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No. F-8(261) RMSC/EPM/M-3/17-18/NIB-335/ 1776 Date: 17-04-18

Clarification/Corrigendum/Addendum

Subject: - Revised Technical Specification and Date Extension for NIB No. F-8(261) RMSC/EPM/M-3/17-18/NIB-335/1514 Date:3.4.2018 for item Ventilators (Basic and Advanced).

In Reference to subject cited above and NIB-335, the various representations received from the firms and issues raised by the Bidders are examined by the competent Authorities and technical committee. The following Corrigendum/Addendum is issued for inclusion in bid document as below:-

1. Revised Technical Specifications:-

Technical Specifications for Basic Ventilator

1. It should have microprocessor based technology for adult and pediatric application.
2. It should have user friendly pop-up menu with rotary encoder.
3. It should have simultaneous display of waveforms & loops on screen, screen size should be 12 inch or more with Touch Screen.
4. It should have apnea backup ventilation.
5. It should have about 24 hour trend display.
6. It should have manual/auto nebulizer.
7. It should have standard ventilator modes:
 - a. CMV-V (Assist) and CMV-P (Pressure Support)
 - b. SIMV / V and SIMV / P
 - c. Bi-level Ventilation or equivalent.
 - d. Pressure Regulated Volume Controlled (PRVC)
 - e. CPAP and PEEP.
 - f. Facility for Non-Invasive ventilation
 - g. **One optional advance ventilation mode:** Any upgradable advance ventilation mode like ASV or MMV or PAV or equivalent, price to be quoted separately in BOQ.
8. It should have settings of:
 - a. Tidal volume: 20ml - 1500ml.
 - b. Inspiratory pressure: 5 - 70 cmH₂O.
 - c. Pressure support: 0 - 30 cmH₂O
 - d. Respiratory rate: 2-80 bpm.
 - e. Inspiratory time: 0.3-10 sec.
 - f. PEEP: 0 - 30 cmH₂O.
 - g. O₂ delivery: 21-100%
9. Alarms should be user friendly, audio and visual with text message, system alarm should be for:
 - a. Pressure changes (high/low).



- b. Tidal volume changes
 - c. Minute volume changes
 - d. High PEEP
 - e. High/Low O₂ Concentration
 - f. Power failure & Low Battery
 - g. Patient disconnection
 - h. Apnea
10. Monitoring data:
- a. Flow vs Time, Pressure vs Time and Volume vs Time graphs.
 - b. Parameters: Rate, PIP, leakage, tidal volume, minute volume and Delivered O₂%
 - c. Display of set and measured parameters
11. Should have inbuilt/integrated Air source of same make.
12. It should be compatible with central gas supply of air & O₂ in ICU setup, wherever applicable.
13. Battery backup for ventilator including air source should be minimum 2 Hours.

System Configuration Accessories, spares and consumables:

14. Mounting Trolley/ cart mounting for easy transportation and Hinged Support Arm - 1 no. All of same make.
15. Adult and Pediatric reusable silicone patient breathing circuits - 02 nos. each complete set.
16. Hose for Oxygen and compressed Air with connector - 01 no. each
17. Reusable Masks (Large & Medium) with each machine - 01 set each
18. **Humidifier** - Heated humidifier comprising of adult & pediatric chamber with all required accessories like temp. Probe, heating wire, draw, chamber - 1 no. each

Standards, Safety and Training:

19. Ventilator should be USFDA / European CE (by Notified Body) approved.
20. Demonstration of quoted equipment model is must for final technical approval.
21. Firm should have service engineer network in Rajasthan. The service provider should have the necessary equipments recommended by the manufacturer to carry out preventive maintenance test as per guidelines provided in the service/maintenance manual.
22. **Guarantee:** for three years from the date of installation, including Oxygen Sensor.
23. **CMC:** CMC shall be given @ 4% of net rate (excluding GST as applicable) and yearly escalation of 5% on last year's CMC price. The CMC may be awarded for five years (on yearly basis) after Guarantee period of three years.

Technical Specifications for Advanced Ventilator

Operational Requirements:

1. It should be microprocessor Controlled ventilator with integrated facility for Ventilation monitoring suitable for Neonatal to adult ventilation.
2. The unit should be external compressor based of same make for precise gas delivery.

Technical Specifications:

3. Should have integrated Colored Touch screen 12 inch or more
4. It should have inbuilt facility to measure and display for all patient category (Adult to neonatal)
 - a) Should have End Tidal CO₂ detection by main stream Capnography.
 - b) 3 waves - Pressure and Time, Volume and Time and Flow and Time.



- c) 3 loops - P-V, F-V, P-F with facility of saving of Loops for reference.
- d) Status indicator for Ventilator mode, Battery life, patient data, alarm settings, clock etc.
- e) Simultaneous display of set and exhaled parameter, waveforms and loops.
5. Should have Trending facility for 24 hours or more
6. Should have Automatic compliance & Leakage compensation for circuit
7. Should have following settings for all age groups.
 - a) Tidal Volume: 5 ml to 1500 ml
 - b) Pressure (insp): 2 - 80 cmH₂O
 - c) Pressure Ramp / Flow patterns
 - d) Respiratory Rate: 1 to 150 bpm,
 - e) Insp. Time: 0.15 to 3 sec,
 - f) I: E Ratio: 4:1 to 1:4
 - g) CPAP/PEEP: 0-40 cmH₂O
 - h) Pressure support: 2-80 cm H₂O
 - i) FiO₂: 21 to 100%
 - j) Pause Time: 0 to 2 sec
 - k) Flow Trigger: 0.2 to 15 lpm
8. 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
 - g) Intrinsic PEEP
 - h) Plateau Pressure
 - i) Resistance & Compliance
 - j) Use selector Alarms for all measured & monitored parameters
9. Should have following modes or equivalent modes of ventilation
 - a) Volume controlled
 - b) Pressure Controlled
 - c) Pressure Regulated Volume Controlled (PRVC)
 - d) SIMV (Pressure Control and volume control) with pressure support
 - e) CPAP/PEEP, PSV + assured tidal volume / guarantee
 - f) Any advance mode like pressure controlled volume guaranteed /NAVA/MMV/ASV / AUTOFLOW or any equivalent mode
 - g) Non Invasive ventilation including Nasal CPAP for neonates.
10. Should have Apnea / backup ventilation
11. Expiratory block: not requiring routine calibration and could be sterilized.
12. Should have monitoring of the following parameters
 - a. Occlusion Pressure (P0.1), Max Inspiratory pressure (Pi max)
 - b. RSBI, Imposed work of Breathing (WOBi)
13. Should have integrated (in-built) nebuliser or synchronized ultrasonic nebuliser with capability to deliver fine particle on line.
14. Should have integrated Battery backup for minimum 1 hour for main unit

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System Configuration Accessories, spares and consumables:

15. Mounting Trolley/ cart mounting for easy transportation and Hinged Support Arm - 1 no. All of same make.
16. Adult, Paediatric, Neonatal autoclavable silicone patient breathing circuits - 02 nos. each complete set.
17. Reusable and autoclavable Flow sensor and exhalation valve / expiratory cassette. The expiratory flow sensor and valve should have 5 years complete replacement garranty (free of cost). Firm should submit the rate of Flow sensor and exhalation valve / expiratory cassette in sealed envelope at the time of bid submission and rates will be freeze for three years.
18. Hose for Oxygen and compressed Air with connector - 01 no. each
19. Reusable Masks (Small, Medium, Large) with each machine - 01 set each
20. **Humidifier** - Servo controlled with digital monitoring of inspired gas temperature - 01. All required accessories like temp. Probe, heating wire, draw, chamber - each 1 no.

Standards, Safety and Training:

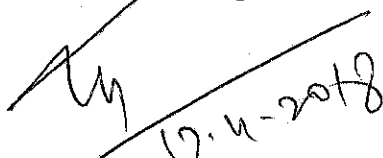
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2. Date extension of Bid:-

Extended dates		
Last Date for Sale of Bid Form	Last Date of Receipt of Bid Form	Date of Opening of Technical Bid
1.05.2018 11:00 AM	1.05.2018 06:00 PM	2.05.2018 11:00 AM

Please note that all clarification/amendment/corrigendum in technical specifications/bid conditions is the integral part of the bid document. This corrigendum/addendum should be signed and annexed with bid document.

All other terms & conditions remains the same.


17.4.2018
Executive Director (EPM)
RMSCL, Jaipur

