

**Functional Requirements for Cardiac Ultrasound  
for Central Iowa VA Healthcare System – Des Moines (Station 636A6)  
Obligation Number 618-B69083**

*This cardiology ultrasound equipment will be used at a Medical Center for the following clinical applications: General purpose, dobutamine stress echocardiogram (DSE), transesophageal echocardiogram (TEE) and transthoracic echocardiogram (TTE).*

**Technical Requirements:**

1. Capable of processing multiple data stream simultaneously built for 2D, 3D, MPR
2. All image modes available on a single transducer
  - a. 2D
  - b. 3D
  - c. M-mode
  - d. Harmonic image
3. Doppler Display
  - a. Pulsed Wave
  - b. Frequency
  - c. Velocity
  - d. Power – Microvascular/directional
  - e. Duplex
  - f. Triplex
4. Display monitor – minimum 21 inches
5. Touchscreen
6. Keyboard on touchscreen
7. Image storage on acquisition unit – minimum 3 days
8. One button image optimization
9. One button optimization of Doppler
10. Programmable protocols
11. Four (4) active transducer ports
12. Utilizing a supported operating system (i.e. Windows 7, Linux, etc.)
13. DICOM 3.0 print, store, commit, and modality worklist
14. Beam Steering
15. Ease of maneuverability
  - a. Screen rotation
  - b. Unit moves up and down both monitor and the control panel
  - c. Size of equipment
  - d. Weight of unit
  - e. Rotation of desktop/control panel
16. Digital calipers
17. Selectable dynamic range
18. Adjustable transmit focus
19. Dynamic receive focus
20. Pan/Zoom
21. Split screen
22. Image auto-optimization based on gain and contrast

23. Equalization of Doppler
24. Tissue tracking/velocity
25. Anatomical-M PW/HPRF
26. Quantitative Applications
27. Ability to enter a standby mode or sleep mode
28. Compatible with Philips X7-2t compact Transesophageal transducer (*if the vendor solution is not compatible, please quote a TEE transducer*)
29. Ability to image the microbubbles found within the myocardium when using contrast agents to assess LV microvasculature
30. Live 3D quantification tool that calculates the volumes of the LV and LA simultaneously, as well as an LV EF and Stroke Volume in less than 30 seconds
31. Interface capabilities to currently installed Cardiac PACS system - Philips Xcelera (provide references)

**Transducers/Probe Types:**

1. Cardiac 5-1 MHz
2. PW/CW Doppler 2 MHz
3. 3D, 2D 5-1 MHz

*Each vendor is to respond with transducers that meet the criteria listed above. Please also include all other transducers offered by your company in the optional section on the quotes.*

**Analysis Packages:**

1. Procedural
2. Cardiovascular Clinical
3. Automatic Cardiac Motion Quantification
4. Cardiac 3D Quantification
5. Vascular – measurement and analysis of vessels
6. Contrast Card Perfusion

*Each vendor is to respond with analysis packages that meet the criteria listed above. Please include all other analysis packages offered by your company in the optional section on the quotes.*

**Support and other Documentation to Provide:**

1. Please provide the weight of the unit.
2. Please provide the physical size (Height, Width, and Depth).
3. Provide DICOM Conformance Statement
4. Provide completed pre-procurement assessment form (6550)
5. Provide information about your companies support structure during the warranty period (i.e. a listing of field service engineer locations and availability, support phone number(s), remote support, etc.).  
Warranty period shall be a minimum of 1 year – parts, labor and required PMs. Contractor shall provide a hard copy of the warranty with the product.
6. Please provide version/platform long-range plan
7. Provide 2 copies product service manuals (1 hard copy and 1 digital copy).
8. References for sites that have successfully interfaced with different vendor Cardiac PACS systems

### Training

1. On-site
  - a. Clinical applications **during GO LIVE** - minimum of 4 days (8 hrs each day).
  - b. Training should include both Technologists and Physicians
2. Follow up
  - a. Applications training to be provided after technologists have hands-on experience with the system - between **3-4 months** following GO LIVE - minimum of 2 days (8 hrs each day).
  - b. Applications training to be provided after technologists have hands-on experience with the system – between **6-9 months** after GO LIVE - - minimum of 2 days (8 hrs each day).
3. One Biomedical Technical training per unit – tuition and travel (including airfare and lodging)

### Trade-in:

Option 1 **ALL Hard Drives will be retained by the VA.**

#### Ultrasound:

Manufacturer: Philips  
Model: IE33  
Acq. Year: 5/19/2008  
EE: 2980060  
S/N: 02XDN9

#### Transducers:

Model: S5-1  
S/N: B1BNQQ

Model: D2cwc  
S/N: 032N2J

Model: D2cwc  
S/N: 032VG7