Admn/Prop/41/2019-AIIMS.JDH   Dated: - 30th August 2019

Subject: Purchase of High End Ultrasound Machine for the Department of Radiology at AIIMS, Jodhpur on proprietary basis - **Inviting comments thereon.**

The Institute is in the purchase of High End Ultrasound Machine for the Department of Radiology at AIIMS, Jodhpur from M/s Canon Medical Systems Corporation, 1385, Shimoishigami, Otawara-shi, Tochigi, 324-8550, Japan on proprietary basis. The proposal submitted by M/s Canon Medical Systems Corporation, Japan and PAC certification by user are attached.

The above document are being uploaded for open information to submit objection, comments, if any from any manufacturer regarding proprietary nature of the equipment within 21days of issue giving reference Admn/Prop/41/2019-AIIMS.JDH. The comments should be received by office of Administrative Officer, Medical College at AIIMS, Jodhpur on or before 23rd September 2019 upto 03:00 PM failing which it will be presumed that any other vendor is having no comment to offer and case will be decided on merits.

Yours faithfully,

Administrative Officer

Enclosed: **Related documents enclosed.**

PC for Item no 4b.

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REF: NX-8033
DATE: 2018/12/18

To:
Dr. Pushpinder S.Khera
MD DNB FRCR Post-doctoral Fellow (Vasc and Intervent Rad),
Additional Professor and Head,
Department of Diagnostic and Interventional Radiology,
AIIMS
Jodhpur, Rajasthan, India

Dear Sir,

Ref: Tender Specification- File A

Sub: Proprietary Article Certificate

The indented goods are manufactured by M/s. Canon Medical Systems Corporation, Japan.

We hereby authorize our Ultra-Premium Color Doppler Model Aplio-i800 (TUS-Ai800) has the following proprietary features available in the system:

1. The System should have latest Innovation Technology like Multi Synchronizing Pulser which drive simultaneously with superimposing several waveforms to each elements 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 Micro Slice based Matrix array transducer technology. The main element and side elements of the Transducer's are controlled separately to create a thin slice beam with continuous focus from near field to far field and System should have option to control the Slice Thickness of Beam (iDMS)

5. The System should have Real time Quad view imaging for Shear wave, CHI, Volume Imaging applications.

6. The System to visualize images with Very few artifacts by cancelling multiple reflection from the body by Innovative Technology (USRC Ai900A)

7. Real Time Micro Calcification Detection Technology for Breast Application. The system should have latest radar or constant falls alarm rate technology to detect micro calcification areas in Breast and small parts applications in real time with Twin Live Mode (Reference B. Mode and Micro calcification mode) Only Calcified area should be highlighted with Inverted Different Tint Normal Image area. (USMP AI900A)

8. The System should enable to measure MPI (Myocardial Performance Index) from the Time change Curve in TDI for Fetal Heart Applications (USFH AI600A)

9. 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. (SMI &iSMI Standard Package)
    i. 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.
    ii. Micro Vascular Imaging should have Two Imaging Mode:
        1. Monochrome Mode - Back Round 2D Information should be suppressed
        2. Color Mode- Back Round 2D Information also displayed along with Color mode.
    iii. These features should demonstrate with 3D mode also.

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    iv. The System should have Next Generation Micro Vascular imaging with Bigger ROI and Higher Sensitivity.

10. The System should have Shear wave Elastography for Liver, Breast, Thyroid, Uterus and Prostate Application. The Following application should support Shear wave Elastography
(Part of USLP AI900A)

    a. Shear wave Elastography with Smart Map of Live Four Display Modes in One Screen (Quad Display) like Speed/Elasticity/2D mode/Propagation modes
    b. System should have either Propagation or equivalent to visualize the arrival time information of Speed/ Elasticity.
    c. System should also display to variance of Disturbance in Propagation for still more accuracy.
    d. Intuitive Quad View display should be possible
    e. Dual display either Left/Right or Up/Down or Quad display should be possible
    f. System should have Real time/One shot Measurement area Detection by Color ROI divided into small Regions to get Standard Deviation value of each region for accurate measurement placement.
    g. The integration of ECG sync for Shear wave should be Possible to ensure that the time phase with minimum biological variation using heartbeat to get the Shear wave Elastography and significantly reduces artefact and ensures a more robust result should be obtained for Left Lobe Liver and Pancreas.

11. System Should have Advanced Liver Package with Following Features:
(USLP AI900A and USDL AI900A)

    a. The System should have Fatty Liver Imaging analysis. It should have the capability to measure and visualize the attenuation coefficient of the tissue for fatty liver evaluation. This feature should automatically remove structures such as vessels and Calcifications, and excludes these from the measurements, leading to more stable results and Quality Reference Display should be available for Accuracy of Reading.

    b. System should have Suitable Shear Wave Map to measure Dispersion of Shear wave which is related to viscosity of the liver indicating variation of propagation speed and to achieve detailed evaluation and early detection of a fatty liver as well as hepatitis in terms of Inflammation Condition of Liver.
    c. Shear Wave Elastography with Smart Map of Live Four Display Modes in One Screen (Quad Display) like Speed/Elasticity/2D mode/Propagation modes
    d. Multi Parametric Report page should be Available for Comprehensive Liver Package Report with Shear wave, Dispersion, Fatty Liver Information along with BMI and Blood Test Information to give Current condition of Liver status whether Normal to Severe Cirrhosis Condition

12. The System should have 2D Strain/Wall Motion Tracking for Fetal Heart using Normal Convex probe with Polar Map or Bull's Eye (USWT AI900A/USWT AI904A)

13. The Virtual Endoscopic imaging should have Following (4D Kit +USFT AI900A)
    i. Using 4D data to produce a perspective view from within the lumen
    ii. The displayed perspective should moves aligned to the centerline of the lumen of the blood vessel, intestinal tract etc.,
    iii. 4D MPR automatically shows long axis view of the blood vessel, intestinal tract etc. It is very easy to pursue these structures as a volume
    iv. The Visual endoscopic mode can be viewed either Autopilot mode and Manual Selection
    v. For Visual Display – Depth Cueing should be available.

14. The System Should have advanced Contrast Package available in the Industry
(USHI AI900A/USHI AI901A)
    i. The System able to Display Wash In, Stay & Washout information of Contrast information to the single frame like Micro flow Imaging.
    ii. 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.
    iii. 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.
    iv. Intuitive Quad View display should be possible

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    v. System should have high Frame Rate CHI Imaging by using Multidirectional simultaneous reception & Compounding and visualizing the Pulsation generated by arterial flow and enable to analysis of Tumor blood flow in Arterial Phase and should able to display slow motion.

15. The System should have Sensor based 3D Imaging for Radiology and OB/Gyn Application using Normal Probe. The Following Feature's should be available:(Fusion Kit +USSS AI900A)
    a. Enables routine transducers to be Volume Imaging transducers with Quantification information
    b. Sensor position tracking using the Fusion Imaging technology
    c. Gives accurate 3D reconstruction with precise measurements
    d. Preview Display
    e. Real time visualization during data collection
    f. Drift correction related to patient respiration.

16. The Following Probes are Available with Quoted System:
    a. Micro Slice Based 2D Matrix Convex Probe with Band width of 1MHz to 8MHz for Radiology and OB/Gyn Applications and Support for Strain & Shear wave Elastography Application with Biopsy Guide (PVI 475BX)
    b. Micro Slice Based technology 2D Matrix Convex Probe with Band width of 1 MHz to 10MHz for Pediatric and Neonatal Radiology and Early OB Application (PVI 574BX)
    c. Micro Slice based 2D Matrix Linear Probe with Bandwidth of 8MHz to 24MHz for MSK & Dermatology Applications (PLI 2004BX)
    d. Micro Slice based 2D Matrix Linear Probe with Bandwidth of 5 MHz to 18MHz for Small Parts and MSK Applications. (PLI 1205BX)
    d) Micro Slice based 2D Matrix Linear Probe with Bandwidth of 9MHz to 33MHz for Dermatology Applications. (PLI 3003BX)

Yours faithfully,

YOSHIHIKO KAMEI
GROUP MANAGER
INTERNATIONAL SALES DIVISION
CANON MEDICAL SYSTEMS CORPORATION

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4.b.Premium High End Color Doppler Specifications

1. System Should be State of art High End Fully Digital with Broadband digital Beam Former

2. Full-digital ultrasound beam transmission and Reception. System should employ full-digital transmission and reception circuits. The higher definition ultrasound beams and data processing technology should be available. The full-digital systems allow higher sensitivity and image quality to be achieved simultaneously.

3. The system should have minimum 50000 digitally processing channel

4. The system should have 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.

5. The System panel height should be adjusted 140cm to 220cm for user and patient comport during critical procedure.

6. The System operational panel can do Global movements of 40° 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 direction.

8. The freely fully programmable, mode-sensitive color Touch command should be minimum 12" size with High Resolution Display matrix minimum of 1280 * 800 and should be Tablet mode operation enable direct access to all basic and advanced system controls.

9. The system should have Quick View mode for 2D & CDI Preset selection during exam and minimum 8 sub preset for 2D & CDI Modes

10. All the transducers are broadband with multi frequency capability.

11. Minimum frequency should be 1MHz and Maximum Frequency should be 24 MHz can be selected depends on Probe

12. System Depth should be minimum 50 cm

13. All Panel keys should customize according to user preferences

14. The system should have single key image optimization for 2D and Doppler

15. The System should have Automatic Real time Image Optimization.

16. The System should High Dynamic range of 180db or more. Higher Dynamic range will be Preferred.

17. The system should have 256 gray scales

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

19. The System should have 4 active Transducer ports.

20. The System should have latest Innovation Technology like Multi Synchronizing Pulser which drive simultaneously with superimposing several waveform to each elements 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.

21. 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.

22. 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.

23. The System should have Micro Slice based Matrix array transducer technology. The main element and side elements of the Transducer's are controlled separately to create a thin slice beam with continuous focus from near field to far field and and System should have option to control the Slice Thickness of Beam.

24. The System should have Real time Quad view imaging for Shear wave, CHI, Volume Imaging applications.

25. The System should have On Screen Navigation for System Operation for Ease of use.

26. The Boot up time less than 30 sec and stand by Boot less than 15 sec.

27. The System should have Option for On line Manual for ease of Reference.

28. The System should have RAW Data Processing for 2D/M Mode/CDI Mode/Doppler Mode and various Advanced Applications.

29. Off Line SWE and Advanced Measurement tool available from the Internal Raw Data.

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

31. The system should have new method of signal processing techniques to enhance ultrasound beam data by including information from adjacent lines to allow early identification of diffuse random noise and structural boundaries and to improve resolutions and give uniform homogenous image, and multiple selection should be possible.

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

33. The System Should be Next Generation Tissue harmonic Imaging by Transmitting Two Band width of Information and Receiving Difference of Two Band Width and Second Harmonic of Primary Band width Resulting Uniform Image Quality from Near to Far Field and multiple selection should be possible.

34. 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.

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35. The System to visualize images with Very few artifact by cancelling multiple reflection from the body by Innovative Technology to get Gold standard Image Quality to be quoted as standard.

36. 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 Key STC and Keyboard should be Provided.

37. Real Time Micro Calcification Detection Technology for Breast Application. The system should have latest radar or constant falls alarm rate technology to detect micro calcification areas in Breast and small parts applications in real time with Twin Live Mode (Reference B. Mode and Micro calcification mode) Only Calcified area should be highlighted with Inverted Different Tint Normal Image area.

38. 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.

39. The System should enable to measure MPI (Myocardial Performance Index) from the Time change Curve in TDI for Fetal Heart Applications to be Quoted as standard.

40. The System should have Z-score Analysis for Fetal Heart Measurement to be quoted as standard.

41. 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.

42. 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.

    i. 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.

    ii. Micro Vascular Imaging should have Two Imaging Mode:

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

    iii. These features should demonstrate with 3D mode also.

    iv. The System should have Next Generation Micro Vascular imaging with Bigger ROI and Higher Sensitivity.

43. The System should have Real Time Strain Elastography for Liver, Breast, and Prostate Applications. Also the Following features Available in the Strain Elastography:

    i. Elastography should be very mild Compression or without compression Technique. During Elasto Mode, Reference 2D Mode should display side by side. After Freeze best cycle selected from cine mode reference of Compression Wave

    ii. Elastography should be Velocity based, The System should able to measure by OFF LINE the Stiffness of Tissue and Compare with Normal Tissue, and Ratio should be calculated between Reference Tissue vs Target Tissue.

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iii. Liver Elastography should also to measure the Strain. No Limitation of Depth and ROI size.

iv. Endocavity Probe should Support Prostate Elastography.. Necessary Software should be Built Inn.

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

45. The system should have PW Doppler & HPRF mode for All Transducer's.

46. The System should have Shear wave Elastography for Liver, Breast, Thyroid, Uterus and Prostate Application. The Following application should support Shear wave Elastography:

   a. Shear wave Elastography with Smart Map of Live Four Display Modes in One Screen (Quad Display) like Speed/Elasticity/2D mode / Propagation modes

   b. System Should Measure the Speed by m/s and elasticity by Kpa

   c. System should have either Propagation or equivalent to visualize the arrival time information of Speed/ Elasticity.

   d. System should also display to variance of Disturbance in Propagation for still more accuracy.

   e. Intuitive Quad View display should be possible

   f. Dual display either Left/Right or Up/Down or Quad display should be possible

   g. System should have Real time/One shot Measurement area Detection by Color ROI divided into small Regions to get Standard Deviation value of each region for accurate measurement placement.

   h. Post-exam measurements should be possible with RAW-data

   i. The System should able to adjust Shear wave Velocity range up to 12m/s and Elasticity up to 400Kpa to see the Injured Tendon Stiffness and Analysis. Also Relaxed/Contraction Property of Tendon should be Monitor Real time (ex-Patellar Tendon)

   j. The Range of Shear wave Detection Should be set 0-200Kpa and 200 to 400Kpa for Different Application should be Possible.

   k. System able to Measure minimum 10 Measurement of Shear wave Measurement and able to Show mean, median, SD and IQR in the Report Page.

   l. Shear wave should have one shot mode for measurement and Live Mode to identify the lesion.

47. The integration of ECG sync for Shear wave should be Possible to ensure that the time phase with minimum biological variation using heartbeat to get the Shear wave Elastography and significantly reduces artefact and ensures a more robust result should be obtained for Left Lobe Liver and Pancreas.

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48. System should have Suitable Shear Wave Map to measure Dispersion of Shear wave which is related to viscosity of the liver indicating variation of propagation speed and to achieve detailed evaluation and early detection of a fatty liver as well as hepatitis in terms of Inflammation Condition of Liver.

49. The System should have Fatty Liver Imaging analysis. It should have the capability to measure and visualize the attenuation coefficient of the tissue for fatty liver evaluation. This feature should automatically remove structures such as vessels and Calcifications, and excludes these from the measurements, leading to more stable results and Quality Reference Display should be available for Accuracy of Reading.

50. The System Should have advanced Contrast Package available in the Industry
    i.   The System able to Display Wash In, Stay & Washout information of Contrast information to the single frame like Micro flow Imaging.

    ii. 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.

    iii. 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.

    iv. The System should have Contrast Quantification package so that it able to measure the arrival time of contrast agent at any point of time. It should be OFF Line Mode

    v.   Intuitive Quad View display should be possible

51. System should have high Frame Rate CHI Imaging by using Multidirectional simultaneous reception & Compounding and visualizing the Pulsation generated by arterial flow and enable to analysis of Tumor blood flow in Arterial Phase and should able to display slow motion.

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

53. Pw Sample Gate selection should be 0.5mm to 20mm by 15 steps selection should be possible.

54. The System Should offer to Single Crystal with Micro Slice based Matrix Convex Probe for Better Imaging.

55. The System should have Micro slice-based 2D Matrix probes with 2 in 1 Application for Convex and Linear Probes.

56. The System Should have Matrix Volume Probe for Radiology Applications

57. The System Upgradable to Laparoscopic Imaging.

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

    a. For a comprehensive pre- and post-interventional evaluation System should allow to work in any ultrasound imaging mode including color Doppler and contrast-enhanced ultrasound etc

    b. System should have provision to show innovative navigation tool showing 3D reconstructed data for intuitive probe positioning in quad view.

c. The System should have Dual / Triple View / Quad View.

d. The Magnetic Arm (Transmitter) should adjust 90-120cm from the ground level.

e. System should able to view the Real time Ultrasound images overlapped with reference CT/MR image like Blend Imaging.

f. The System should have Blend Image Brightness control to CT/Ultrasound data.

g. The System should have Sensor based 3D Information for Convex, Linear and Endocavity probes for Fusion Sync.

h. The Fusion Registration can be done simple two step operation of Angle and Position synchronization.

i. The System should enable Quad display of live ultrasound with pre-loaded CT or MR data, Blend Image (CT/MR Overlapped with Ultrasound), Volume based Sensor 3D Image combined with an image of two modalities with Intuitive probe position tool should be shown.

j. Fusion Adopter should be Given for Convex, Linear & Endocavity Probes for Liver, Breast & Prostate Fusion Applications.

k. Cardiac Fusion also should be supported with PWD & CWD function available infusion mode with Standard Measurement Package.

l. System should support Auto Track Device for CT and MR for Automatic Registration of Fusion Data set and quoted as standard.

m. System should support Sensor Based 3D software for 3D Volume based Synchronization and quoted as standard.

59. The System should have to Needle Navigation by Ablation therapy and Utilizes Fusion mode and following should be possible:

a. A virtual biopsy line generated using a position sensor (up to 3 lines) is displayed on the screen during ultrasound-guided treatment procedures. Deviation of the needle tip from the image plane is displayed in different colors according to the direction of deviation. Smart Fusion can be used in combination

b. Sensor for needle is attached with CIVCO's Virtu TRAX Needle Navigator.

c. Enables the visualization of the position of the needle tip during a procedure

d. Displays a virtual needle line using a position sensor attached on the needle

e. Multiple needles –Up to Three Needles should by display at a time

f. System can Preset for Needle length

g. Ruler with Tip Distance

h. Minimum Two Number Virtu Trax Needle Navigator should be Supplied along with System.

i. Three Sensors to be supplied with system for Needle Navigation at a time.

60. The System should have Advanced Next Generation 4D Package Semi Transparent Glass Imaging mode. It Combine both anatomical structure and vascular flow adding a semi-transparent glass

effect to the skin surface and reveal more clinical detail. 4D Transparent Glass Imaging Tool should useful to surgical planning to determine how the tumor's vasculature is infiltrated in surrounding tissue and quote as standard.

61. The System should have Next Generation 4D Imaging with Following Feature's

    i. Real Time 4D/Auto 3D
    ii. Auto Face Detection or Auto Cut line Movement.
    iii. STIC Imaging (B&W and Color)
    iv. Multi Slice View
    v. Volume View
    vi. 3D/4D Magic Cut – To Control Cropping Depth
    vii. Curved Omni view with 3 Planes

62. The System should have Light Source Imaging mode for the 4D/3D imaging with Depth Cue mapping.

63. The System should have Auto Volume Measurement for Hypo echoic structures like Follicle in Left Ovary and Right Ovary with Different Color and Volume of Each color in the Monitor and Combined Report Page and maximum of 16 Follicles should be measured.

64. The Visual Endoscopic imaging should have Following:

    i. Using 4D data to produce a perspective view from within the lumen

    ii. The displayed perspective should moves aligned to the centerline of the lumen of the blood vessel, intestinal tract etc..

    iii. 4D MPR automatically shows long axis view of the blood vessel , intestinal tract etc. It is very easy to pursue these structures as a volume

    iv. The Visual endoscopic mode can be viewed either Autopilot mode and Manual Selection

    v. The Visual endoscopic mode should be used for the following applications:

        1. Digestive tract internal medicine / Radiology

        2. Cancer of the bile duct

        3. Intraductal papillary mucinous neoplasm (IPMN)

        4. Gall bladder cancer (early stage)

        5. Crohn's disease (block section)

        6. Cystic fibrosis of the pancreas

    vi. For Visual Display – Depth Cueing should be available.

65. The System should have Sensor based 3D Imaging for Radiology and OB/ Gyn Application using Normal Probe. The Following Feature's should be available:

    a. Enables routine transducers to be Volume Imaging transducers with Quantification information

    b. Sensor position tracking using the Fusion Imaging technology

    c. Gives accurate 3D reconstruction with precise measurements

d. Should Works in all modes

e. Preview Display

f. Real time visualization during data collection

g. Drift correction related to patient respiration

66. System should have option for sending Output of Volume data by 4D/3D /Sensor based (STL Format) 3D Images to 3D Printers

67. The System should store the patient data automatically External HDD (Min 5TB HDD) and Necessary Data Base Software to be Inbuilt. This is very much Important to avoid system slow due to Storage and Quote as standard.

68. The System should have Advanced DICOM for Image Transfer

69. The Following Detailed Measurement Package should be Available:

   a) Measurement should be possible on frozen images and Images Recalled from the Image archive.

   b) The System should have Comprehensive set of Measurements in Carotid /Lower Limb / Upper Limb /Thyroid / Testis /Abdominal /OB Gyn Applications

   c) Template customization should be possible.

   d) EDD should Display all OB Measurements

   e) Average US EDD and LMP EDD should display during scanning.

   f) LMP GA should display on Monitor screen during scanning.

   g) IUGR Graph should be Display every Measurement and Shown in Left side of Monitor during scanning.

   h) On Board Report for all Packages – Report transfer to Print Page along with Selected Images through normal PC Printer without any Hard ware.

70. Following Probes should be supplied along with system:

   a. Micro Slice Based 2D Matrix Convex Probe with Band width of 1MHz to 8MHz for Radiology and OB/Gyn Applications and Support for Strain & Shear wave Elastography Application with Biopsy Guide

   b. Linear Probe with Bandwidth of 3 MHz to 11MHz for Vascular Applications.

   c. Linear Probe with Bandwidth of 5MHz to 14MHz for Small Parts & Support for Strain & Shear wave Elastography Application with Biopsy Guide

   d. Endocavity Probe with Band width of 3-11MHz for TV/TR Application along with Biopsy Guide and should support shear wave elastography.

   e. Hockey Stick probe with Band width of 8-22MHz for MSK Applications

    f. 4D Convex Probe with Band width of 2MHz to 9MHz for Radiology & OB 4D

    g. Micro Slice based 2D Matrix Linear Probe with Bandwidth of 5 MHz to 18MHz for Small Parts and MSK Applications.

71. **Optional Probes:**

    h. Micro Slice based 2D Matrix Linear Probe with Bandwidth of 8MHz to 24MHz for MSK & Dermatology Applications.

    i. High Frequency Convex Probe with Band width of 3MHz to 10MHz for Pediatric and Neonatal Radiology and Early OB Application.

    j. 4D Endocavity Probe with Band width of 3-11MHz for TV/TR Application with 2D Tilt Feature.

72. **Following Accessories Should Supply along with System:**

    a) B&W Thermal Printer with 50 nos of Paper Rolls

    b) Color Laser Printer with One packet of Glossy Paper

    c) Suitable online UPS with 30 min Back up

    d) GPS Facility with active tracker as per PC-PNDT Norms

    e) Desktop with latest configuration (i7 or more) along with offline quantification software.

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

74. The System should be demonstrated all Quoted Feature's including Optional Feature's.

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

76. 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.

77. The system should compulsorily have DICOM and LAN connectivity and same to be done at the time of installation.

78. External Certification: The Offered Model must have a Valid Quality Certificate- CE (Europe) and USA FDA at the time of submission.

79. Please Provide Name and address of Other Installation in India & Aboard. Also submit Latest Satisfactory certificate from the user.
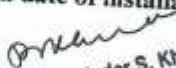
Accessories

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1. Online UPS OF 2KVa for at least 30mins backup
2. Patient Couch(fully motorized high end with adjustable height to enable easy transfer of patients) & two ergonomic high back operator Chairs.
3. Patient stool and stepper(one each).
4. Offline solution for Contrast Wash-in/wash out quantification.
5. 30 vials of ultrasound contrast agent(Sonovue)
6. One Computer desktop with core i7 CPU -Minimum 4 GB RAM ,1 TB storage with 32 inch display.It should have the software required for real time transfer of ultrasound images in DICOM format from the scanner to the computer.
7. One black and white laser paper printer of reputed company.
8. One good quality colour paper printer with scanner.
9. Any other hardware required for optimum utilization of advanced applications on the scanner.
10. Stand alone gel warmer capable of holding three ultrasound bottles of standard size at a time(Thermasonic or equivalent brand).
11. Wall mounted cabinets to be installed in the ultrasound room.
12. Patient privacy curtain and appropriate partition to optimize space utilization.
13. Ambient lighting in the room as per the ACR norms.
14. Signages as per the PC-PNDT guidelines.
15. Appropriate probe cleansing solution adequate for one year.
16. Customised suitcases for keeping probes for storage.
17. Heavy duty cover for cables of probes to safeguard against rodent damage.
18. Biopsy guide attachments:
    a. Convex Curved array 1 - 8 MHz:One in number(non disposable).
    b. Linear array 3 - 11 MHz:One in number(non disposable).
    c. Endocavitary probe 3 – 11 MHz: One in number(non disposable).

Kindly note: The vendor will have to ensure that the ultrasound scanner has GPS and tracker enabled as per PC-PNDT requirements.The same should also be maintained for five years from date of installation.

Dr. Pushpinder S. Khera
Additional Professor & Head
Department of Diagnostic & Interventional Radiology
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