

TECHNICAL SPECIFICATION FOR HIGH-END ECHOCARDIOGRAPHY MACHINE

1. The system must be the Latest generation, Highest end & Technologically advanced Digital 4D (Live 3D) Echocardiography system for Transthoracic and TOE adult & pediatric cardiac applications. Any other model other than the highest end and the latest version is liable for rejection.
2. System must be offered with a minimum of 60,00,00 digital processed channels. The original technical data sheet should be enclosed in the technical bid to support the number of channels on the systems. If not mentioned, please attach a letter from the manufacturer along with the technical bid clearly stating the digital processed channels of the offered system. 2D Frame rate 2500 frames per second and Dynamic gain 300db
3. System must have adult and pediatric cardiology transducer with either single crystal technology or pure wave technology or matrix or phased array for excellent grayscale Image quality on Difficult to image patients. Please mention the technology used in the transducer. The original technical data sheet should be enclosed in the technical bid to support the crystal technology.
4. System must be offered with a minimum 22-inch High-Resolution OLED/Better Technology Flat Panel Medical Grade Display monitor with multiple/nearly infinite position adjustments. The company should provide wider monitoring if available.
5. System should have at least four Imaging active probe ports with an electronic switching facility from the keyboard without a probe adapter.
6. System should be capable of supporting second generation 4D (Live 3D) matrix Transducer capable of supporting a minimum of 2000 elements for exceptional 4D (Live 3D) Echo, 4D (Live 3D) zoom, triggered full volume, and triggered 3D color volume with electrocautery Suppression
7. System should support broadband probes spanning a frequency of 1-15 MHz +2
8. Image storage facility on in-build hard disc or MOD/CD/DVD-RW/SSD facility should be available. 1 TB built/external hard disk/SSD with the capacity to store multiple images. The system should have extensive image management capability including thumbnail review, Cine loop editing, etc.
9. System must be offered with Speckle Reduction Imaging: Image processing technique to remove speckles and clutter artifacts like tissue boost/ACE or equivalent technology
10. System should have 4D (Live 3D) Echocardiography capability with Color Flow Imaging
11. System should be capable of scanning depth of 30 cm or more. Scanning Depth should be mentioned in the technical quote If not mentioned Please attach a letter from the manufacturer along with the technical bid clearly stating the scanning depth of 30 cm or more in the offered system.
12. Should be able to perform advanced quantification measurements like Strain & Strain Rate Quantification. Should Measure the myocardial velocity and derives the strain rate and strain along user-defined M-lines, Capable of drawing up to 3 M-lines at a time, Capable of sub-dividing each m-line into 8 sub-regions or according to user-defined sub-region sizes, Point of Interest tool obtains values from any point on the M-mode display.

Automatic LV, LA, and RV strain
Auto LV and LA 4D volume calculation.

In addition to the Tissue Doppler-based strain, Layered strain, 3D Circumferential strain, Longitudinal strain, Aortic Valve Quantification, Offline Reporting, Doppler measurement, PW, CW, TVI, and TDI Offline measurement of LIMP. The system should have 2D Based strains like VVI, AFI, and CMQ or similar technology should be offered. These should be offered both on the

King George's Medical University, UP, Lko.

system and a licensed workstation. OFF-CART workstation (both licensed hardware and licensed software) should be quoted and highlighted in the technical bid.

13. 2D speckle tracking with the latest software and AI. The system should have 4d depth rendering technology with a light source.

14. System must be offered with a user-friendly high-resolution user interface touch panel of minimum size of 12 inches or intuitive Keyboard. User-friendliness will be given preference.

15. Should be provided with software to be able to perform MPR views for Quantification from 3D Imaging on Volume measurements like LV volumes, Ejection fraction from 3DImage, etc. Also, should offer synchronicity indicators to measure and compare the timing of maximum contraction of LV volumes. Should display global LV volume and should provide simultaneous display of 17 regional/ Strain volume waveforms. Triplane 2D imaging in volume probe for visualizing all 17 segments. This should be offered both on the system and a licensed workstation (both licensed hardware and licensed software) and should be offered and highlighted in the technical bid. Should be able to perform advanced quantification measurements like Automated strain & CRT quantification. The system Should have 4D dynamic LV, RV, and LA Volume. The quantification capabilities should be offered OFF-LINE also. The system images should be transferred through DICOM to the OFF-LINE and via networking to the licensed workstation. The workstation should have a DICOM Image Management System Software loaded to print images through a Color laser printer

16. The system should have the facility of displaying the three planes of the 3D data set.

17. Contrast Harmonic Imaging should be offered as standard on the system, with optimization for Low and HI MI applications. Should also have the facility of LOW MI with triggered replenishment Imaging.

Integrated strain stress Echo facility to perform Stress Echo exams. (Dubatamine & exercise stress echo). All the software related to Valve, chamber Quantification, RWMA (strain and volume) in 3D and 2D. Anatomical M Mode, Auto Doppler measurement, 3DQ, 3Dq Advanced / 4D strain. Contrast and perfusion should be provided.

18. Should have the state-of-the-art Transmit Real-Time Compound Imaging Technology with Multiple transmitted lines of sight, wherein Multiple Coplanar Images from different viewing angles are obtained and combined into a single compound Image at real-time frame rates for improved visualization. Should demonstrate and show multiple transmitted lines of sight in linear probes.

Latest PC (off-cart workstation) with permanent license software for analyzing and quantification of 2D and 3D data sets like Strain and Strain rate imaging, Tissue Motion Annular Displacement/Tissue Tracking, Mitral valve, Aortic Valve, Left Atrial Appendage measurement in 3D data sets, 2D & 3D Speckle tracking, Reporting, Layered Strain, Mitral valve 3D data sets, 2D Speckle tracking. CD/DVD writer with Image management software and color laser Printer. PC should be offered with a flat panel > 21" display monitor. (Hardware essential for OFF cart quantification).

2D AI-based measurements like LV Study / Auto EF should be offered. Strain Measurement for LV, RV, and LA to be offered as standard in the system. System Should be offered with tomographic representation for Mitral Valve and Aorta.

The system Should be offered with 4D with up to 12 Slice imaging.

19. SYSTEM MUST BE SUPPLIED WITH FOLLOWING TRANSDUCERS (Latest Technology should be offered)

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I. 4D (Live 3D) Echo Matrix Transducer for Adult 4D (Live 3D) with frequency ranging from 1-5 \pm 1 Mhz. This probe must support a minimum of 2000 elements for exceptional 4D (Live 3D) image quality on the matrix array transducer to the simultaneous display of two real-time live high-quality image planes. This transducer should have either single crystal technology or pure wave technology for excellent Image quality on Difficult image patients. Please mention the crystal technology used in the transducer.
II. 1-5 \pm 1 MHz Broadband Adult Echo Transducer for Adult Cardiology imaging. Must have Tissue Harmonic Imaging. Must have either single crystal technology or pure wave or matrix technology for excellent Image quality on Difficult image patients. Must attach the original technical data sheet of the transducer to specify the above technology used in the transducer. This adult probe must be of the smallest footprint.
III. Either one probe with adult 2D & 4D (3D life) capability or two separate probes
IV. 3-8 MHz Broadband Pediatric Echo Transducer for Pediatric and small adult Cardiology imaging.
V. 5-12 MHz Broadband Pediatric Echo Transducer for Neonatal and large Pediatric Cardiology imaging.
VI. 2D Echo TEE Transducer for Adult with frequency ranging from 2-7 Mhz. customizable TEE probe button with mitral valve analysis package & subsequent software packages for other valves to be provided free of cost.
VII. Linear transducer for vascular ultrasound 3-12 M Hz \pm 2
VIII. All probes must be included in the total machine price. In addition, the price of probes should be quoted separately also.
IX. At the time of installation, the vendor should provide all the required items (UPS, etc) necessary for the smooth, proper, and safe functioning of the machine. The system should be supplied with ONE 3KVA online UPS backup of 30 min minimum, from APC or Emerson, or any other standard brand
X. Latest software for depth rendering etc. should be offered as standard with the light source.
20. The cost of each transducer (including the TEE transducer) should be quoted separately for further purchase.
21. Guarantee & Warranty: Warranty for 5 years and Comprehensive Guarantee after the expiry of warranty for all accessories for Five years including parts and labor as per institute norms. All software updates for 5 years are to be provided free of cost. CMC should be unconditional and include all accessories and consumables including third-party items. A comprehensive Guarantee for parts and labor from years 6 to 10 will also need to be quoted in the price separately and will be taken into account (added in the price bid) while calculating the Final Price. The CMC should be unconditional and include all accessories and consumables, probes, cables, and third-party items.
22. System should also be provided with- <ul style="list-style-type: none"> a.) Latest PC (off-line licensed workstation) with minimum 2TB Hard drive/ SSD, 2x8 GB DDR 3 RAM, Intel i7- 3.5 GHz or higher processor, Two serial ports, Minimum 4 USB port, Inbuilt Bluetooth & Wi-Fi, 24" Monitor, Keyboard, mouse, 10 or latest Windows professional or equivalent, licensed software for analyzing and quantification of 2D and 3D data sets, CD/DVD writer with Image Management Software and High-End color laser Printer with auto-duplexing should be supplied. PC should be supplied with the licensed software to work on above mentioned tender specifications related to Strain and Strain rate imaging, Semi-Automated Border Detection, Tissue Motion Annular Displacement, Mitral Valve 3D data sets, 2D speckle tracking (any other Hardware essential for OFFLINE Quantification)

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b.) Latest B/W Thermal Printer with 100 rolls of thermal papers for thermal printer
c.) d.) ECG cable: Five in numbers
23. Local Service Facility should be available. The system should be US FDA and European CE approved
24. In case the bidder is found to be L1, the bidder must submit copies of previous supply order to AIIMS, New Delhi, or any other hospital, within one week of receiving the information.
25. Cidex tray for TEE probe
26. Hanger for TEE probe
27. Probe cover for physical damage & rodent bite prevention

Conditions for tenderer:

1. All accessories should be from the same Original Equipment Manufacturer for the main unit.
2. Instruments must be ISO certified and a copy should be enclosed. (The ISO Certificate must be issued by any organization accredited by the Bureau of Indian Standard or accredited by the international accrediting forum "IAF" (Certificate to be attached).
3. Should be USA FDA and European CE be approved by 4 digits notified body?
4. Other necessary certifications if any required will be provided by the bidder for the smooth functioning of the machine.
5. Installation process should be performed by O.E.M trained service engineers/ service representatives on OEM letterhead or Service Report within 15 days of supply, with the mandatory provision of providing preventive services visit of OEM trained Service Engineer/ Service Representative quarterly per year till the completion of warranty period (i.e., 20 visits for the first 05 years) & further quarterly visits (04 visits/year) year till the completion of CMC period.
6. The equipment should have a Brand name/ Model Number embossed/etched on the equipment.
7. All the technical specifications in the compliance statement must be supported by Original Literature from the firm/ O.E.M with highlighting Numbering & flagging of all technical certificates.
8. Offered Equipment should have a strong Government Installation base.
9. Offered Equipment should have a Regional Sales Service Centre of the Original Equipment Manufacturer in the region for a 95 % uptime guarantee.
10. For the offered main unit, the essential, optional required consumables'/accessories' shelf life should be declared on the Original Equipment Manufacturer's letterhead.

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11. In case of technical snag/failure/breakdown the response time for the inspection should be within 24 hours and repair within 05 days otherwise provide a service machine/ alternate arrangement to be made till the period of recovery of the breakdown of the unit, failing which attracts penal action as per the decision of institute/ hospital.
12. For offered equipment the Training of technical staff and users should be performed by Original Equipment Manufacturer trained Service Engineers at the proper designated place- at bidders' cost.
13. Company should quote their latest model and need to provide an affidavit for the same.
14. As a tendering process the Demonstration of the offered Equipment is Mandatory at hospital/institute premises or other designated places at the bidder's cost.
15. The bidder must comply with the General Financial Rules and their modifications if any issued by the Government of India- 2017.
16. Any bidder from a country that shares a land border with India will be eligible to bid in the tender only if the bidder is registered with the Competent Authority (i.e., Registration certificate issued by the Ministry of Commerce and Industry (Department for Promotion of Industry and Internal Trade- DPIIT after October 2020). If any such bidder is not registered with DPIIT they will be liable for technical disqualification.
17. Principal (OEM) must authorize only one agent to be quoted in the bid otherwise multiple quotes through different agents in the same bid will be canceled.
18. The Bidder and it's OEM both have to submit a notarized affidavit on the Indian Non-Judicial Stamp Paper of Rs.100/- that the bidder has not quoted the price higher than the current financial year and last financial year supplied to any government Institute/ Organization/ reputed Private Organization. OEM also has to submit that the price quoted by the bidder in the bid is on its behalf and the lowest in the current and last financial year in the country. Therefore, if at any stage it has been found that the supplier and its OEM have quoted lower rates than those quoted in this bid; the Institute (the purchaser) would be given the benefit of lower rates by the Supplier and any excess payment if any, will become immediately payable to the Institute (the purchaser). If such an affidavit is not submitted, the bid will be outrightly rejected. (Part of technical bid).
19. Guarantee / Warranty Period: Separate offers of Comprehensive Maintenance Contract (CMC on main equipment) and Annual Maintenance Contract (AMC on main equipment) for further 5 years after expiry of 5 years of warranty (i.e., 6th, 7th, 8th, 9th and 10th years) in rupees only (and on basis of percentage of price) should be included in a financial bid in the absence of which the offer is liable to be rejected. Payment for CMC/AMC shall be made only after the expiry of the warranty of 5 years, in case the Institute (the purchaser) decides for availing of CMC/AMC services. Contract for CMC/AMC shall be decided on expiry of warranty but rates (not more than 5% inclusive of all taxes for 6th to 10th year) will be frozen at the price of an issued purchase order before the release of payment by the Institute (the purchaser). However, the Institute (the

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purchaser) may decide not to enter into any CMC/AMC contract without assigning any reason for the same, which shall be binding upon the bid.

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B3