JAMMU AND KASHMIR MEDICAL SUPPLIES CORPORATION LTD.
(Public Sector Undertaking of Govt of Jammu & Kashmir)
Corporate Head Office: 1ST Floor, Drug Store Building, Govt. Medical College, Bakshi Nagar, Jammu
Corporate Office Kashmir: 121, Green Avenue, Hyderpora, Opp. Al-Farooq Masjid, Srinagar
JKMSCL Telephone: 0191-2580842, Fax: 0191-2581845 (Jammu); Telefax: 0194-2432008 (Srinagar)

Principal/Dean
Government Medical Collage,
Jammu / Srinagar.

Director General Health Services,
Kashmir.

Director Health Service,
Jammu.

No:- PS/MD/JKMSCL/Srinagar/2018/2088-95 Dated:- 26-07-2018

Sub:- Request for nominating technical experts for attending Pre-Bid for the procurement of "Machinery and Equipments ".....regarding.

Madam/Sir(s),

This is to inform you that the tender document for the finalization of rate contract for the procurement of "Machinery and Equipments" has been uploaded vide ref. no. NIT/JKMSCL/Mach/2018/296 dated 14-07-2018 and the pre –bid meeting for the same is scheduled on ***2nd August 2018 at 10.00AM*** at JKMSCL Corporate Office, Srinagar (121, Green Avenue, Hyderpora, Opp. Al-Farooq Masjid, Srinagar).

You are requested to kindly depute the technical experts of the following disciplines for attending the Pre-Bid Meeting on the date and time mentioned above.

- ✓ ***Cardiology***
- ✓ ***Biochemistry.***
- ✓ ***Radiology***
- ✓ ***Chest-Medicine.***
- ✓ ***ENT***
- ✓ ***Orthopaedics***
- ✓ ***Paediatrics***
- ✓ ***Radiotherapy***

Needless to mention that the presence of the technical experts is mandatory for giving clarifications to the bidders and subsequently incorporate amendments (if any required) in the specification (as placed at **Annexure AIV**) of the tender document.

A favourable response in this connection shall be highly appreciated.

Yours faithfully

(Inder Jeet),KAS
Managing Director
26/07/2018

Copy to the :-

1. Principal Secretary to Government, H&ME Department, Civil Secretariat, Srinagar. : for information.
2. General Manager-(Adm),JKMSCL : for information.

3. General Manager-(P&S,I.T),JKMSCL : for information.
4. Medical Officer (Adm),JKMSCL : for necessary follow up.
5. Office record file.

(Annexure AIV)

Tender Specifications

S. No.	Item code	Technical Specifications	
29	MC1704	**State of The Art Cardiac Intervention Lab(Single Plane)**	
		1.	**Expected function of the System**
			Dedicated flat panel detector single angiography system for Cardiac and DSA applications for all angiographies and interventional procedures (cardiac). The firm without any additional cost will supply any updates of quoted model Satisfying present QRs, if available in the market at the time of supply.
		2.	**Main Features:**
		A.	State of the art high resolution flat panel detector technology
		B.	Capable of real time digital angiography acquisition.
		C.	Rotational angiography should be available.
		D.	Capable of road mapping with zoom, freeze frame and advance facilities
		E.	Capable of storing fluoroscopy sequence on hard disk and CD for review.
		F.	Capable of head to toe patient coverage without changing position of the patient.
		G.	Ease of use for quick access and full control of all functionality within the examination room.
		H.	100% UPS backup for the entire system for at least 30 minute.
		3.	**Technical Specifications:**
		a.	**Gantry:**
		I.	The system should have ceiling suspended Gantry.
		II.	It should be possible to pre-program the gantries for at least two examination positions.
		III.	All movements of the gantry should be controllable from the table side.
		IV.	Should have multiple keys for each functionality of the Gantry, table, etc.
		V.	The system should have an in-built collision protection.
		VI.	The gantry should have rotation speed of at least 20-degree/sec.
		VII.	The gantry should have LAO/RAO motorized movement for at least +/- 120 degrees
		VIII.	The Gantry should have CRAN/CAUD motorized movement for at least +/- 45 degrees
		IX.	Isocentre to floor distance for frontal C arm should be at least 105 cm
		X.	Gantry should be move (+/-90deg.) around the table and it should be all 3 working position to access the patient.
		B.	**Table:**
		I.	Floor mounted floating top: Table top length should be at least 280 cm. Width at least 45 cm.
		II.	Should have floating longitudinal, horizontal movement and motorized vertical movement. Must have radiolucent carbon fiber table top or equivalent. Transverse travel at least+/- 10 cm. Longitudinal travels at least 100cm. Facility for bolus chase must be there.
		iii.	Accessories for the table should include head fixing aids, mattress, four radiolucent carbon fiber arm support, drip stand, peripheral filter set and catheterization arm support
		C.	**Generator:**

MS/SM

		i	High frequency power unit that provides grid pulsed fluoroscopy capability
		ii.	Max power at least 100 KW, maximum KVp at least 125 KVp.
		iii.	Radiographic KVp range to be 40-125 KVp or more. Fluroscopy KVp range to be 60-120 KVp or more. Output at 100 KVp to be 1000mA or more.
		IV	Should have automatic exposure control device for radiographic fluoroscopy and angio mode.
		V	Should have an overloading protection.
		D	**Tube**
		I	Tube should be provided with rotating anode high –speed tube.
		II	Small focal spot not more than 0.6mm with power of at least 30 KW
		III	Large focal spot not more than 1.0mm with power at least 80 KW
		IV	Anode heat storage capacity 2.4 MHU or more, with advanced cooling mechanism.
		V	Maximum continuous heat dissipation rate not less than 3 KW.
		VI	At least 3 selectable programmable cu filters for reducing the dose to the patient.
		VII	Tube should be having **Primary/Secondary Grid** switch for cutting the unnecessary radiation to Patient, operator and staff.
		E	**Flat panel detection:**
		I	Detector size should be 25cm diagonally or more with at least 3 zoom fields
		II	Acquisition; speed of at least 25 frames per sec. Acquisition speed for DSA should be 0.5 frames/sec to 6 frames/sec or higher.
		III	Pixel size not more than 190 microns. Matrix at least 1024x1024 in 12/14 bit depth/
		IV	Detector quantum efficiency at least 75%
		F	**Collimator**
			At least one collimator to be provided, preferably with IRIS/square type arrangement
		I	Should have facility for dose measurement chamber in order to display the skin radiation dose on the monitors in the lab.
		II	Collimator, should have facility for copper pre filtration for reducing the x-ray dose.
		III	Software controlled, integrated special filters should be present in collimation assembly.
		IV	Radiations free positioning of primary and semitransparent collimators via graphic display on live monitor.
		G	**LCD/TFT image monitors**
		I	Examination room: four 19" monochrome LCD/TFT or more. For Live and roadmap. Monitor for Physiology Display.
		II	Must be mounted together on a ceiling suspension to allow free positioning at any location: Height adjustment should be possible.
		III	Control room: One /Two LCD/TFT monitors of 19" or more for data and image viewing Brightness should be at least 500 Cd/m^2. These monitors should have the facility for all review post processing and quantification of coronary and ventricular function for training and teaching.
		H	**Digital imaging system with digital angiography and pulse fluoroscopic acquisition capabilities.**
		I	High resolution imaging capable of acquiring, processing, storing, displaying and reviewing in upto at least 1024x1024 matrix.
		II	Continuous acquisition with digital storage in the digital mass storage device at 1024x1024 matrix at 12/10 bit, with real time instant access to all required images.
		III	Real time image processing algorithm applicable for both fluoroscopy and acquisition.
		IV	Road mapping and landscaping facility should be available.
		V	Disc storage capacity of at least 1,00,000 uncompressed images of 1024x1024 matrix at a minimum of 10 bit/pixel.
		VI	Post processing software facilities with real time edge enhancement, positive/negative image display windowing, electronic shuttering, roaming, image reversal, zooming and magnifying with text and annotation junctions.

AS/PM

		VII	Rotational angiography facility at a speed of at least 50 degrees per second with acquisition frame rate of at least 25 frames per second in 1 k matrix with facility for display of subtracted and un subtracted images in the examination room.
		IX	The possibility of acquiring 3D Coronary Arteriography package along with the stent enhancement package. Stent enhancement with lumen subtraction facility will be preferred. The system should quote with intuitive navigation technology for EP studies and the system should quote with Cross sectional 3 D images using 3 D reconstruction algorithms for 3D reconstruction of left atrium chamber and pulmonary veins from the projection images of rotational angiography with speed of 50 deg/sec).
		X	The complete digital system should be networked and connected to a DICOM compatible laser/thermal camera.
		XI	Complete cardiovascular computation software package. This should include clinically validated coronary, Ventricular and vascular quantification software package (QCA, LVA).
		XII	Algorithm/software for stent visualization with vessel lumen should be possible. An easy to operate rapid calculation software for offline coronary quantification should be available.
		XIII	Should have DAP and AK Display capability.
		XIV	DICOM 3 ready and PACS Connectivity should be feasible without any additional hardware/software requirement.
		XV	The system should be supplied with DICOM CD recorder for storing DSA runs, photo file images and it should be possible to review the same in any PC.
		XIV	All vendor should quote the system with latest dose reduction feature.
		4	**Essential accessories.**
		A	**Foot switch** for fluoroscopy and acquisition to be provided
		B	**Pressure injector** compatible with the system
		C	**Lead aprons**: of standard state of the art make, light weight, with a lead equivalent of 0.5 mm, should be double sides, 12 such aprons to be provided 6 of which should be two piece and 6 should be single piece, Design should be wrap around.
		D	Thyroid guards: Qty as per turnkey.
		E	Lead Spectacles: Qty as per turnkey.
		F	Lead Lined gloves: qty as per turnkey.
		G	Focused ceiling mounted light with a handle for positioning the light. This handle should be removable.
		H	Ceiling suspended radiation shield
		I	Additional Table mounted radiation shield to be provided
		J	**Defibrillator cum monitor.** Three of approved and reputed make- Two of these for the intervention room and one for the recovery room. One of them should have external pacing facility.
		K	**ACT analyzer**: of approved make-One
		L	**Electrophysiology system**: Should be minimum 100 intracardiac channel EP recording system with stimulator and Radiofrequency Ablator & Simulator- EP system should be manufactured from one Company with stimulator and ablator
		M	**State of art Intra aortic balloon pump (IABP) System**, One, State of art, latest Imported Model.
		O	**Hemodynamic Recorder** (for Cardiac Catheterization) with 2 pressure and 12 ECG
		I	Data entry to include full access to Cath Lab ID Screen, all menus for monitoring of respiration, NIBP, SpO2, 12-lead ECG, two invasive pressures. (pressure gradient measurements and cardiac output.
		II	Latest computer with greater than 2 Ghz processor with 512 MB RAM, 40 GB or greater Hard Drive, DVD writer, Ethernet Network Card 10/100, Serial mouse, Custom Keyboard, windows 2000 or higher OS with latest Anti-virus software
		III	The system should be quoted with NIBP, SpO2, 12 lead ECG, Invasive pressure and CO2
		IV	Hardware, SpO2 extension cable, Finger probe, NIBP hose, Adult, paediatric and neonatal cuffs. ECG Cable, Radiolucent lead wire set, Pressure harness, Cardiac output cable, Bath temp probe, 17" (or more) colour TFT monitor for main console 1024x1024 or higher resolution), 17" (or more) Slave TFT Monitor 1024x1024 or higher resolution with mountings bracket, Network laser jet printer, Appropriate cables for system in control room

			and for report generation from system
		P	**Lead Glass**: 100x150 cm or bigger with lead equivalent as prescribed by ICRP or BARC/AERB recommendations to be fixed between console room and gantry room for radiation protection.
		Q	UPS for the complete System with 30 mins backup
		R	The system should quote with an portable Echocardiography Adult/Paeditric transducer. System Ultrasound system with TEE Probe.

INSTALLATION AND TURNKEY

1.Installation to be done on turnkey basis lab and attached patient waiting area needs to be renovated with high quality false ceiling floor and wall tiles up to roof level high quality adequate modular storage racks and necessary furniture like table chair also need to be provided.

2. Cath lab also needs to be provided with total 20 ton AC with voltage stabilizer. The AC may be distributed to the console room, procedure room, equipment room and patient waiting area as per site requirement

Site modification

1. Comprehensive site modification and detailed lay out plan suitable to the existing site and ambient condition at the center to be submitted by all the agencies before offering their price bid.

2. Power of air conditioning and space requirement will be provided by the institute for coordinated planning and execution of the work.

3. Turnkey would include dismantling and disposal of redundant fixtures and execution of all necessary civil electrical and air conditioning work at site.

4. Site preparation should be time bound and completed before shipment of equipment and time to installation of the machine no more than 4 weeks(total time 90 days).

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

6. Essential site preparation requirement include the following.

Civil Work

The site modification work –Cath Lab

1. The supplier should inspect the proposed site offered by the consignee institute in which the cath lab system has to be installed and they are required to submit the plan for the complete cath lab centre. The scope of work includes complete civil work, electrical, plumbing, furnishing, air-conditioning and fire fighting for the construction of cath lab centre.

2. While preparing the plan, the following aspects have to be addressed:

a) Care should be taken to provide easy negotiation of the patient stretchers/trolleys through corridors and doors.

b) Radiation shielding for doors, walls, windows etc.

c) Furniture like desk, chairs, shelves etc.

d) Patient stretcher and other furniture / accessory to make the cath lab centre functional.

3. The cost of site modification for the area of 1500 sq.ft and air conditioning of Tonnage 20 TR will be considered for ranking/evaluation purpose.

4. Moreover bidders will have to quote the unit rates of the following components of turnkey work.

a) Civil works.

b) Electrical work.

c) Public health (plumbing and sanitary fittings).

d) Air conditioning (HVAC).

e) Interior Furnishing and Furniture.

f) Miscellaneous like scrub, catheter wash station,etc.

Scope of work for Site modification Cath Lab System

The Cath Lab site shall consist of the following rooms:

a) Cath Lab Room.
b) Console Room.
c) Equipment Room.
d) Patient preparation room.
e) Change room.
f) Scrub area, catheter wash area.
g) Pre cath patient waiting area up to 5 patients.
h) Post cath patient waiting area up to 5 patients.
i) Consultant room.

The actual area of site modification works done will be considered for payment, based on the unit rates and site measurements.

Civil work

a) Civil construction work including construction of brick wall if any, plastering, flooring, as per the approved plan and equipment layout plan.
b) Concrete bed at cath lab equipment area.
c) Platform for unloading and shifting the cath lab should be provided if necessary.
d) Cable tray, trench and channel-necessary trenches, cable tray and channels at required location would be provided.
e) All the construction work to be done as per the final plan approved by the consignee.

a) Flooring:

1600 x 600 mm vitrified tiles/non porous high quality granite at least 20 mm thickness with 100 mm tiles skirting to match in console room, lobby and patient preparation areas, radiologist room etc.
250 mm thick cement concrete flooring with Vinyl flooring in cath lab equipment / UPS room.

b) Painting:

1 Two coats plastic emulsion paint over 2 coats of wall putty including primer in patient preparation area, lobby area, console room, Cath lab room and equipment room etc.

c) False Ceiling:

1 Acoustical tile for ceiling with light weight insulating material of high quality supported on grid or finished seamless with support above ceiling. Finished with white paint or powder coated with white paint, if metallic. Ceiling height to suit the equipment mount and clearances.

d) Plumbing Work:

All water pipes and fittings shall be of high density polythene of approved and standard make. The gratings shall be brass chrome plated. All plumbing accessories should be of standard make.

e) Electrical Work:

The supplier shall be required to specify the total load requirements for the cath lab centre including the load of air conditioning, room lighting and for the accessories if any. The supply line will be provided by the institute up to one point within the cath lab centre. The distribution panel shall be provided by the vendor. Few lights in each room shall be connected to the UPS to provide emergency lighting.

f) The Electrical work shall include the following:

a) Wiring- All interior electrical wiring-with main distribution panel board, necessary MCBs,DB, joint box, switch box etc.The wire shall be of copper of different capacity as per the load and should be renowned make as listed below.
b) Switches light and power points should be of modular type and of standard make as listed below.
c) General lights- LED light fitting with 500 Lux illuminations.

AIR CONDITIONING: All Weather (Hot and Cold)

1. Ductable package air conditioners and split AC units may be used according to room requirement and suitability. Humidity control should be effective to eliminate moisture condensation on equipment surface. The air conditioning should be designed with standby provision to function 24 hours a day.
The outdoor units of AC should have grill coverings to prevent theft and damage.
2. Environment Specifications:
a) Relative Humidity range: To be maintained between 60% and 80% in all areas except equipment room which shall be as per requirement of the equipment.
b) Temperature ranges: 22 ± 2°C in all areas except equipment room which shall be as per requirement of the equipment.
c) Air conditioning load: The heat load calculations and maintaining the desired temperature and humidity shall be the responsibility of the bidder.

Furniture

1. Revolving chairs height adjustable, medium-back with hand- rest in the console room-4 no.
2. Tables for console and workstation-As required.
3. Modular design walls cabinets (highest quality) for safe keeping and storage of drugs, catheter, interventional items, manuals procedures sets, linen, trays etc under lock and key-4 no.
4. Cupboard with laminate door shutters for storage of spare parts and accessories and records as per requirement-3 no
5. Instrument trolleys-2 no
6. Patient foot step-1 no
7. Drug trolley-1 no
8. Chairs for patient waiting area-three seater (chrome plated)-10 no
9. Patient trolley with rubber foam mattress to be kept in the patient preparation room-1 no.

 MSM

10. Changing room should have change lockers and dressing table -2 no
11. Dustbins (plastic with lid) to be provided -4 no
12. All furniture items should be of standard make as mentioned in the table below.

LIST OF ITEMS AND SUGGESTED MANUFACTURERS

ITEMS	PREFERRED MAKES
1. Flooring Vitrified Tiles:	Somany, Kajaria, H&R Johnson, RAK India
2. Paint:	Dulux, Asian Paints, Nerolac
3. Plumbing:	Kohler, Jaguar, Grohe, Roca
4. Sanitary Items:	CERA, Hindware, Parryware
5. Electrical:	
a) Cables:	Finolex, Havells, V-Guard
b) Switches:	Legrand, L&T, Crabtree, Roma
c) Distribution Box, MCB:	Legrand, L&T, Siemens, Havells, Syska
d) Light Fittings (LED Lights):	Philips, Crompton, Wipro, Havells, Syska
6. Air Conditioning:	Daikin, Hitachi, Blue Star, Voltas
7. Furniture:	Herman Miller, Godrej, Featherlite, Geeken

S.no	BOM	QTY
1.	Lead Glass (120 x 100 cm)	1.no
2.	Radiation shield ceiling and table mounted / Suspended	1.no
3.	High power contrast injector	1.no
4.	Radiation protective apron light weight: a) Front type b) Wrap around c)Two-piece type d)Lead cap e)Lead Gloves.	 10.no 06.no 04.no 04.no 04 pairs
5.	Hanger stands to hold 5 apron	02.no
6.	Wall mounted hangers	02.no
7.	Thyroid guards	10.no
8.	Lead spectacles	10.no
9.	Intercom between exam room and control room	LS
10.	Laser network printer	01.no
11.	ETO sterilizer Good quality ISO /CE/ ISI marked	01.no
12.	Anaesthesia work station Europe CE / USFDA	01.no

FURNITURES

1. Revolving Chairs Height adjustable: 04.no
2. Tables for console and workstation – As required LS
3. Modular design walls cabinets: 04.no
4. Cupboard with laminate door shutters: 03.no
5. Instrument trolleys: 02.no
6. Patient foot step: 01.no
7. Drug trolley: 01.no
8. Chairs for patient waiting area – Three seater (chrome plated): 10.no
9. Patient trolley with rubber foam mattress: 01.no
10. Changing rooms should have change lockers and dressing table: 02.no
11. Dustbins (plastic with lid): 04.no

Site Modification

1. Civil works 1500 ft 2
2. Electrical work 1500 ft 2.
3. Public health (plumbing and sanitary fittings). 1500 ft 2
4. Air Conditioning 20 TR
5. Interior Furnishing and Furniture 1500 ft 2
6. Miscellaneous items 1 set

30	MC1774	**FULLY AUTOMATED BLOOD GAS ANALYZER WITH ELECTROLYTES and METABOLITES** - The analyzer should be able to measure blood gas (pH, pO2, pCO2) electrolytes

		(Na+,K+,Ca++,Cl-),Metabolites-Glucose ,Lactate, Urea/BUN/Creatinine, Saturation Oxygen ,Hemoglobin and more than 45 derived parameters. • Minimum 5 programmable options for sample measurement mode with different parameter configuration as per the user requirement. • The instrument should perform automated ampoule quality control • The instrument should provide ACID BASE chart/graph for assisting clinical interpretation. • The instrument should be user friendly and inbuilt onboard training tools. • Automated capillary sample volume determination and subsequent parameter measurement. • Analyzer should have onboard help system vis multimedia video tutorials. • Onboard facility automated ampoule quality control with anytime removal and loading. • The instrument should be operated with conventional individual reagents like Calibration solutions, rinse / cleaning reagents etc. • The instrument should have onboard gas bottles, No external gas cylinders or gas mixed solutions or foiled gas packs. • No fixed tests cartridge / cassettes /Modules/sensors or package solutions. • Analyzer should have automated individual Reagent management software with inventory displayed onscreen. • Analyzer should have data backup facility with USB ports. • Analyzer should have integrated barcode reader to support sample and Consumables identification • The analyzer should allow hands free sample introduction with aspiration mode to analyze. • The analyzer should have the possibility for optional remote support. • All prices should be quoted in Local currency INR. • Should be USFDA Approved only. • Should provide ONE KIT WITH THE MACHINE FREE OF COST. A. Cost of Test to be quoted separately

31	MC1716	**<u>500 mA X-Ray Machine</u>** **1. USE** 1.1 Clinical purpose Radiography of the bones and fractures and other arthropathies. X- Ray Chest for the supportive diagnosis of the Pulmonary Tuberculosis. X - Ray Pelvis (KUB) for renal disorders and stones. Sinusitis, Fractures of the Skull. Cardiac diseases and cardiac enlargement. Silicosis and other respiratory conditions, like Pleual effusion,, hydrothorax, Pneumothorax. Peritonitis by X-Ray abdomen. 1.2 Used by clinical department/ward : Radiology Department **2. TECHNICAL CHARACTERISTICS** 2.1 Technical characteristics (specific to this type of device) High frequency X-Ray machine suitable for general radiography. **X-RAY GENERATOR :** ➢ High Frequency X-Ray Generator having frequency of 50KHz or more should be provided. ➢ Power output of generator should be 50KW. ➢ Radiographic KV Range should be 40 to 125KV. ➢ mA Range (Rad.): 500mA or more. ➢ Exposure time (Rad.): 1ms to 3Sec. ➢ mAs Range (Rad.): 1 to 200mAs.

CONTROL:

A very compact, Soft Touch Control Panel having following functions & indications should be provided. The panel can be supplied in Floor or Wall mount with Spill Proof design.

Following features should be available on the control panel.

- Machine ON/OFF Switch.
- Digital Display of KV & mAs.
- KV & mAs Increase and decrease switches.
- Tube focal spot selection Switch.
- Ready and X-Ray on switch with Indicators
- Bucky Selection Switch.
- Self diagnostic Programme with indicators for Earth fault error, KV error, filament error & Tube's Thermal Overload.
- Anatomical Programming Radiography (i.e. APR) should have Preprogrammed parameters of human Anatomy Up to 216 programs which helps the user to select exposure parameters based on body part, examination view and size of the patient.

2.1 Technical characteristics (specific to this type of device)

A dual action hand switch with retractable cord should be provided for Radiation Protection of Operator. There should be provision for a cordless Exposure switch also.

There should be provision of auto shut off of Control if no key is pressed for 10Min.

X-RAY TUBE:

- Two Nos. Dual focus Rotating Anode X-Ray tube thermally protected
- Anode heat storage capacity of tube should be more than 140KHU.
- Two Pair of 8 meter H.V. Cable.
- Two Nos. Collimator with auto shut off facility should be provided.

HV TANK:

- A very compact H.V. Tank filled with high dielectric transformer oil should be provided. The H.V. Tank should contain H.V. transformer, Filament Transformers, H.V. Rectifiers & H.V. Cable receptacles.

TUBE STAND:

- Floor to Ceiling Stand with Counter Balanced Tube Head (Rotatable ± 180 Degree), 360 Degree Rotatable; mounted on Floor Ceiling Rails for convenient movements should be provided.

2.1 Technical characteristics (specific to this type of device)

TABLE:

- Motorized table should have motorized bucky consisting of bucky grid of size 17 ¼" x 18 7/8" ratio 8:1, 85 lines/inch. Spot Film Device (semi automatic) capable of doing all routine spot filming (4 on 1, 2 on 1, 1 on 1) for use with 8" x 10", 10" x 12", 14" x 14" cassettes. Grid size 15" x 15", 6:1 ratio, 103 lines per inch. Compression movement of spot film device is motorized. The fluoroscopic parameters (fluoro KV, fluoro mA and fluoro time) should be digitally displayed on the SFD. Control of fluoro KV should be available on SFD.

VERTICAL BUCKY STAND:

- Vertical Bucky Stand with oscillating Grid of Ratio 8:1, 85 lines/inch is provided.T
- The Bucky moves up & down & is equipped with a stainless steel cassette tray.
- The stand is floor-mounted type & can accommodate cassettes up to 14" X 17". The Bucky is tilted in 6 steps of 15 degree Angle each for various Radiographs.

2.2 User's interface : manual

2.3 Software and/or standard of communication(where ever required) : In built

3. PHYSICAL CHARACTERISTICS

3.1 Dimensions (metric) : NA

3.2 Weight (lbs, kg) : NA

3.3 Configuration : NA

3.4 Noise (in dBA) Noise-free system

3.5 Heat Dissipation: Should maintain nominal Temp and the heat should be disbursed through a cooling mechanism

3.6 Mobility, portability Stationary Installation.

4. ENERGY SOUR CE (Electricity, UPS, Solar, Gas, Water, CO2 ....)

4.1 Power Requirements Power supply: Three phase 440 volts

4.2 Battery operated : No

 MS/M

4.3 Tolerance (to variations, shutdowns) line regulation of ±10%
4.4 Protection : NA

5. ACCESSORIES, SPARE PARTS, CONSUMABLES

BARC Approved whole body lead aprons with hangers : 02 nos.
Goggles : 02 nos.
Thyroid guard : 02 nos.
Gonadal sheet : 02 nos.
Mastoid cone : 02 nos

6. ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATONS

6.1 Atmosphere / Ambiance (air conditioning, humidity, dust ...)

- Operating condition: Capable of operating continuously in ambient temperature of 5 to 50 deg C and relative humidity of 15 to 80% in ideal circumstances.
- Storage condition: Capable of being stored continuously in ambient temperature of 0 to 50 deg C and relative humidity of 15 to 90%.

6.2 User's care, Cleaning, Disinfection & Sterility issues

- Disinfection: Parts of the Device that are designed to come into contact with the patient or the operator should either be capable of easy disinfection or be protected by a single use/disposable cover.
- Sterilization not required.

7. STANDARDS AND SAFETY

7.1 Certificates (pre-market, sanitary, ..); Performance and safety standards (specific to the device type);Local and/or international.

- Should be USFDA/ European CE/BIS approved product.
- Manufacturer and Supplier should have ISO 13485 certification for quality standards.
- Electrical safety conforms to the standards for electrical safety IEC 60601 - 1-General requirements(or equivalent BIS Standard)
- Shall meet internationally recognised standard for Electromagnetic Compatibility(EMI/EMC) for electromedical equipment: 61326-1.
- Certified to be compliant with IEC 61010-1-3,IEC 61010-1-2,IEC 61010-2-54,IEC 61010-1-6 and IEC 62304
- AERB type approved

7.2 Local and/or international Manufacturer / supplier should have ISO 13485 certificate for quality standard.

8. TRAINING AND IN STALLATION

8.1 Pre-installation requirements: nature, values, quality, tolerance. Three phase stable power supply
8.2 Requirements for sign-off Certificate of calibration and inspection of parts from the manufacturer
8.3 Training of staff (medical, paramedical, technicians)

- Training of users on operation and basic maintenance;
- Advanced maintenance tasks required shall be documented

32.	MC1705	**Specifications for Polysomnography System (Sleep Lab)**
		A. General Specifications: ➢ Polysomnography system should have 68 or more channels. ➢ Polysomnography system must have integrated ZRIP driver allows to setup the patient faster and easier by reducing the no. Of connection during hook-up. ➢ Polysomnography system suitable for both adult and pediatric patients. ➢ Polysomnography system must have automatic chn re-referencing ➢ Polysomnography System must have continuous impedence monitored and reported for ECG, EMG and ECG during sleep study. ➢ Comprehensive training for lab staff and support services till familiarity with the system to be provided. ➢ The system should be US FDA ➢ The system should be CE approved ➢ Manufacturer to have ISO-13485 certification for quality standards. ➢ Manufacturer to have IEC 60601 part 1&2 CERTIFICATION. ➢ Should follow latest AASM quidelines. ➢ All essential accessories compatible with the system to be provided.

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B. Technical Specifications: -

1. Polysomonography system single head box having total no of channel 50 or more EEG with 32 inputs or more.

- Dedicated EMG channels- 5 channels
- Chin EMG-3
- Automatic Chin EMG referencing
- EOG channels-2
- ECG-7(3 physical and 4 derived)
- Pressure transducer-Dedicated differential w/snore
- Flow (thermal)-(Adult and Pediatric)
- Snore reading by microphone-
- Body Position-1
- Actimeter Inputs-2
- Effort (chest & abdominal)-ZRIP DuraBelt integrated RIP driver
- AUX inputs/DC inputs-8
- Min sampling rate 2000Hz
- Min storage rate; 500 Hz
- PSG lab should have Pulse transit time-
- Electrode interface-intuitive image
- Pulse oximetry Should be connected to head box
- Internal Memory of base station should be equal or more than 60GB
- Lab must be supplied with fully synchronize Audio & video recording
- Must be supplied with light sensor-1 no
- VOIP intercom system for 2 way communication

2. Software Specification: -

- Should have a software for both automatic and manual analysis and scoring of recorded data.
- Real-Time access to data while the study is in progress should be possible
- Should permit storage of uncompressed raw data for further review and re-analysis
- On screen Permit writing of data on storage media such as CD/DVD for review on any computer
- On screen impedance check of values.
- Adjustable gain and notch filter.
- User defined montages
- Automated user configurable reports.
- Signal resolution/bit; should be at least 16
- Should have capability to define a dynamic and time synchronized workship
- Should have capability to check inter scorer reliability
- Should be upgraded to advance scoring- optional
- Must have licence free software and free up-gradation of software.
- 3 or more software CD's to be provided

3. Networking and Hardware: -

- Compatible with high and processing with LAN
- Weight of head box/junction box: should not be more than 550gm.
- Titration Machine-With modes; CPAP,Auto,BIPAP,Automatic Epap, automatic respiratory rate, Voloume assured pressure support, Adptive ventilator.
- Computer: System should include 1 latest Pentium processor-based computer 8GB RAM. 1024 GB Hard disk memory with a 17 inch flat screen monitor and a laser printer. Should also include preloaded genuine Microsoft Windows XP software with UPS with Mouse. Should have Screen resolution from 800 x 600 to 1200 x 1600.

4. Additional Accessories:

- Titration Machine-Optional
- Oximeter probe- Optional
- Sensor ZRIP belt kit-Optional
- Thermistor airflow sensor-Optional
- Pediatric thermistor, saturation probe with pediatric strap-Optional
- LoFlo9Etco20 starter kit-Optional
- Link Module

C. Terms and Conditions:

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- 2 years comprehensive warranty after installation
- CAMC for 5 Years after completion of 2 years warranty of the equipment, spare parts/ accessories used.
- The company should give the certificate that the model quoted is the latest and not obsolete; and spares will be easily available for next 7 years.
- Price of all accessories for the next 5 years to be quoted separately.

33.	MC1706	**High Resolution Video Paediatric Bronchoscopy System**

Specifications:

Video Bronchoscopy Paed.): Should have following specifications:

1. Lighter and Possess high resolution image quality
2. Compatibility with Electrocautry & Laser
3. Should have High resolution image and insertion tube capability to move in left/right directions by 120 degree
4. Four or more no. Of remote control switches on control body.

Compatible with leakage testing device with its air flow and pressure regulation through light source's air pump.

Filed of View	110 degree or more
Direction of view	0 Degree, forward viewing
Depth of field	2 to 50 mm or better
Distal end outer diameter	4.2 mm or less
Insertion tube outer diameter	4.1 mm or less
Tip Bending rage	Up 210 deg. & more, Down 13
Working length	600 mm or more
Channel inner diameter	2.0 mm or more
Minimum visible distance of	3 mm closer from distal end

All standard accessories must be quoted separately Biopsy forceps, grasping forceps compatible with quoted bronchoscope.

Video Processor Module: Should have following technical specifications/features

- Separate module from light source
- Must have high resolution HDTV and Narrow band imaging capabilities to visualize minute vessels and fine capillaries
- Should have structure and edge enhancement level for observation of smaller structures on mucosal surface
- Should have scope identification function
- Should have electronic magnification from 1 x to 1.5 x
- Should have Output; HDTV: RGB
  - SDTV: VBS composuite(NTSC/PAL),Y/C and RGB.
- Should have capacity to store patient data of 40 patients.
- Digital-to Digital recording provision for both Still & moving images
- Picture-In-Picture display for endoscopic images, fluoroscope images etc.
- USB drive slot for transferring images

300 Watt Xenon Light Source: Should have following technical specifications/features;

- Separate module from videoprocessor
- Powerful 300 watt xenon lamp with backup lamp of halogen(atleats 35 watt)
- Lamp life should not be less than 500hrs(appox)
- Should have inbuilt air pump
- Automatically Adjusts light intensity to achieve ideal illumination

34	MC1710	**Vertical Autoclave**	Fully automatic vertical autoclave, suitable for sterilization under working steam pressure up to 15 PSI or more and temperature of 121°C or more.
		Design:	Unit made of SS 304 chamber, approx inner dimensions 16" to 25" (diameter x depth). Lid made of heavy gauge, steam release valve & necessary safety valves, with foot lifting arrangement to open lid, programmable, with all functional accessories.
		Capacity	70 to 80 lit
		Display:	Time and temperature LCD display
		Alarm:	Low water level alarm and cut off / Sensor open alarm
		Accessories:	Perforated carriers made upto of SS 304 (3-4 Nos)
		Power Supply:	220 / 230 volts AC – 50HZ or suitable power supply
35	MC1724	**Dissection Boxes** Dissection sets: - 10 instruments is leatheroid case 1 preparation needle 130 mm long pointed S.S. 1 Lancet 140 mm long S.S. 1 Scalpel handle S.S. 5 Scalped Blade Straight Preparation scissors 110 mm long S.S. Tweezers 100 mm long S.S. Tweezers 130 mm long Cover slip Tweezers 105 mm to 130 mm long with one rounded S.S. Brush Size 8.	
36.	MC1727	**Whole Body Physiotherapy Chamber** 1) Lamp configuration: (combined therapy), both UVA & NBUVB. 2) The meter should have a linear dynamic range approximate for therapy sources i.e. 0.05 – 50 mw/CM2. 3) The sensor should also respond accurately to radiation independently of its angle of incidence on the sensor i.e. less than 5% deviation from true cosine weighting. 4) ELCB: Should be provided. 5) Tubes: TL 100w / 10R (or) TL 100/01 6) No of Tubes = UVA (12) & NBUVB (12) 7) Power required = 6KVA (24 tubes) 8) Dimension – minimum inside space(850 8 850 mm) 9) Connection to local 210 = 250w /50Hz with voltage stablizer / regulator giving fixed output. 10) Accessories: UV Protective glass 4s, 5 spare tubes. 11) Reflectors: Imported aluminum mirror type 12) Painting: High quality (7 line process) Powder coating. 13) Chokes: Special UV chokes. 14) Dosimetry: Should be provided. 15) Arrangement of Tubes: Computer calculated distance 16) Design: Modular 17) Cumulative Hour meter: Should be provided. 18) Cooling System: Should be provided. **Desirable:** 1. It should have at least ISO 9002 approval and preferably USFDA approved. 2. Should have double fuse protection against faulty current safety switch /spark buster.	

 MGM

		3. Automatic cut out in case of short circuit / breakage / earthing should be present / built in. 4. User friendly with simple calculation of dose and time of exposure 5. Operated via touch screen.

37	MC1732	**Homogenizer/Tissue grinder with Teflon grinding rod** Designed for Homogenization, emulsification & Dispersion & mixing of fluids at high speed. Suitable for homogenizing of tissues at high speed Check to hold shaft upto 10mm dia. Fitted with Teflon grinding pestle, stirring shaft (ØX Length: 8X275mm), impeller Teflon pestle, motor: AC/DC 1/8 HP, Speed (rpm):300(Minimum) & 8000 (Maximum)/ Stirring capacity: upto 100ml provided with Digital speed indicator.
38	MC1750	**Hand Held Paediatric Autorefractometer** 1. Should measure corneal astigmatism. 2. Measurable range sphere≥ plus/minus 20D and cylinder≥ 10D Axis 0 to 180. 3. Minimum Pupil size 2 mm. 4. Vertex distance 10.5 mm, 12 mm, 13.5 mm 5. IOL mode with print out facility. 6. Light in weight, operable with one hand.

39	MC1765	**Doctor Speech (VAGMI)** It should have: • Real – Time one channel recording of voice signal • F0, Jitter, Shimmer, Glottal Noise, Ratio etc. • Spectrogram power spectrum (FFT) and LPC • Voice Progress Tracking • Build – in voice database of 3902 Pathological voice and 2907 normal voices • Video capture and e-mail compatible • Speech Therapy – 5.0 • Real Time Bio feed back • Interactive cartoon for sound, pitch, loudness • Voicing, Voicing onset and vowel exercise Phonationand Articulation Clinical Goal setting over 70 voice activated games with clinical assessment
40	MC1766	**Hearing AID of different models** It should have: Type of hearing AID | Band / Channels | Fitting Range | Battery Type / Life Behind the ear (BTE) | 08/20 | 80DBHL | 13 No Behind the ear (BTE) | 10/10 | 100DBHL | 13 No Behind the ear (BTE) | 10/10 | 110DBHL | 13 No Behind the ear (BTE) | 10/10 | 120DBHL | 675 No
41	MC1767	**Hearing aid Programmer** It should have: • Pc interface • USB Connector type. • Power from the PC USB Port • GN Otometrics • Version 4.5

42	MC1720	**PULMONARY FUNCTION TEST SYSTEM WITH DIFFUSION & BODY PLETHYSMOGRAPHY** Description Body Pleythsmograph • A wide cabin with internal volume range of 800 litres to provide ease of accessibility

and comfort to the patient without effecting volume changes.

- Transparent glass walls to ensure visibility form all sides and minimize any claustrophobic feeling for the patient.
- The seat must be comfortable and adjustable in height.
- The arm for the breathing valve support must be flexible enough to allow tests execution even outside the cabin.
- Controlling station should be on a movable trolley.
- The machine should have Compensation box for automatic compensation of pressure changes in environment or integrated mechanism system.
- Intercom for communication with the patient

Test and minimum set of parameter required

Dynamic lung Volumes	Measurement of the forced vital capacity (FVC). Slow vital Capacity (SVC) and Maximal Ventilator y Ventilation (MVV). Graphic display of Flow/volume
Bronchial challenge test	Measurement of the response to Bronco constriction and Bronco dilation. Graphic display of fall FEVI:
Static lung volumes Airway resistance	Measurement of TGV, RV, VC, IRV, ERV, FRC, TLC RAW (Insp, exp, tot), SRAW, GAW, SGAW, Derived Parameters.
Respiratory Mechanics	MIP/MEP and Respiratory Drive (P0.1)
Lung Diffusion capacity Tests	a) Single- Breath with Apnea b) Single Breath without Breath Holding. c) DLCO 3 Equation

Technical Specifications

Flow meters: Both Pneumotachograph as well as Digital Turbine or Ultrasonic Sensing

a) PNTX9 Pneumotach Type Illy pneumotach. Flow range 0.02 -16 1/s, Accuracy ±2% Resistance <1 cm H@O/1s @ 14 1/s

b) Bi-directional Turbine with a flow range of 0.03 to 20 L/s. Ventilation Range 5-300 L/m, accuracy: ±2%

CO-CH4 Sensor: should be Non Dispersing infrared (NDIR) with 0-3% range, Accuracy ±0.003%

Box Pressure sensor: Type Piezoresistive Range ±1cm H2O Resolution 0.05 cm H2O

The system should carry out tests with Methane (CH4) or Helium Gas.

Mouth Pressure Sensor: Type Piezoresistive Range ±70cm H2O Resolution 0.1 cm H2O

Environmental sensors: The system should have temperature, barometric and Humidity sensors

Sensors: All sensors should be non-consumable

Power supply: The operating AC Voltage range should be 100-240 V AC±10% 50/60Hz

Interface: it should have Rs 232/USB interface for connecting to a computer

Software: Software should be supplied with the equipment. The management software should be designed for windows 8/10 environment.

Essential Accessories: The system should be supplied with all essential accessories required like compatible Desktop PC, DeskJet Printer, UPS (1KVA), Trolley for PC and Control unit, Diffusion Test gas cylinder (02 Nos) Compressed Gas Cylinder Medical Grade for Body Box (02 nos.) and regulators (02 nos.) anti-bacterial filters (1000 nos.) Silicon Mouthpieces (1000 nos) Nose clips (100 nos.)

Quality assurance: The system should have CE/US FDA/ ISO certifications and should meet ATS/ERS standardization guidelines

43	MC1782	**RADIATION SURVEY METER**
1		**Operational Requirements**
1.1		The survey meter should provide enhanced sensitivity and improved energy response to measure radiation rate from x-ray and gamma sources. It should be a hand held one powered by battery.
2		**Technical Specifications**
2.1		The unit should be Pressurised Ion Chamber Digital Survey meter and measure leakage and scattered radiation around diagnostic x-ray and radiation therapy suites.
2.2		Operational Ranges of 0-20R/hr or better with automatic range changeover.Product with FDA/CE certification will be preferred.
2.3		The device should have LCD display and audible alarm.
2.4		Battery charge status should appear on the display.
3		**Accessories, Spares and Consumables**
3.1		Survey Meter -01
3.2		Carrying Case -01
3.3		User Manual -01
3.4		All accessories and consumables required for standardization of analyzer.
4		**Standards, Safety and Calibration**
4.1		Comprehensive warranty for 2 years.
4.2		During the warranty period equipment should be calibrated free of cost.
4.3		Comprehensive training for the radiotherapy staff.
		2) Pocket dosimetry system (two numbers): • Digital Pocket (Personal) Dosimeter is used for personal monitoring and warning of x-rays and gamma rays around the radiotherapy installations by wearing them in pockets. • It shall be able to measure x-rays and gamma rays (dose/dose rates) of varying energy levels in minimum possible timeframe. • The type of detector shall have either internal energy compensated GM detector or Si detector. The measurement should range from 1 µSv/h to 500 mSv/h. Specify the details of the offer system. • Products with FDA/CE certification will be preferred. 3) Specifications for Mould Room equipment: • An integrated Immobilization system consisting of universal treatment/ fixation base plate Made of Carbon Fibre for Head, head and neck, breast, thorax and abdomen/pelvic with facility to make custom made Supine and prone head rest for individual patients to maintain an accuracy of less than 2mm- Two sets. • The vendor shall provide 4 set of carbon fibre based Head rest, prone head rest, cushion for shoulder, breast board carbon fibre with all accessories and knee and arm supports. • Large water bath / suspan to accommodate all types of thermoplastics having electronic//digital thermostats- 1 number.

44	MC1787	**Technical Specification of Xenon Bulb for Light Source** **Electrical** Primary: 100-120 VAC, 50/60 Hz, 450 W 220-240 VAC, 50/60 Hz, 450 W Fuses (2) 5.0A 250V **Fiberoptic Cable Range:** 2 mm to 6.5 mm diameter **Bulb** Type: 300 Watt Xenon (Elliptical) Life: Approximately 500 hours

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		Operating conditions 10 to 40° C 30 to 75 % Relative Humidity **Transportation & Storage** -20 to 60° C 10% to 75% Relative Humidity 700hPa to 1060hPa **Classification & Approvals** **Complies with medical safety standards:** IEC 60601-1:2005 CAN/CSA C22.2 No.601.1-M90 UL 60601-1:2003 **Complies with medical EMC standard:** IEC 60601-1-2:2001 Class I Equipment Type CF applied parts Water Ingress protection, IPX0-Ordinary Equipment Continuous Operating **Patient Protection** U.S. #5,850,496; 6,110,107; and 6,689, 050.Other patents pending. **Stryker European Representative:** Regulatory Manager, Stryker France ZAC Satolas Green pusignan Av.De Satolas Green 69881 MEYZIEU Cedex, France

45	MC1805	**Dosimetry Equipment:** 1. A mechanical quality control kit for the teletherapy unit. 2. A calibrated portable survey meter capable of integrated and equivalent dose rate modes. 3. Two direct reading personal dosimeters capable of producing an audible alarm at the preset equivalent dose level. 4. A simple diode in vivo dosimetry system with 3 channels: Two with cobalt-60 built up and one detector for providing surface dosimetry. Cables shall be provided to position the control at the treatment control panel. 5. A manual densitometer / sensitometer system for doing film dosimetry.

FOR SNCU

CENTRIFUGE

	Name	Centrifuge
SN1805	Code	NA
	1. General	
	Use	
	clinical purpose	Used in Biochemical and Analytical labs for Hematocrit, blood Corpuscle percentage, Serum Analysis, Precipitate Separation and Blood Group Matching.
	Used by clinical department/ ward	Analytical Laboratories.
	2. Technical	
	Technical Characteristics	
	Technical characteristics (specific to this type of device)	1. Speed: Maximum Range 4000 to 6000 RPM. 2. Reciprocating Centrifugal force (RCF): 3000 to 3500. 3. Minimum Capacity: 240 ml. 4. Digital Timer range: 0 to 59 minutes. 5. Auto Lid interlock to prevent opening while running centrifuge with emergency lid lock release. 6. Motor imbalance detector feature - desirable.

		7. Microprocessor with digital display. 8. Dynamic break for quick deacleration. 9. Stainless steel Chamber easy to clean. 10. Hinges to prevent door falling. 11. Rotor Sizes: 16 x 15ml. 12. Rotors should be autoclavable.
	user's interface	Manual
	Software and/or standard of communication (where ever required)	NA
	3.Physical Characteristics	
	Dimensions (metric)	NA
	Weight (lbs, kg)	NA
	Noise (in DBA)	NA
	Heat dissipation	Heat Dissipation: Should maintain nominal Temp and the heat should be disbursed through an cooling mechanism.
	Mobility, portability	Portable
	Capacity	120 ml or above
	4 .Energy Source (Electricity, UPS, Solar, Gas, Water, co2 ....)	
	Power requirements	220 -240 V /50Hz
	Battery operated	NO
	Protection	NA
	Power consumption	400 to 500 Watts.
	5. Accessories spare parts, consumables	
	Accessories (mandatory, standard, optional); Spare parts (main ones); Consumables/ reagents (open, closed system)	Rubber adapter should be provider for the use of vacationer for 3ml and 5ml.
	BIDDING/PROCUREMENT TERMS/DONATION REQUIREMENTS	
	6 .Environmental and Departmental considerations	
	Atmosphere / Ambiance (air conditioning, humidity, dust ...)	1) Operating condition: Capable of operating continuously in ambient temperature of 10 to 50 deg C and relative humidity of 15 to 90% in ideal Circumstances. 2) Storage condition: Capable of being stored continuously in ambient temperature of 0 to 50 deg C and relative humidity of 15 to 90%.
	User's care, cleaning, Disinfection & Sterility issues	1) Disinfection: Parts of the Device that are designed to come into contact with the patient or the operator should either be capable of easy disinfection or be protected by a single use/disposable cover. 2) Sterilization not required.
	7. Standards and Safety	
	Certificates (pre-market, sanitary, ..); Performance and safety standard (specific to the device type);Local and/or international	1. Should be FDA/CE/BIS approved product. 2. Manufacturer and Supplier should have ISO 13485 certification for quality standards. 3. Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements (or equivalent BIS Standard). 5. Shall meet internationally recognised for

		Electromagnetic Compatibility (EMC) for electro medical equipment: 61326-1. 6. Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety.
	Local and/or international	Manufacturer/supplier should have ISO certificate for quality standard.
	8. Training and Installation	
	Pre-installation requirements: nature, values, quality, tolerance	1) Availability of 5 amp socket; 2) Safety and operation check before handover;
	Requirements for sign-off	Certificate of calibration and inspection from the manufacturer.
	Training of staff (medical, paramedical, technicians) optional (Depending upon scope of work order)	1) Training of users on operation and basic maintenance; 2) Advanced maintenance tasks required shall be documented.
	9. Warranty and maintenance	
	Warranty	02 years
	maintenance tasks	CMC 5 years 04 PM Visits Annually. All Breakdown calls to be attended within 24 hrs of registration.
	Service contract clauses, including prices	The spare price list of all spares and accessories (including minor) required for maintenance and repairs in future after guarantee/warranty period should be attached.
	10. Documentation	
	operating manuals, service manuals, other manuals	Should provide 2 sets(hardcopy and soft-copy) of:- 1) User, technical and maintenance manuals to be supplied in English/Hindi language along with machine diagrams; 2) List of equipment and procedures required for local calibration and routine maintenance; 3) Service and operation manuals (original and copy) to be provided; 4) Advanced maintenance tasks documentation; 5) Certificate of calibration and inspection.
	Other accompanying documents	List of important spares and accessories, with their part numbers and cost.
	11. notes	
	Service Support contact details (Hierchy Wise; including a toll free/landline number)	Contact details of manufacturer, supplier and local service agent to be provided. Any Contract (AMC/CMC/add-hoc) to be declared by the manufacturer.
	Recommendations or warnings	Any warning signs would be adequately displayed.

AUTOCLAVE HP VERTICAL (SINGLE BIN)

SN1810	name	**Autoclave HP Vertical (single bin)**
	1. General	
	Use	
	Clinical purpose	An airtight vessel for heating and sometimes agitating its contents under high steam pressure; used for industrial processing, sterilizing, and cooking with moist or dry heat at high temperatures.
	Used by clinical	Operation theatre

	department/ ward	
	2. Technical	
	Technical Characteristics	
	Technical characteristics (specific to this type of device)	1) High Grade strong stainless steel, Triple walled construction. 2) Positive radial self-locking safety doors. 3) Hydrostatically tested to withstand 2.5 times the working pressure. 4) Sealed with Neoprene/Silicon long-lasting and durable gasket. 5) Digital display for Jacket and Chamber pressure and temperature. 6) Outer jacket insulated to prevent heat loss, with a high grade insulation material. 7) Mounted on 304 stainless steel frame with ground levelling flanges. 8) Temperature and pressure cut-off device. 9)Auto cut-off at low water level 10) Rust-proof 304 grade stainless steel. 11) Cylindrical construction. 12) Equipment should have separate steam release valve and drainage system. 13) Minimum of two safety valves with auto release at 16 and 20.
	user's interface	Manual.
	Software and/ or standard of communication(where ever required)	NA
	3.Physical Characteristics	
	Dimensions (metric)	NA
	Weight (lbs, kg)	NA
	Capacity	40 L,70 L,100 L
	Noise (in DBA)	NA
	Heat dissipation	Heat Dissipation: Should maintain nominal Temp and the heat should be disbursed through an cooling mechanism.
	Mobility, portability	Portable.
	4 .Energy Source (Electricity, UPS, Solar, Gas, Water, co2 ....)	
	Power Requirements	Recharging unit: Input voltage- single/3-phase
	Battery operated	NO.
	Tolerance (to variations, shutdowns)	±10%
	Pressure gauge	0-2.1Kgf/cm²
	Operating pressure	from 15-20 psi
	Sterilizing pressure	1.2Kgf/cm(15 psi) at 121°C
	Protection	Should have over-charging cut-off with visual symbol.
	Power consumption	up to 9kW
	5. Accessories spare parts, consumables	
	Accessories (mandatory, standard, optional): Spare parts (main ones); Consumables / reagents (open, closed system)	1. Automatic Pressure Control Switch -2 no. 2. Automatic Water Cut-off Device -2 no. 3. Micro Processor PID Controller with Timer & Auto Stop Facility 4. Digital Pressure Indicator-2 no. 5. Perforate basket(rust-free stainless steel) 6. Cord-plug-4 no. 7. Biological and chemical indicators-1 set
	BIDDING / PROCUREMENT TERMS / DONATION REQUIREMENTS	
	6 .Environmental and Departmental considerations	
	Atmosphere / Ambiance (air conditioning, humidity, dust ...)	1) Operating condition: Capable of operating continuously in ambient temperature of 10 to 50 deg C and relative humidity of 15 to 90% in ideal circumstances.

		2) Storage condition: Capable of being stored continuously in ambient temperature of 0 to 50 deg C and relative humidity of 15 to 90%.
	User's care, cleaning, Disinfection & Sterility issues	1) Disinfection: Parts of the Device that are designed to come into contact with the patient or the operator should either be capable of easy disinfection or be protected by a single use/disposable cover. 2) Sterilization not required.
	7. Standards and Safety	
	Certificates (premarket, sanitary),Performance and safety standards (specific to the device type);Local and/or international	1. Should be FDA/CE/BIS approved product. 2. Manufacturer and Supplier should have ISO 13485 certification for quality standards. 3. Electrical safety conforms to the standards for electrical safety IEC 60601-General requirements(or equivalent BIS Standard) 4. Shall meet internationally recognised for Electromagnetic Compatibility (EMC) for electro medical equipment: 61326-1. 5. Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety.
	8. Training and Installation	
	Pre-installation requirements: nature, values, quality, tolerance	1) Availability of 5 amp socket; 2) Safety and operation check before handover.
	Requirements for sign-off	Certificate of calibration and inspection from the manufacturer.
	Training of staff (medical, paramedical, technicians)	1) Training of users on operation and basic maintenance. 2) Advanced maintenance tasks required shall be documented.
	Others	
	9. Warranty and maintenance	
	Warranty	05 years
	maintenance tasks	1. Maintenance manual detailing. 2. Complete maintenance schedule.
	Service contract clauses, including prices	The spare price list of all spares and accessories (including minor) required for maintenance and repairs in future after guarantee / warranty period should be attached.
	10. Documentation	
	Operating manuals, service manuals, other manuals	Should provide 2 sets(hardcopy and soft-copy) of:- 1) User, technical and maintenance manuals to be supplied in English/ Hindi language along with machine diagrams. 2) List of equipment and procedures required for local calibration and routine maintenance 3) Service and operation manuals (original and copy) to be provided. 4) Advanced maintenance tasks documentation. 5) Certificate of calibration and inspection
	Other accompanying documents.	List of important spares and accessories, with their part numbers and cost.
	11. notes	
	Service Support Contact details (Hierarchy Wise; including a toll free/ landline number)	Contact details of manufacturer, supplier and local service agent to be provided. Any Contract (AMC/CMC/add-hoc) to be declared by the manufacturer.
	Recommendations or warnings	Any warning signs would be adequately displayed.

ARTIFICIAL MANUAL BREATHING UNIT (CHILD AND NEONATAL)

SN1811	**Name and Coding**	
	name	Resuscitators
	definition	A hand-operated device designed to provide or assist ventilation in patients who are apnoeic or exhibit inadequate respiration. It typically employs entrained ambient air and includes a large flexible chamber that is hand-ventilated, a gas reservoir, tubing, and a connector for attachment to a mask or end tracheal (ET) tube, oxygen (O2) from an O2 source may also be connected when necessary. It is used by emergency medical services (EMS) in ambulances, intensive care units (ICU), during internal patient transfer, accident and emergency (A&E), mass casualty incidents (MCI), and is generally placed strategically throughout a hospital. This is a reusable device.
	1. General	
	Use	
	Clinical purpose	To provide or assist ventilation in a patient who is apnoeic or exhibits inadequate respiration through manual pulmonar-driven pressure cycle functions.
	Used by clinical department/ ward	It is used in ambulances, intensive care units (ICU), during internal patient transfer, accident and emergency (A&E), and mass casualty incidents (MCI).
	2. Technical	
	Technical Characteristics	
	Technical characteristics	1. Easy Grip manual resuscitator with transparent face-mask. 2. Adult models (500 to 250 ml bag capacity) 3. Standard 15-22 mm Swivel connector allows connections to all common masks End tracheal Tubes. 4. Provision to give supplemented oxygen-by-oxygen reservoir providing 100% oxygen. 5. Non-re breathing valve enabling the patient to inspire oxygen from the reservoir bag.
	Settings	Manual
	user's interface	Manual.
	Software and/ or standard of communication(where ever required)	NA
	3.Physical Characteristics	
	Dimensions (metric)	Handheld.
	Weight (lbs, kg)	Light enough to be operated by hand/palm for long duration.
	Configuration	NA
	Noise (in DBA)	NA
	Heat dissipation	NA
	Mobility, portability	Handheld.
	Others	
	4 .Energy Source (Electricity, UPS, Solar, Gas, Water, co2 ....)	
	Power Requirements	
	Battery operated	NA
	Tolerance (to variations, shutdowns)	NA
	Protection	NA
	Power consumption	NA
	Other energy supplies	NA
	5. Accessories spare parts, consumables	
	Accessories & Spares	Silicon bellow, Non Rebreathing Valve.
	Consumables / reagents (open, closed system)	Adult Mask, Oxygen Reservoir bag, 1 meter oxygen tube, Guedel Airway.
	6 .Environmental and Departmental considerations	
	Atmosphere / Ambiance (air	Capable of being stored continuously in ambient temperature

	conditioning, humidity, dust ...)	of 0 to 50 deg C and relative humidity of 15 to 90%.Capable of operating continuously in ambient temperature of 10 to 40 deg C and relative humidity of 15 to 90%.
	User's care, cleaning, Disinfection & Sterility issues	Complete unit to be easily washable and sterilizable using both alcohol and chlorine agents.
	7. Standards and Safety	
	Certifications	ISO 13485; CE Certified product.
	8. Training and Installation	
	Pre-installation requirements: nature, values, quality, tolerance	Supplier to perform installation, safety and operation checks before handover.
	Requirements for sign-off	Certificate of calibration and inspection from the factory.
	Training of staff (medical, paramedical, technicians)	Training of users in operation and basic maintenance shall be provided.
	9. Warranty and maintenance	
	Warranty	1 years
	maintenance tasks	NA
	Service contract clauses, including prices	NA
	10. Documentation	
	Operating manuals, service manuals, other manuals	NA

49	MC0017	Color Doppler Machine	**1. USE** 1.1 Clinical purpose Doppler ultra-sonography is a non-invasive diagnostic procedure that changes sound waves into an image that can be viewed on a monitor. an ultrasonic technique for detecting anatomic details by color coding of velocity shifts. In cardiography blood flowing in one direction appears red, and blood flowing in the opposite direction appears blue. The technique can also indicate the velocity of red blood corpuscles moving through the circulatory system, which makes it possible to quantify the flow, measure the pressures within the heart chambers, and calculate the stroke volume. In laparoscopy, Doppler color flow allows for rapid identification and differentiation of ducts and valves in the viscera, particularly in detection and diagnosis of pancreatic and liver tumours and colorectal liver metastases. 1.2 Used by clinical department/ward : Radiology diagnostic laboratories.NICAL **2. TECHNICAL CHARACTERI STI CS** 2.1 Technical characteristics (specific to this type of device) The system should be state art with full Digital Technology & should be capable of whole body sonography & other application for adult & paediatrics (Infants & Neonates) which includes abdominal, Obs/Gyn, Endovascular, Peripheral vascular, transcranial, transvaginal, transrectal & small parts. ➢ The system should incorporate facility for high resolution 2D, 3D, M mode, PW color imaging, Power Doppler Angio Imaging Modes. ➢ The system should have more than 20000 Digital Channels & on the site to higher number of channels (preferable). ➢ The system should have 256 Grey shade or more. ➢ The system should have capability of triplex display in real time with all probes. ➢ The system should have a very high frame rate of 700 frames per second or more.Please specify frame rate in triplex mode. ➢ The system should have Harmonic Imaging for hard to image patients. The system shall support Tissue Harmonic Imaging capability on phased, linear, 3D and curved array transducers.

 M/M

- The system should have advance image processing algorithms to analyze between targets & artifacts so as to sharpen target anatomy, reduce the sparkle & artifacts to improve image quality.
- The system shall offer Harmonic Imaging in Power Doppler imaging mode for improved sensitivity and specificity in differentiating blood/agent from tissue.
- The system should have facility for Zoom(Real-time and Frozen-image) & manipulation of image through pre-processing and post-processing with cine loop viewing image of all modes.
- System should have disc of atleast 500 GB or more.
- The system should have facility of digital storage & retrieval of B/W & color image data(Both frozen & cine loops) on built in as well as ramble media(CD, DVD)USB port.
- The system should have automatic real time quantification of Doppler parameter like velocity, frequency, time heart rate stop, flow volume, plasticity index, resistivity index, peak velocity, average value, point value, area & diameter flow volume etc.
- The system should have high dynamic range of 170 dB with scanning depth of 30 cm or more.
- All transducers(minimum 3) should be broadband width, Frequency range 2 to 12 MHz or more with universal ports for transducer interchange. Two active ports and one parking probe is required.
- System should have **17" or more HD** display with tilt and swivel Facility along with alphanumeric keyboard with illuminating keys and status function.
- Dicom 3.0 compatible.
- Review of stored images is desirable.

2.2 User's interface Software, Automatic (stages to be displayed or recordable for printing).

3. PHYSICAL CHARACTERISTICS

3.1 Dimensions (metric) : NA

3.2 Weight (lbs, kg) : NA

3.3 Configuration : NA

3.4 Noise (in dBA) Noise-free system.

3.5 Heat dissipation: Should maintain nominal Temp and the heat should be disbursed through an cooling mechanism.

3.6 Mobility, portability Certified Room Installation.

4. ENERGY SOUR CE (Electricity, UPS, Solar, Gas, Water, CO2 ...)

4.1 Power Requirements Power unit: Input voltage- 220V-240V AC, 50Hz Single-phase.

4.2 Battery operated No

4.3 Tolerance (to variations, shutdowns) : NA

4.4 Protection : NA

5. ACCESSORIES, SPARE PARTS, CONSUMABLES

5.1 Accessories (mandatory, standard, optional); Spare parts (main ones); Consumables/reagents (open, closed system)

Machine should be supplied with following transducers:

- Broad band convex array transducer with multi-frequency range of 2 to 5 MHz or wider range-1 No.
- Broad band transvaginal/transrectal probe with multi-frequency range between 5 to 8 MHz or wider range-1 No.
- Linear probe Transducer 5 to 12 MHz or more.

The system should have following documentation devices

i. Laser color printer for color image printing.
ii. B/W Thermal printer of latest model.
iii. Glazed thermal paper rolls 50 no. & 5 rim of Glossy paper sheet.
iv. Online Ups for power back up of minimum 30 minutes

			v. 50 nos. of CDs to be supplied BIDDING/PROCUREMENT TERMS/DONATION REQUIREMENTS **6. ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATIONS** 6.1 Atmosphere/Ambiance (air conditioning, humidity, dust ...) ➢ Operating condition: Capable of operating continuously in ambient temperature of 5 to 50 deg C and relative humidity of 15 to 80% in ideal circumstances. ➢ Storage condition: Capable of being stored continuously in ambient temperature of 0 to 50 deg C and relative humidity of 15 to 90%. 6.2 User's care, Cleaning, Disinfection & Sterility issues ➢ Disinfection: Parts of the Device that are designed to come into contact with the patient or the operator should either be capable of easy disinfection or be protected by a single use/disposable cover. ➢ Sterilization not required. **7. STANDARD S AND SAFETY** 7.1 Certificates (pre-market, sanitary. ..); Performance and safety standards (specific to the device type);Local and/or international. ➢ Should be USFDA/European CE/BIS approved product. ➢ Manufacturer and Supplier should have ISO 13485 certification for quality standards. ➢ Electrical safety conforms to the standards for electrical safety IEC 60601-General requirements(or equivalent BIS Standard) ➢ Shall meet internationally recognised for Electromagnetic Compatibility (EMI/EMC) for electromedical equipment: 61326-1. ➢ Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety. 7.2 Local and/or international Manufacturer/supplier should have ISO 13485 certificate for quality standard. **8. TRAINING AND INSTALLATION** 8.1 Pre-installation requirements: ➢ Availability of 5 amp socket; ➢ Safety and operation check before handover; ➢ To be installed in a separate room. 8.2 Requirements for sign-off Certificate of calibration and inspection of parts from the manufacturer 8.3 Training of staff (medical, paramedical, technicians) ➢ Training of users on operation and basic maintenance for 2 weeks; ➢ Advanced maintenance tasks required shall be documented.
50	MC0018	Ultrasound system	**1. USE** 1.1 Clinical purpose Diagnostic sonography (ultrasonography) is an ultrasound-based diagnostic imaging technique used for visualizing internal body structures including tendons, muscles, joints, vessels and internal organs for possible pathology orlesions. The practice of examining pregnant women using ultrasound is called obstetric sonography, and is widely used. 1.2 Used by clinical department/ward : Radiology laboratories TECHNICAL **2. TECHNI CAL CHARACTERISTICS** 2.1 Ultrasound scanner with integrated trolley with probe, soft touch alphanumeric key board with track ball: ➢ With panel switches & control's easily operable. ➢ Integrated high resolution Monitor(15" or more). ➢ Probes & Gel holder-conveniently placed (2 each). Following transducers are to be supplied: ➢ A-2.0-5.0 MHz Multi frequency Convex Transducer-One. ➢ B-5.0-12.0 MHz Multi frequency Linear transducer-One. ➢ C-5.0-8.0 MHz or more Endo Cavitory probe-One.

(+/- 1 MHz to be allowed for each):

i. All probes should be electronic transducers and multi-frequency preferably three frequencies and should give aperture & depths of scanning.
ii. Controls for Depth, gain compensation, body markers with transducers position.
iii. Real-time continuous dynamic focus.
iv. Auto annotation facility anywhere on image.
v. Image display in B, B/M&M Model(2B&2D).
vi. Zoom facility minimum five times or more.
vii. Shades of grey 256 h. inbuilt cine memory.
viii. Unite should be capable of measuring BPD, CRL, FL & AC and other GA parameters.
ix. Facility for image magnification, inversion, changing, scan, direction, freeze facility.
x. 8 step STC/GTC should be available.
xi. Frame rate **150 FPS or more**, hard disk capacity of 200GB or more.
xii. Caliper with trackball for the measurement of distances circumferences, area volume etc. should be possible to make different measurement on single image.
xiii. Alphanumeric key board,
xiv. Panel Switches & Foot Controls.
xv. Patient reports for Obs/Gynae including fetal growth trend, including Histogram facility for Tissue texture & Trend graph for IUGR cases, Urology and orthopedics.
xvi. Give the gain adjustable/Range & its steps.
xvii. Calculations needed, Velocity, Heart rate, Volume addl. modes.
xviii. Dicom 3.0 compatible.
xix. Review of stored images is desirable.
xx. Channels: 1000 or more.
xxi. Depth: 25 to 30 cm.
xxii. Dynamic range: 170dB & above.
xxiii. Cine loop preview for minimum 60 sec or more.
xxiv. Minimum 2 active ports should be there.

2.2 User's interface Manual

2.3 Software and/or standard of communication(where ever required) : NA

3. PHYSICAL CHARACTERISTICS

3.1 Configuration : NA

3.2 Noise (in dBA) : NA

3.3 Heat dissipation Heat Dissipation: Should maintain nominal Temp and the heat should be disbursed through a cooling mechanism.

3.6 Mobility, portability Portable.

4. ENERGY SOURCE (Electricity, UPS, Solar, Gas, Water, CO2 ....)

4.1 Power Requirements Recharging unit: Input voltage- 220V-240V AC, 50Hz

4.2 Battery operated : No

4.3 Tolerance (to variations, shutdowns) : NA

4.4 Protection Should have over-charging cut-off with visual symbol.

5. ACCESSORIES, SPARE PARTS, CONSUMABLES

5.1 Accessories (mandatory, standard, optional); Spare parts (main ones); Consumables/reagents (open, closed system). The system should be supplied with the following accessories:

- B & W thermal printer with 50 rolls.
- Two KVA online suitable UPS.

DING/PROCUREMENT TERMS/DONATION REQUIREMENTS

6. ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATION S

6.1 Atmosphere/Ambiance (air conditioning, humidity, dust ...)

- Operating condition: Capable of operating continuously in ambient

temperature of 10 to 50 deg C and relative humidity of 15 to 90% in ideal circumstances.

- Storage condition: Capable of being stored continuously in ambient temperature of 0 to 50 deg C and relative humidity of 15 to 90%.

6.2 User's care, Cleaning, Disinfection & Sterility issues

- Disinfection: Parts of the Device that are designed to come into contact with the patient or the operator should either be capable of easy disinfection or be protected by a single use/disposable cover.
- Sterilization not required.

7. STANDARDS AND SAFETY

7.1 Certificates (pre-market, sanitary, ..); Performance and safety standards (specific to the device type); Local and/or international

- Should be USFDA/ European CE/BIS approved product.
- Manufacturer and Supplier should have ISO 13485 certification for quality standards.
- Electrical safety conforms to the standards for electrical safety IEC 60601-General requirements (or equivalent BIS Standard).
- Shall meet internationally recognised for Electromagnetic Compatibility(EMI/EMC) for electromedical equipment: 61326-1.
- Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety.

7.2 Local and/or international Manufacturer/supplier should have ISO 13485 certificate for quality standard.

8. TRAINING AND INSTALLATION

8.1 Pre-installation requirements: nature, values, quality, tolerance

- Availability of 5 amp socket.
- Safety and operation check before hand over.
- Machine to be installed only when PNDT registration is obtained by health care facility.

8.2 Requirements for sign-off Certificate of calibration and inspection from the manufacturer.

8.3 Training of staff (medical, paramedical, technicians)

- Training of users on operation and basic maintenance atleast for two weeks.
- Advanced maintenance tasks required shall be documented.