# **Annex – 6 Technical Specifications for Invitation to Bid (ITB) No.UNFPA/UKR/ITB/25/01**

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| 1. **Infant ventilator with HFOV** | **Quantity, pcs:** |
| **Product Description**  Device designed to provide temporary ventilation for premature born, infant and pediatric patients who require assistance maintaining adequate ventilation. Equipment to be used in critical care areas, stationary.  **Electrical Requirements:**   * Power requirements according to Ukraine standards: 220 VAC ± 10%, 50 Hz. * Power cord with “F” type plug for medical devices. * Built-in rechargeable battery, allowing at least 2.5 hours of continuous operation.   **Technical specifications:**   * Premature born, infant and pediatric patients up to 30 Kg. * Mounted on a trolley with four (4) antistatic castors, at least two of the castors with brakes. Structure made at least of steel tube with anticorrosive finish in epoxy/electrostatic paint or higher quality. * Gas inlet connections for supply from wall outlets: O₂ and Air. Connections compliant with DIN (according to the requirements of the destination country). With security systems to avoid errors in the gas connection. * Display LCD, at least 12”. * Hot-wire flow sensor, proximal to patient. * Flow sensor removable and autoclavable, included. Cable for flow sensor included. * Automatic compliance and leakage compensation. * Expiratory valve or expiratory block autoclavable * Self-test * Leak test. * Preoxygenation function. 23% – 100% O2, up to 2 min * PEEP/CPAP range at least: 0 – 30 cmH₂O * Ventilation rate 2-200 bpm * Tidal volume 2–300 ml * Adjustable I/E ratio or adjustable inspiration time. * Peak inspiratory pressure: at least 4 to 60 cm H2O. * Inspiration rise time adjustable. * Inspiratory flow: at least 1 - 32 l/min * Expiratory flow: at least 2 - 10 l/min * Constant / Bias Flow adjustable at least: 5 to 20 Lpm * Manual breath in all modes. Maximum time manual breath adjustable: at least 2 – 30s * Inspiration time in the range of at least 0.1 -2 seconds * FiO₂ adjustable: 21 - 100%. Oxygen cell included. * High-frequency oscillation ventilation.   Pressure amplitude range: 5 - 90 mbar.  Frequency range: at least between 5 and 20 Hz  Mean airway pressure: at least 5 - 40 mbar  VTG in HFOV at least 0,2 ml - 30 ml  I:E HFO: 1:1, 1:2, 1:3  Recruitment Maneuver: Frequency, inspiratory Time, and Pmean, adjustable.   * Volume, flow, and pressure adjustable trigger * Termination criteria for PSV must be modifiable by the user. * Ventilation modes, at least:   + Intermittent Positive Pressure Ventilation (IPPV), with Volume-limited ventilation.   + Volume guarantee ventilation   + Volume-limited   + Positive Pressure Ventilation (IPPV)   + Positive Pressure Ventilation (IPPV) with Volume-limited ventilation and Volume guaranteed.   + Synchronized Intermittent Positive Pressure Ventilation (S-IPPV), with Volume-limited ventilation and Volume guaranteed.   + Synchronized Intermittent Mandatory Ventilation (SIMV)   + Synchronized Intermittent Mandatory Ventilation (SIMV), with pressure support (PSV), Volume-guarantee and Volume-limited.   + Continuous Positive Airway Pressure mode (CPAP), with Backup Frequency   + Pressure supports ventilation with Synchronized Intermittent Positive Pressure Ventilation (PSV + S-IPPV), with Volume guaranteed and Volume-limited.   + Pressure support ventilation with Synchronized Intermittent Positive Pressure Ventilation (PSV + SIMV), with Volume guaranteed and Volume-limited.   + Biphasic positive airway pressure mode (BiLevel Airway Pressure Ventilation, BiPAP, DuoPAP, PDUO or similar)   + Backup ventilation   + High frequency oscillatory ventilation (HFOV) with volume guarantee   + Non-invasive ventilation:   + Nasal intermittent positive pressure ventilation (nIPPV)   + Nasal continuous positive airway pressure (nCPAP)   + Biphasic positive airway pressure mode   + O2 Therapy High and Low Flow Oxygen Therapy (Optional)   + nHFO * Monitored and Displayed parameters, at least:   + Capnography (sensor included)   + Respiratory rate   + Inspired and expired tidal volume   + Minute volume.   + I:E ratio   + Inspiratory and expiratory times.   + Airway pressure, peak and mean.   + FiO2   + PEEP   + Peak pressure   + Waves vs time: pressure, volume, and flow   + Pressure-Volume, Flow-Volume and Pressure-Flow loops.   + Battery status.   + Alarm settings.   + Resistance, compliance C20/C   + Ventilation gas leak * Audio and visual alarms for at least:   + High and low airway pressure.   + Tidal volume   + Minute Volume   + FiO₂   + Apnea   + Respiratory rate   + Patient disconnection   + Gas supply failure   + Power failure   + Low battery   + System failures * All materials resistant to disinfection with hospital-grade products. * Indications and messages on the equipment must be in English language as mandatory, and preferably also in Ukrainian language.   **Accessories:**   * Support arm for patient-circuit, adjustable. * One (1) Air pressure regulator, compatible with the medical gas system of the health unit if it is necessary. * One (1) O2 pressure regulator, compatible with the medical gas system of the health unit if it is necessary. * Hoses for Air and O2, length: at least 2 meters (2-3 meters preferably), with their respective connections compatible with the gas inlet of the equipment and the supplied pressure regulators. * One (1) expiratory valve or expiratory block autoclavable, in addition to that included in the device. * One (1) test lung, neonatal size. * Sixty (60) Neonatal disposable patient circuits for invasive ventilation, complete, including pressure line if applicable. * Two hundred (200) complete disposable neonatal high-frequency ventilation circuits (including adapters, filters, pressure lines and any element necessary for their correct functioning). Only applies if they are different from conventional ventilation circuits. * Nine (9) neonatal nasal masks, in three different sizes, for nCPAP and nIPPV, reusables. * Nine (9) neonatal nasal prongs, in three different sizes, for nCPAP and nIPPV, reusables. * Twenty (20) Neonatal disposable patient circuits for non-invasive ventilation, complete, including all necessary adapters. * One (1) Oxygen cell, if applicable, in addition to that included in the device. * One (1) cable for proximal flow sensor, in addition to that included with the device. * Two (2) distal flow sensors, reusable, if applicable, in addition to that included in the device. * Three (3) Neonatal (proximal) flow sensors, reusable, in addition to that included in the device. * One (1) capnography sensor, in addition to that provided with the device, and ten (10) reusable adapters for patient circuit (pediatric size).   *NOTE: If applicable, all other necessary accessories and consumables for the correct operation of the product during the first 12 months, including all standard tools, cleaning, and lubrication materials, even if they are not included in these required technical specifications must be included and listed in the offer.* | 1 |
| **Documentation required:**  Bidder shall furnish the following documents:   * Manufacturer brochure or data sheet including at least all technical specifications required. * User manual must be provided including installation requirements, operation instructions, maintenance and procedures for decontamination, storage conditions, safe disposal. * Service manuals must be provided including preventive maintenance and calibration procedures, equipment necessary for preventive maintenance and repair, diagrams, and circuits. * List of all common spare parts and accessories with part numbers. * Manufacturer authorization Letter. * Commitment manufacturer letter including:   + installation and commissioning on site would be performed by the manufacturer or his representative in the country.   + at least two (2) years of full onsite warranty.   + at least five (5) years of Spare Parts availability.   + training on use, cleaning, and disinfecting for the healthcare staff, and basic maintenance for the technical staff, in Ukrainian and English language.   **NOTE: All the documents must be submitted in English and Ukrainian language as mandatory. The Russian language could be accepted as an exception to the Ukrainian language.** |  |
| **Regulatory approvals required:**  Bidder shall furnish **documentary evidence** to demonstrate that the good offered is approved according:   * Valid certificate or approval letter from national Ukrainian regulatory body, which confirms local registration of the product and permission to use it in medical practice. * Valid manufacturing licenses. * And at least one of the following regulatory approvals and certificates:   + European Certificate of Conformity (CE) with Regulation 2017/745 or Directive 93/42 EC and Agreement Letter signed with the NB demonstrating the on-going MDR application, for Class IIb devices, or   + FDA (Food and Drug Administration) of the USA that certifies marketing permission in the United States, or other regulatory bodies of an IMDRF founding member country such as Australia, Canada, or Japan. |  |
| **Safety & product Standards:**  Bidder shall furnish the following documents:   * Valid ISO 13485 certificate. * Signed and dated Declaration of Conformity (DoC) according to ISO 17050 to demonstrate that, the good offered, meet at least the follow international safety & regulatory standards:   + IEC 60601-1: Medical electrical equipment - Part 1: General requirements for basic safety and essential performance   + IEC 60601-1-2: Medical electrical equipment - Part 1-2: General requirements for basic safety and essential performance - Collateral Standard: Electromagnetic disturbances - Requirements and tests   + ISO 80601-2-12: This standard outlines the basic safety and essential performance requirements for a ventilator in critical care environments, ensuring compliance with ventilation accuracy, alarms, monitoring capabilities, electrical safety, mechanical |  |

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| 1. **Mobile X-ray** | **Quantity, pcs:** |
| **Product Description**  Mobile X-ray equipment equipped with wheels to be moved to different locations in a hospital or medical unit to develop bedside radiography.  **Electrical Requirements:**   * Power requirements according to Ukraine standards: 220 VAC ± 10%, 50 Hz. * Power cord with “F” type plug for medical devices.   **Technical specifications:**   * Integrated components:   + Generator     - * Microprocessed and/or microcontrolled.       * Selectable voltage range: At least from 40 to 100 kV       * Selectable dose range: At least from 0.4 to 200 mAs.       * kV, dose (mAs) indicators.       * Radiographic exposure with manual activation switch.       * Remote control, connected by a retractable cable, or wireless.   + X-ray tube     - * Focus ≤ 2.0 mm.       * Stationary anode.       * Inherent filtration: At least 0.8mm Al @ 50kV       * Over temperature protection.   + Collimator     - * Adjustable, in longitudinal and transverse axis.       * Adjustable collimator blades to control the opening of the collimation field.       * With a centering axis by means of a light beam.       * Inherent filtration ≥ 2mm Al @ 75kV   + Digital detector     - * Flat detector with active sensory matrix of solid-state technology of scintillator type of materials (gadolinium oxysulfide, cesium iodide or its equivalent).       * Grayscale level in acquisition of 14 bits/pixel or greater.       * Pixel size ≤ 150 µm.       * Size ≥ 14” × 17”. * Movements:   + Tube rotation around transversal axis: ≥ 90° to -30°   + Tube rotation around longitudinal axis: ≥ ±110°   + Arm rotation around vertical axis: ≥ ±90°   + Arm rotation around transversal axis: ≥ 120°.   + Maximum height: ≥ 2,000 mm * Movement on wheels: Manual * Full DICOM Compatibility. * Continuous monitoring, with visual and audible alarm system. * Chassis and external components must be built of materials, and/or have a finish/coating resistant to corrosion and the application of disinfectants commonly used in healthcare premises.   **Accessories:**   * One (1) power supply cable.   *NOTE: If applicable, all other necessary accessories and consumables for the correct operation of the product during the first 12 months, including all standard tools, cleaning, and lubrication materials, even if they are not included in these required technical specifications must be included and listed in the offer.* | 2 |
| **Documentation required:**  Bidder shall furnish the following documents:   * Manufacturer brochure or data sheet including at least all technical specifications required. * User manual must be provided including installation requirements, operation instructions, maintenance and procedures for decontamination, storage conditions, safe disposal. * Service manuals must be provided including preventive maintenance and calibration procedures, equipment necessary for preventive maintenance and repair, diagrams, and circuits. * List of all common spare parts and accessories with part numbers. * Manufacturer authorization Letter. * Commitment manufacturer letter including:   + installation and commissioning on site would be performed by the manufacturer or his representative in the country (according to the general requirements in the bid document under the clause “Installation and commissioning on site").   + at least two (2) years of full onsite warranty (according to the general requirements in the bid document under the clause “Warranty").   + at least five (5) years of Spare Parts availability (according to the general requirements in the bid document under the clause “Post-sale Services").   + training on use, cleaning, and disinfecting for the healthcare staff, and basic maintenance for the technical staff, in Ukrainian and English language (according to the general requirements in the bid document under the clause “Training").   **NOTE: All the documents must be submitted in English and Ukrainian language as mandatory. The Russian language could be accepted as an exception to the Ukrainian language.** |  |
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| 1. **Neonatal intensive care incubator** | **Quantity, pcs:** |
| **Product Description**  Incubator for neonatal intensive care, intended to provide a controlled environment in an enclosed chamber to maintain appropriate temperature and humidity levels.  **Electrical Requirements:**   * Power requirements according to Ukraine standards: 220 VAC ± 10%, 50 Hz. * Power cord with “F” type plug for medical devices.   **Technical specifications:**   * General system self-test. * Color Touch Display: at least 10”. * Temperature reading and control in at least degrees Celsius. * Preferably temperature data trend. * Operating modes: skin mode (servo), manual mode and pre-heating function. * Dome with double wall, made of transparent acrylic or superior material, resistant to hospital-use disinfectants. * At least eight (8) tubing accesses ports for breathing tubes, catheters and drains. * At least two (2) access doors panels on the long sides of the canopy, for patient access that can be folded down. * At least four (4) portholes for hand access, weather stripping. * Portholes or access door for patient access from at least one of the short sides of the canopy * Air curtain to prevent temperature loss during door opening. * Sliding out mattress base. * Air temperature control range: 20°C or lower to 39°C or higher * Skin temperature control range: 35°C, or lower, to 37,5°C, or higher. Reusable skin temperature sensor, reusable. * Temperature Resolution: 0.1°C * Oxygen concentration servo controlled. Minimum range: 21% to 65%. Alarm ±3% from set point. Oxygen cell included. * Humidifier servo-controlled: 30 - 85% RH * Audible and visual alarms, for at least:   + High / Low Temperature: Variation of +/- 1 °C with respect to the established control temperature.   + Oxygen concentration   + Electric power failure.   + Failure of the air circulation system.   + Skin temperature sensor failure/disconnection.   + System failure * Adjustable height with pedal. Floor to mattress height: at least 81 - 111 cm * Mattress tilt angle: 12º * Integrated electronic scale with digital display. Range of measurement: 0.3 - 8 Kg. Resolution: 10 g. Accuracy no greater than 10 g. * Translucent bed for taking X-ray images, including chassis holder or equivalent system. * Air filter for particles of at least 0.5 microns, with 99.8% efficiency or better. Filter included. * Noise level inside the cabin < 47 dB * Input for oxygen connection from the hospital gas network and from an oxygen cylinder with pressure regulator. * At least one (1) drawer for storage. * Structure made at least of steel tube with anticorrosive finish in epoxy/electrostatic paint or higher quality. * Mounted on four (4) antistatic wheels, with locking mechanism, of at least 12.5 cm of diameter. * Connection availability for data transfer to the medical record * Indications and messages on the equipment must be in English language as mandatory, and preferably also in Ukrainian language. * Built-in rechargeable battery, allowing at least 1 hours of continuous operation   **Accessories:**   * Neonatal mattress. Thickness of at least 3 cm. Cover of hypoallergenic and non-toxic material, waterproof and resistant to hospital-grade disinfection products. * Two (2) reusable skin temperature sensors, additional to that included in the equipment. * One (1) Oxygen hose with connector compatible with the Hospital network. * One (1) air filter, additional to that included in the equipment. * One (1) oxygen cell, additional to that included in the equipment.   *NOTE: If applicable, all other necessary accessories and consumables for the correct operation of the product during the first 12 months, including all standard tools, cleaning, and lubrication materials, even if they are not included in these required technical specifications must be included and listed in the offer.* | 2 |
| **Documentation required:**  Bidder shall furnish the following documents:   * Manufacturer brochure or data sheet including at least all technical specifications required. * User manual must be provided including installation requirements, operation instructions, maintenance and procedures for decontamination, storage conditions, safe disposal. * Service manuals must be provided including preventive maintenance and calibration procedures, equipment necessary for preventive maintenance and repair, diagrams, and circuits. * List of all common spare parts and accessories with part numbers. * Manufacturer authorization Letter. * Commitment manufacturer letter including:   + installation and commissioning on site would be performed by the manufacturer or his representative in the country (according to the general requirements in the bid document under the clause “Installation and commissioning on site").   + at least two (2) years of full onsite warranty (according to the general requirements in the bid document under the clause “Warranty").   + at least five (5) years of Spare Parts availability (according to the general requirements in the bid document under the clause “Post-sale Services").   + training on use, cleaning, and disinfecting for the healthcare staff, and basic maintenance for the technical staff, in Ukrainian and English language (according to the general requirements in the bid document under the clause “Training").   **NOTE: All the documents must be submitted in English and Ukrainian language as mandatory. The Russian language could be accepted as an exception to the Ukrainian language.** |  |
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| 1. **Birthing bed** | **Quantity, pcs:** |
| **Product Description**  Adjustable bed designed to support a woman's body in an appropriate position during labor and delivery and in other examination/treatment procedures related to pregnancy. Electrically controlled.  **Electrical Requirements:**   * Power requirements according to Ukraine standards: 220 VAC ± 10%, 50 Hz. * Power cord with “F” type plug for medical devices. * Built-in rechargeable batteries with autonomy for at least 1 hour.   **Technical specifications:**   * Operation: electric for at least adjustment of the bed height, inclination of the backrest section, Trendelenburg and Anti-Trendelenburg positioning. * Motors protection at least IPX4. * Wired hand control unit for bed movements, with graphic indications, included. Additionally, a control panel integrated into the side boards is desirable. * Number of sections: at least 3 sections (backrest, seat, and footrest). * Structure made at least of steel tube with anticorrosive finish in epoxy/electrostatic paint or higher quality. * Stainless steel side rails for accessory placement. * Folding side restraints on each side of the bed, made of Polypropylene, ABS, or similar material, resistant to hospital-grade disinfection products. * Headboard made of Polypropylene, ABS, or similar material, resistant to hospital disinfectants. Removable. * Mattress: polyurethane foam, in sections that match layout of table sections. Cover of hypoallergenic and non-toxic material, waterproof and resistant to hospital-grade disinfection products. * Seat section with gynecological perineal cut. * Holes for IV holders on both sides of the bed * Removable or folding footrest section allowing lithotomy position. * Mounted on four (4) antistatic wheels, with brakes on all of them, of at least 12.5 cm of diameter. * Load weight capacity min.: 180 kg. * Width: at least 90 cm * Length: at least 200 cm * All materials resistant to hospital-use disinfectants * Movements:   + Adjustable height. Lower position at least 66 cm from floor level.   + Adjustable backrest up to 70°.   + Trendelenburg and Anti-Trendelenburg positioning, at least 12°   + Preferably Up-folding of seat plate at least 15°   + Able to reach chair position.   + Release mechanism to CPR position.   **Accessories:**   * Removable or folding footrest section. * Two (2) leg rest Goepel type, padded, removable or foldable, adjustable in height, and in all planes. With the same upholstery as the bed, and with sliding grip holder * Two hand grips, adjustable on each side of the table. With sliding grip holder * Removable stainless steel fluid bowl. * IV pole, adjustable on each side of the table. * Hand control: If the bed does not have an integrated control panel, a wired hand control must be provided in addition to the one included with the device.   *NOTE: If applicable, all other necessary accessories and consumables for the correct operation of the product during the first 12 months, including all standard tools, cleaning, and lubrication materials, even if they are not included in these required technical specifications must be included and listed in the offer.* | 2 |
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