

SPECIFICATIONS AND TERMS & CONDITIONS

COMPONENT A: ULTRASOUND MACHINE WITH COMPLETE ACCESSORIES

I-GENERAL DESCRIPTION

The system is a high-end ultrasound system, built with multi-disciplinary applications and also equipped with the following key technologies:

- Capable of up to 40cm display Depth with special transducer for future upgrade.
- Shear Wave elastography for abdominal studies as well as for breast and thyroid.
- Shear Wave studies allows for both Quantitative and Qualitative assessment of tissue stiffness and elasticity.
- Fusion Imaging
- Advanced Needle Visualization with needle trajectory display
- Universal Image Processing - Reduces speckle and enhances contrast to provide a realistic tissue presentation and patient-specific processing that adapts to differences in tissue

II-ULTRASOUND SYSTEM STRUCTURE

- ***LCD DISPLAY:***

- High definition display monitor with WLED backlight
- LCD Display size at least 22"
- Technology must have a full HD 1920 X 1080 Monitor Resolution.
- High contrast dynamic range of at least >1000:1 with enhanced black levels for grayscale values
- Glass faced design for panel protection and easy cleaning
- Meets the ACD display standard for diagnostic imaging
- FPD Rotation: at least $\pm 180^\circ$

- ***CONTROL PANEL:***

- Easy-to-learn graphical user interface with reduced number of hard controls
- Primary controls concentrated in cluster around the trackball
- Eight-slid pot control adjustment of TGC curve
- Retractable, backlit alphanumeric keyboard
- Height, swivel and tilt
- Up and down: at least 25.4 cm (10 inches)
- Rotates 180° from center
- Operate on battery for adjustment on mobile exam

- ***TOUCH PANEL:***

- Full color capacitive touchscreen with swipe technology
- Display Size at least 12"
- Aspect Ratio must be 16:9
- Tilt Angle: at least 30° up to 50°

Ergonomics:

- Easily accessed transducer connector ports, usb and DVD media drive
- Up to 6 transducer and gel bottle holder
- Mobility through high-quality, shock-absorbing casters with foot pedal controls for:
 - 4-wheel swivel
 - 2-wheel swivel
 - 2-wheel brakes
- Integrated footrest
- Transducer connector and OEM bay illumination for easy visibility
- Digitally enhanced two-speaker high fidelity stereo output with rear-mounted subwoofer

- ***TRANSDUCER MANAGEMENT:***

- Must have 4 active transducer ports.
- Ergonomic design with lightweight flexible cable
- Connectors must be compact-pinless
- Supports instantaneous switching between transducers while maintaining current depth parameters
- Electronic switching of transducers using four universal connectors
- Integrated storage shelf for transducer connectors
- User-adjustable display depth: transducer dependent
- Transducer Activation: Should be able to switch transducer via touch screen panel.
- Integrated storage shelf for transducer connectors
- At least 0.5 cm and capable of up to 40cm.

III- DATA STORAGE AND TRANSFER

The ultrasound system supports data storage and review of completed ultrasound studies, including static images, dynamic clips, measurements, calculations, and reports.

- DICOM Compatibility: DICOM 3.0 Standard activated/functional)
- Hard Drive: at least 1TB
- USB Ports: Must have at least 2 USB port for importing and exporting protocols and exams, archiving and serviceability.

IV-TRANSDUCERS

- Curved Array Transducer
 - Single crystal
 - At least 5 to 1Mhz extended operating frequency range
 - Scanplane aperture of at least 50mm or better
 - At least 100°field of view or better (wide-scan enabled)
 - high density curved array with at least 160 elements
 - General purpose abdominal, obstetrical, gynecological and interventional applications
 - Elastography & Shear-wave capable

- Linear Array Transducer
 - Multi-row array with fine elevation focusing
 - Diagnostic bandwidth of at least 4-18 Mhz
 - Capable of ultrabroad band frequencies: 2 to 22 Mhz
 - Fine pitch, at least 1920 elements
 - Depth: at least 14cm
 - Field of view: 38.2mm or better

- Endocavitary Transducer
 - At least with 128 elements
 - scanplane aperture of at least 22 mm or better
 - field of view of at least 140° or better
 - single layer or 1D, piezo ceramic
 - Frequency Bandwidth: at least 3.0 MHz up to 10.0 MHz

V- IMAGING MODES:

- 2D GRAYSCALE IMAGING
 - Available in all transducers
 - selection between one and eight focal zone
 - Display zoom and magnify on live or frozen images up to 16 times
 - Three level of frame rates
 - Support of frame rates of over 2800 frames per second
 - Tissue optimization
 - Depth: adjustment from 1.0 to 40 cm depending on the transducers
 - Cineloop image review: at least 2,220 frames

- M-MODE:
 - available on all imaging transducers
 - cineloop review of M-mode data 256 (8bits) gray levels
 - multiple color maps

- COLOR DOPPLER
 - available on all imaging transducer
 - color gain
 - region of interest
 - must have flow algorithms to provide clear vessel delineation
 - must have a cineloop review with full playback control
 - 256 color bins

- COLOR POWER ANGIO IMAGING
 - Available on all imaging transducers
 - cineloop review
 - Multicolor maps

- STRAIN BASED ELSTOGRAPHY
 - real-time tissue deformation from ultrasound push pulses
 - large region of interest (ROI) capable of supporting multiple PQ sample points
 - Must have an indicator for compression level
 - side-by-side display of 2d image and 2d with elastogram
 - Functional for curved and linear array transducers
- SHEAR WAVE ELASTOGRAPHY
 - must have a detection pulse to calculate shear wave velocity
 - must be functional in curve transducer
 - pressure (kPa) and velocity (m/s) options is functional
- TISSUE HARMONICS IMAGING
 - available in all imaging transducers
 - provides second harmonic processing to reduce artifacts and improve image quality
 - Extends high performance imaging capabilities to all patient body types (Obese II)

VI- APPLICATIONS AND FEATURES

- Automatic Image Optimization -Should be able to optimize the overall field of view imaging brightness uniformity by changing the depth gain compensation and over gain.
 - Should support 2D-mode and Pulsed Wave Doppler
 - individual data frames composing the panoramic image can be reviewed through cine display.
- Universal Imaging Processing
 - Reduces speckle and enhances contrast to provide a realistic tissue presentation and patient- specific processing that adapts to differences in tissue.
- Artifact Reduction Technology
 - Should be able to decrease artifacts in the 2D-mode image resulting in an improved view of anatomical structures.
- Panoramic Imaging
 - Should be able to create up to 60 cm in length and up to 360° when the depth is less than the radius of the target area being scanned.
 - Should be able to perform color panoramic Imaging through combination of real-time panorama image and real-time power mode acquisition.
- Fusion Imaging
 - Should be able to align reference data with real-time ultrasound image for diagnosis and interventional procedure.
 - Reference data shall be Computed Tomography and Magnetic Resonance Imaging.

VII. DICOM CONFORMANCE

A fully functioning DICOM 3.0 compliant interface is required for both the image acquisition system.

If hardware or software keys are required to modify the DICOM configuration parameters, they must be provided under the proposal.

Any additional proprietary or confidential information that is required to maintain, modify, or configure DICOM capabilities of the system should be explicitly noted in the proposal.

Cost of DICOM maintenance and upgrading during the warranty period must be covered by the warranty or must be clearly specified as a separate item.

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The units must be able to connect with RIS/PACS and HIS network at no additional cost to the hospital. The successful bidder will be required to work with other vendors and the purchaser to integrate the system into existing and growing DICOM network.

Any additional DICOM gateway hardware or software that may be required shall be clearly indicated, original, properly licensed shall be included as a separate item on the bid.

Cost of DICOM maintenance and upgrading during the warranty period must be covered by the warranty or must be clearly specified as a separate item.

VIII- ACCESSORIES

- The System shall have the following accessories:
 - Instruction manuals with CD/DVD copy
 - B/W Printer
 - Recordable disc drive for storage, review and archive of patient and image data
 - shall be compatible with Blu ray disc or medical-grade DVD media
 - Configurable three-pedal footswitch
 - UPS with at least 30mins back-up battery

IX-CYBERSECURITY, DATA PRIVACY, AND REMOTE SERVICE ASSISTANCE

- Data storage encryption with encryption software
- Protects patient information and system settings stored on the ultrasound system by preventing unauthorized access
- Includes a USB storage device with the recovery key for recovering encrypted data
- Should have an option to hide patient information in the display.
- Remote assistance technology
- Remote support on system monitor for faster resolution of questions/problems

X- TRAININGS AND TRAINING-RELATED MATERIALS.

Hands-on training for One (1) Radiologist with product hardware and software specialist for ten (10) days for special interest fields

Onsite training by Application system Specialist for CRMC USD staff Radtechs for at least 2 weeks.

XI- WARRANTY/ ASSURANCES.

- Four Years on Parts and Labor. Two year on Probes and Peripherals.
- Lifetime After Sales service.

- Bidders must have Trained Engineers within Lanao del Norte to cater service calls during warranty.
- Bidders must have branch Office and Warehouse in Lanao Del Norte Area
- Provision for a stand-by/replacement unit for unresolved service calls/repairs exceeding 48 hours from filing of report during warranty period.

Bidder must provide a certification from the manufacturer- the availability of spare parts for the next 10 years

COMPONENT B: REFURBISHING (Room Preparation, Floor re-enforcement and other civil and electrical works for the completion of site)

REFURBISHING WORKS:

Refurbishing works for Patient's receiving area:

- Installation of new entrance door (frameless glass swing type double door with transom, 2.25m x 2.70m)
- Installation of panic/emergency exit uneven door w/ glass (steel, 1.5m x 2.20m)
- 1 set - Receptionist table and chair with Removable Acrylic Partition
- Installation of New Tiles (60x60) – 51sq.m
- 1 set - Complete unit of Desktop Computer (CPU clock speed 3.0 GHz Cache:4M: 5 Core: Graphic card: 2GB), with UPS
- One (1) unit 3 toners split type aircon
- One (1) unit 2.5 split type aircon
- Waiting chairs/bench (minimum of 10 persons)
- 3 units - Storage cabinets for supplies (1.8m x 2.20m)
- 2 sets - Zebra dual roller blinds on windows (1.8m x 1.50m)

Refurbishing works for Ultrasound Room including full furnishing

- Installation of new panel door (1set - 2.10m x 1.2m)
- 2.5HP Split Type Air conditioning unit (Inverter)
- 1-unit Large computer table (1.60m x 0.75m) with two office chairs
- 2 complete units of desktop computers computer (CPU clock speed 3.0 GHz Cache:4M: 5 Core: Graphic card: 4GB), with inkjet tank printer and UPS
- 2 units mobile pedestal cabinet (0.70m x 0.60m)
- 2 units hydraulic stool chair
- 1-unit air purifier with HEPA filter
- 1-unit Hospital bed
- 1 set of Accordion Door (H=2.80m ; L=4m)
- 2 units Built-in hanging cabinets (H=0.50m; L=1.60m)
- Installation of 1 set - Sliding Window (1.8m x 1.5m); 1 set Fixed (above) and Sliding (below) Window (0.90m x 1.5m)
- Zebra dual roller blinds on all windows (1unit – 1.8m x 1.5m); (1 unit – 0.90m x 1.50m)

Refurbishing works for Radiologist's Room with complete furnishing and appliances

- 2.5HP Split Type Air conditioning unit (Inverter)
- Installation of 1-unit Frameless Doors for Comfort Rooms (0.70m x 2.10m)

- Executive office table with executive chair
- One mobile pedestal cabinet (0.70m x 0.60m)
- 1 complete unit of desktop computer (CPU clock speed 4.0 GHz Cache:8MB: 4 Core: Graphic card: 8GB), with inkjet tank printer and UPS
- Office Cabinet (1.40m x 2.0m)
- Water dispenser (Hot and Cold)
- 1-unit Air-purifier with HEPA filter
- Installation of 1 set - Sliding Window (1.8m x 1.5m); 1 set Awning window (0.60m x 1.50m)
- Zebra dual roller blinds on all windows (1unit - 1.80m x 1.50m); (1unit- 0.60m x 1.50m)
- Mini sala set with center table and side table (3-seater)
- Tile Works for Comfort room and sink – 16.08 sq.m
- Replacement of water closet, lavatory, faucets, shower and other accessories)1-unit 4cubic Refrigerator

Refurbishing of Dark room into Pantry/Rad Tech's Quarter with complete furnishing and appliances

- Installation of new panel door (1set - 2.10m x 1.2m)
- Dining table with chairs (6-seater)
- Addition of kitchen sink with hanging and sink cabinet (0.60m x 1.60m)
- One (1) unit 2.0 Hp Split Type Aircon (Inverter)
- 1 unit double deck
- Locker cabinet (8 compartments – W=1.20m ; H=2.10m)
- One 8" cubic refrigerator
- Microwave oven (1000 watts)
- One water dispenser (Hot and Cold)
- 1 set Awning window (1.0m x 1.15m)
- 1unit Zebra dual roller blinds (1m x 1.15m)

Refurbishing of old X-ray room's Comfort Room with complete fixtures

- Installation of new panel door (1set - 2.10m x 1.2m)
- Installation of 2 units Frameless Doors for Comfort Room (0.70m x 2.10m) adjoining the pantry room
- Tile Works – 10.5 sq.m
- Replacement of water closet, lavatory, faucet, shower and other accessories)

ELECTRICAL UPGRADING:

Installation of new Lighting Fixtures, Conduits, Boxes and Fittings (54 sets)

- 54 sets- 18watts LED Light Frameless square lamp
- 1 lot – 38mm dia. x 3m PVC Pipe; 20mm dia. x 3m PVC Pipe; Junction boxes; Utility boxes; Electrical Tape

Installation of new Wire and Wiring Devices

- 1 lot – Wires and Cables: 30mm² THHN stranded wire; 5.5 mm² THHN stranded wire; 3.5mm² THHN stranded wire; 2.0mm² THHN stranded wire; 8.0mm² TW stranded wire (Neutral ground); 2.0mm² TW stranded wire (Neutral ground)
- 23 sets – Two-gang convenience outlet with grounding system flush mounted
- 1 set – One-gang switch flush mounted
- 1 set – Two-gang switch flush mounted

- 5 sets – Three-gang switch flush mounted

Installation of Power Load Center, Switchgear and Panel Board (1 set)

- 1 set – Panel Board and Enclosure:
Main: 1 – 100AT / 100AF, 3 Phase, Bolt-on Type
Branches: 9 – 30AT / 30AF, 1dia., 2P, Bolt-on Type
 2 – 15AT / 15AF, 1dia., 2P, Bolt-on Type
 2 – 20AT / 20AF, 1dia., 2P, Bolt-on Type

AUXILIARIES:

- 1 lot – Fire Detection Alarm System
- 6 units - Emergency Lights in all rooms and receiving area
LAN (Local-area network) for all computer units in radiology facility