AMENDMENT NO. 3 Dated 30.07.2018

Ref No: HLL/SD/RBD/2018-19/02 Dt: 05.07.2018

Tender Title: E-TENDER FOR THE SUPPLY, INSTALLATION, TESTING & COMMISSIONING AND ONSITE SUPPORT FOR MEDICAL EQUIPMENTS TO ZAMBIA

The following amendment has been incorporated to the bid document for the above tender.

1. Section II - Invitation of Bids (IFB) - Schedule A - Serial No. B

FOR

CR Fixed Floor Mounted X-ray Machine and multi loader CR printer

MAY BE READ US

CR with Loader and Film Printer

2. The Section V- Technical Specification (page number 21-37) of the initial tender document is amended and shall be read as given below. The Section V- Technical Specification (page number 21-37) in the initial tender document stands deleted.

A) COLOUR DOPPLER ULTRASOUND MACHINE AND PRINTER

1. Description of function
1.1 Color Doppler Echocardiography System is required to study the anatomical abnormalities and blood flow in the heart and associated vessels.
2. Operational requirements
2.1 Latest generation Electronic Phased array Color Doppler system with Minimum 512 Electronic independent channels. System should be DICOM ready and capable of being interfaced with PACS.
2.2 Should be field up gradable to next generation system on site.
2.3 Frequency compounding or better technology for better resolution and penetration.
3. Technical Specifications
3.1 High Definition 20''(Minimum) LCD screen, high resolution Tilt and Swivel monitor should be able to view in all angles and all light conditions. with arm to rotate left to right and up down
3.2 4 probe Connectors with dynamic inter probe switching without rebooting the machine.

3.3 5 probes - Linear Probe, Convex Probe, Micro-Convex probe, Phase array probe with cardiac CW package and 4D volume probe with necessary software packages need to be provided as standard configuration.
3.4 Latest generation Electronic Phased array Color Doppler system with Minimum 512 Electronic independent channels.
3.5 256 gray shades for sharp contrast resolutions
3.6 Multi-dimensional Beam former for generating two images simultaneously one at low end of bandwidth and one at high end then selectively retrieves and mixes the components together for finely textured 2-D or B mode image with superior contrast resolution.
3.7 Adult Cardiac and Vascular Probes supplied should be latest generation wide band transducers with frequency selection for higher sensitivity of response over a broader frequency range of operation. All probes to be phased array. OPTIONAL Probes must be available for pediatric application and Trans esophageal Echo for future requirement.
3.8 Harmonic Imaging- System should have following modes in harmonic with separate setting for:
i. Tissue Harmonic.
ii. Contrast Harmonic - both triggered and real time
iii. Harmonic Angio
iv. Quantification of harmonics imaging
v. Harmonic imaging capability in Adult Cardiac, Pediatric Cardiac and linear probe
3.9 Gain control in two dimensions for additional level of flexibility to image quality control.
4. Real time high frequency 2D for higher resolution and low frequency Doppler for higher sensitivity in all probes
4.1 Frame rate should be 300 FPS or more
4.2 Steerable PW/CW in all Phased Array probes.
4.3 High definition acoustic zoom for enlarging sections of 2D and Colour flow images with more acoustic information for greater clarity and detail while maintaining an optimal frame rate.
4.4 Modes - 2D, M-Mode, Steerable PW/CW Doppler, Colour Doppler, and High Definition Colour flow with capability of automatically picking up colour flow as a function of focal depth
4.5 Colour Flow Imaging for
a) Increased lateral & spatial resolution.
b) Detection of even subtle areas of turbulence, displaying a more physiological blood flow appearance without loss of frame rate.
c) Colour flow with capability of automatically picking up colour flow as a function of focal depth
4.6 Tissue Colorization (B-Colour) for improved contrast resolution

4.7 Application software for Adult, Pediatric, Fetal and Peripheral Vascular and Trans esophageal applications. (All application package should be built into the system)
4.8 Cine loop memory- more than 120MB of memory. High Frame rate review for better clarity of playback images study in slow motion. Quad loop with memory for pre and post image comparison of any procedure. Memory- 256 frames or more in quad loop. M Mode & Doppler Scroll Memory- 40seconds or more. Frame grabber facility for post analysis.
4.9 Various maps for pre and post processing.
5. ECG trigger facility.
5.1 User defined system and application presets for multi-user department.
5.2 Minimum 4.8 GB optical disc drive for image storage and retrieval. (standard with system)
5.3 Dedicated integrated dynamic stress echo package for flexible user defined protocols with stacked sub loops facility and contrast stress protocol.
5.4 Tissue movement colorization with quantification possibility for IHD/CAD patients.
5.5 Three transducer ports will be preferred.
5.6 Color Map resolution up to 128 levels.
5.7 Study Manager (> 1.5 GB) for on-cart digital acquisition, review and editing of complete patient studies.
5.8 Should have a minimum hard disk storage capacity 500GB or more exclusively for images.
5.9 Facility of Real time perfusion studies
6. SYSTEM PERIPHERALS should include
a) CD Writer with calculation facility on playback.
b) Color printer.
c) B/W Thermal Printer.
6.1 Color M-Mode
7. System Configuration Accessories, spares and consumables
1. Color Doppler System with all application packages Quad loop for serial studies with High frame rate review. Harmonic imaging capability in all modes. (Tissue, Contrast, Anglo)
2. 1.0-3.0 MHz Adult Cardiac probe Electronics Phased Array probe.-01 each
3. 3.0-11.0 MHz Electronics Phased Array Probe for Vascular applications- 01each
4. Multi-plane TEE Probe- (Optional) 4-8 MHz for Adult as well as Pediatric echocardiography.
5. 5.0-10 MHz Electronic phased array probe for Pediatric cardiology.(OPTIONAL)
6. DVD/CD Recorder with 100 DVDs

7. Color Printer. -01
8. B/W Video Thermal Printers -01
9. Colour Print Paper- 1000 sheets
10. B/W Thermal Paper - 50 rolls
11. ECG Cable - 02
12. External Hard disk of 2TB or more storage capacity for data archiving
13. 5 USB ports (1 at the control panel, 4 at the rear panel) , Ethernet port, S-video out port, VGA port, ECG Port, Printer socket(Hold small printers), should be available.
8. Environmental factors
8.1 The unit shall be capable of operating continuously in ambient temperature of 30C and relative humidity of 90%
8.2 The machine must be suitable for African climate.
9. Power supply
9.1 Power input to be 220-240VAC, 50Hz fitted with Indian plug
9.2 Resettable overcurrent breaker shall be fitted for protection
9.3 Suitable Servo controlled Stabilizer/CVT
9.4 UPS of suitable rating conforming to IS-302 shall be supplied. Servo stabilizer is not required if the UPS has voltage correction facility.
10. Standards and safety
10.1 Should be CE approved product
10.2 Electrical safety conforms to standards for electrical safety IEC-60601 /IS-13450
10.3 The product shall comply to IEC 60601-2-37 ed1: Medical Electrical Equipment – Part 2-37: Particular Requirements for the Safety of Ultrasonic Medical Diagnostic and Monitoring Equipment
10.4 Type of protection against electric shocks -- Class I Degree of protection against electric shocks for ultrasound probes Type "BF" For ECG electrodes Type 'CF"
10.5 The manufacturer should have ISO certification for quality standards.
11. Documentation
11.1 User manual in English
11.2 Service manual in English
11.3 List of important spare parts and accessories with their part number and costing.
11.4 Certificate of calibration and inspection from factory.

11.5 Log book with instruction for daily, weekly, monthly and quarterly maintenance checklist. The job description of the hospital technician and company service engineer should be clearly spelt out
List of equipment available for calibration and preventive maintenance as laid down in the Technical/Service Manual.

B) CR with loader & film printer

The CR system should have following essential features:
IMAGE RECORDING SYSTEM (CASSETTES & IMAGING PLATES):
PSP image plates and cassettes approved for general radiography use must be quoted with the system. Cassettes should preferably have rewritable label to avoid mix up of patient name /ID with image data before the same is brought to the CR reader / Digitizer from X-Ray rooms / wards for cassette scanning. The image plates should be rigid type for improved life and to reduce artifacts from dust or roller marks.
CASSETTES WITH IMAGE PLATES:
- 35x43 cm or 14” x 17” ----------02 nos should be provided
- 24x30 cm or 10” x 12”----------02 nos should be provided
- 18x24 cm or 8" x 10"----------02 nos should be provided
IMAGE READING (CR READER / DIGITIZER):
- It should be able to process standard size cassettes
- It should have grey scale resolution of 16 bits / pixel
- Time to preview image of should be less than 20secs
- The scanning resolution of 100 micron (10 pixels/mm) should be available for all cassette sizes
- The highest through put should be 40 plates/hr or better
- It should have auto cropping feature to remove the unexposed pixels. This is to avoid zooming when smaller body parts are examined with larger image plates.
- It should have the low dose technology.
PROCESSING SERVER / CR WORKSTATION WITH 19" LCD PANEL:
- PC based unified server / workstation for centralized patient identification & management of Images / Studies
- Process of identification should be ready for interface with existing Hospital Information System (HIS) or Radiology Information System (RIS) in DICOM protocols
- This Server must provide display of acquired images with greater details of demographics, like patient / study listing for easy access.
- This sever must provide full amount of post processing features like Geometric Corrections, Window / Level, Algorithms, Annotations such as markers, predefined texts, drawing lines and geometrical shapes, measuring distances and angles and determining leg length differences, Shuttering, histograms, Zoom, Grey Scale Reversal, Edge Enhancement, Noise Reduction, Indicate Grey Scale Saturation Level, Latitude Reduction.
- This terminal must provide a full fledge DICOM printing. Should be able to print in multiple formats (minimum 4) of a patient study, print a True Size image on any size of film.
- Should be able to send DICOM images to a DICOM viewing stations or PACS.
- Should be equipped with DICOM CD writer for allowing examination of a patient to be written onto a CD in DICOM format for referral purposes.
- All the software, the digitiser and the printer must be from same manufacturer and the quoted model should be CE/FDA Approved.
- The Imaging software must have provision for PACS interfacing.
DRY IMAGER (FOR FILM PRINTING)

- The system must be a Dry Imager, without need of any wet chemistry
- The system must be DICOM 3.0 Print Service Class Provider, allowing minimum of 10 associations at a time
- The system must be able to process at least 75 films / hour.
- The system must deliver its first film within 80 seconds from print request.
- The system must have a spatial resolution of 320 PPI / DPI or more for all sizes printed.
- The system must have at least three online film sizes, and should be capable to print on any of the 8 " x 10". 10 “x 12 ". 11 “x 14 ", 14 " x17 " sizes three film input trays should be freely configurable at user level for all the mentioned film sizes.
- All the input trays should be freely configurable for loading any of the mentioned film sizes at user level.
- The printer should capable of printing first film within 10 minutes after switching on.
INTERCONNECTIVITY:
- Interconnectivity between various CR modules should be Ethernet / TCP IP Based i.e. RJ 45 Connection (10 / 100 Base T / LAN).
ESSENTIAL SOFTWARE / FEATURES/ACCESSORIES:
- Application related software like black border / black masking should be available.
- A set of CR image plate cleaner should be supplied with the unit.
- 1500 films of each size 8 " x 10". 10 “x 12 ". 11 “x 14 ", 14 " x17 need to be supplied along with the equipment
U.P.S:
- A suitable UPS with at least 30 minutes back up should be provided with the system.
WARRANTY / GUARANTEE:
- Unit should be quoted with 1 year comprehensive Warranty.
- The equipment operating power requirements should be compatible with Zambia power distribution ranges. Necessary power cords need to be provided.

C) X-RAY MACHINE

High frequency X-Ray machine suitable for general radiography.
X-RAY GENERATOR:
- High Frequency X-Ray Generator having frequency of 50 KHz should be provided.
- Power output of generator should be 40KW.
- Radiographic KV Range should be 40 to 125KV.
- mA Range (Rad.): 400mA or more.
- Exposure time (Rad.): 3ms to 3Sec.
- mAs Range (Rad.): 1 to 200mAs.
CONTROL:
A very compact, Soft feather Touch Control Panel having following functions & indications should be provided. The panel should be supplied in Floor 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 with pre-programmed functions in which automatic selection of factors is done according to the body part selection
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:
- One No. Dual focus Rotating Anode X-Ray tube thermally protected.
- Anode heat storage capacity of tube should be more than 100KHU.
- Large Focal spot 2.0mm or less & Small focal spot 1.0mm or less
- One Pair of 8 meter H.V. Cable.
- One No. 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:
All the movements of the stand should be manual but electromagnetically locked which includes:
• Longitudinal movement of column, which is locked electromagnetically.
• Column Rotation, which is automatically locked at 90^0 step and is unlocked by pressing the foot lock.
• Tube head up/ down movement, should be locked electromagnetically.
• Transverse movement of tube head, should be locked electromagnetically.
• Tube head $\pm 90^0$ rotation, should be locked by a mechanical lock.
Mechanical Specifications:
1. Total height of stand from ground: minimum 2100 mm
2. Longitudinal movement of column on tracks should be: minimum 2300mm
3. Total up/down movement of tube head should be: minimum 1400mm
4. Transverse movement of tube head should be more than 400mm
5. Column rotational movement: +90° with automatic mechanical locks at each 90° step (unlocking with foot switch).
6. Tube head rotation should be: ±90 degree
7. Net weight of stand should be less than 350 Kgs
TABLE:
• Floatex table with 4-way movement of the table top i.e. along x axis and y axis should be provided. Longitudinal movement of tabletop is 500mm or more & transverse movement 190mm or more.
• The Table Bucky should consists of motorized reciprocating Grid of size 17 ¼" x 18 7/8" & of Ratio 8:1 – 85 lines/inch.
• The Bucky should be locked at any desired length position by an Electromagnetic lock.
• The tabletop should be made of low radiation absorption, waterproof material.
• Table Accessories like stainless steel cassette tray, Compression band is to be provided.
VERTICAL BUCKY STAND:
• Vertical Bucky Stand should have reciprocating Grid of Ratio 8:1, 85 lines.
• The Bucky should move up & down & is equipped with a stainless steel cassette Tray. This stand should be Floor mounted type & can accommodate cassettes up to 14" X 17".
ACCESSORIES:
• 6 nos of lead aprons need to be supplied along with the machine
• 6 nos Thyroid protection shield need to be supplied along with the machine
• 6 nos gonad shields need to be supplied along with the machine
POWER REQUIREMENT:
The unit should be operable on 3 Phase, 400Volts AC 50Hz with Line Regulation ±10%.
OTHER REQUIREMENTS:

• The company should be ISO-9001: 2008, ISO-13485: 2012 company with European CE Certified products.
• The unit should be approved by AERB.
• The equipment operating power requirements should be compatible with Zambia power distribution ranges. Necessary power cords need to be provided.
• The unit should be quoted with 1 year comprehensive warranty.

D. AUTOMATIC FILM PROCESSOR

FEATURES:
- New retractable feed tray provides space savings for small dark rooms.
1. Exceptionally quiet operation should be provided
2. Microprocessor controlled should be provided
3. High quality developing should be provided
4. Easy installation, use and maintenance should be provided
5. Automatic replenishment should be provided
6. The control panel digitally displays should be provided
a. Replenishment rate
b. Developer & dryer temperatures
c. Heater & blower timer
d. Clock
e. Water level sensor prevents overflowing of tank
f. Stand-by mode for energy saving
7. One year warranty on all parts should be provided
PROCESSOR TYPE:
- Continuous roller transport system should be provided
PROCESSING TIME:
- Standard: 90 seconds should be provided
- Option: 90 to 230 seconds by variable speed controller
FILM SIZE:
- From 4”X4” (10cmX10cm) up to 14”X17” (35cmX43cm)
PROCESSING CAPACITY:
- 100 Sheets / hour (Mixed Sizes) to be provided
- At 95 seconds standard processing time to be provided
DEVELOPER TEMPERATURE:
- Automatic microprocessor controlled to be provided
- Temperature control range: 28~38oC(82~100oF)
- Temperature can be easily changed and re-set
DRYER TEMPERATURE:
- Automatic microprocessor controlled should be provided
- Temperature control range: 45~55oC(113~131oF)
- Temperature can be easily changed and re-set
CIRCULATION MODE:
- Anti-crystallization by automatic circulation pump to be provided
REPLENISHMENT MODE:
- Automatic microprocessor and manual-controlled should be provided
DRYER TYPE:
- Blower-Heater should be provided
FILM FEED SENSOR:
- Micro-switch sensor should be provided

TANK CAPACITIES:
- Developer : 5.0 liters (1.32 gallons) should be provided
- Fixer : 5.0 liters (1.32 gallons) should be provided
- Washer : 6.0 liters (1.58 gallons) should be provided
WATER CONSUMPTION:
- Not more than 1.5 liters (0.4 gallons) per minute
ELECTRICAL CONNECTIONS:
- AC 220~240 Volt, 50-60Hz, Single phase should be provided
STANDARD ACCESSORIES:
- Replenishment Tanks should be provided extra 2 nos
- Hoses should be provided extra 2 nos
- Stand should be provided
- Manual should be provided
- Developer, Fixer & Washer should be provided for developing 1000 films.
Spare Parts Kit should be provided

E. X-RAY FILM LASER PRINTER

Dry Imager (For Film Printing)
- The Dry Imager must be DICOM 3.0 Print Service Class Provider, allowing minimum of 10 associations at a time
- The system must be able to process at least 75 films / hour.
- The system must deliver its first film within 80 seconds from print request.
- The system must deliver its first film within 80 seconds from print request.
- The system must have a spatial resolution of 320 PPI / DPI or more for all sizes printed.
- The system must have at least two online film sizes, and should be capable to print on any of the 8 " x 10". 10 “x 12 ". 11 “x 14 ", 14 “x 17 "sizes two film input trays should be freely configurable at user level for all the mentioned film sizes.
- All the input trays should be freely configurable for loading any of the mentioned film sizes at user level.
- The printer should capable of printing first film within 10 minutes after switching on.
- 1500 films of each size 8 " x 10". 10 “x 12 ". 11 “x 14 ", 14 " x17 need to be supplied along with the equipment

F. ANESTHESIA MACHINE

The Machine should have centralized display integration and functional integration.
The Machine should have a built-in anesthesia ventilator with Pressure, volume controlled modes with PEEP. The machine and ventilator should be from the same manufacturer
Should be compact, ergonomic & easy to use with automatic pre-use check for electronic parts
Should have complete integrated anesthesia gas delivery system.
It should be electronically controlled with a master switch, pneumatically operated with prioritized alarm system.
Should provide with adult and pediatric reusable and autoclave light weight tubing breathing circuit.

Should be able to deliver a tidal volume from 50ml to 1500ml.
Should have a battery backup for 60 minutes with low battery alarm and over charge protection.
Should have monitoring facility of continuous airway pressure, tidal volume, frequency , oxygen concentration and oxygen supply pressure
Should have display of at least 6 inches for set parameters.
Should have automatic self test for the entire system.
Anesthesia machine should be with 3 gas supply system (O2, N2O and Air) with pipeline connections and reserve cylinder yokes.
Gas cylinder (pin indexed) yokes with sturdy clamping bars for easy handling.
One Pin index yoke for connecting cylinder each for O2, N2O through pipeline.
Regulator one each for O2 and N2O, N2O should be activated only with oxygen on flow
Should have pressure gauge for all gas inlets including central lines mounted on the front panel for easy visibility
Should have audible alarm for O2 failure
N2O supply should cut off if O2 supply fails. (hypoxic guard).
Oxygen and Nitrous oxide should be linked either mechanically or pneumatically to ensure a minimum of 25% oxygen delivery at all times to avoid delivery of hypoxic mixture
Should have dual cascade type flow meter for at least O2 and N2O calibrated in multiple scale.
The anesthesia machine should have a master control ON/OFF switch
Provision to mount any two vaporizers with interlocking facility to allow use of only one
Iso-flurane vaporizer of newer generation having specifications equivalent to tech 7 type to be provided.
Non-return cum pressure relief valve when pressure exceeds 120cm of H2O.
Should have auxiliary common gas outlet for open circuit.
Should provide with oxygen flush switch
Circle absorber with corrugated reusable breathing circuit for closed circuit system with each unit. It should be autoclavable. It should be with ventilator selector switch and circle on/off switch
Should have low flow anaesthesia technique.
Should have a facility to connect to the passive scavenging system and the required tubing to be provided
Should have atleast two universal electrical outlets.
Should have a provision for mounting monitors on top of the machine and with drawers.
Should have fiber wheels and Foot brakes.
Standard bains circuit : 5 no. with each unit
Magills Circuit: 5 No with each unit.
Reservoir bag (2liters): 2 nos. with each machine
Connectors for bains circuit: 10 nos with each machine.
AMBU bag: 10 no. with each machine.
Pressure regulated valve with 5 meter hose and connector (conversion kit) for oxygen should be provided with each machine
Should be supplied with driver gas hoses with necessary attachments (colour coded)
Should be supplied with necessary attachments to use the breathing circuits viz namely
Bains, Magills, Jackson-Rees and closed circuit (Single limb circuit)
Should work in 220-240Vac 50 Hz input supply
Should be supplied with two Vaporizer.
Should supply 10 kg Soda Lime along with machine.

Should have safety certificate from a competent authority CE issued by a notified body registered in European Commission / FDA (US) / STQC CB certificate /STQC S certificate or valid detailed electrical and functional safety test report from ERTL/ ISI

G. NEONATAL INCUBATORS

FEATURES:
- The temp. controlled unit should be operated by advance micro controller technology.
- The three digital display indications should provide set temperature, air temperature and skin temperature.
- Two function control modes should provide the clinician more flexibility while optimizing the thermal environment.
- In addition, the skin temperature display should be larger than the set/air temperature display.
- The removable heater and control unit should make it easy to clean and service.
- Full visibility and accessibility of the baby is provided by the removable acrylic hood.
- A full complement of alarm should provides safety convenience ,with both audible and visual indicators:
• Probe failure
• Power failure
• High temperature
• Low temperature
• Battery Level
- Skin temperature Display can be converted from C to F by push of a button
- A Big LCD should be provided for more specific information and Visualization of the heater power in different modes.
- The High and Low temp alarm setting can be adjusted according to patient condition
- Humidification should be provided with the help of two water trays provided at the back of the unit
- Three side trays should be provided at the bottom of the unit to keep consumables
- The unit should be provided with 4 big castors with brakes in front of castors
- M6 size aluminum Oxygen cylinder with pressure gauge and connector setup to be provided with chamber to hold the cylinder.
- Should have xray cassette holder tray system
- The heater should automatically cut off at 39 degree Celsius irrespective of the set parameters.
- Should have IV stand and observation lamp.
- The baby tray should have externally controlled tilting facility for trendelenberg position and the tray should be withdraw able type
- The equipment to be supplied along with 4 skin & 4 chamber temperature probes
- Must be CE certified.
- The equipment should have battery backup of minimum 3 hours.

– The equipment operating power requirements should be compatible with Zambia power distribution ranges. Necessary power cords need to be provided.

H. VENTILATORS

ICU ventilators provide artificial respiratory support to the critical patients in all the types of Intensive Care Units with altitude compensation for volume and BTPS correction for monitoring.
• Should be microprocessor Controlled ventilator with integrated facility for Ventilation monitoring suitable for Neonate, Pediatric to adult ventilation.
• The unit should be compressor based for precise gas delivery (not a turbine /piston/ blower based). Demonstration of the equipment is a must.
• Hinged arm holder for holding the circuit.
• Should have inbuilt Coloured Touch screen TFT of 12 Inch or more, not an external display.
• Ventilator should have software for lung protective ventilation.
• Should have Facility to measure and display.
• 3 waves- Pressure and Time, Volume and Time and Flow and Time.
• 3 loops- P-V, F-V, P-F with facility of saving of 4 Loops for reference.
• Ventilator should have in built oxygen sensor and guaranteed for 10 years with free replacement warranty.
• Graphic display to have automatic scaling facility for waves.
• Status indicator for Ventilator mode, Battery life, patient data, alarm settings, clock etc.
• Should have Trending facility for 72 hours.
• Should have Automatic compliance & Leakage compensation for circuit.
• Flow sensor should be Hot wire technology or differential pressure technology or
ultrasonic and Flow sensor must be expiratory end. Should be reusable and autoclavable and should be guaranteed for 10 years with free replacement.
• **Should have following settings for all age groups.**
a) Tidal Volume 5 ml to 2500 ml
b) Pressure (insp) 2- 100 cm H2O
c) Pressure Ramp/ Flow patterns
d) Respiratory Rate 1 to 150 bpm, Insp. Time 0.1 to 3 sec, I : E Ratio 5:1 to 1:599
e) Insp. Flow (resultant) 0.2 to 180 LPM, continuous Flow 0-40 lpm (in TCPL Code)
g) CPAP/PEEP 0-50 cmH2O
h) Pressure support 2-100 cmh2O
i) FIO2 21 to 100%
j) Pause Time 0 to 2 sec
k) Flow Trigger 0.2 to 15 lpm, Pressure Trigger 0.5 to 20 cmH2O
l) Expiratory trigger 5-80-% of flow
• **Should have Monitoring of the following parameters.**
a) Airway Pressure (Peak & Mean)
b) Tidal volume (Inspired & Expired)
c) Minute volume (Expired)
d) Spontaneous Minute Volume
e) Total Frequency

f) FIO2 dynamic
g) Intrinsic PEEP and PEEPi Volume (or trapped Volume)
h) Plateau Pressure
i) Resistance (Rinsp & Rexp)& Compliance (Cdyn & Cstat)
j) Use selector Alarms for all measured & monitored parameters
• **Should have following Modes of ventilation**
a) Volume controlled
b) Pressure Controlled
c) Pressure Support
d) SIMV (Pressure Control and volume control) with pressure support
e) CPAP/PEEP, PSV + assured tidal volume
f) Non Invasive ventilation
g) PRVC
h) MMV+PSV
i) TCPL
j) SIMV +TCPL + PSV
k) N-CPAP(with continuous flow)
l) APRV
m) Apnea /backup ventilation
• **Should have below advanced monitoring**
a) Intrinsic Peep & Intrinsic PEEP Volume (Trapped Volume)
b) Occlusion Pressure(P0.1) , Max Inspiratory pressure (Pi max)
c) Non-forced Slow Vital Capacity , physiologic Dead space, RSBI, Imposed
d) work of Breathing (WOBi), Expiratory Time constant (Tcexp)
e) Facility to calculate lower and upper inflection point (P/V Flex points)
f) Patient circuit compensation
g) Should have Nebulizer with capability to deliver fine particle size of to be used in On line
h) Should have Ideal Body Weight facility
• **System should be supplied with below Accessories, spares and consumables**
a) ICU Ventilator with trolley - 01
b) Reusable Adult , Pediatric and Neonate Circuit - 05 each
c) Reusable and autoclavable Flow sensor and exhalation valve - 5 each
d) Reusable Humidifier with Adult and Pediatric Chamber – 2 set
e) Low noise Medical Air Compressor with automatic switch over when pipeline air source interrupted.
f) Disposable Patient circuit for Adult and Pediatric – 25nos/each
g) Hinged Support Arm – 1 No
h) Air and Oxygen Hose - each 1 No
• **Power and Gas requirements:**
a) Power input to be 220-240VAC, 50Hz
b) Gas input(air and oxygen) - 50-100 psi
• **Standards, Safety and Training**
a) Should be US FDA or European CE approved product
b) Manufacturer should be ISO certified for quality standards.
c) Demonstration of quoted equipment model is a must.

d) Should have local service facility .The service provider should have the necessary equipment recommended by the manufacturer to carry out maintenance test as per guidelines provided in the service/maintenance manual.
e) Comprehensive warranty for 1 years.

I. DIGITAL MICROSCOPE

Trinocular Phase contrast Microscope with Universal Infinity Corrected Optical System.
Illumination system:
Research type frame with built in transmitted LED power illumination system, power consumption 2.4W, precentred Kohler illumination (fixed field diaphragm).
Trinocular, 10X Eyepiece with FN20, 30 degree inclined, inter pupillary distance: 48-75mm
Stage height movement, Focusing Stopper, stroke per rotation for coarse adjustment knob, fine focus knob.
Nose piece:
Fixed Quintuple revolving nose piece with inward tilt
Stage:
Wire movement mechanical fixed stage 211mm x 154mm, travelling range 76mm(x) x 52mm(y), single slide holder, Specimen position scale, stage XY movement stopper.
Condenser:
Abbe condenser (N.A. 1.25) with oil immersion, universal condenser with 7 turret positions (Bright Field, Dark Field, Ph1, Ph2, Ph3, FL, 2X)
Objectives:
All Universal Plan Achromat objective 4x/0.10, PH10x/0.25, PH20x/0.4, PH40x/0.65x & PH100x/1.25
CMOS CAMERA WITH SYSTEM
2.3 Mega Pixel CMOS Camera with sensor having sensor size of 1/1.9", Resolution: 1920 X1200, suitable for Fluorescence & Bright Field Imaging, pixel size 3.75 X 3.75 um, Binning1X1, 2X2 with USB 3 port for faster data transfer, with a software for point to Point measurement, auto white balance, auto exposure option, basic setting: Gain, Gamma, Contrast, Auto white balance, optical Port: C-Mount compatible with Windows 10 (32/ 64 bit).
Packing should include: 2.3 MP Camera, USB 3 cable, calibration slide.

System:
Monitor with 19” LED Monitor, Intel i3 Processor, 500 GB Hard disk, 4GB Ram, 1GB Dedicated graphics processor.

2. Section III - Instructions to Bidders (ITB) - Clause no. 17 (page no.15-16) may be read as follows;

17. AWARD OF CONTRACT

Evaluation of Proposals & Award Criteria

The bidder can go ahead with any one or more equipements listed in Schedule A. The lowest price criteria shall be applied equipment wise on the total composite amount (inclusive of all charges except customs duty at destination country) for the equipment quoted [Annexure IX(a)]. The price quoted for CMC [Annexure IX(b)], Consumables and spares [Annexure IX(c)] (if any) will not be taken for arriving the L1 price. However these rates will be finalized for future requirements of supplies and the requirement will be intimated to the party either by HLL or MEA or by the host in the destination country and this price will be valid for period of four years after the warranty period.

Preliminary scrutiny of the proposal will be made to determine whether they are complete, required bid security (EMD) have been furnished, whether the uploaded documents have been properly signed and whether the bids are generally in order. Proposals not conforming to such preliminary requirements will be prima facie rejected.

Bids complying with all the eligibility requirements mentioned under Section III Clause 4 of this E-Tender document and fulfilling the specifications and schedule of requirements mentioned in (please refer annexure VIII for sheet) Section V shall be treated as substantially responsive bids. Responsiveness of the bids shall be determined on the basis of the contents of the bid itself and shall not be determined by extrinsic evidences.

HLL Lifecare Ltd, if required, may ask bidders for presentation on the solution offered. Failure on part of bidder to arrange the presentation on the date & place fixed by HLL shall result in the rejection of technical bids and financial bids of these bidders shall not be opened. Also, if it is found after presentation that the solution offered is not meeting the specifications prescribed by, such bidders shall be treated as substantially non- responsive. HLL Lifecare Ltd decision shall be final in this regard. The place for presentation shall be conveyed to the bidders at an appropriate date.

Commercial bids of only those bidders will be opened who are found to be substantially responsive and the work shall be awarded to the commercially lowest bidder.

The price bid format for the equipments is common for all the equipments listed in schedule A. If the bidder is quoted for more than one equipments in a single bid, there is a possibility that the price quoted for technically disqualified equipment, if any, may also get revealed at the time of price bid opening. Hence it is recommended to apply sufficient caution by the bidders, that **price bid need to be submitted only for technically qualified equipments as per the technical**

specification of the equipment and minimum eligibility criteria.

The bidder should carefully cross check the prices entered in figures with corresponding figures converted in words. In case of discrepancy between words and figures, the rates quoted in words shall be treated as final. The correct amount will be calculated by multiplying unit price with quantity and in case of any discrepancy, the corrected amount shall be considered and total of all corrected amount shall be bidder's total quoted amount.

In the copies of supply order/ contract/ agreement/ experience certificate submitted by the bidder, if the currency is other than Indian Rupees, the value of work in Indian Rupees shall be determined by using the exchange rate declared by Reserve Bank of India as on the last date of submission of technical/ commercial bids and the eligibility of the bidder shall be determined accordingly.

If more than one bidder happens to quote the same lowest price, HLL Lifecare Ltd reserves the right to split the order and award the contract to more than one bidder.

3. Section IV - Special Conditions of Contract (SCC) (Page no.18) may be read as follows;

Prices:

The price quoted shall be considered firm and no price escalation will be permitted.

The prices quoted should be inclusive of all applicable costs like equipment cost, profit margin, freight, insurance, packing, port charges, documentation charges, demurrage charges, training cost, installation, testing & commissioning charges including manpower charges, warranty charges, loading & unloading charges, applicable statutory charges (if any) at the destination country etc till final destination as per the supply order. Applicable statuary government taxes in India(if any) like GST and Custom Duty at Zambia need to be indicated seperately in the prescribed price bid format. However MEA would reimburse taxes as per the applicable rates as on the date of invoice. The packing shall be transport worthy so as to prevent their damage or deterioration to goods during transit to their final destination as indicated in this document. The packing shall be sufficient to withstand, without limitation, rough handling during transit and exposure to extreme temperatures, salt and precipitation during transit and open storage. Packing case size and weights shall take into consideration, where appropriate, and the remoteness of the Goods final destination and the absence of heavy handling facilities at all point in transit. However risk in good shall continue with supplier till goods are delivered in good condition and installed at end user's site duly certified by HLL Lifecare Ltd, end- user & Indian Mission in Zambia.

Taxes and Duties:

Applicable statuary government taxes in India (if any) like GST etc would be reimbursed by MEA as per the applicable rates as on the date of invoice. However bidder should indicate the necesary details in the prescribed price format. The items being imported in Zambia as per schedule A from India/ third country will be exempted from payment of Custom Duty at Zambia. The Government of Zambia end user on the request of supplier shall provide necessary Custom

Duty Exemption Certificate but the custom clearance will be the responsibility of the successful bidder. No Concession Tax Form (C/D) will be given by HLL Lifecare Ltd.

Bidder shall arrange to clear the consignment after following customs formalities at Zambia and shall arrange to deliver the consignment to the end user individual site(s). The cost and risk of the consignment rests with the bidder till it is delivered to the end user individual site(s) and till the completion of Installation, testing, Commissioning and acceptance as per the relevant claused mentioned in the e-tender.

4. Annexure IX - Pricing Sheet has been amended as follows;

Annexure IX (a)

Name of the bidder:

Ref: RFx No.

Price Format (offered in INR)											
1	2	3	4	5	6	7	8	9	10	11	12
Sl. No.	**Description of goods as per specification**	**Make/ Model**	**Country of Origin**	**HS/ HSN Code**	**Unit of measurement**	**Quantity per set of equipment**	**Unit Price at Consignee Site (excluding GST)**	**Applicable GST (%)**	**Applicable GST value/ unit (8 x 9)**	**Unit Price at Consignee Site (8+10)**	**Total Price at Consignee Site (7 x 11)**

Note:

1. All the information must be entered in the relevant columns of the price format excel attached.

2. Any Incidental Services (including Installation, Testing & Commissioning, Supervision, Demonstration and Training) at the Consignee site has to be mentioned as a sperate line item with HSN Code and applicable GST based on nature of the work

4.It is core responsibility of bidder to understand the site before bidding and make sure arrangement being provided by Government of Zambia as per schedule A.

5. Any, remaining parts such as: Base for Machines, Sheds, Electrical Wire, Water Pipeline or any kind of additions / changes / modifications required would be responsibility of bidder only

6. It is the responsibility of bidder to arrange all parts for installation which is not covered by local government to be locally done within given timeline.

7. Bidder has to make arrangement to provide services / spare parts for all quoted machines in short time. It can be done by visit of engineer or setting up a local officer or by availing spare parts in advance.

Annexure IX (b)

Comprehensive Maintenance Contract Quotes after Warranty							
S.No.	Description of goods as per specification	Make/ Model	Country of Origin	2nd Year of operation	3rd Year of operation	4th Year of operation	5th Year of Operation
				(in Rs. incl. of all applicable duties/taxes)			

Annexure IX (c)

Consumables and Spares Quotation							
S.No	**Description of goods as per specification**	**Category Spare/ Consumable**	**Spare or Consumable Description**	**Ordering Code**	**Unit of Measurement**	**Packing Size**	**Unit Price Incl. of all taxes**
1							
2							
3							
4							

All relevant clauses of the tender document are to be read in accordance with the above change and documents to be submitted are to be in compliance of the above. All other specifications, terms and conditions of the original tender document shall remain unchanged.

Senior Manager
Sourcing Division - RBD
HLL Lifecare Ltd.
HLL Bhavan, Poojappura,
Thiruvananthapuram.
Ph.no: 0471 2353932.