# Notice Inviting e-Tender


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**Supply and Commissioning of 1 (One) unit of Ultrasound Machine with Abdominal, Linear and Transrectal Probe System for the Department of Urology, IPGME&R SSKM Hospital**
(Submission of Bid through *online*)

| **Bid Reference No.: WBMSCL/NIT-914/2025** | **Dated-11.11.2025** |
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# Amendment-II

# Technical Specification

# Specification for Ultrasound machine

## General Specification:

1. System should be State of art Ultra-Premium High End Fully Digital with Broadband digital Beam Former
2. The system should have minimum 800000 digitally processing channel
3. The system should have multiple /minimum 300 region specific presets like Adult Abdomen, Pediatric Abdomen, TV /TR, Gyn, Small Parts, Musculoskeletal and vascular presets. All Presets should be customized according to the user.
4. The system should have Quick View mode for 2D & CDI Preset selection during exam and minimum 8 sub preset for 2D & CDI Modes
5. The System panel height should be adjusted for user and patient comport during critical procedure.
6. The System operational panel can do Global movements of either direction for positioning with locking of position with periodical interval.

7. The system monitor should be minimum 23" LCD with Flexible Arm with Display matrix minimum 1920 * 1080 and Swivel and Rotation 40degree both directions.
8. The freely fully programmable, mode-sensitive color Touch command should be minimum 10" or more size with High Resolution Display matrix minimum of 1280 * 800 and should be Touch Screen mode operation enable direct access to all basic and advanced system controls.
9. All Panel keys should customize according to user preferences.
10. The system should have single key image optimization for 2D and Doppler.
11. Minimum frequency should be 1MHz and Maximum Frequency should be 22MHz can be selected depends on Probe.
12. System Depth should be minimum 38 cm or more.
13. The System should have Automatic Real time Image Optimization.
14. The system should have 256 gray scales.
15. The Boot up time less than 90 sec and stand by Boot less than 20 sec.
16. The System should have 4 universal active Transducer ports.

## System hardware Design Specification:

1. The System should have latest Innovation Technology like Advanced Synchronizing Pulsar which drive simultaneously with superimposing several waveforms to each element of transducer. It makes thin beams with focused in-depth direction, Resulting Increases Signal to Noise Ratio to the Fundamental Ultrasound waves to allow clear Detection of Second harmonic information. Clinically should get Increased Penetration, Spatial and Contrast resolution at the same time reduced artifact and clutter noise .

2. The System should have Multi Beam Receiving Technology. The system should able to receive multiple lines or a wide area signal simultaneously, creating a high-density field of scan lines across the footprint of the transducer. The system should produce lateral and temporal resolution combined with higher frame rates.

3. The System should have Multi-Harmonic Compounding Technology. The Signals obtained from each individual beam should overlap data from adjacent beams to

get straight homogeneous beams. The compounding should be RF (amplitude and phase) signal stage.

4. The System should have On Screen Navigation for System Operation for Ease of use (biopsy guide)

5. The System should have Spatial & Frequency Compound imaging in Transmit and Receive Direction with Multiple selections.

6. The System should have pulse subtraction / Pulse Inversion Tissue Harmonic Imaging for Better Contrast and Less Side Lobe Artifact.

7. The System should have Wide band / Differential Tissue Harmonic Imaging for better Depth Information.

8. The System Should have Tissue Optimization depends on Fat Tissue by sound Velocity Correction as a Standard Features and also Auto Tissue Correction should be Possible for Linear Probes.

9. The System should have 6 step Lateral Gain Compensation and 8 step TGC/STC adjustment and these controls done by Digital type in Touch command screen and Also Hard Keyboard should be Provided.

10. The System should have Biopsy Enhancement mode for Better Needle Insertion and Multiple Enhancement Level Adjustment should be Possible.

11. The System Upgradable to Biopsy Convex 1-6MHz for Interventional study.

12. The System Upgradable to Intraoperative Liner (4-11MHz) with Finger/Vertical/horizontal for Interventional study.

## General Imaging Specification:

1. The system should have advanced wide band color Doppler imaging mode with directional in formations without blooming / over painting for low flow applications for Fetal Applications.

2. The system should have real time panoramic view imaging that operates by sweeping a transducer over the anatomy of interest. Should be possible with all transducers.

3. The system should Upgradable to Radiant Flow or Doppler Luminance and should be available for all probes and all color modes

4. System should have innovative Best Micro-Vascular Imaging technology expands the range of visible blood flow and provides visualization of low velocity micro vascular flow usually unseen with routine ultrasound.

5. Micro Vascular Imaging should have better vascular visualization, combined with high frame rates, should result diagnostic confidence when evaluating lesions, cysts and tumours, improving patient outcomes with Following mode Selection

* Monochrome Mode -Back Round 2D Information should be suppressed
* Color Mode-Back Round 2D Information also displayed along with Color mode.

6. The System should have Directional Power Doppler Imaging mode.

7. The system should have PW Doppler & HPRF mode for All Transducer's and CW Doppler for Phased array Sector Probes.

8. The System should have Advanced DICOM for Image Transfer RADS Specifications .

## RADS Specifications

1. The System Upgradable to ACR Measurement Method of BI-RADS, TI-RADS and CEUS LI-RADS

a. The BI-RADS Atlas provides standardized breast imaging terminology, report organization, assessment structure and a classification system for ultrasound of the breast .

b. The goal of TI-RADS is to develop evidence-based recommendations for the management of thyroid nodules based on sonographic features that can be applied to every lesions .

c. The Goal of CEUS LI RADS to Standardization of Contrast-Enhanced Ultrasound (CEUS) and Categorization of HCC and clinical management of Major findings, Nodule size, Arterial phase hyper enhancement for Washout Timing and degree of washout.

2. Support for Shear wave elastography (for convex and linear probe).

## MSK Imaging Specification:

1. System Should Upgradable to MSK Protocol Movie for skill development of Sonographers /Doctors by providing teaching materials on board the system to enable increased clinical areas to be scanned, the skill development movie Should demonstrates the anatomy and scanning of the shoulder, with practical tips.

2. The System should upgradable to Shear wave Elastography range for MSK should be 0 700KPa Elasticity and 0-16m/s Speed to Measure the Tendon Stiffness (Relaxation and Contraction)

3. The System should have Side/ Vertical Display of 2D Images should be possible to improve the Examination Efficiency for Superficial Tissue and MSK Applications.

4. The System should support 6-18 (±2)MHz Linear for Dedicated MSK Imaging.

5. The System should Support 7-17MHz (±2)Hockey Stick Probe for MSK Joints.

6. The System should Support 8-18 MHz (±2)HF Hockey Stick Probe for MSK Joints.

7. The System should Upgrade to Support 8-18MHz Matrix/single crystal Linear for MSK
Contrast Specifications:

8. The System Should Upgradable to advanced Contrast Package available in the Industry.

- The System able to Display Wash In, Stay & Washout information of Contrast information to the single frame like Micro flow Imaging.
- The system should have Micro flow imaging with advanced software technology to compensate respiratory motion or unsteady application · of the transducers providing stable
  images during contrast application for Radiology Applications.
- The System should Display different Color for Wash In, Stay & Washout information of Contrast information to understand the arrival time of Contrast to Confirm the Contrast Property.

## Fusion and Navigation Specifications:

1. System should Upgradable to Real-time; Fusion Imaging allows to locate difficult lesions faster and to navigate complex anatomy securely, while carrying out invasive procedures.

2. The System should Upgradable to Needle Navigation by Ablation Therapy and Utilizes Fusion mode

## Measurement package Specification:

1. The Following Detailed Measurement Package should be Available:

▪ Measurement should be possible on frozen images and Images
Recalled from the Image archive.
▪ The System should have Comprehensive set of Measurements in Carotid /Lower Limb / Upper Limb /Thyroid / Testis / Abdominal /OB Gyn/ Adult Cardiology/ Pediatric Cardiology Applications
▪ On Board Report for all Packages -Report transfer to Print Page along with Selected Images through normal PC Printer without any Hard ware.
2. Following Probes should be supplied along with system:

1. Single Crystal 2D Convex Probe with Band width of 1.8MHz to 6.4 MHz (± 2 MHZ) )for Radiology and OB/Gyn Applications and Support for Shear wave Elastography Application with biopsy guide and biopsy attachment
2. Linear Probe with Bandwidth of 3 MHz to 8.5MHz (± 2 MHZ) for Vascular Applications with guide and biopsy attachments.

3. Bi Plane Endo Rectal Probe with End Firing Convex and Side Firing Convex type with Band width of 4.7-l0MHz ((± 2 MHZ)) for Dedicated TR Application with Biopsy Guide and biopsy attachment.

4. Following Accessories Should Supply along with System:

a) B&W Thermal Printer with 10 nos of Paper Rolls
b) Color Ink Jet Printer with One packet of Glossy Paper
c) Suitable UPS (online) with 30 min Back up

5. Please attach the Original Manufacture's Product Catalog and Data sheet.

6. The System should be demonstrated all Quoted Feature's including Optional Feature's by Virtual Demo.

7. .Five Comprehensive Warranty for Entire Equipment, Probes and Accessories which include service, spare as well as probes. Please quote CMC hick include service and spares expiry of Warranty for 5 Years.

8. 95% Uptime Guarantee should be Given. In case down time Exceed 5% penalty in the Form of Extended Warrantee, Down the Number of days for which the Equipment goes out of service will be applied.

**The bidder/OEM should have valid CDSCO certificate**