REQUEST FOR BUDGETARY ESTIMATE

Ref.: HSCC/PUR /MEA- ZAMBIA/Med. Eqpt./2023/01 dated 09.08.2023

HSCC (India) Ltd. intends to invites **On-line bids/GeM** from eligible bidders, in single stage two bid system for supply, installation, testing, commissioning & handing-over of various Medical Equipment for **REPUBLIC OF ZAMBIA** for items listed at **Annexure-I**. The Technical Specifications are annexed at **Annexure-II**.

It is requested to submit the Budgetary Estimate of the Equipments in Company Letter Head, as per the single page format enclosed at Annexure-III, in both Hard & Soft Copy latest by 16.08.2023 at following address:

General Manager (Projects)

HSCC (India) Ltd.,

E-6(A), Sector-1,

NOIDA (U.P.) – 201 301.

Please note that MII guideline shall be followed while procuring the items and soft copy may be send on following e-mail ID:

t_nath@hsccltd.co.in

suresh_kumar@hsccltd.co.in

GM (Projects),
HSCC (I) Ltd,
(A Govt. Of India Enterprises)

Annexure-I

A. MEDICAL EQUIPMENT

No.	Item	Qty.
1	Anaesthesia Machine	10 Units
2	Operation Theatre Table	20 Units
3	OT Lights	20 units
4	Dental Chair Unit	10 Units
5	Infant Incubator	10 Units
6	Infant Resucitaire	10 Units
7	Patient monitors	20 Units
8	Hospital Bed	1204 Units

Annexure -ii

TECHNICAL SPECIFICATIONS OF MEDICAL EQUIPMENTS FOR SUPPLY TO REPUBLIC OF ZAMBIA

I. **Anaesthesia Machine**- Quantity- 10 Units

1. Compact and modular, three gas Anaesthesia workstation with an integrated ventilator for adult to infants and integrated airway monitor for airway pressure and volume. The machine should be suitable for low and minimal flow anesthesia application with compliance compensation of breathing ckt, fresh gas flow compensation/ decoupling.
2. **Operational Requirements**-Anaesthesia machine complete and integrated with Anaesthesia gas delivery system; Circle absorber system; TEC Vaporisers for Halothane / Isoflurane / Sevoflurane ; Anaesthesia ventilator; Anaesthesia Gas monitoring with automatic Agent identification, EtCO2, Patient circuit Oxygenation status FiO2 and EtO2 (using Paramagnetic cell for no recurring cost).
3. **System Configuration Accessories, spares and consumables**
   3.1 Anaesthesia Gas Delivery system -01
   3.2 Circle absorber –01
   3.3 Ventilator -01
   3.4 TEC Vaporizer Sevoflurane -01
   3.5 TEC Vaporizer Isoflurane -01
   3.6 Adult and Paediatric autoclavable silicone breathing circuit each
   3.7 Accessories Anesthetic gases measurement-01 set
   3.8 Standard accessories to make all parameters working- 01 set
4. **Technical Specifications**

   4.1 Flow management

   (i) Should be Compact, ergonomic & easy to use.

   (ii) Machine should provide electronic gas mixing. User should be able to set Fresh Gas flow and FiO2 on the screen. Direct setting of FiO2 should be available to make setting of O2 plus Air flows faster across all flow ranges instantaneously.

   (iii) Multi-color Touch Screen TFT/LED display of at least 15” size, with display of flow of O2, N2O or Air; pressure Vs time, flow Vs time , scalars; flow volume & pressure volume loops; respiratory gas monitoring & anaesthetic agent monitoring; automatic agent indentification; concentration, inspired & expired, Age corrected and MAC values. The screen should be movable and angle should be tiltable for better veiwing.

   (iv) Dual flow sensing capability at inhalation and exhalation ports with back-up O2 control which provides an independent fresh gas source and flow meter control in case of electronic failure.

   (vi) One no. yoke each for Oxygen & Nitrous Oxide. Separate Pipeline inlet for Oxygen, Nitrous Oxide and Air with electronic pressure gauges to indicate inlet pressures.

   (vii) Electronic Hypoxic Guard to ensure minimum 25% O2 across all O2-N2O mixtures and Oxygen Failure Warning. Audible visual oxygen failure alarm and Emergency Oxygen flush at 30 – 70 L/min by passing the vaporizer.

(viii) Auxillary flowmeter for Oxygen.
(ix) Should have unlockable Oxygen flush to deliver oxygen flow of approximately 40 l/min.
(x) Should have facility of delivering basal flow of oxygen on switching on the machine.
(xi) A single pneumatic/electric on/off switch should activate the gas flow and vaporization.

4.2 Breathing system

(i) All parts of the breathing system that are in contact with patient gas should be latex free and autoclavable.
(ii) Flow sensing capability at inhalation and exhalation ports, sensor connections shall be internal to help prevent disconnect.
(iii) Should not require tools when dismantled for cleaning and sterilization.
(iv) Sensor should not require daily maintenance.
(v) Should have bag / vent selecting valve integrated onto the absorber and should automatically turn on the ventilator when positioned to ventilator position.
(vi) Adjustable pressure limiting valve shall be flow and pressure compensated.
(vii) Should be supplied with necessary attachments to use the breathing circuits viz namely Bains, Jackson-Rees and closed circuit (Single limb circuit)

4.3 Standard Circle Absorber System

(i) Should have adjustable pressure limiting valve, breathing circuit pressure measuring device.
(ii) Should have a bag/ventilator selecting valve integrated onto the absorber.
(iii) Should be suitable to use low flow techniques.
(iv) Should have CO2 absorbent chamber canister
(v) Should have CO2 bypass without any air entrainment or loss of pressure / disconnect

4.4 Vaporizers

(i) Vaporizer must be isolated from the gas flow in the off position and prevent the simultaneous activation of more than one vaporizer.
(ii) Vaporizer shall require no tools to mount.
(iii) Supplier must offer total vaporizer manufacturing capability - Desflurane, Enflurane, Sevoflurane, Halothane and Isoflurane. The rate for the vaporizers shall be offered separately and the same shall be taken for L1 evaluation.
(iv) Back bar to accept two vaporisers.

4.5 Ventilator (Integrated)

(i) The workstation should have integrated Anesthesia Ventilator system for adult and paediatric and neonates.
(ii) Ventilator should be pneumatically driven, electronically controlled and should be ascending bellows /bag in bottle type.
(iii) Ventilator should have Volume Control and Pressure Controlled, SIMV and PEEP, Dual control mode (PRVC/ PRVT/ PCV-VG etc.), Pressure Support.
(iv) Ventilator should be capable of ventilating diverse range of patient groups from neonates to patients with restrictive airways with tidal volume range between 20 ml to 1500 ml with single bellows system. With option of delivering 5ml in neonatal mode.
(v) Assisted modes of breathing should be flow triggered.

(vi) Ventilator shall compensate for fresh gas flow and compliance of the entire circuit dynamically. Ventilator should have a tidal volume compensation capability to adjust for losses due to compression.

(vii) The workstation should be capable of delivery of low flow and minimal flow anaesthesia.

(viii) Ventilator should be capable of at least 120-150 L/min peak flow to facilitate rapid movement through physiologic “dead space” in the Pressure Control mode.

(ix) Ventilator should also display waveforms for flow and airway pressure.

(x) Ventilator should display spirometery loops including Flow-Volume and Pressure-Volume curves.

4.6 Power Supply

(i) Power input to be 220-240VAC, 50Hz,as appropriate fitted with Type D/G plug.

(ii) Resettable over current breaker shall be fitted for protection. Suitable Servo controlled Stabilizer/CVT.

(iii) The Anaesthesia Delivery system and Monitoring system will have a one hour battery back up.

4.7 Standards, Safety and Training

(i) Monitors and Anaesthesia Workstations Should be FDA /BIS/CE approved product.

(ii) Electrical safety conforms to standards for electrical safety IEC-60601-1-2: 2001 / IS-13450 for Electromagnetic Compatibility.

(iii) Certified to be compliant with IEC 60601-2-13-Medical Electrical Equipment.

(iv) The manufacturer should recommend the necessary equipments by the to carry out preventive maintenance test as per guidelines provided in the service/maintenance manual.

(v) All components like anaesthesia machine, vaporisers, and ventilator should be only from one manufacturer/principal.

(vi) Warranty of Five years will be offered. Supplier will assure supply of spares for a minimum period 10 years.

5. **Documentation**

5.1 User Manual in English

5.2 Service manual in English

5.3 List of important spare parts and accessories with their part number and costing.

5.4 Certificate of Calibration and inspection from the factory

5.5 Log book with instructions for daily, weekly, monthly and quarterly maintenance checklist. The job description of the hospital technician and company service engineer should be clearly spelt out.

5.6 List of Equipment available for providing calibration and routine maintenance support as per manufacturer documentation in service / technical manual.

5.7 Compliance Report to be submitted in a tabulated and point wise manner clearly mentioning the page/para number of original catalogue/data sheet. Any point, if not substantiated with authenticated catalogue/manual, will not be considered.

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II. **Operation Theatre Table**- Quantity- 20 Units

1. The quoted system should be based on electro hydraulic technology and operated by hand control. Should have a manual override function for all major positions (up, down, flex reflex, side tilt, slide etc) and movements with an additional control unit which can be operated manually without any requirement of power.
2. The table should have soft start function for fine adjustment of positioning.
3. The system should comply with
   a) Electrical IEC 60601-1, medical/ electrical equipment for safety
   b) IEC 60601-2-46 for safety of OT tables
   c) IEC 60601-1-2 for electromagnetic compatibility (Test reports for the same should be submitted) for the quoted model.
   d) Manufacturing License under MDR 2017.
4. The table should either be eccentric or with central column. The tables with central column should allow sufficient motorized slide of at least 400 mm to permit full upper body imaging including the pelvis without having to move the patient (transitional facility controlled by remote). Should have inbuilt Kidney Bridge or Break position or motorised kidney elevator.
5. Radiolucent five section table top in head section, back section, seat section with perineal cut with facility to seal the perineal cut has to be provided, split leg section and inbuilt kidney bridge or inclinable back extension which performs the same function of kidney bridge.
6. Table should have interchangeable positions of head plate and leg plate so that they can be interchanged with each other on either end.
7. The table should be sturdy, mobile with padded divided (split leg) foot section with double abduction facility. All tables sections except the section attached to the pillar should be quickly detachable using easy latch mechanism to suit all surgical needs.
8. The table should be made of stainless steel/ABS with space to provide comfortable leg space to the surgeon while operating.
9. The base column should have telescopic cover of stainless steel and fiberglass/ABS laminate to prevent ingress of fluid into the system.
10. All metal components of the table should be made up of corrosion resistant aluminium or stainless steel.
11. The table should have heavy duty antistatic swivel castors with hydraulic central locking through hand held controller for easy maneuverability. It should have self-leveling floor locks and wheels for 360 degree rotation.
12. The remote control should have clearly labelled LED / graphic display control panel with push button for main adjustments such as height, lateral, back section, trendelenburg / Reverse trendelenburg and return to basic/0 position with indication of load control of the battery sufficient for weekly use. Should also have the sliding movement function in remote control. Should also have feature of having a reverse position button to recognize the changed head and leg end in case the head and leg sections have been interchanged.

13. LCD/LED backlit screen on hand held controlled displaying each selected position of the table and similar features should be available on override control panel.
14. Should have stainless steel accessory rail on both sides to hold various accessories.
15. Weight load capacity -Should have safe patient weight load capacity of at least 220 kg in all table positions including reverse orientation. The STATIC patient weight capacity should be 500 Kg or more. The literature should clearly mention both types of weight capacities.
16. Table top and mattress -
    (a) The table top should be made up of scratch-less X-Ray/C-arm translucent material.
    (b) Mattress should be molded, seamless, anti-decubitus/antistatic and separate for each section with easy Velcro free fixation/Velcro and should be easy to detach from the top.
    (c) The mattress should be easy to clean.
    (d) The mattress should be latex and CFC free and 100% hygienic.
17. Technical parameters
    (a) Overall length: 200cm or
    (b) Longitudinal Shift300 mm or more and should be able to slide on both the ends
    (c) Max. Width : Min. 580 mm (With side rails)
    (d) Minimum height: 580 mm or less (without mattress)
    (e) Maximum height: 1180mm or more (without mattress)
    (f) Side Tilt: 20 degree.
    (g) Trendelenburg: 25 degree
    (h) Anti-Trendelenburg : 25 degree
    (i) Motorized Leg movement : 30 degree or more upward and 100 degree or more downward
    (j) Motorized Back section adjustment 30° to 70° up, 40° down.
    (k) Power input to be 220-240Vac, 50HZ fitted with Type D/G plug.
    (l) Weight of Table- 350 kg or more
18. Bidders should offer all accessories necessary to achieve below mentioned patient positions
    (a) Kidney position with kidney bridge
    (b) All position for thoracic surgery
    (c) Lloyd Davis
    (d) Lithotomy
    (e) Hand Surgery/Vascular Hand Surgery
    (f) Thyroid/Neck
    (g) Jack knife position
    (h) Sims position
19. Should be supplied with following standard accessories:
    (a) Padded Compelling rest with clamps (Pair)- 1 pair
    (b) Anesthesia screen with clamp- 1
    (c) Shoulder supports pair clamps- 1
    (d) Padded armrest with straps with clamps- 1 pair
    (e) X-ray cassette tray/holder- 1
    (f) Body restraint belt- 1

(g) Wrist let- 2

(h) Trolley to store various accessories along complete set of gel positioners for adult and pediatric patients, including bolsters and rings for prone positioning.

20. Attachment for Neuro Surgery for Prone, Spine and Beach chair

(a) Universal Adopter for DORO Universal Basic Unit- 1

(b) Doro Universal Basic Unit- 1

(c) Doro Skull clamp adopter- 1

(d) Doro Skull clamp- 1

(e) Doro head shape head rest- 1

(f) Cross bar attachment with attachment clamp- 1

(g) Doro skull pins Adult- 3

(h) Doro skull pins pediatric- 3

(i) Gel Heal Pad- 1

(j) Cushion- 1

(k) Plexus cushion- 1

21. Attachment for Orthopedic Surgery:

The table should have a feature of beach chair position and there should be helmet with chin support to put the patient in beach chair position after general anaesthesia.

(a) Shoulder Surgery

(i) Shoulder surgery plate- 1

(ii) Body support- 1

(iii) Head rest for shoulder surgery with connector- 1

(b) Arm/Hand

(i) Large Arm Board (815 X 520 mm)- 1

(ii) Gel head ring Adult & Pediatric- 1 each

(c) Shoulder Traction

(i) System for shoulder traction device: Weightless Shoulder suspension with traction setting up to 18 Kg with a simple turn of tension knob. Boom arm adjustable from 0° to 90°. Including 1 sterile arm holder and clamps to attach to the side rails. It should have a max weight capacity of 227 kg.

(ii) Pubis/Sacrum/Sternum support- 1

(iii) Attachment for the Pubis/Sacrum/Sternum support- 1

(iv) Tunnel cushion- 1

(d) Humerus

(i) Weinberger hand tract. Device- 1

(ii) Humerus positioning device with clamp – 1

(iii) Humerus countertraction post with clamp 1

(iv) Cushion- 1

(v) Gel head ring, Adult & Pediatric- 1

(vi) Gel heal pads- 1

(e) Limbs

The table should have attachment and feature to enable us to do the tibia interlocking nail with knee and hip suspended at 90degree each and also to give traction to the limb through calcaneum pin in the same position

(i) Ortho extension device for treatment of lower limb factures with mounting fixtures-1

(ii) Positioning plate for dorsal position- 1

(iii) Transport trolley for extension device- 1

(iv) Transfer leg plates for extension device- 1

(v) Side rail extension- 1

(vi) Kirschner wire device- 1

(vii) Knee positioning device with clamp- 1

(viii) Knee ARTHOSCOPY support- 1

(ix) Counter traction post for lateral position- 1

(x) Traction device for Tibial fractures- 1

(f) Spine

(i) Buttock support with clamp- 1

(ii) Knee elbow positioning device- 1

(iii) Plexus cushion- 1

(iv) Gel prone head rest Adult & Pediatric- 1

(v) Cushion for intervertable disc operations- 1

(vi) Horse shoe head rest- 1

(vii) Adaptor for horse shoe head rest- 1

(viii) Cushion/Chest roll- 1

22. Attachment for ENT

(a) Head rest connector- 1

(b) Horse shoe head rest- 1

(c) Gel Heal pads

(d) Chest Roll/Cushion- 1

(e) CMFS Plate- 1

23. Attachment for Gynaecology

(a) Urological adaptor- 1

(b) Swivel mounted rinsing basin with holder- 1

(c) Transfer leg plates- 1 pair

(d) Elbow rests- 1 pair

(e) Leg support servo assisted- 1 pair

24. Specifications for Urology

(a) Urological adaptor- 1

(b) Swivel mounted rinsing basin with holder- 1

(c) Transfer leg plates- 1 pair

(d) Elbow rests- 1 pair

(e) Leg support servo assisted- 1 pair

25. Attachment for plastic surgery
    (a) Hand Surgery side table attachment with telescopic leg for height adjustment- 1 pair
    (b) Microsurgical ring – 1 pair
    (c) Hair transplant support – 1 pair
    (d) Horseshoe shaped face rest – 1, head rest adult (big size) – 1 & small size – 1

26. Warranty:- Not less than 02 years

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III. **OT Lights-** Quantity- 20 units

1. The OT Lights should have microprocessor controlled 09 or more LED light engines/modules altogether 135 LEDs or more emitting homogenous luminous field and prevent the casting of color shadows.
2. Dome body should be of single piece and should have provision for air circulation & laminar flow.
3. Intensity at 1-meter distance 1,50,000 to 1,60,000 lux and irradiance not more than 555w/m2.
4. Should have at least 03 or more variable Colour Temperature within 3500-5500 K.
5. Should have Digital control panel- on/ off switch and light intensity control on light dome as well as away from it.
6. The contrast between the lighted area and the surrounding should not cause stress to the surgeon's eye and should have Soft-start option (light does not start immediately with full brightness).
7. Depth of illumination (L1+L2) at 20% should be 100-140 cms.
8. Variable Illuminated field diameter should be approx. 20-30 cms with focus adjustment. The process of adjusting the light field diameter should involve no moving parts at all and thus it should be entirely maintenance-free.
9. Colour rendering index (CRI) (Ra= R1 to R8) and R9 should be 90% or more. Colour
10. Shadow Dilution with one offset mask should be 80% or more and with two mask should be 70% or more.
11. User selectable intensity variation with digital display from 30 to 100% in 6 or more steps.
12. Height adjustment more than 1 meter with 360 degree rotation.
13. It should have a back light (5%) or ENDO mode (Small Light field).
14. LED life span 50000 or more Hrs.
15. Power input: 220-240V/ 50 Hz AC Single phase fitted with appropriate plugs and sockets. Total power consumption should not be more than 55 W. Integrated Rechargeable battery backup for Minimum 30 mins to operate the light in case of main power failure.
16. In-built Electronic Voltage corrector/stabilizer of appropriate ratings meeting BIS Standards/Specifications.(Input 160-260 V and output 220-240 V and 50 Hz).
17. Electrical safety conforms to standards for electrical safety IEC 60601-1 General Requirements.
18. Should meet internationally recognised standard for Electro Magnetic Compatibility (EMC) for electromedical equipment: IEC-60601-1-2 :latest edition or should comply with 89/366/EEC; EMC-directive as amended.
19. Certified to be compliant with IEC 60601-2-41: Particular requirements for the safety of Operation Theatre Light or equivalent if applicable.
20. Equipment should have US FDA and European CE approved /certified.
21. Degree of protection: Light head - IP 42 or more, Suspension system – IP 30 or more.
22. Warranty: Not less than 1 year.
23. Should be supplied with all accessories.

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IV. **Dental Chair Unit**- Quantity- 10

1. Physiological Dental Chair operated by electricity.
2. Technical Specifications
   (a) Chair parts should be made of die cast aluminum and memory foam padding support.
   (b) Base and others should have corrosion resistant coatings.
   (c) Should be supplied with monitor arm and multimedia connections.
   (d) Integrated bio-system for disinfection of hand piece, tubings internally after every treatment.
   (e) Dental unit should have latest delivery overhead system with 5 ports, feather touch keypad.
   (f) It should have two 3 way syringes (tip autoclavable, with 6 spare tips) one on unit side and other on the assistant side.
   (g) It should have one high speed Air Rotor terminal with water control on coupling supplied with original CE 380000 rpm hand piece.
   (h) It should have one high speed fiber-optic air-rotor terminal with handpiece
   (i) One brushless micromotor (40000 rpm) terminal having straight and contra angle handpieces
   (j) It should have LED light cure unit on unit sides (Min. Intensity 800 mW/cm2 and wave length range - 370 - 500 nm output)
   (k) It should have one in-built Piezon Ultrasonic Scaler (frequency 28-36 KHz) with 4 scaler tips and one set of perio-curette tips
   (l) Should have one intra-oral camera with monitor mounted to chair.All handpieces/terminals should be kept on Autoclavable pads. 6 spare autoclavable pads should be supplied. Arm of unit should be pneumatically locked.
   (m) Should have one intra-oral camera with monitor mounted to chair.
   (n) It should have infection control system with non-retraction valves (Bio System/ equivalent). All air tubing of the delivery system should have option for disinfection internally after every dental procedure.
   (o) Removable auxillary tray (stainless steel)- 02
   (p) It should have latest LED/halogen Light with two intensity and sensor control (min 35,000 LUX).
   (q) It should have Rotatable Water System with removable spittoon.
   (r) It should have Medium Vacuum Suction and High suction (Motorised Suction) and stainless steel autoclavable suction tips (10)
   (s) It should have following programmes –
      i. Two programmable working positions.
      ii. Spitting and last working position with light ON and OFF automatically.
      iii. Return to Zero position with light OFF automatically.
      iv. It should have option to Lock the movements of chair.
      v. It should have emergency stop control.
      vi. Programmable Bowl water and Cup filler water.
   (t) It should have LED based X-ray viewer.
   (u) It should be provided with rotatable right arm(options for Fixed, Lateral 90 degree swivel)
   (v) It should have multifunctional foot control base (fixed or mobile).
   (w) It should be provided with one doctor’s stool and one assistant’s stool with adjustable backrest tilt including an adjustable ring for foot rest.
   (x) Oil Free Air Compressor, 1.5 HP with silicon filter and dryer (Medical Grade).
   (y) Should have attached monitor mounting Arm

(z) It should have weight lifting capacity of at least 120kg.

3. System Configuration Accessories, spares and consumables
   (a) All electrical and civil consumables required for installation and standardization of system to be given free of cost.
   (b) All fixtures and furniture for 10×12 feet surgeries.
   (c) Fixtures should include modular work station with acid and fire resistant table top, high quality wash basin, modular drawer system of approximate size of 6 feet×2.5 feet×3 feet and one instrument trolley.
   (d) All the outlet and inlet for the services to chair should be concealed in a box at foot area or within the unit for infection control purpose.
   (e) Complete installation of the system including water input and drainage system has to be installed
4. Power Supply
   (a) Power input to be 220-240VAC, 50Hz
   (b) Five KV Servo Voltage stabilizer of appropriate ratings meeting ISI Specifications. (Input 160-260 V and output 220-240 V and 50 Hz).
5. Standards, Safety and Training
   (a) Should be USFDA/ European CE / BIS approved product
   (b) Manufacturer/Supplier should have ISO certification for quality standards.
   (c) Electrical safety conforms to standards for electrical safety IEC60601 / IS-13450.
   (d) Manufacturing License as per MDR 2017.
6. Documentation
   (a) User/Technical/Maintenance manuals to be supplied in English.
   (b) Certificate of calibration and inspection.
   (c) List of important spare parts, handpieces, and accessories with their part number and costing
   (d) Log book with instructions for daily, weekly, monthly and quarterly maintenance checklist.
   (e) The job description of the hospital technician and company service engineer should be clearly spelt out.
7. Warranty: Not less than 2 years

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V. **Infant Incubator-** Quantity- 10

1. The unit system should be Mobile, height adjustable and convertible (i.e into an incubator or into a radiant warmer by an automated control).
2. Control for converting the unit from and to the incubator mode should be sturdy and not easily breakable (the belt or other such mechanisms used for converting).
3. Should have Microprocessor based temperature controller with Skin Servo modes, Air and Manual.
4. Manual radiant warmer heater output control: 0-100% in 5% increments and should have display for Heater Power %.
5. Should have 8" LED to display modes of Operation, Alarm messages & Timer as well as Skin Temperature, Air Temperature, Humidity & Oxygen.
6. Maximum weight capacity holding- 5-10 Kgs.
7. Should have integrated weighing scale with an accuracy of 10 g.
8. Modes of Operation: Skin Servo, Air and Manual
    - 8.1. Skin servo mode:
        a) Temperature range should be: 34 to 38°C , Resolution should be : 0.1°C.
        b) Relative Humidity- 30 % to 95 %. The unit should not form any condensation on the walls; accuracy of 10%; reservoir capacity of at least 750-1000 mL.
        c) FiO2 with an accuracy of 5%
    - 8.2. Air mode:
        a) Temperature range should be: Room temp. to 39°C.
    - 8.3. Manual mode:
        a) Should be adjustable Heater Power 0 to 100%.
        b) Time duration should be: 20mins.
        c) Safety cutoff at 38°C for skin.
        d) 39°C for air with audio and visual alarms.
9. Operating Voltage: 220-240 VAC, 50Hz.
10. Power consumption should be 650W (Max.)
11. Should have sound adjustable Alarm facility with Audio & LED indicator:
    - 11.1. Audio alarm with 10 minute mute facility & Visual alarms with message on LCD Power Fail.
    - 11.2. Skin Sensor is unplugged /Faulty.
    - 11.3. Measured skin temperature higher than set temperature by 0.5°C.
    - 11.4. Measured skin temperature lower than set temperature by 0.5°C.
    - 11.5. Measured skin temperature higher than 38.0°C (With cut-off).
    - 11.6. Measured skin temperature lower than 34.0°C.
    - 11.7. Measured air temperature higher than set temperature by 1.5°C lesser than 3.0.
    - 11.8. Measured air temperature higher than 39.0°C (With cut-off).
    - 11.9. Measured air temperature lower than 20.0°C.
    - 11.10. Heater is unplugged or faulty.
    - 11.11. Heater Power drive fail/uncontrollable.
    - 11.12. Fan not working
12. Accessories:
    - 12.1. A big drawer for keeping essentials for the baby and 3 small trays.
    - 12.2. Height adjustable IV stand.

12.3. Skin temperature probe (including intermediate cable, if any) - 10 with each unit
12.4. LED control panel.
12.5. Control panel for converting the unit into warmer mode from the incubator mode.
12.6. Side panels
12.7. Hinges, bends
12.8. Corner assembly
12.9. Locks and other attachments
12.10. Touch keys
12.11. Mattress bed:

a) Tiltable in the both directions.
b) Soft
c) Waterproof hypoallergen mattress cover removable with zipper, washable, resistant to cleaning with chlorine-based solutions.

13. Mechanical Specifications:

13.1. Should have Acrylic double walled canopy with front loading & six operated port holes.
13.2. Should have Sliding acrylic baby tray.
13.3. Should have Facility to take X-Ray.
13.4. Should have 3 Drawer storage facility and facility to keep essential things for baby.
13.5. Should be Mounted on heavy duty castors.
13.6. Should have Stainless Steel blower sub assembly.
13.7. Should consist of Inlet for Oxygen, Sensors and IV tubing etc. Humidity tray & humidity indicator.
13.8. Should have External head up down positioning and pull out sliding baby tray facility.
13.9. Should have safety certificate from a competent authority CE issued by a notified body registered in European Commission / FDA (US) /BIS/ IEC 60601-1 , IEC 60601-1-2 and IEC 60601-2-21.
13.10. Copy of the certificate / NABL test report.

14. Warranty: Not less than 01 year.

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VI. **Infant Resucitaire-** Quantity- 10

1. Should be manually operated, gas-powered resuscitator with consistent Peak Inspiratory Pressure(PIP) and Positive End Expiratory Pressure (PEEP) to infants.
2. Should accept and deliver oxygen concentrations from 21% to 100%.
3. T-piece circuits should be connected to infant resuscitation masks or endotracheal tubes.
4. The gas flow outlet should allow easy and secure connection of the T-piece circuit and humidified T-piece circuit.
5. In-built pressure Gauge (manometer) to set & indicate delivery of PIP & PEEP
   - 5.1. Manometer range : -10 to 80 cmH_2O (mbar)
   - 5.2. Manometer accuracy :- ± 2% full scale deflection.
6. Maximum pressure relief at 8L/min:- 5 to 70 cmH_2O (mbar)
7. Peak Inspiratory Pressure :
   - 7.1. at 5L/min :- 2 to 70 cmH_2O (mbar)
   - 7.2. at 8L/min :- 3 to 72 cmH_2O (mbar)
   - 7.3. at 10L/min :- 4 to 73 cmH_2O (mbar)
   - 7.4. at 15L/min :- 8 to 75 cmH_2O (mbar)
8. Positive End Expiratory Pressure (PEEP) at 8 L/min :- 0 cmH_2O to 9 cmH_2O.
9. Safety provision with adjustable Pressure Relief Valve for maximum limiting.
10. Input gas flow range: 5L/min (minimum) to 15L/min (maximum).
11. Unit should be compatible for use with neonatal mask & endotracheal tube.
12. The patient T-Piece should have port for surfactant delivery.
13. Should be compatible for use with heated humidifier.
14. Spiral Heated wire circuit from OEM with integrated T-Piece compatible for use with heated humidifier should be supplied with system.
15. Should be supplied with the following accessory
    - 15.1. Test lung – 01
    - 15.2. T Piece Resuscitation Circuits from OEM with PEEP valve -20 (at least 10 pcs. Humidifier circuit).
    - 15.3. Resuscitation Masks of Premature size (medium)-10.
    - 15.4. Resuscitation Masks of Micro Premature size (small) -10.
    - 15.5. Resuscitation Masks of term size -10.
    - 15.6. Gas supply line – 3
16. Manufacturing License under MDR 2017.
17. Should have a safety certificate from a competent authority CE issued by a notified body registered in the European commission / FDA (US)/ STQC CB Certificate/ STQC S Certificate or a valid detailed electrical and functional safety test report from ERTL.
18. Copy of the certificate/ test report shall be produced along with the technical bid.
19. Warranty: Not less than 2 years.

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VII. **Patient monitors-** Quantity- 20

1. The unit should be advanced high end modular patient monitor having the screen and the processing unit integrated in the same unit. The Monitor should be a dedicated High-End Patient monitor and not a PC based Solution.
2. Monitor must have bright, highly visible minimum 19" color TFT/LED display with full touch screen facility.
3. Monitor must have the facility to display min 12 waveform or more, along with related numerical parameters on single screen.
4. Monitors must be able to monitor ECG, SpO_2, NIBP, Respiration, dual temp, dual IBP, modular $ETCO_2$ and minimally invasive Continuous Cardiac Output simultaneously. Out of these mentioned parameters ECG, Respiration, NIBP, SpO2, Invasive pressure and Temperature should be monitored through one server/ module, which should have display of these parameters with waveforms on server/ module itself. It should have its own battery backup of 2-3 hours and should be capable to be used as independent transport monitor as & when required. After Transportation, all monitored data during patient transport should be transferred back to the main bed side monitor for maintaining the continuum of care.
5. Monitor must be ready to connect for CO (Thermo dilution) & Minimal invasive continuous Cardiac Output, BIS, NMT Module, three IBP, Spirometry, non-invasive hemoglobin, EEG module and it should be capable to monitor all these parameters simultaneously along with parameters mentioned under point no.4
6. Monitor must have advanced arrhythmia detection and ST Analysis as standard feature. It should also have various screen lay outs, like simultaneous 12 lead ECG display, Big Numerics for distant visibility etc. It should also be possible to configure/ customize the sreen as per user's requirement.
7. System must have minimum 48 hours review data including graphical and tabular trends, arrhythmia event recalls.
8. Monitor must have the time linked review function. Monitor must show the waveforms for the time when the arrhythmia occurred in case of arrhythmia recall.
9. Monitor must have facility to display 12 lead ECG through 5/6 lead ECG cable.
10. Monitor should have the ability to perform sepsis screening and should capable of predicting and guiding against potential Sepsis & standard protocols to treat such patients through advisories which adhere to latest International Sepsis Guidelines.
11. Monitor should have ST segment calculations.
12. Must have facility to hook up with network printer, at any point of time and able to take print any review data (Trends, Graphs, waveform full disclosure, arrhythmia recall etc.)
13. Monitor must be able to connect to central monitoring station and should use single network for all kind of networking with the central station or other hospital information system (HIS).

14. Monitor must have a valid 510K U.S.FDA/ European CE / BIS certificate for main equipment as well as all its modules.(Certificate to be enclosed along with the bid).
15. Each monitor to be supplied with following:
    15.1. 3 and 5 Lead ECG electrode cable 2 No. each
    15.2. Adult, Pediatirc and neonate SpO_2 probe – 2 No. each(Ear lobe probes for neonates)
    15.3. NIBP cuffs for Adult, Pediatrics and neonates – 2 no each (of different sizes).
    15.4. Temp Probe – 2 Nos. (skin & esophageal one each)
    15.5. IBP connection cable – 03 Nos.
    15.6. IBP Disposable Pressure Transducers – 10 Nos
    15.7. ETCO2 sample line: 10 nos (if applicable)
16. CNS of 27" LED to be provided with one laser printer and one 21" slave monitor. The cabling has to be done by bidder in the ICU i.e. One CNS with 12 monitors.
17. Central station should have trend storage of 6-7 days and data should stay for minimum 7 days even after discharge of patient.
18. ECG, SpO_2, NIBP, Respiration, dual temp and 3 IBP for each monitor (through mix of independent/ dual/ Multi-para Module).
19. Two Modules each of minimally invasive continuous cardiac output(CCO) monitoring and mainstream ETCO2 with suitable accessories.
20. Monitor should be upgradable to monitor NMT, EEG and spirometry, BIS/Entropy through interchangeable modules.
21. The monitor should have ability to over view facility and data transfer over the network.
22. Web browsing facility to monitor each network monitor data through hospital LAN and through dial up facility from remote location. There should be two reference sites operational in India with web access feature.
23. Monitor should be remote web viewing enabled.
24. Should be upgradable to provide suitable facility for sending and receiving DICOM compatible radiological images like Ultrasound, X-ray etc i.e. to and from monitoring network to and from HIS, RIS etc for integration of various information on the same patient monitor screen.
25. ICU Monitoring supplier firm should be capable to upgrade the ICU with Electronic Charting and integration with other ICU equipments like Ventilators and Syringe Pumps etc.
26. Integration of the unit considering one syringe pump rack, one ventilator and one bedside monitoring system should be done on turnkey basis i.e. including s/w and h/w requirements.
27. Firm should also demonstrate electronic charting & ICU integration while giving demonstration of quoted monitoring system.
28. Warranty: Not less than 02 years

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VIII. **Hospital Bed-** Quantity- 1204

1. The fowler bed should have the following dimensions:
   1.1. Overall Size: Approx 2090mm L X 920mm W X 600mm H (Without Mattress & Castor).
   1.2. Overall Size Buffer to Buffer: Approx > 2140mm L x 970mm W x 600mm H (Without Mattress & With Castor).
   1.3. Bed Platform frame size: Approx. 2070mm L X 910mm W.
   1.4. Mattress Platform Size: 1970mm L X 790mm W.
   1.5. Buffer to Handle Length: 2275mm
   1.6. Height: 600mm, adjustable
   1.7. Four section-
      a) Top flat platform made of detachable 1.2mm (18G) CRCA M.S perforated sheet for easy breathing of mattress.
      b) Backrest section is welded with MS CRCA tube size 25.4mm X 2.0mm (14G).
      c) Leg Section is welded with MS CRCA tube 25.4mm X 1.6mm (16G) for support.
      d) The size of perforated hole is having 21mm diameter.
   1.8. Screw mechanism welded with ERW MS tube 31.75mm X 1.2mm (18G) is M.S. cover made from dia 38.10mm X 1.6mm (16G) ERW tube.
   1.9. Manual adjustments: Backrest, kneerest through two screw systems with thrust bearings individually manoeuvred by a single handle.
   1.10. Size of Back Rest: Over all- 785mm L X 795mm W.
      a) Only Section: 720mm L X 795mm W.
   1.11. Size of Knee Rest: Over all- 470mm L X 820mm W.
      a) Only Section: 380mm L X 795mm W.
   1.12. Size of Leg Rest: Over all- 610mm L X 795mm W.
      a) Only Section: 610mm L X 795mm W.
   1.13. 13 Size of Fix Section: Over all- 140mm L X 780mm W.
      a) Only Section: 610mm L X 780mm W.
   1.14. Raised Backrest Angle- 65^0
   1.15. Raised Kneerest Angle- 40^0
   1.16. Back Rest- Should be min 45% of the frame length.
   1.17. Bed frame, made from 60mm X 30mm X 1.6mm (16G) thick ERW tube should have proper support. This frame is fitted on H leg made from ERW tubes diameter 31.75mm X 1.2mm (18G) thick and diameter 22.22mm X 1.2mm (18G) thick and MS sheet having thickness 3.0mm (11G).
2. The bottom end of the H legs are provided with PVC shoes in case of without castors.
3. The bed should have head & foot panels detachable by hand without need of any tool. These heads & foot panels are mounted in round bracket size 50mm (OD) X 48mm (ID) made from MS sheet having 2.0mm (18G) thick and welded with bed frame and used along with PVC sleeve. Four corner rubber buffers of 100MM dia. with castor application.

4. There should be six fixtures on the bed platform to hold stainless steel Telescopic Saline rod 12mm dia with 15.87mm dia X 1.2mm (18G) stainless steel outer covering tube with a knob to mount syringe pump.
5. Patient Working Load- >180 kg.
6. Safe Working Load- 200 kg.
7. Finishing & workmanship in the medical furniture is of prime importance and must be of high standard. All corners should be rounded off so that there shall be no sharp corners and holes. The joints should be burr free.
8. M.S. tubular parts, linkages, flats are to be In-house, pretreated/ shot blasted and Epoxy powder coated with coating thickness 50 to 100 microns.
9. All Process Parameters as per documented IMS Procedures for Quality Assurance (ISO 9001:2015, ISO 14001:2015, OHSAS 18001:2007 & ISO 13485:2003).
10. Standard Accessories:
    10.1. Polymer Moulded Handle.
    10.2. H'Type Legs 910mm Width & 600mm Height with Rubber Shoes.
    10.3. Fixed polymer moulded handle set of two.
    10.4. The bed should have easily detachable moulded head and foot side panels.
    10.5. S.S. Laminated Head & Foot Boards (0182G) (Diameter of SS 304 tube is 31.75mm X1.2mm (18G) thick with 12mm thick material (SS/MS coated).
    10.6. Length of Head bow and foot bow are 900mm
    10.7. Height of Head bow & Leg Bow is 370mm (without Mattress).
    10.8. H Type legs with 910mm W & 450mm Height: 125mm (5") dia High Grade Synthetic Body Castors, two with brake, two w/o brake.
    10.9. Telescopic I.V. Pole with 4 hooks.
    10.10. Urine Bag Holder.
    10.11. Moulded Chart Holder.
    10.12. Provided with four section 4" thick PU memory Foam of 40 density covered PVC (0321).
    10.13. The Back Rest size is 760mm L X 865mm W X 100mm T.
    10.14. Fix section size is 180mm LX 865mm W X 100mm T.
    10.15. Knee Rest size is 416mm L X 865mm W X 100mm T.
    10.16. Leg Rest size is 620mm L X 865mm W X 100mm T
    10.17. Mattress cover should be provided which is water resistant and fire retardant.
    10.18. S.S. Traction pulley attachment for trauma cases.
    10.19. S.S. Lifting pole.
    10.20. Full length Collapsible SS side railings (0352). Safety with anti-finger entrapment facility, zero transfer gap facility.
    10.21. Mattress Arrestor Set of two (0171)
    10.22. Crib attachment with Clamp (0155B) with 3" PU foam mattress with PVC Rexene cover (0122B). Not with 0183 Bow penal
    10.23. Mosquito Net Poles (0157D)
    10.24. Rubber Buffer 4" (0162)

10.25. Rubber Buffer 5” (0163)

11. Products should be CE/US FDA/ ISO/BIS certified along with authenticated in house test reports should be provided.
12. All Process Parameters should be as per documented IMS Procedures for Quality Assurance (ISO9001: 2015, ISO 14001: 2015, OHSAS 18001: 2007 & ISO 13485: 2003).
13. Pre-treatment & Shot blasting process to prevent rusting of mild steel. Declaration should be provided.
14. Fast cure antibacterial oven baked powder coating process for achieving smooth, uniform finish and superior bonding properties which prevent growth of bacteria. Declaration should be provided.
15. Should have Bending test, impact test and salt spray test carried out regularly to validate the adhesion strength of powder coating.
16. M.S. tubular parts, linkages, flats are to be In-house, pre-treated/ shot blasted and Epoxy powder coated with coating thickness 50 to 100 microns.
17. Finishing & workmanship in the furniture is of prime importance and must be of high standard. All corners shall be rounded off so that there shall be no sharp corners.
18. S.S. 304 grade test reports to be provided from NABL accredited Laboratory.
19. Warranty:- 05 (Five) years (365, 24 X 7 days).

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ANNEXURE-III

Ref.: HSCC/PUR /MEA- ZAMBIA/Med. Eqpt./2023/01 dated 09.08.2023

BUGETARY QUOTATION FORMAT

	Particulars	Remarks
1)	Sr. No. of Equipment:	
2)	Name of Item:	
3)	Model No.:	
4)	Name of manufacturer & Address:	
5)	Contact Details of the Firm submitting Budgetary Quotation:	
6)	Budgetary Cost of Equipment(Incl. GST):	

The Budgetary Cost of Equipment includes the following:

1) All Taxes & Duties and transportation up to IGI, Delhi Airport.
2) Insurance till Delhi Airport.
3) Inclusive of Warranty one year as per mentioned/as per available with equipment.
4) Delivery - within 30 days from the date of issue of Purchase Order
5) Installation within 30 days from the date of Delivery
6) Cost inclusive of 3rd Party Inspection by reputed Agencies i.e. SGS / Llyod / TUV etc.
7) Equipments to be installed by OEM/bidder in REPUBLIC OF ZAMBIA & conduct training to end user.

NOTE:

1. **Please enclose a copy of Last Purchase Order for the same Model (preferably from a Govt. Institute).**

2. **Copy of Catalogue / Brochure / Product Data Sheet etc to be submitted.**

3. **Please provide separately, the cost of transportation of each Equipment (Incl. Marine /transit insurance) from Airport Delhi to REPUBLIC OF ZAMBIA.**