Date: 09.9.2014

Sub.: Procurement of Medical Equipment for Cantonment General Hospital, Delhi Cantt. – Rate Contract Basis.

Ref.: Queries received from prospective bidders during pre-bid meeting held in C.G. Hospital, Delhi Cantt. on 27.8.2014.

I **GIT 12.1**

Existing Tender Clause

The tenderer supplying Indian or imported goods shall quote only in Indian Rupees and shall enclose **"BILL OF ENTRY** "Without this Bill of Entry payment cannot be made.

Amended Tender Clause

The tenderer supplying Indian or imported goods shall quote only in Indian Rupees and shall enclose **"BILL OF ENTRY/Certificate from the Manufacturer confirming that the Equipment is Brand New, its S.No., Country of Origin & Date of Manufacture of the Equipment"** "Without this payment cannot be made.

The Amendment is accepted.

II. **GIT 18.3**

Existing Tender Clause

The earnest money shall be denominated in Indian Rupees or equivalent currencies as per GIT clause 12.2. The earnest money shall be furnished in one of the following forms:

i) Account Payee Demand Draft
ii) Banker's cheque

Amended Tender Clause: **No Change**

9/9/2014

Chief Medical Officer
Cantonment General Hospital
Delhi Cantt.

Amendment -II

Subject: **Supply, Installation, Testing & Commissioning of Medical Equipment at Cantonment General Hospital, Delhi Cantt**.

With reference to the Pre-bid meeting on 27.09.2014, the approved Amendments for the Rate Contract for Medical Equipment - Tender Enquiry No. DCB/RC/MedEquip/2014 , published on 8.8.2014, are as following:

Item No. 1 - Anesthesia Machine

Sl.No.	Tender Point No.	Tender Specification	Approved Amendments
1	Point No. 2(a)	Anaesthesia Workstation complete with Anaesthesia gas delivery system.;Circle absorber system.;Precision vaporiser for halothane,isoflurane and Sevoflurane ;Anaesthesia ventilator. Monitoring system to monitor Anaesthetic gases,ECG, EtCO2, Pulse Oximeter and airway pressure,NIBP, IBP (No as required) , rectal/&skin temperature.	No Change
2	Point No. 3.1.2	Machine should provide electronic gas mixing.	No Change
3	Point 3.1.3	Multi-color TFT display of at least 12" size, with virtual flow meters for O2, N2O or Air	Multi-color TFT display of **at least 8" size**, with virtual flow meters for O2, N2O or Air
4	Point No. 3.1.7	One no. yoke each for Oxygen & Nitrous Oxide. Separate Pipeline inlet for Oxygen , Nitrous Oxide and Air	No Change
5	Point 3.2.3	Flow sensing capability at inhalation and exhalation ports, sensor connections shall be internal to help prevent disconnect.	Flow sensing capability at inhalation and exhalation ports**/Y-Piece**. **sensor connections shall be internal to help prevent disconnect**
6	Point No.3.3	Vaporizers Vaporizer should mount to a selectatec manifold of 2 vaporizers, which allows easy exchange between agents. Temperature, pressure and flow compensated vaporizers and Maintenance free-for Isoflurane, Halothane and Sevoflurane.	No change
7	Point 3.4.5	Ventilator should be capable of atleast 120-150 L/min peak flow to facilitate rapid movement through physiologic ―dead space‖ in the Pressure Control mode	Ventilator should be capable of **atleast 100 L/min** peak flow to facilitate rapid movement through physiologic ―dead space‖ in the Pressure Control mode.

Sl.No.	Tender Point No.	Tender Specification	Approved Amendments
8	Point No.3.5	Anesthesia Monitoring Specifications:	Multipara Monitor should have minimum 15'' or more TFT touch screen colour display
9	Point 3.5.1(a)	Monitoring of vital parameters:ECG,NIBP,SPO2 and two Invasive Blood Pressure.	No change
10	Point No. 3.5.1(d)	Depth of Anesthesia Monitoring module - one per monitor with 50 sensors with each monitor	Depth of Anesthesia Monitoring **BIS module** - one per monitor with 50 sensors with each monitor
11	Point No. 3.5.1(e)	Neuromuscular Transmission Monitoring with all accessories. One set with each monitor	**Inbuilt** Neuromuscular Transmission Monitoring Module with all accessories. One set with each monitor
12	Point No. 3.6	Centralized Monitoring & Networking Central Monitor with Ethernet Networking of all the OT Monitors with Laser Printer and with client computer in office of Doctor Incharge , for browsing real time waveforms, graphical & numerical trend upto 24 hrs, from each OT Monitor.	No change
13	Point No. 3.6(2)	Web Browsing feature for browsing near real time waveform and graphical & numerical trend upto 24hrs remotely through telephone dial in facility.	No Change
14	Point No. 3.7	Automatic Recording System.	No change
15	Point No. 4.9	reusable transducers with cable (4 in No.)	Disposable IBP kit 50 Nos
16	Point No. 4.16	Accessories for neuromuscular transmission monitors -01 set	Deleted
17	Point No. 4.20	Vital Parametrer Accessories-01 Set	Deleted
18	Point No. 6.3	Suitable Servo controlled Stability/CVT	No Change

Sl.No	Tender Point No.	Tender Specification	Approved Amendments
18	Point No. 6.4	UPS of suitable rating shall be supplied for minimum 1 hour backup for the entire system.	Battery Backup / UPS of suitable rating shall be supplied for minimum 1 hour backup for the entire system.
19	Point No. 7.1	Should be FDA or CE approved product	Should be US FDA or European CE.

Item No. 4- ICU Ventilator

Sl.No	Tender Point No.	Tender Specification	Approved Amendments
1	Sl. No. 2.1	Microprocessor Controlled ventilator with integrated facility for Ventilation monitoring suitable for new born to adults ventilation.	No Change
2	Sl. No. 3.2	Colored TFT screen , 12 Inch or more	Colored **Touch LCD/TFT** screen, 12 Inch or more
3	Point No. 3.3(a)	End tidal CO2 Capnography	Facility to measure and display a. End tidal CO2 with capnography **integrated in ventilator with display of values and EtCO2 waveform on the screen.**
4	Point No. 3.4	Trending facility for 72 hrs with minimum 5 minutes resolution for recent 24 hrs.	Trending facility for min **24 hours** with minimum 5 minutes resolution for recent 24hours
5	Point No.3.7 (c)	Minute volume (Inspired and Expired)	No Change
6	Sl. No. 3.7(g)	Intrinsic PEEP and PEEP I Volume	Intrinsic PEEP and/**or** PEEPi Volume
7	Point No. 3.10	Expiratory block should be autoclavable and no routine calibration required	**Two autoclavable expiratory blocks including flow sensors should be provided with each ventilator and** no routine calibration should be required
8	Point No. 3.11	Should have the ability to calculate / Procedure b. Occlusion Pressure	Occlusion Pressure/RSBI

Sl.No	Tender Point No.	Tender Specification	Approved Amendments
8	Sl. No. 3.11(a)	Intrinsic Peep & Intrinsic PEEP Volume	a. Intrinsic PEEP and/**or** PEEPi Volume
9	Point No. 3.11 (c)	Spontaneous Breathing trial	No change
10	Point No.3.16	RS 323C interface for communications with networked devices.	RS 232 **or similar** interface for communications with networked devices. HL7 compatible.
11	Point No. 4	Medical Air Compressor. (Optional)	Inbuilt Medical Air Compressor to be offered as standard part of equipment.
12	Point No.6.2	Suitable Servo controlled Stabilizer/CVT	No change
13	Point No.7.2	Should be FDA or CE approved product	Should be US FDA or European CE.
14	Point No.7.3	Certified to be compliant with ISO-7767 for Oxygen monitoring.	Certified to be compliant with ISO-7767 or equivalent for Oxygen monitoring.

Item No. 5 – ICU MONITORS

Sl.No	Tender Point No.	Tender Specification	Approved Amendments
1	Point No.2	Monitors should have high resolution 1**9**" or more integrated colors, TFT, touch Screen display at least **6** wave forms along with related numerical parameters on single screen.	Monitors should have high resolution 17" instead of 19" (Rest to remain same).
2	Point No.4	User selectable Apnea Alarm delay 5-90 sec	User selectable Apnea Alarm delay 10-40 sec.
3	Point No.6	Capnography- side stream module, capnography with numeric display of EtCo2, FiCO2 & Respiration	Remove $FiCO_2$.
4	Point No.8	Monitors must be ready to connect for CO & CCO Noninvasive Continuous Cardiac output measurement (invasive & non invasive methods), BIS, TOF	Monitors must be upgradable for CO & BIS modules.
5	Point No.11	Should have full disclosure for user selectable waveforms facility **as standard**. Must have following features as standard event recall, minimum of 72 hours graphical and tabular trends, alarm logs. Monitors with time linked review functional will be preferred.	Should have full disclosure for user selectable waveforms facility as standard. As Standard may be deleted. Rest to remain same.

Sl.No	Tender Point No.	Tender Specification	Approved Amendments
6	Point No. 12	It should have drugs, oxygenation, ventilation and homodynamic calculation packages. Drugs dose calculation Lung functional calculation & Oxy CRG also should be present.	It should have drugs, oxygenation, ventilation and homodynamic calculation packages.
7	Point No. 14	Should be capable to take print of any review data from any beside monitors through network printer.	Should be capable to take print of any review data from any beside monitors.
8	Point No. 19 (a)	3and 5/6 Leads ECG electrode cable- 05 no. each	3 & 5/6/10/12 leads ECG electrode cable- 05 no. each
9	Point No. 19(h)	Compatible Cables for disposable pressure transducers - 10	Not to be changed
10			Should be ready to run to web based application like PACS/HIS/RIs/LIS etc.

Item No. 6 Syringe Infusion Pump

Sl.No.	Tender Point No.	Tender Specification	Approved Amendments
1	Point No. 1	It should be Light Weight (<5 kg), Compact & should be able to work on standard disposable syringes of 10, 20 & 50/60 ml sizes of different makes. Volumetric accuracy must be with +2% with syringes.	No Change
2	Point No. 3	Should have drug library for at least for 30 drugs.	No Change
	Point No.5	Should have CHECK facility for the programmed parameters in case of occlusion or alarms	Check means inbuilt check.
	Point No.7	Should have a clear LED display to observe parameters and with indications (audio/visual) for pump running and paused from distance of 8-10 feet.	Word LED be replaced by LED/TFT.
	Point No. 12	Should have selectable occlusion pressure trigger levels selectable from 100 – 900 mmHg.	Remove “selectable from 100 – 900 mmHg”.
	Point No.19	Classification type BF, Class II	Atleast to be added
	Point No. 21	Accessories – One communication rack system for 04 pumps to allow power & communication centralization, so that all the pumps can be connected to PDMS/HIS with one cable. Price to be quoted separately for each communication rack system.	No Change

ITEM NO. 9 DEFIBRILLATOR

Sl.No.	Tender Point No.	Tender Specification	Approved Amendments
1	Point no. 2.4	Should works on Manual and Automatic external defibrillation (AED) mode Manual selection up to 360 J.	Should work on **both** Manual and Automated external defibrillation (AED) mode up to **200 J or more**
2	Point no. 3.1	Should be a Low Energy Biphasic defibrillator monitor with Recorder, having capability to arrest all arrhythmia within a maximum energy of 360 Joules.	Should be a Low Energy Biphasic defibrillator monitor with Recorder, having capability to arrest all arrhythmia within a maximum energy of **200 Joules.**
3	Point No. 3.1.3		No change
4	Point no. 3.2	Should monitor ECG through paddles, pads and monitoring Electrodes and Deflibrillate through pads and paddles. Should have automatic Lead switching to see patient ECG through paddles or leads.	No change
	Point No. 3.2	Should monitor ECG through paddles, pads and monitoring electrodes and Defibrillate through pads and paddles. Should have Automatic Lead switching to see patient ECG through paddles or leads	
5	Point no. 3.5	Should have charging time of less than 3 seconds for maximum energy. Charging indicator should be there.	Should have charging time **of less than 7 seconds** for maximum energy. Charging indicator should be there.
6	Point No.3.6	Should have bright electroluminescent display for viewing messages and ECG waveform of 4 seconds	Should have bright **LCD / TFT display** for viewing messages and ECG waveform of 4 seconds
7	Point No.3.7	Should have external & internal paddles with paddles contact indicator for good paddle contact. Single Adults and pediatric paddle should be available.	No Change
8	Point no. 3.8	Should have event summary facility for recording and printing at least 250 events and 50 waveforms. Patient data storage 90 mins of ECG and events.	Should have event summary facility for recording and printing at least 120 events and 50 waveforms. Patient data storage 90 mins of ECG and events.
9	Point No.3.9	Should have a battery capable of usage for at least 90minutes or 30 discharges.	No Change
10	Point No. 3.10	Should be capable of printing Reports on Event summary, configuration, self-test, battery capacity etc	No Change

Sl. No	Tender Point No.	Tender Specification	Approved Amendments
11	Point no. 3.12	Should have SPO2 and NIBP integrated facility	Should have SP02, NIBP and **EtCO2** integrated facility**.**
12	Point no. 3.13	Should be capable of delivering energy in increment of 1-2 joules up to 30J and increment of maximum 50J thereafter.	No change
13	Point No. 3.16	Printing reports of events summary configuration/set test/ battery capacity	No Change
14	Point No. 3.17	Optional noninvasive pacing/ transcutaneous pacing	noninvasive pacing/ transcutaneous pacing to be offered as standard specification.
15	Point No. 4.4	Patient cable -02	No Change
16	Point no. 4.7	NIBP Cuff Adult -02 NIBP Cuff Paediatrics -02 NIBP Cuff Infants-02	NIBP Cuff Adult -02 NIBP Cuff Paediatrics -02 NIBP Cuff Infants-02 EtCO2 mainstream sensor -01, Airway adapters-05 Nos.
17	Point No. 4.9	Complete set of ECG Leads- 02	No Change
18	Point no. 7.1	Should be FDA or CE approve product.	USFDA or European CE
19	Point no. 7.3	Drop Test-Withstands 1 meter drop to any edge, corner or surface.	Deleted
20	Point no. 7.5	Should meet IEC 529 Level -2 (IP2X) for enclosure protection solid foreign object ingress.	Should meet IEC 529 Level -2 (IP2X) or better for enclosure protection solid foreign object ingress
21	Point no. 7.6	Should meet IEC 529 Level 3 (IP3X) (spraying water) for enclosure protection, water ingress.	Should meet IEC 529 Level 3 (IP3X) (spraying water) for enclosure protection, water ingress or better

Item No. 10 – TRANSPORT VENTILATOR

Sl. No.	Tender Specification	Approved Amendments
	Technical Specifications of Transport Ventilator are mentioned below: **1. Broad Specifications** a) Microprocessor turbine controlled electrically driven intensive care ventilator adult and paediatric. b) Should be possible to operate from a varicty of	1) Ventilator should be suitable for emergency and critical care transport for use by professionals in pre-hospital & hospital settings. 2) Suitable for adults, children and infants operations. 3) Ventilator should have Emergency Preset Mode for Adult, Pediatric & infant which

	power sources including AC power (220), rechargeable external/internal batteries (Lithium ion/ Nickel-cadmium battery or equivalent standard). c) Should have invasive & Noninvasive ventilation with leakage compensation. d) Ventilator should weight not more than 5kg (five kg) . **2. <u>Modes</u>:** Should have the following modes :- a) PCV (pressure controlled ventilation) / PACV (pressure assisted controlled ventilation) b) CV (controlled volume)/ ACV (assisted controlled volume) c) SIMV (synchronous intermittent mandatory ventilation). d) PSV-S(pressure support ventilation) / PSV-ST (pressure support with apnea backup rate). e) CPAP (continuous positive pressure) f) Should have target tidal volume available with all dual pressure modes . g) Ramp control for pressure modes h) Should have availability to change the flow pattern in volume control (rectangle and decelerate) i) Should have automatic adjustment of flow at airway pressure for delivering set tidal volume. **3. <u>Parameter settings</u>:** a) Tidal volume : 50-2000ml b) Rate: 4-60bpm .	can be used in case of emergency & doctors/specialist are not available. 4) Should have provision for wall mounting. 5) Should be light weight, robust and user friendly. 6) Ventilator should have capable to showing wave forms. 7) Ventilator should have large colour TFT display of minimum 6" size, with the option to change into night mode. 8) Modes of ventilation : IPPV, SIMV & PRCV Bi-pap, CPAP with ASB & PCV, Apnea, Niv 9) Should have adjustable fio2 40% to 100%. 10) Ventilator should have option to give Oxygenation in emergency. 11) Should have option EtCo2 monitoring & can be upgraded later. 12) NIV should able to operate in all modes. 13) Should have facility of leak compensation. 14) Should have the measurements of p-Peak, p-Plat & p-Mean 15) High inflation pressure alarm 16) Tidal volume : 75 ml to 2000 ml rate : 0 to 60min-1 Pinsp : 5 mbar to 60 mbar Pressure support (ASB) : 0 to 30 mbar PEEP; 0 to 30 mbar I: E ration: 4:1 to 1:4 Maximum Flow: 150 1/min Trigger (Flow) : 1 1/min to 15 1/min 17) Should have visible bright red alarm light, & volumes should be regulated separately for adjusting limits as per requirements. 18) Ventilator should have battery backup of minimum 4 hours and

	c) Inspiratory flow rate:10 to 200 liter/min. d) SIMV rate 2-40 bmp. e) PEEP: 2-20mbar . f) Pressure support - ASB: 0-40 cm H2O relative to PEEP . g) Inspiration pressure: 0-100 mbar . h) I/E ratio:1.0-3.0 i) Inspiratory time control cycle 0.1-0.3 sec (time cycke operation). j) FiO2 measurement from 21 to 100% . k) Flow trigger 3-15 liter /min (adults) & 0.15-15 liter/min (pediatrie). 4. Must have in-built O2 blender with sensor. Should provide oxygen enrichment on both low (0.5 psi) and high-pressure (40 to 60 psi) oxygen supply source. 5. Should have built in air supply. 6. Should have double limb ventilation. 7. Should have battery back up for at least 10 hours. 8. Should have both pressure and flow trigger. 9. Display **(real time)**: a) Should display ventilator parameters: inspired positive airway pressure (IPAP) expired positive airway pressure (EPAP), inspired tidal volume, leak , breath rate, FiO2, SpO2, I/E, inspiratory time. Peak pressure. Plateau pressure, CPAP/PEEP. Inspired minute volume. b) Must display real time pressure and flow waveforms with	should be supplied one additional battery. 19) Charging time of battery should not be more than 4 hrs. to reach 0 to 100% 20) Equipment should be complete with carry bag, patient circuit, pressure regulator for the oxygen cylinder and relief valve. (Transport Ventilator Kit) 21) The above Kit should be supplied with all required brackets/mounts to ensure mounting on the all applicable scenario and on stretcher rails without hampering patient care. Should be from the same manufacturer which should be complying with crash proof test EN-1789 standard. 22) Ventilator should have Electric Interface/Data Transfer facility. 23) Ventilator should have all safety certificates for Dust, Water, Electric Shock, etc. 24) Ventilator should have Certificate for AIR WORTHINESS. 25) Should be European CE/US FDA certified.

	c) Should have history browse facility. d) Should display pressure volume loop and flow volume loop. 10. Must include respiratory diagnostic software package and display: a) Dynamic Lung Mechanics (Compliance, Resistance and mean air way pressure) 11. Must provide 24 Hours trending and browsing of monitored parameters. **12. <u>Alarms</u>** a) Should have minimum & maximum inspired tidal volume alarm. b) Should have minimum exhaled tidal volume leak maxi alarm. c) Should have fr(frequency) maxi . d) Should have min &maxi inspiratory time alarm. e) Should have alarms for high/low peak pressure, apnea, external power low/ failure, disconnection, PEEP not set, low battery /fail.high /low minute volume and oxygen line failure. f) Alarm silence & reset facility should be available. 13. **<u>Ventilator should be supplied with following accessories</u>**: a) Adult breathing cricuits 4 sets. b) Pediatric breathing eircuits 4 sets. c) Rechargeable batteries 2 sets. d) Base to mount ventilator .	

Item No. 11 – Patient Trolley

SL. No.	Tender Point No.	Tender Specification	Approved Amendments
1.	Point No.7	It shall have a pair of stainless steel tuck down type railings made of 19 mm dia x 18 G tube fitted M.S.brackets (a) Effective railings height above main frame is 235 mm & length of the railing is 1175	No Change
2.	Point No. 13	Suitable 4" thick latex free, cleanable, washable breathable, non-staining mattress should be supplied with trolley with cover and pillow.	No Change

Item No. 12 – ICU BEDS

Sl. No.	Tender Point No.	Tender Specification	Approved Amendments
1.	Point No.2.1	The system should be electrically operatable and adjustable for heights.	The system should be electrically operatable by control panel and adjustable for heights, trendelenburg etc. It should also be having radiotransluscent top for carrying out X-Ray at the bedside.
2.	Point No.3.1	Should have four section mattress base	No Change
3.	Point No.3.2	Should have X Ray translucent back section made up of high pressure laminate	No Change
4.	Point No.3.3	Should have X-Ray cassette holder underneath the back section & should allow insertion of Xray Cassette from either side of the bed.	3.3 Should have X-Ray cassette holder underneath the entire length & ends of the bed & should allow insertion of X-Ray cassette from either side of the bed.
5.	Point No.3.4	Base frame & support frame should be made up of Stainless steel for long life & prevention from rusting	Base frame & support frame should be made up of **Epoxy powder coated MS or CRCA tubes** for long life & prevention from rusting
6.	Point No. 3.5 a	Height: 450-840 mm	a. Height: 450-840 mm **+/-10%** b. Back section: 0- 50 **degrees or more** c. Leg Section: 0-25 **degrees or more**
7.	Point No.3.6	Should have step – less pneumatic adjustment for Trendlenburg (**25C** approx.), anti – trendlenburg (**15C** approx.)	Should have step-less **pneumatic / electric adjustments** for Trendlenburg (**15 deg or more**.); anti-trendlenburg (**15 deg or more)**
8	Point No. 7.2	Should be FDA or CE or BIS approved product	Should be US FDA or European CE

Item No. 13- Warming Blanket

Sl.No.	Tender Point No.	Tender Specification	Approved Amendments
1			Read 60 seconds instead of 30 seconds
2			Temperature setting of warming system should between 32^0 C-43^0 C and Ambient.

Item No. 14 – Multi Para Monitors

Sl. No.	Tender Point No.	Tender Specification	Approved Amendments
1	Point No. 1	Monitors should have high resolution 12"or more integrated color, TFT, Preferably touch Screen display. Should be able to display at lest 6 wave forms.	No Change
2	Point No.2	Should be able to monitors ECG, NIBP, SpO2, Respiration, 2 Temperature, 2IBP and side stream Capnography.	Should be able to monitors ECG, NIBP, SpO2, Respiration, 2 Temperature, 2IBP and side stream Capnography.
3	Point No.2(d)	Respiration – Display of respiration waveform with respiration rate using impedance pneumography principle. User selectable apnea alarm delay: 5-90 sec.	Replace '5-90 sec with '10-40 sec.
4	Point No. 2(g)	Capnography –Side stream Module, Capnography with numeric display of EtCO2, FICO2 & Respiration	Remove $FICO_2$
5	Point No. 10	The unit should have a battery backup of minimum 120 minutes	No Change
6	Point No. 11	The equipment must conform to relevant, safety general electrical standards for Medical Equipment.	The product should be Us FDA / European CE approved.

Item No. 26 – Surgical Operating Microscope (Ophthalmology, Major OT)

Sl. No.	Tender Point No.	Tender Specification	Approved Amendments
1	Point No.8	Inclinable binocular tube with integrating image,inverter, facility for IPD adjustment	Inclinable binocular tube and image inverter, facility for IPD adjustment
2	Point No. 9	Stereo coaxial illumination for unique detail recognition, high contrast & stability of a red reflex even for strongly pigmented, decentered and ametropic eye.	Stereo coaxial illumination (SCI) / red reflex illumination for unique detail recognition, high contrast & stability of a red reflex even for strongly pigmented, decentered and ametropic eye.
3	Point No.12	The assistant microscope should be rote able/ position able on both side of surgeon with option to be detached from the microscope.	The assistant microscope should be rote able/ position able on both side of surgeon

Sl. No.	Tender Point No.	Tender Specification	Approved Amendments
4	Point No. 17	Stand should have Xenon illumination	Stand should have Xenon/LED/Halogen illumination
5	Point No. 22	Beam Splitter 80:20	No Change
6		High quality apochromatic optics	No change
7		Should have retina protection device, UV filter , blue blocking filter, fluorescence filter and contrast enhancement aperture	No Change
8		Objective lens should have focal length f= 200mm, 65mm diameter	F=200/175mm Diameter 55-75mm
9		Should have motorized Zoom magnification, magnification factor 0.4-2.4x, with facility for manual override	No Change
10		Motorized foot control & motorized X-Y coupling with range X 40 mm or more. Key for resetting to initial of X-Y coupling and focus	No Change
11		Inclinable binocular tube with integration image inverter, facility for IPD adjustment.	No Change
12		Pair of high eye point wide field push- in (magnetic) eyepieces 12.5x, field of view diameter 18mm or more, diopter setting from – 7D to + 5D or better, also suitable for spectacles wearers	No Change
13		Independent integrated binocular assistant microscope with 5 step magnification changer, inclined binocular tube and focusing. It should be without beam splitter with independent illumination path/ optics.	No Change
14		High quality programmable floor stand with large, swivel arm, magnetic breaks and clutches for easy positioning through handles and suspension arm. Lord carrying capacity at least 19 kg or more	High quality programmable floor stand with large, swivel arm, magnetic clutches for easy positioning through handles and suspension arm. Lord carrying capacity at least 19 kg or more

Sl. No.	Tender Point No.	Tender Specification	Approved Amendments
16		Foot switch should be water proof or water resistant with at least 12 Function and joystick	No Change

Item No. 27 -3D COLOUR ULTRASOUND SCANNER WITH COLOR DOPPLER

Sl. No.	Tender Point No.	Tender Specification	Approved Amendments
1	Point No.3	All transducers should have Board Bandwidth technology for extremely high resolution imaging. Frequency range of Transducers should be 2-17 MHz or more. All transducers should have multifrquency selection (preferably more than three).	No change
2	Point No.5	The system have 30000 or more digital processing channel and the system should have 256 Grey Scale or more:	The system should have 50,000 or more digital processing channel and the system should have 256 Grey Scale or more".
3	Point No.6	The system should have a scanning depth of 28 cm or more.	The system should have a scanning depth of 36 cm or more
4	Point No 7.	The system should have a high dynamic range more than 180 dB.	No change
6	Point No 10.	The system should have a very high frame rate of at least 500 frames per second in B mode and More than 300 fbs in/color mode. Please specify.	No Change
7	Point No 11.	The system must have intergrated high –resolution TFT/LCD/single monitor of 19 Inches or More with tilt and swivel facility.	No Change
8	Point No. 14	The system should have contrast Harmonic imaging and should have optimization setting to Detect the Contrast Agents.	No Change

Sl. No.	Tender Point No.	Tender Specification	Approved Amendments
9	Point No. 18	The system should have cine loop review facility in Individual and mixed modes cine loop Greater than 4000 frames and greater than 30 second of spectral Doppler and M mode. System Should have 120 GB or more HDD.	No Change
10	Point No. 27	The system should have support real time acquisition and display of two image planes Simuilaneously with color by incorporating electronic volume Transducer for this function	The system should have support real time acquisition and display of three image planes Simultaneously, with color by incorporating mechanical volume Transducer for this function
11	Point No. 29	As the requirement is for 3D Doppler but no volume probe is mentioned under this point.	Convex Volume probe with frequency range 2-6 MHz or better for 3D/4D application.
12	**New Point**		US FDA or European CE
13	Page No 120 Point Number 4	System shall have three universal transducer ports with electronic switching capability allowing any transducer to be connected to any port.	No change
14	Page No 120 Point # 15	The system should have real time frequency and Spatial Compound imaging technology with Multiple lines or sight to obtain the image at real time frame rates for improved visualization and Better image quality	No change
15	Point No 24	The system should be DICOM compatible	The system should be DICOM compatible with installation for films
16	Page No 121 Point No 29	Board band convex array transducer with frequency range 2-5 MHz or better.	No Change

Item No. 28-Paediatrics Ventilator

Sl. No.	Tender Point No.	Tender Specification	Approved Amendments
1	Point No.2	Should have not less than 10 inch colored TFT screen capable for the monitoring of the ventilation parameters, curves and loops .	Should have not less than **12** inch colored TFT screen for monitoring of the ventilation parameters, curves and loops to provide better view
2	Point No.4(a)	Tidal Volume (2-250ml)	Tidal Volume (2-1000ml or more)
3	Point No.7.9	High frequency ventilation (Optional)	Deleted
4	Point No.8	Sensors should be automatically calibrated every time it is switched on.	Reusable and autoclavable sensors **should automatically go for calibration every** time it is switched on