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| C:\Users\BMSICL\Desktop\bmsicl_logo.jpg | **Bihar Medical Services & Infrastructure Corporation Limited 4th floor State Building Construction Corporation Limited. Hospital Road, Shastri Nagar, Patna 800023, Phone/Fax: +91612 2283287,+ 91612 2283288** |
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**Corrigendum-I**

Bihar Medical Services and Infrastructure Corporation Limited (BMSICL) had invited E-Bids from the interested parties for the procurement, rate contract and the supply of medical equipment for different Govt. Medical Colleges and Hospitals of Bihar vide Notice Inviting Tender No.-BMSICL/2019-20/ME-148. A Pre-Bid Meeting was held on 23.09.2019. In the meeting some technical specification amendments have been made as per the Annexure-I of this corrigendum. In order to facilitate maximum participation of bidders the tender schedule is being revised as follows:-

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| --- | --- |
| Tender Reference No. | **BMSICL/2019-20/ME-148** |
| Date and time for downloading of bid document | **Up to 14th October 2019 till 17:00 Hrs.** |
| Last date and time of submission of online bids | **16th October 2019 till 17:00 Hrs.** |
| Last date and time of submission of original documents of EMD, Tender Fee and Document. | **18th October 2019 till 14:00 Hrs.** |
| Date, Time and Place of opening of Technical Bid | **18th October 2019 (at 15:00 Hrs.) on the website of** [**www.eproc.bihar.gov.in**](http://www.eproc.bihar.gov.in/)**in the office of BMSICL** |
| Date and time of opening of financial Bids | **To be announced later on www.eproc.bihar.gov.in** |

**Note:-**Please refer to the **Annexure-I** of this corrigendum before submission of bid.

**Sd/-**

**GM (Procurement)**

**BMSICL**

**Annexure-I**

**TMT Machine**

1. Should be PC based cardiac workstation simultaneously 12 lead acquisition cambines resting & exercise ECG in one unit.
2. Should have wire/Radio frequency based wireless connectivity with Acquisition module to acquire diagnostic quality ECG data.
3. Each wire of patient cable set should be detachable, so that each cable can be changeable in case of one cable faulty or the ECG cable should be moulded.
4. The ECG acquisition sampling rate should be 8,000 Samples/seconds channel or more.
5. System should have 22” or above display for easy access.
6. As adding ECG post test will lead to fidding of patient data. Which can be lead to False positive.
7. Should have facility to hide Zoom ECG, context ECG view and Trends at any time.
8. System should have display speed : 6.25,12.5,25, 50 mm/s
9. Should have full disclosure of all 12 leads for beat to beat analysis.
10. The final report should include information on blood pressure, heart rat MET,s treadmill speed/Grade, ST trends relating to stage wise & recovery phase and duke treadmill score etc.
11. Report should be user-definable and can be selectable at final step of reporting.
12. Automatic calculation & display of METs.
13. System should support Time and METs ramped protocol.
14. System should show recovery elapsed time in % or actual time. System should have following standard softwares. Signal averaging software. QT dispersion software. QT analyser software for non invasive diagnosis of ischemic heart disease. Should have coloured Graphical Representation of QT intervals, PT intervals & ST Alteration. Should have a non-invasive alternative to invasive testing for ventricular arrhythmia like Late potential Analyser.
15. System should support left to right work flow.
16. System should provide online printing of ECG prints on High Quality Thermal printer manually and automatically during stress testing.
17. Treadmill soft stop option for stopping the treadmill after 20 second in recovery mode.
18. Facility to get system generated auto statement report.
19. System should support editing of final report in review phase.
20. System should support user defined ST measurement points.
21. System should have special filters to reduce noise artefacts, motion artefacts, baseline artefacts during stress test.
22. System should be capable to store full disclosure ECG data for later review using page review mode.
23. System should support multi login password protected access.
24. System should be supplied with US-FDA approved stress automatic BP measurement device with interface cable to measure automatically the patient NIBP during stress test per the programming done at stress system.
25. The display screen must be 22” or more and it should support. 1900x1200 or 1900 x1080 resolution and it should display following parameters.

* Exercise time.
* Target and max HR with % of target achievement.
* HR & METS trends.
* NIBP trends.
* ST level trends.
* Zoomed ECG with reference trace in background.
* ST profile with reference level in background.
* Context view/Playback view/scroll back view of complete study from pre-exercise in recovery/past ECG or eposoides that might have missed or print an arrythmia while continuing to view the real.
* 3-6-12 lead real time ECG rhythm.
* 12 lead average display.
* Speed of treadmill.

27. The following items must be provided along with the above stress testing software and automatic BP system.

28. Should have following performance characteristics.

* Defibrillation protected.
* Input impedance :< 100 Mohm.
* CMRR:>100 dB.

29. should have following Transmission options.

* Network
* USB
* XML
* PDF
* DICOM (Bi-Directional)

PC-

* Latest windows suitable for the system.
* I3 or better processor
* 4 GB RAM
* 500 GB Hard Disk
* Two serial port.
* Minimum 4 USB port.
* 24” LCD Monitor.

Trolley.

* Trolley must be of good quality and specially designed for stress testing system.
* Must be on wheel.
* Must have facility to fix the LCD Monitor.

Treadmill-

* Should be heavy duty important medical treadmill of same company.
* Should have stop/start button for emergency stop.
* Should have zero start.
* Should be European CE or US-FDA Approved.
* Should have running surface of 50 x150mm or more with -+10% deviation in size will be excentable.
* Should have elevation range of 0% to 25%.
* Should have speed range of 0.5 to 20km/h.
* Should have user weight capacity of 227kg or higher.
* Walking surface must be a double sided polished for prolonged product life span.
* Emergency stop button must have the ability to be located in the location of choice by the end user. This ESB must be a standard feature of the treadmill.
* Hand rails must be available as a standard feature with optional removable hand-rails, or nuclear handrails for the advancement of a nuclear camera to the front of the patient while still on the treadmill.

**Should have following safety features.**

**Electrical Safety**

* Stress Test System falls under Class II
* Type protection: CF
* ANSI/AAMI EC, Diagnostic Electrocardiograph Devices.
* IEC, Medical Electrical Equipment. Part1: General Requirements for safety.
* Including Amendment and Amendment.
* IEC Medical Electrical Equipment. Part 2 particular Requirements of the.
* Safety of Electrocardiographs, including
* Council directive 93/42/EEC of 14 June 1993 concerning medical devices.(Medical Device)
* Directive.)
* IEC Medical Electrical Equipment-part 1:General requirements for safety.
* Subpart 2. Collateral standard: Electromagnetic compatibility –Requirements and tests.

**Standards of compliance**

* CE Marked (Class IIa)
* CAN/CSA Approved.
* FDA Approved.
* IP 20 According DIN VDE 0470 PART 1/EN 60529/IEC 529

**Environmental**

* Operating temperature:+10 to + 40 deg. C (+50 to +104 deg.F)
* Storage temperature:-40 to +70 deg. C (-40 to + 158 deg.F)
* Operating relative humidity: 10% to 95%, non condensing.
* Storage relative humidity: 10% to 95%, non-condensing.
* Operation/ storage atmospheric pressure: 500 hPa to 1060 hPa.

**Note: Complete system should be US FDA/ CE approved ( with notified European body)**

**Holter Monitoring with Recorder**

The Analyser software should provide beat to beat review and complete presentation of all arrhythmias and ischemic events. 12 Channel ECG strips at any point in time as per user’s requirement.

**1.** Software should have Ability to assign user roles and permissions to operations with physician electronic signature for the final report.

**2.** Software should have facility to identify the test progress by ordered, in progress, acquired edited, reviewed and signed status.

**3.** The databased screen of software should display work list, import, export, recorder setup and patients demographic database.

**4. Download and scan time should be less than 90 seconds.**

**5.** Software should have color coded beat identification for a total of 13 beat types for quick and easy identification.

**6.** Software should have color coded Event Bars for ST episodes, Atrial fibrillation, Artifact, and other rhythm episodes as well as user-defined events.

**Add:-** Should have specialized Graphical software for detection of onset of Atrial Fibrillation.

**7.** Software should have clippers which allow measurements of amplitude, time and heart rate with ability to march out for identification of interval regularity.

**Add:-** should have HRV in time and frequency domain.

**8.** Software should have Histograms for graphical representation of RR interval, VE and SVE runs, and pacer spike relationship to QRS distribution.

**9.** Software should give the choice to user to choose any combination of leads can be used or excluded for beat detection and labeling.

**10.** Software should have multiple scanning Modes like prospective, retrospective, page Mode and superimposition with bi-directional multi speed for up to 12 channels.

**11.** Software should have facility of editing/reviewing of final reports before printing system allows preparation of final reports, including automatic strips, comments, morphology report, full disclosure and ECG strips.

**12.** Software should have facility of Rhythm Analysis of Ventricular and supraventricular singles, couplets, runs (longest and fastest), bradycardia, tachycardia, supraventricular tachycardia, ventricular tachycardia, bigeminy, trigeminy, artrial fibrillation, Atrial, Dual and Ventricular pacemaker rhythms, pause, longest RR,RR standard deviation and Heart Rate variability. Percent and total beats in summary and each hourly period.

**13. Software should have USFDA/ CE certification. (with notified European body)**

PC system specifications.

15 should provide windows Latest professional 32 bit or 64 bit OS plateform with minimal performance equivalent to an intel core i3 processor, 1TB RAM and 500 GB storage capacity.

16. Should provide the good quality laser printer with at least 14 PPM paper speed.

**17. Digital recorder Features.**

**Compact**, efficient design.

**Light weight,**

**Pre-**processing of ECG data.

**24 hour** or 48 hour or 7 days recording time.

ColorLCD for waveform display, low battery and lead quality indication.

Add:- The recorder should have minimum sampling frequency of 5000Hz.

Patient event button and digital clock for reporting of patient symptoms.

Pacemaker detection and defibrillator protection.

Built-in impedance check to ensure signal quality.

**Shock,** vibration and ESD tolerant to avoid interrupted operation.

**Enter entire** patient demographics via PC to minimize inter-patient confusion.

**Traditional** 5 –wire patient cable.

12 channel continuous ECG acquisition.

Should USFDA Certified. Or European CE certified**( with notified European body)**.

**18. The bidder should supply with five recorders.**

**19.** The bidder should quote the price of Holter Recorder in option, so that recorder can be purchase in given price later.

**20. Should provide five years of warranty.**

1. The Analyser software should provide beat to beat review and complete presentation of all arrhythmias and ischemic events. Prints 12-channel ECG strips at any point in time as per user’s requirement.

2. Software should have ability to assign user roles and permissions to operations with physician electronic signature for the final report.

3. Software should have facility to indentify the test progress by ordered, in progress, acquired,edited, reviewed and

**Echocardiography**

**High End Echo Machine (live 3D / 4D ECHO machine)**

a. Light weight ECHO machine system should have 17 inch or more flat panal type TFT / LCD or better technology monitor.

b. The system should have multiple lines acquisition capable of achieving very high frame rates, atleast 2000 frames per second and system must allow frame by frame review. Should have TEE facility.

**Probes** :-

1. Trans-thoracic 3D/4D Adult Probe – 01.

2. Trans-thoracic: 2D Paediatric Probe – 01.

3. Standard TEE 3D Probe (Prcle to be frozen)

4. Trans-thoracic 2D Adult Probe-01

a. Sequential measurement of IA/LV volume and LVEF measurement (Auto mode)

b. RV volume and function measurement package.

c. Mitral Valve Assessment package

d. Offline anatomical M-mode with single cardiac beat acquisition

CD/DVD R/W, USB + Compatible Printer

DICOM format (configuration) facilities

FDA and CE’ (issued by notified body) Approved

2D speckle tracking Echo for strain and strain rate calculation and related facility like Tissue Tracking with Bulls eye view format

Dynamic stress echo package

**Mid End Echo (2D ECHO MACHINE )**

A) Trans – thothoracic Probes

1) Adult -01

2) Paediatric Probe – 01

3) Neonatal Probe – 01

4) Vascular Probe – 01 Auto IMT Measurement

Dynamic stress echo package, with Pause & review ficilty.

Tissue Dopplor Imaging/Tissue Velocity Imaging package with colorflow and PW facility plis advanced and updated Q analisys and related calculations facilities

2D speckle tracking Echo for strain and strain rate calculation and related facility like Tissue Tracking with Bulls eye view format

CD/DVD R/W, USB + Compatible Printer.

US FDA & European CE (issued by notified body)

System should have 17 inch Display or higher with touch screen facity.

Three or more active ports

Machine should cover five years complete warranty period & five years comprehensive CMC period.

Offered Model should not be less than FY2015.

Digital Processing channel

Standard UPS & thermal printer.

Frame Rate :atleast 1900.

**Ultrasonic Generator System for both Laproscopy& Open Surgery**

1. Ultrasonic generator generating ultrasound frequency in between 45-60 KHz.
2. Hand-piece with in-built transducer autoclavable.
3. Hand-switch activation adopter for Intelligent tissue monitoring.
4. Cart to house the generator and accessories.
5. Single/Dual foot-switch attachment.
6. Stand-by mode for better safety.
7. System diagnostics and troubleshooting guide.
8. Warning system for malfunctioning cable, probe etc.
9. Power entry filters to suppress electromagnetic disturbances to monitors.

System Configuration Accessories, spares and consumables.

4.1 B) Accessories.

1. Foot-switch with max and min pedals and cable.

2. 5 mm blade system 36cm.

3. All hand pieces & Scissors should be steam autoclavable/ ETO.

4. Power Supply 200-240VAC, 50Hz fitted with Indian plug.

5. UPS of suitable rating with voltage regulation and spike protection for 30 minutes back up.

6. Should be USFDA/European CE /BIS approved Model.