ADICHUNCHANAGIRI
UNIVERSITY
(Estd. under Karnataka Act No. 18 of 2013)
B.G. Nagara - 571448

ACU/AUTY/AHRC-900(5)/**242**/2022-23 Date: 02.02.2023

TENDER NOTIFICATION

The Adichunchanagiri University invites **closed tenders** from eligible tenderers or bonafide licensed manufacturer or their authorised local supplier/dealer/distributor in the state of Karnataka for the procurement of equipment/Instruments as per section I & II.

1	Name of the work	Supply of Respiratory Medicine instruments/ equipment to Adichunchanagiri Hospital and Research Centre, BG Nagara
2	Last date for tender submission	On or Before 09-02-2023 up to 05:00 PM

Sl. No.	Name of the Medical Equipment / Instrument	Provisional Qty. (In No's)
1.	Diffusing capacity of the lungs for carbon monoxide (DLCO)	01
2.	Video Bronchoscope	01
3.	Polysomnography (Sleep Lab)	01

SECTION -I

Instruction to Tenderers

- The Tenderer shall send quotes in 2 bid formats (Technical and Financial bids sealed separately inside the main envelope for any or all list of items) on professional business letterheads. The inner and outer sealed cover must bear the following identification
    1. Tender for .....[name of service | Contract]
    2. Tender Reference No.....[insert number]
    3. Address to "The Registrar, Adichunchanagiri University, B.G. Nagara -571448, Nagamangala (T), Mandya (D)"
    4. The tenderer who prefers to submit the tender through Post can dispatch the same through Registered Post / Speed Post or Courier so as to reach the above address on or before the due date and time specified in the Tender Notice. Tenders received after the due date and time, for what so ever reasons will not be considered and the authority, ACU BG-Nagara will not be liable or responsible for the same.
- **Tender Currency:** Prices shall be quoted in Indian Rupees Only
- **AMC/CMC** is subject to the Adichunchanagiri University's norms.

- **Warranty: 03 years required**
- **Amendment of Tender Documents:** At any time prior to the deadline for submission of tenders, the University may, for any reason, whether at its own initiative or otherwise, modify the tender documents by amendment. Adichunchanagiri University reserves all the rights to accept, reject, incorporate changes and re-tender without giving any reasons.
- **Documents Comprising the Tender:** Shall attach Brochure, Certification of the product, Bank/account details, PAN, GSTIN, Good Standing Certificate and 02 Years of ITR declaration inside the envelope and company contact details with email ID on the main envelope cover for further correspondence.
- **Tender Prices:** Prices indicated on the Price Schedule shall be entered separately I.e. the price of the goods, quoted (ex-works, ex-factory, ex-showroom, ex-warehouse, or off-the-shelf, as applicable), including all duties and sales and other taxes already paid or payable. Any Indian duties, sales and other taxes which will be payable on the goods if this Contract is awarded. Conditional tenders will not be considered.
- **Validity of the Bid:** 90 Days from the last date of submission of bid
- **Corrupt or Fraudulent practices:** The Adichunchanagiri University requires that the Tenderers, observe the highest standard of ethics during the procurement and execution of such contracts. In pursuance of this policy:

    1. will reject a proposal for award if it determines that the Tenderer recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question;
    2. will declare a firm ineligible, either indefinitely or for a stated period of time, to be awarded a university contract if it at any time determines that the firm has engaged in corrupt or fraudulent practices in competing for, or in executing, a University contract.

- **Process to be confidential:** Information relating to the examination, clarification, evaluation, and comparison of Tenders and recommendations for the award of a contract shall not be disclosed to Tenderers or any other persons not officially concerned with such process until the award to the successful Tenderer has been announced. Any effort by a Tenderer to influence the Employer's processing of Tenders or award decisions may result in the rejection of his Tender.
- **Clarification of Tenders:** To assist in the examination, evaluation, and comparison of Tenders, the Employer may, at his discretion, ask any Tenderer for clarification of his Tender, including breakdowns of unit rates. The request for clarification and the response shall be in writing or by cable, but no change in the price or substance of the Tender shall be sought, offered, or permitted except as required to confirm the correction of arithmetic errors discovered by the Employer in the evaluation of the tenders.

- **Delivery:** The successful BIDDER should commence the services as per tender document/Work or Purchase Order. For any queries/ assistance, please write to registrar@acu.edu.in or telephone to purchase section +91 -98458 35834

SECTION -II

Sl. No.	Name of the Medical Equipment / Instrument
1.	**Diffusing capacity of the lungs for carbon monoxide (DLCO)**
	DLCO (smart PFT CO transfer Fast) **Linear and selective gas analysis for precise CO transfer testing** 1. CO transfer testing system with table, 3D stands and test gas bottle. 2. DLCO should be stabile metal box with gas analyser, ambient condition sensors and microprocessor unit. The gas analyser unit is selective and very linear with a fast response time. 3. Should be provide low resistance demand valve for efficient gas supply. 4. Should be provide flow sensor with shutter and demand valve with low dead space. Flow sensor should be a variable orifice with low resistance at all low rates. It should not have influenced by any breathing humidity. 5. Gas bottle holder as extension for the table is included as standard. 6. Online gas and volume graphs to avoid errors during the manoeuvre. 7. A comfortable report generator allows modification of existing print templates and to create new print templates. **Operational requirement for equipment** 1. The System should be an economically oriented lung function measuring system for the determination of the static and dynamic lung volumes using the classical FRC- Helium re-breathing and the Diffusion Capacity by using the single Breath technique. It should also be possible to measure Diffusion Capacity (DLCO) by the Re-breathing technique for patients with distribution impairments of the lungs, to minimise patient co-operation. 2. Indian predictive values should be available for all measurements and both methods of estimation of lung diffusion. The proper medical reference from where these values have been incorporated should be clearly mentioned. **Technical Specification for equipment** 1. The system should measure the following: a) Slow and forced spirometry (Inspiratory and Expiratory Flow Volume Curve)

b) Lung sub volumes - Functional residual Capacity (FRC), Residual Volume (RV) . Total Lung Capacity (TLC) by FRC-Helium multiple breath technique.

c) Diffusion capacity of the lung, by single breath technique.

d) Diffusion capacity of the lung by the multiple breath technique.

2. The system should measure the following parameters :

a) Slow and forced Spirometry,

VT, BF, MV, ERV, FVC, FEV1, VCin, VCex, MEF 50, MEF 75, PEF, MVV etc.

b) Lung Sub volumes : FRC, RV, TLC, RV%TLC etc.

c)Diffusion capacity of the Lungs : DLCO-SB , DLCO – RB.

3. The system should have an easy to exchange, bidirectional heated pneumotach with the following specifications. :

Range - Should be 0 to 20 lit/sec.

Accuracy - Should be +/-2%

Resistance - Should be less than 0.05 KPa/ lit/sec.

4. The system should have carbon monoxide analyser, He analyser and O2 Analyser with the following specifications:

a) Carbon monoxide analyser: Range - Should be from 0 to 0.4%

Resolution/Accuracy should be 0.0002%/0.0003%

Reproducibility should be 0.0006%

b) He Analyser: Range - Should be 0 to 9.5%

Resolution/Accuracy should 0.005% /0.05 %

Reproducibility should be 0.02%

c) O2 analyser Range - Should be 0 to 100%.

Resolution / Accuracy should be 0.05% / 1.0%

Reproducibility should be 0.1%.

5. The system should have a demand valve unit for direct breathing (no inspiratory bag) from pre-mix gas container, to minimise wastage of gas.

6. The computer system should have the following specification:

Branded - P4 3 GHz PC System with ,80 GB HDD, 512 MB RAM, 1.44 MB FDD, 52 X CD - ROM R/W, Serial / Parallel Ports, 15" TFT Monitor, Keyboard, Mouse.

HP colour inkjet printer

ORIGINAL WINDOWS XP PROFESSIONAL

OEM O.S.WITH SERVICE PACKS 2

7. System software should have facility for entry of patient data and saving of this information in a data base system Software should be MS-windows -95 based. It should be possible to configure different report output formats.

8. It should be possible to upgrade the system to the following:
   a) Body Plethysmography.

9. The system should have fully computerised calibration procedure for flow sensor and gas analysers. The system should also have a check procedure during start-up.

10. It should be possible to integrate/connect the system in a local Area Network (LAN). The data base must be accessed in a novel authorised operating system.

11. The software for diffusion must have program for patient training of DLCO Test without gas.

12. The software must be able to be set values for discard volume, Alveolar time & other parameters according to user requirement.

Environmental Factors

1. The unit shall be capable of being stored continuously in ambient temperature of
   0-50deg C and relative humidity of 15-90%
2. The unit shall be capable of operating continuously in ambient temperature of 10 -40deg C and relative humidity of 15-90%

Power Supply

1. Power input to be 220-240VAC, 50Hz
2. Suitable UPS with maintenance free batteries for minimum one-hour back-up should be supplied with the system.

Standards, Safety and Training

1. Should be certified to be meeting ATS Standards
2. Should be FDA , CE,UL or BIS approved product
3. Manufacturer should be ISO certified for quality standards.
4. Comprehensive warranty for 2 years and 5 years CMC after warranty including UPS
5. Comprehensive training on application after installation for one month at site or till the users is familiar with the operation of the unit.
6. Should have local service facility .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.

2.	**Video Bronchoscope**

Technical Specification

The flexible fiber optic bronchoscope and the light source should be **USFDA and CE certified**

- Flexible fiber optic bronchoscope should be light weight, & portable
- Flexible fiber optic bronchoscope should be supplied with tray system for disinfection andstorage from OEM.
- should be provided with a Carrying & storage Case
- Demonstration of Flexible fiber optic bronchoscope, light ource and monitor is a mustbefore finalization of technical evaluation of product

HD VIDEO PROCESSOR WITH LIGHT SOURCE (ADULT)

Description and Specification:

Channel Inner diameter	2.8mm or more
Field view	110^0 or More
Depth of field	3 – 50 mm
Distal End Outer Diameter	Less than 6.3mm
Insertion tube outer diameter	Less than 6.3mm
Working length	500-700mm
Bending Angulation range	Up-180^0 Down-120^0 or more
Total length	800-900 mm
Bronchoscope should be fully immiscible in disinfectant and cleaning solution	

3.	Polysomnography (Sleep Lab)

A. Hard ware Specifications for Video-PSG–facility to record up to 58 channels.

1. Should have following Channels:

EOG, EMG, Thermistor, Pressure Transducer, Respiratory Efforts-RIP Belts, Snoring, Body Position, CPAP pressure, Limb Moment detection, actimeter, SPO2, Pulse rate, End-tidal Capnography

2. The System should have:

a) Amplifier/Unit must be compact, body wearable and light weight < 500 gms.)

b) Reference Channels-at least 32, possible to configure all reference channels for EEG, EOG, and EMG as per requirement.

c) Bipolar Channel – 6.

d) The system should be able to record Systolic and Diastolic BP either from PTT signal or from 3rd party standalone system offering NIBP measurement from non-inflating soft finger cuffs that can directly be interfaced with the machine.

e) Should have and additional feature of FFT Analysis of all EEG waveforms and capability to record Heart Rate Variability. Should have adjustable low and high pass filters to have clear view of EEG, should have sampling rate of 4 to 512 samples/sec. Should have an ECG Elimination filter for EEG. Also should have facility of Brain mapping.

3. Should have Integrated Pulse Oximeter, body position sensor, light sensor and body movement detection sensor.

4. Should have on screen impedance check & self-calibration.

5. Should have adjustable gain and notch filters.

6. Should have fully compressed raw data stored on all channels.

7. Easy interface with CPAP machines of various make should be possible, with ease in PAP titration. There should be provision for automatic calculation and display of apnea- hypopnea index as well as other parameters like desaturation index, live during recording of titration studies.

8. Should have synchronized digital video with camera and infrared source. Video camera with high audio quality without external microphone (best available commercially).

9. Should have provision for power backup for at least 12 hrs and UPS for camera & computer.

10. Ability for wireless transmission of PSG data from patient to the PC - means full mobility to the patient

11. The unit should have back up facility to store data on Flash card and simultaneously wireless transmitted the data to the Base station/PC. Data Storage on high speed compact flash card with up to 2 GB capacity or up to minimum of 50 hours of PSG recording time.

12. Should have continuous signal check on display or at the patient bedside.

13. The system should have the ability to work on battery so that there is no

electrical interference coming to EEG signals.

B. Software Specifications:

1. Should have provision for Real Time Access to studies for analysis of data currently being recorded from the review/ recording station.

2. Should be interfaced to PC via interface for data acquisition.

3. The system should be compact & modular in design and should have facility to upgrade it in future.

4. Should have user definable Montage changes.

5. Should have independent, Selectable time basis for upper & Lower portions of the screen enabling review of fast moving traces like EEG in one half and slower Respiratory Waveforms on the other half, simultaneously.

6. Should have sleep staging options for Adult and Paediatric populations, configured according to latest AASM 2017 criteria.

7. Should have scoring comparison (quality control) feature which will allow comparison between scoring by different users, including sleep stages, respiratory events and AHI, arousals and limb movements, with provision for calculation of percentage agreement between different reviewers/scorers.

8. Should have capability to export and import the complete study in EDF Format, exe format, and reports can be exported to Excel and PDF format

9. Software should have the capability to display and analyze respiratory events linking with arousals, periodic limb movements and desaturations.

10. Should have the capability for periodic limb movement display and analysis with linking of Individual limb movements with apnea/hypopnea and with arousals.

11. Software for cyclic alternating pattern analysis should be made available.

12. It should have an integrated display the detailed sleep apnea treatment steps for all modalities (CPAP, bi-level PAP (different modes), Adaptive servo ventilation and oxygen supplementation)

13. Antivirus security should be made available.

C. Review/Analysis Station:

Highest Configuration Windows All in One Computer with latest generation Intel core i5 processor Camera:

1. The system should be provided with High end HD camera which can be synchronized with the raw data and audio recordings. Playback at different frame speeds (1-100 times).
2. It should have good recording in dark also (infrared).
3. Camera should be controlled directly via Software with IR capability and be supportable on a portable
4. Sturdy tripod/stand along with facility to be wall mount or ceiling mounts.
5. Should have Integrated IR Illumination, Integrated microphone speaker, Integrated BT- receiver, Incl. video recording software, Video streaming, Resolution: 1280*960 pixels

D. Treatment facilities to be supplied with the system:

1. Multimodality titration equipment (enabled to titrate CPAP, Bi-level, and ASV)
2. Capability to remotely control PAP treatment parameters live, from the review station, without entering patients' cubicles.
3. Multiple types of masks of different sizes paediatric and adult.
4. The suitable rating UPS to be provided for uninterrupted recording for 1 - 2 hrs for both raw data and video

E. Consumables to be supplied with instruments

Gold cup electrodes-4 sets of 32 electrodes in each Sensors– two sets of following sensors

1. Thermistor
2. Pressure Transducer
3. RIP Belts- 2 sets for each of the following: Adult & Paediatrics
4. Pulse oximeter

Head of Procurement
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