducer
Read as:
Pediatric echo transducer with frequency from 3-8 MHz
Existing Specification:
Transducer for abdominal ultrasound
Read as:
Transducer for abdominal ultrasound with 1-5 MHz
Existing Specification:
Vascular probe
Read as:
Vascular probe with frequency form 4-12 MHz

Added para:
1. Separate TEE probe for adult and pediatric echocardiography (should be quoted as standard)
2. The system should be capable of performing Stress, Strain and Contrast Echo (to be quoted optionally)
Existing Specification:
Should have flat panel high resolution display monitor minimum 15 inch
Read as:
Should have flat panel high resolution display monitor minimum 15 inch LED monitor

Schedule: 02
External Defibrillator

Existing Specification:
Para: 1. Portable, light weight external defibrillator with ECG, SpO2, NIBP monitoring and external pacer with a touch screen color display showing ≥ 4 wave forms
Read as:
Portable, light weight external defibrillator with ECG, SpO2, NIBP monitoring and external pacer with a color display showing ≥ 4 wave forms and minimum 5 inch monitor screen

Schedule: 03
Portable ECG Machine

Existing Specification:
12 channel digital ECG machine with simultaneous acquisition of all leads and preferably an ICD display prior to printing
Read as:
12 channel digital ECG machine with simultaneous acquisition of all leads and preferably an LCD/TFT display prior to printing with alarm message
Existing Specification:
The unit should be light weight, it must be less than 5 Kg and portable, preferably be capable of storing at least 20 electrocardiograms and allow for rapid transfer of this data to a computer.
Read as:
The unit should be light weight, it must be less than 5 Kg and portable, preferably be capable of storing at least 20 electrocardiograms and allow for USB/LAN transfer of this data to a computer
Existing Specification:
The ECG machine should conform to AHA, ACC guidelines for medical equipment

Read as:
The ECG machine should conform to current AHA, ACC guidelines for ECG machine for all age group

Existing Specification:
All spares should also be quoted separately i.e Battery, ECG clips, bulbs, ECG cables and batteries

Read as:
All spares should also be quoted separately i.e Battery, ECG clips, bulbs, ECG cables

Schedule: 04
Single plane cardiovascular Catheterisation with digital substraction angiography lab

Existing Specification:
A. Multi Directional C ARM positioned
2. The C arm/G arm should travel both side (right and left) of the patient for head to toe imaging without repositioning of the patient

Read as:
The C arm/G arm should travel both side (right and left) of the patient and it should be possible to park the C arm away from table for patient shifting

Existing Specification:
A. Multi Directional C ARM positioned
4. The C or G arm rotation minimum 15 degrees/second in RAO/LAO and 15 degree/second in cranio/caudal

Read as:
The C or G arm rotation minimum 18 degrees/second in RAO/LAO and 18 degree/second in cranio/caudal

Existing Specification:
B. Patient Table
4. The table should have floating longitudinal and horizontal movement and motorized vertical movement

Read as:
The table should have floating longitudinal and horizontal movement and motorized vertical movement and head side tilt facility

Existing Specification:
Para: E.1: 1. Flat detector of current generation for cardiovascular application with excellent spatial and contrast resolution (20 x 20cm) with pixel size smaller than 200Um

Read as:
Flat detector of current generation for cardiovascular application with excellent spatial and contrast resolution (25cm diagonally) with pixel size smaller than 200Um

Existing Specification:
E. Dynamic flat detector system
4. Any other additional feature/ design/ technology towards image quality improvement will be given preference

Read as:
System must be offered with latest image processing software /algorithm to reduce quantum noise in image to have excellent image quality

Existing Specification:
F. Digital Image system

1. Digital cardiac imaging for acquisition storage and retrieval in high matrix of 1024 x 1024 or more acquisition/ display and storage of image application to give excellent resolution

Read as:

Digital cardiac imaging for acquisition storage and retrieval in high matrix of 1024 x 1024 or more acquisition/ display and storage of image application to give excellent resolution with latest image processing software/algorithm

Existing Specification:

F.4. Medical grade large high definition display (approx. 56 inches).

Read as:

Medical grade large high definition display (app 56 inches) to display live, reference, 3D,CT like image, Hemodynamic and EP waveforms with layout selection from table side touch screen in exam room

Existing Specification:

F. Digital Image system

7. Cath lab should be supplied with state of art complete coronary ventricular and vascular on line & off line both quantifications software programs which are clinically validated.

Read as:

Cath lab should be supplied with state of art complete coronary ventricular and vascular on line & off line both quantifications software programs which are clinically validated with operation from exam room and control room

Existing Specification:

F. Digital Image system

12. On line acquisition & display of DSA images in 1024 x 1024 matrix with DSA post processing from table side in exam room and control room

Read as:

On line acquisition & display of DSA images in 1024 x 1024 matrix with DSA post processing from table side touch screen in exam room and control room. All 2D and 3D roadmaping features should be offered. Since DSA is without roadmap function is not of much use.

Existing Specification:

H. Cross sectional imaging

1. Cross sectional 3 D images using 3 D reconstruction algorithms for 3D reconstruction of chambers and vessels of heart from projection images of a rotational angiography.

Read As:

1. Cross sectional 3 D images using 3 D reconstruction algorithms for 3D reconstruction of chambers and vessels of heart from projection images of a rotational angiography. Digital rotational angiography facility at a speed of 40 degree/sec. or more with acquisition frame rate of 30 frames/sec. or more in 1k matrix with facility for dynamic display of subtracted images in 10242 matrix should be available. It should be possible to reconstruct 3D of aortic arch, LA etc for structural heart diseases from this rotational angiographic data

Added Para:

H. Cross sectional imaging

3. Dedicated 3D workstation to be provided for 3D image processing for efficient workflow with display in control room and exam room

4. 3D roadmaping should be available. It should be possible to have TAVI guidance based on this rotational angiographic data for TAVI procedures with landmark marking and overlay. TAVI guidance packages should be included

5. DICOM workstations: Two number, with 500 GB HDD for image viewing and CD/DVD writing in consultation rooms away from cath lab connected to cath lab for online image transfer.

CD/DVD archiving on these computers should be in addition to standard CD/DVD archiving on main system

Added Para:

HEMODYNAMIC AND EP STATION (Price to be quoted separately): The following features should be available in the recorder

• 12 Lead ECG Amplifier with floating input
• At least 4 pressures with floating inputs
• Time and amplitude measurement with electronic calipers
• Laser Printer with minimum 16 MB memory with minimum 1200 dpi
2. Storing of patient hemo data on hard disk and retrieval as and when required.
3. 18" color wave form monitor with programmable layout and digital monitoring readout – Two
4. SPO2, cardiac output , pressure gradient facility, NIBP should be available
5. FFR measurement facility should be offered and is must & machine should be preferably compatible with OCT & IVUS
6. 64 Channel Intra cardiac ECG for electrophysiological studies should be available. Separate system or integrated solution may be offered.
7. Stimulator and RF ablator
8. ECG cable and pressure transducers with facility for superimposition of pressure tracings with printing supports inside the operating room: 4 each
9. Live Hemodynamic monitors should be available in operating room as well as console room

Existing Specification:

Essential accessories:
2. Ceiling suspended operation lamp
3. Lead glass (120x 100cm)
4. Radiation shield ceiling and table mounted/suspended
5. High power contrast injector (floor/ceiling mounted)
6. Protective lead apron of high quality with hangers: 20 It should be state of art light weight with a lead equivalent of 0.5mm
7. Thyroid guards 10 in number with lead equivalent of 0.5mm
8. Lead spectacles 10 in numbers
9. On line UPS for completed cath lab with back up of at least 30 minutes
10. Should meet all national and international safety standard and comply with BARC and AERB guidelines
11. Defibrillator with external pacer FDA approved: 2
12. Act machine: 1

Read as

1. Foot switch for fluoroscopy and acquisition.
2. Ceiling suspended operation lamp.
3. Lead glass (150 x 100cm) (as per international radiation protection standard)
4. Radiation shield ceiling and table mounted/suspended. (as per international radiation protection standard)
5. High power contrast injector (floor/ceiling mounted) with 200 syringes.
6. Radiation protective apron (US FDA Approved; Lead-Free, light weight) of high quality with hangers: (Total quantity 20: Front type - 10, Wrap around – 6 and Two-piece type - 4). It should be state of art light weight with a lead equivalent of 0.5mm.
7. Two hanger stands to hold 5 apron each and two wall mounted hangers to hold 5 aprons each.
8. Thyroid guards 20 in number with lead equivalent of 0.5mm
9. Lead spectacles 20 in numbers.
10. Lead lined gloves: Two pairs

11. Intercom between exam room and control room.
12. One Laser Network Printer of high resolution (at least 1200 dots per inch) with minimum 128MB memory and 1200 dpi should also be offered for high quality image printing.
13. ETO sterilizer: of approved make at least 4.5 cu ft. – One **(Price to be quoted separately)**
14. Intra-aortic balloon pump (IABP) system – One. State of art, latest, imported model with two gas cylinders and two balloons. **(Price to be quoted separately)**
15. ABG Machine: One no. for measuring Hb, electrolytes, bicarbonate, Po2, Pco2 and oxygen saturation etc. during cardiac catheterization complete with all accessories like rinse solution, calibration solution etc for at least 100 procedures. **(Price to be quoted separately)**
16. On line UPS for completed cath lab with back up of at least 30 minutes. Emergency lighting should also be on UPS.
17. Should meet all national and international safety standard and comply with BARC and AERB guidelines
18. Defibrillator with external pacer FDA approved: 2
19. Act machine: 1 with cartridges for 100 patients.
20. Anaesthesia Workstation: Compact three gas Anaesthesia workstation with an integrated Ventilator for infants/pediatric to adult patients, Airway Monitor and Anaesthesia Monitor. (US FDA Approved) . **(Price to be quoted separately)**

Added para

Radiation Protection

- The system should have integrated computer controlled (preferably automatic) X-Ray Beam filtering with copper filters of various size from 0.2 mm to 0.9 mm to reduce soft radiation for fluoroscopy and acquisition mode. Please list the special filters available.
- The system must have all software/hardware packages for radiation safety of operator and patient like CARE & CLEAR/ALLURA Clarity or Equivalent.
- System should meet all National & International safety standards & comply with BARC & AERB guidelines.

Added Para

Turnkey work

Cost of Turnkey works for 1500 sq ft will be considered for ranking purpose; however payment will be made as per the actual turnkey work done at site.

Existing Specification:

Turnkey:

Civil work:

5. Door/window work P/F aluminum or wooden door with frame lead lining as per the AERB requirement. Sensor based automatic door opening to avoid cross infection by hand or fomites in all the working areas

Read as:

Door/window work P/F aluminum or wooden door with frame lead lining as per the AERB requirement

Existing Specification:

Civil work:11. False ceiling: providing and fixing perforated AI ceiling

Read as:

False ceiling: providing and fixed tile based AI ceiling

Schedule: 05
High End Echocardiography

Existing Specification:
2. System must be offered with a minimum of 500000 digital processed channels. Original technical data sheet should be enclosed in technical bid to support the number of channels on the systems. If not mentioned, Please attach a letter from manufacturer along with the technical bid clearly stating the digital processed channels of the offered system

Read As:
System must be offered with a minimum of 800000 digital processed channels. Original technical data sheet should be enclosed in technical bid to support the number of channels on the systems. If not mentioned, Please attach a letter from manufacturer along with the technical bid clearly stating the digital processed channels of the offered system

Existing Specification:
4. System must be offered with a minimum 19 inch high resolution flat panel medical grade display monitor with infinite position adjustments. Company should provide wider monitor if available.

Read As:
System must be offered with a minimum 21 inch high resolution flat panel medical grade display monitor with infinite position adjustments. Company should provide wider monitor if available

Existing Specification:
10. System should have 4D (Live 3D) Echocardiography capability with color flow Imaging

Read As:
System should have 4D (Live 3D) Echocardiography capability with colour flow imaging with single beat

Existing Specification:
14. System must be offered with user friendly high resolution user interface touch panel of minimum size of 10.5 inch or intuitive keyboard. User friendliness will be given preference.

Read As:
System must be offered with user friendly high resolution user interface touch panel of minimum size of 12.0 inch or intuitive keyboard. User friendliness will be given preference.

Added Para:
Latest PC (off-cart workstation) with permanent licence software for analysing and quantification of 2D and 3D data sets like Strain and Strain rate imaging, Tissue Motion Annular Displacement, Mitral valve 3D data sets, 2D Speckel tracking. CD/DVD writer with Image management software and colour laser Printer. PC should be offered with a flat panel 17" display monitor. (hardware essential for OFF cart quantification)

Schedule: 7
BIPAP Machine

1. **Existing Specification:**
   Should have fixed backup rate of 10 breaths/minutes

   Read as:
   Deleted

Schedule: 8
Fibre Optic Bronchoscope

1. **Existing Specification:**

   Working length should be 600 mm or more
   Read as:

   Working length should be 550 mm or more
2. **Existing Specification:**

   Total length should be **890 mm** or more
   Read as:

   Total length should be **850 - 900 mm** or more
3. **Existing Specification:**

   Up and Down angulations should be 180 degree and 130 degree or better
   Read as:

   Up and Down angulations should be 180 degree and 130 degree **respectively** or better
4. **Existing Specification:**

   Should be compatible with 150 watt Halogen light source
   Read as:

   Should be compatible with 150 watt **or more** Halogen light source

Schedule: 9
Multipara monitor

1. **Existing Specification:**

   Para: 6. Facility to upgrade to end tidal CO2 **(price to be quoted separately for the whole function unit as optional)**

   Read as:

   Para: 6. Should have **end tidal CO2 module**

2. **Existing Specification:**

   Para: 8. Should have minimum of 10 TFT screen high resolution color screen display

   Read as:

   Para: 8. Should have minimum of **12" touch screen** high resolution color screen display

3. **Existing Specification:**

   15. Should have in built battery backup facility for at least 2 hrs

   Read as:

   15. Should have in built battery **(Li-ion)** backup facility for at least **4 hrs**

4. Existing Specification:

18. The cardiac monitor should have in built facility for printing reports

Read as:

18. Deleted

5. Added Para:

The monitors should have12 lead ST Segment analysis & Advanced Arrhythmia analysis as standard

Schedule: 10
Pulmonary Function Test Machine

1. Existing Specification:

2. Required technical features:
   1. Ability to measure all lung **enzymes** and (PVC, SVC, MVV)

Read as:

2.Required technical features:
   a. Ability to measure all lung **volumes** and (**FVC**, SVC, MVV)

2. Existing Specification:

2.Direct measurement of FRC, Muti breath nitrogen wash out method, Helium dilution technique.

Read as:

2.Direct measurement of FRC, Muti breath nitrogen wash out method **or** Helium dilution technique.

3. Existing Specification:

3.Respiratory drive P: Airway resistance and conductance raw (Insp, Esp, **TOT**) sRaw Gaw, sGaw

Read as:

3.Respiratory drive P : Airway resistance and conductance raw (Insp, Esp,) sRaw Gaw, sGaw

4. Existing Specification:

4. VO, VCO measurement

Read as:

Deleted

5. **Existing Specification:**
   Fully automatic calibration and test procedures;
   Flow meter- Bi-directional digital turbine (flow: up to 10L/s or more, accuracy: within 3%) or Pneumotach (flow: up to 14L/s or more; accuracy: within 3%) Gas Analyzer- O2 (upto 100% accuracy within 1%, CO accuracy (upto 0.1% or more), accuracy within 0.5%, Helium upto 10% or more (Accuracy within 0.5%), CH4 (upto 0.2 or more with accuracy within 0.5%) Electronic Barometer: upto 800mmHg, temperature (upto 45 deg C or above) and humidity sensor (upto 100%) for automatic BTPS correction

   Read as:
   5.Fully automatic calibration and test procedures;
   Flow meter- Ultrasonic (flow:16L/s or more, accuracy: within 3%) or Pneumotach (flow: up to 14L/s or more; accuracy: within 3%)
   Gas Analyzer- O2 for multibreath system (upto 100% accuracy within 1%, CO accuracy (upto 0.1% or more), accuracy within 0.5%, Helium upto 10% or more (Accuracy within 0.5%),
   Integrated BTPS correction.

6. **Existing Specification:**

6. Technical Specifications:
Fully automatic calibration and test procedures Flow meter- Bi-directional digital turbine (flow: up to 14L/s or more, accuracy: within 3%) or Pneumotach (flow: up to 10L/s or more; accuracy: within 3%) Gas Analyzer- O2 (upto 100% accuracy within 1%, CO accuracy (upto 0.1% or more), accuracy within 0.5%, Helium upto 10% or more (Accuracy within 0.5%), CH4 (upto 0.2 or more with accuracy within 0.5%) Electronic Barometer: upto 800mmHg, temperature (upto 45 deg C or above) and humidity sensor (upto 100%) for automatic BTPS correction.

Read as:
Deleted

7. **Existing Specification:**

7. Computer Specification:
Dual core processor with atleast 4 GB RAM Hard disc drive (HDD) with at least 500 GB space Windows OS Colour monitor Key board and mouse Colour laser printer UPS (1KVA)

Read as:
7. Computer Specification:

   Latest intel processor with at least 4 GB RAM
   Hard disc drive (HDD) with at
   least 1TB space Latest, original
   Windows OS, office and adobe
   Colour monitor
   Key board and mouse Colour laser printer UPS (1KVA)

8. **Existing Specification:**

   8. Accessories:
   O2 cylinders – 02 nos Gas mixture cylinder (CO,Helium,O2,N2) – 2 nos

Regulators for gas cylinders (6 nos)
Calibration syringe Pulmonary filters (1500 nos)
Disposable mouth pieces – 500 nos
Nose clips – 200 nos Voltage stabilizer (at least 1 KVA) – 1 no
Mobile cart- 1 no

Read as:

O2 cylinders(for multi-breath system) – 02 nos
Gas mixture cylinder (CO,Helium,O2,N2) – 2 nos
Regulators for gas cylinders (26 nos)
Calibration syringe Pulmonary filters (1500 nos)
Disposable mouth pieces – 500 nos
Nose clips – 200 nos
Voltage stabilizer (at least 1 KVA) – 1 no
Mobile cart (OEM)- 1 no

Schedule: 11
Polysomnography (PSG) system for sleep disorders study

1. **Existing Specification:**

Polysomnography (PSG) system **(2.nos)** that records and displays the physiological parameters with at least 48 channels

Read as:
Polysomnography (PSG) system that records and displays the physiological parameters with at least 48 channels

2. **Existing Specification:**

The PSG system should have following channels along with each PSG system:-

EEG	Chin EMG	Left and right leg EMG
ECG	Shoring	Respiratory effort
EOG	**Actimeter**	Body position
Nasal/Oral airflow	CPAP Pressure	Pulse rate
SaO2	Pulse Transit Time (PTT)	

Read as:
The PSG system should have following channels along with each PSG system:-

EEG	Chin EMG	Left and right leg EMG
ECG	Shoring	Respiratory effort
EOG	**deleted**	Body position
Nasal/Oral airflow	CPAP Pressure	Pulse rate
SaO2	Pulse Transit Time (PTT)	

3. **Existing Specification:**

Should have additional **eight** DC channels for external peripherals
Read as:

Should have additional DC channels for external peripherals

4. **Existing Specification:**

Should have LAN (local area network) interface for data communication to the computer
Read as:
Should have **LAN/Wireless** interface for data communication to the computer.

5. **Existing Specification:**

Apnea hypopnea index (AHI) and respiratory disturbance index (RDI) should be available **during acquisition of date** in the report

Read as:
Apnea hypopnea index (AHI) and respiratory disturbance index (RDI) should be available during acquisition of data/report

6. **Existing Specification:**

System should scoring option for sleep and other parameters as per **AASM 2007** (American Academy of sleep Medicine) guidelines.

Read as:
System should scoring option for sleep and other parameters as per **AASM 2013** (American Academy of sleep Medicine) guidelines.

7. **Existing Specification:**

Should be provided **preferably** with a composite integrated universal titration device having capability of titrating OSA, overlap syndrome(OSA + COPD),OHS(Obesity hypo-ventilation syndrome) and CSR (Cheyne-strokes respiration)patients.

Read as:
Should be provided with a composite integrated universal titration device having capability of titrating OSA, overlap syndrome(OSA + COPD),OHS(Obesity hypo-ventilation syndrome) and CSR (Cheyne-strokes respiration)patients.

8. **Existing Specification:**

Manufacturer should have a local office with complete technical support and application backup

Read as:
Manufacturer should have a local office**/ person** with complete technical support and application Backup

9. **Existing Specification:**

Installation list of at least **20 Indian** site is required with satisfactory certificate from at least two users

Read as:
Installation list of at least **3 Govt** institution in India in past 2 years is required with satisfactory certificate from at least two users.

10. Existing Specification:

Computer should have following specification:-
Intel core 2 duo processor
4 GB RAM,22" TFT monitor.
2x500 GB HDD, DVD R/W, mouse
HP laser jet colour printer
1 KVA UPS
One laptop computer

Read as:
Latest Intel processor
4 GB RAM,22" or bigger monitor.
2x 1TB HDD, DVD R/W, mouse
HP laser jet colour printer
1 KVA UPS

Schedule: 12
Bronchovideoscope

1. **Existing Specification:**

Should have facility for pressure regulator leakage testing **through inbuilt pump of light source**

Read as:
Should have facility for pressure regulator leakage testing (specify)

2. **Existing Specification:**

Scope should have at least **four user programmable** remote switches to improve operability

Read as:
Scope should have at least **three user programmable** remote switches to improve operability

3. **Existing Specification:**

Should have facility for enhanced image visibility through Narrow band Imaging/i-scan facility

Read as:
Deleted

4. **Existing Specification:**

It should be compatible with light source and processor of semi rigid thoracoscope so that both can be used with same light source and processor.

Read as:
It should be compatible with light source and video processor (separate or integrated)
Compatible Xenon light source of 150 watt or more , one spare build of same quality
Monitor- High resolution monitor (minimum 19 inch)

5. Existing Specification:

Should have scope ID function.

Read as:
Deleted

6. Existing Specification:

Cup biopsy forceps-**04**

Read as:
Cup biopsy forceps-**24**

7. Existing Specification:

Tran bronchial aspiration needle No.21-04 no.
Read as:
Tran bronchial aspiration needle No.21- 24 no

8. Existing Specification:

Depth of field : 3 to 100 min or better

Read as:
Depth of field : 3 to 50 mim or better

9. Existing Specification:

Working length : 600 mm or more.

Read as:
Working length : 500 to 700 mm
10. Existing Specification:

Channel inner diameter : **3.0 mm** or more

Read as:

Channel inner diameter : **2.8 mm** or more

11. Existing Specification:

In case of any breakdown, fault,repair should be undertaken with 48 hours of receipt of such information. Failure to do so shall be liable to make the company blacklisted for future purchases

Read as:

Deleted

12. Added Para:

All the components must be from original manufacturer

Schedule: 14
Blood Gas Analyser (ABG Machine)

1. **Existing Specification:**

2 Essential Measured parameters; pH, pCO2, pO2, SaO2 with co-oximetry, tHb, **Hemotocrit** Lactates, Na+, K+, Ca++, **BUN**, Cl-. All these parameters should be measured simultaneously.

Read as:

2 Essential Measured parameters; pH, pCO2, pO2, SaO2 with co-oximetry, tHb, Lactates, Na+, K+, Ca++, Cl-. All these parameters should be measured simultaneously.

2. **Existing Specification:**

4 Sample volume-less than **100** micro litre.

Read as:

4 Sample volume-less than **150** micro litre.

3. **Existing Specification:**

10. Data print out on built in **graphic** printer

Read as:

11. Data print out on built in **thermal** printer

Schedule: 24

BONE DENSITOMETER (DEXA SCANNER)

Scanner hardware and acquisition technology

Existing Specification: Para: I) Isocentric fan beam acquisition
Read As: Para: I) Isocentric or Linear fan beam acquisition

Existing Specification: Para IV) Multi-element solid state detector array
Read As: Para: IV) Multi-element solid state detector array, at least 64 detectors

Existing Specification: Para V) Oil cooled high capacity X ray tube
Read As: Para V) Oil cooled/air cooled high capacity X ray tube

Existing Specification: Para IX) Controls on C-arm for user convenience
Read As: Para: IX) Controls on C-arm or on the side of patient table for user convenience

Quality assurance

Existing Specification: Para III) Anthropomorphic spine phantom for daily quality control
Read As: Para III) Whole body research phantom for quality assurance. Also quote small animal phantom or equivalent for small animal studies optionally.

Existing Specification: Radiation Dose: Scatter dose less than 10 Gy/h at 1 meter
Read As: Radiation Dose: Scatter dose less than 0.1 cGy/hr at 1 meter

Clinical applications

Existing Specification: Para i) Facility for supine BDM
Read As: Para i) Facility for supine or decubitus positions

Existing Specification: Para iii) Express exam productivity tolls
Read As: Para iii) Express exam productivity tolls or express exam protocol grouping programme.

Existing Specification: Para xiv) HD IVA
Read As: Para xiv) HD IVA or IVA or Equivalent vertebral analysis

Reference Data

Existing Specification: Para i) Reference data n> 18000
Read As: Para i) Reference data n> 8000

Computer hardware

Existing Specification: Para i) APEX based operating system
Read As: Para i) APEX/Windows based operating system

Existing Specification: Para ii) 1 GB hard drive recommended
Read As: Para ii) 1 GB RAM minimum

Existing Specification: Para viii) Color Printer
Read As: Para viii) Laserjet color printer along with extra consumables. Price to be fixed for 5 years.

Para to be added

- TBS software
- Weighing scale & height measurement device to be supplied
- Suitable Online UPS with 30 min backup for the entire system including computer and printer
- Quoted model should be US FDA approved and AERB type approved product.

Turnkey Works
Bidder to execute turnkey works in an area of approx. 300 sq feet as per AERB norms. Bidder should assist institute in getting AERB site approval.
Bidder should quote separate rate for each of the following items. The payment shall be made as per the actual work done.

SN	Name of the particulars	Qty
1	Construction of 9" brick wall	60 sq meter
2	Provision of wall tiles- Reputed make	30 sq meter
3	Provision of Floor tiles- Reputed make	20 sq meter
4	Provision of false ceiling – reputed make	20 sq meter
4	Provision of Lead lined door	1
5	Air conditioning for room and equipment-suitable AC unit split or package unit	1
6	Electrical works including general electrification and control panel for equipment (if required)	LS
7	Any other miscellaneous works if necessary for successful installation and commissioning of the DEXA scanner	LS

Any applicable taxes on turnkey works to be specified.

All other terms and conditions of the tender enquiry remain unaltered