

## Portable CT Scan Specifications

### Technical Requirements

1. 360 degree rotation < 400 msc
2. Minimum number of samples per rotation (images, slices)  $\geq 32$
3. Display CTDIvol (dose) before scan, with dose alert
4. Display DLP (dose) after exposure
5. Advance Dose Regulation
6. Detector element width  $\leq .625$
7. Automated Ma regulation
8. Retrospective and prospective gated ECG scan
9. Contrast timed injections (bolus chase)
10. Bayer Medrad injector interface
11. 50cm full field scan
12. Reconstruction of images > 24 per second including iterative reconstruction
13. HL7 integration (HIS/RIS)
14. DICOM and IHE- Q/R, MWM, Storage commit SCU, MPPS
15. Separate 3D workstation for applications processing
16. Runs on Windows 7 or latest version

### Advanced Applications

1. CT biopsy guidance
2. CT Angiography
3. 2D and 3D reconstruction
4. Integration to 3<sup>rd</sup> party advanced visualization system

### Training

1. On-site clinical education for technologists training for go live (Two consecutive weeks, 4 technologists)
2. Follow up on-site clinical education training (24 hours)
3. Full Biomed System training CT Image (1 engineers – tuition, lodging, and travel or onsite)

### Optional Items

1. Metal and prosthetic artifact reduction
2. Extended 6 months warranty
3. CT fluoroscopy

### Optional Training Items

1. All prerequisite courses are including in the training costs.

### Support and other Documentation to Provide:

1. Provide DICOM Conformance Statement
2. Provide completed Pre-procurement Assessment form (6550) and MDS<sup>2</sup> document

3. Provide information about your companies support structure during the warranty period (i.e. a listing of Field Service Engineer locations and availability, support 800 phone number(s), remote support, etc.)
4. Please provide version/platform long-range plan
5. Two complete sets of the operator, maintenance manuals and service software
  - 5.1. One set of each must be hardcopy and the other set must be on a DVD/CD

**Trade In**

1. None

## Functional Requirements for **Portable Digital X-ray System**

### **Technical Requirements:**

#### **Portable System Requirements:**

1. 30 kW generator or similar with High Frequency
2. Grid available in both portrait and landscape
3. On-board image display
4. Patient alignment system (laser alignment/positioning lights)
5. Integrated structured DICOM dose reporting
6. Reject/Repeat Analysis Software
7. Battery operated and has a motorized drive
8. Ability to move portable unit from tube head/extension arm
9. Minimum 270 degree tube rotation in both directions
10. Programmable IP destinations for images to be sent
11. kV range: 35-125kV in steps of 1kV or similar
12. mAs range: 0.1-400mAs or similar
13. Tube max 125 kVp
14. The preferred Operating System is Windows 7
15. Computer hard disk 300 GB or greater
16. Image Storage
17. Worklist from RIS to be available at point of care
18. Wireless – compatible with 802.11g
19. Provide DICOM Conformance Statement
20. FIPS 140-2 compliant
21. LAN connection– (as backup)
22. Individual user logins
  - 22.1. Report information will include username of person logged in.
23. Warranty – minimum 1 year
24. Workstations runs on Windows 7 or latest version

#### **Optional Items**

1. Wireless exposure switch that can be operated remotely
2. Pre-programmed exposure settings
3. On-board user monitor with pop up keyboard
4. Extended 6 months warranty

#### **Detector Requirements:**

1. Resolution – minimum 2.0 lp/mm
2. Weight Limit (w/battery installed) – maximum 12.5 lbs
3. Wireless (not tethered to the system/table)
4. Provide maximum patient weight (in lbs) for weight bearing examinations
  - 4.1. Minimum weight will be 150 lbs

5. Provide what full coverage warranty covers for a minimum of one year
6. Provide maintenance requirements and drop policy (post warranty)

**Training**

1. On-site applications during GO LIVE – Minimum 24 hours
2. On-site applications follow-up training – Minimum 24 hours
3. One Biomedical technician training- tuition, lodging, and travel

**Optional Training Items**

1. All prerequisite courses are including in the training costs.

**Support and other Documentation to Provide:**

1. Provide DICOM Conformance Statement
2. Provide completed Pre-procurement Assessment form (6550) and MDS<sup>2</sup> document
3. Provide information about your companies support structure during the warranty period (i.e. a listing of Field Service Engineer locations and availability, support 800 phone number(s), remote support, etc.)
4. Please provide version/platform long-range plan
5. Two complete sets of the operator, maintenance manuals and service software
  - 5.1. One set of each must be hardcopy and the other set must be on a DVD/CD

**Trade In**

1. None

## CT Scan Specifications

### Technical Requirements

1. 360 degree rotation < 400 msc
2. Minimum number of samples per rotation (images, slices)  $\geq 64$
3. Display CTDIvol (dose) before scan, with dose alert
4. Display DLP (dose) after exposure
5. Advance Dose Regulation
6. Detector element width  $\leq .625$
7. Automated Ma regulation
8. Retrospective and prospective gated ECG scan
9. ECG triggered scanning
10. ECG monitor
11. Contrast timed injections (bolus chase)
12. Bayer Medrad injector interface
13. 50cm full field scan
14. Patient weight capacity  $\geq 500$  lbs.
15. Reconstruction of images > 24 per second including iterative reconstruction
16. HL7 integration (HIS/RIS)
17. DICOM and IHE- Q/R, MWM, Storage commit SCU, MPPS
18. Power conditioning as recommended by CT Scanner provider
19. UPS to maintain total system functionality for 10 minutes without facility power
20. Separate 3D workstation for applications processing
21. Workstations runs on Windows 7 or latest version

### Advanced Applications

1. CT brain perfusion
2. CT cardiac
3. CT colonography
4. CT lung nodule
5. Quantitative CT lung screening low dose
6. Dual-energy imaging
7. CT biopsy guidance
8. Metal and prosthetic artifact reduction
9. CTA
10. 3D reconstruction
11. Integration to 3<sup>rd</sup> party advanced visualization system
12. Lung screening computer aided diagnostics

### Training

1. On-site or off-site clinical applications training for physician (2 physicians – tuition, lodging, and travel)
2. Pre-installation clinical education for technologists (2 technologists – tuition, lodging, and travel)
3. On-site clinical education for technologists training for go live (40 hours)

4. Follow up on-site clinical education training (24 hours)
5. Full Biomed System training CT Image Review Server (2 engineers – tuition, lodging, and travel)

**Optional Items**

1. Bariatric table rated for full travel at maximum scan speed
2. Dual energy scanning
3. Extended 6 months warranty
4. CT fluoroscopy
5. Bone densitometry

**Optional Training Items**

1. All prerequisite courses are including in the training costs.

**Support and other Documentation to Provide:**

1. Provide DICOM Conformance Statement
2. Provide completed Pre-procurement Assessment form (6550) and MDS<sup>2</sup> document
3. Provide information about your companies support structure during the warranty period (i.e. a listing of Field Service Engineer locations and availability, support 800 phone number(s), remote support, etc.)
4. Please provide version/platform long-range plan
5. Two complete sets of the operator and maintenance manuals
  - 5.1. One set of each must be hardcopy and the other set must be on a DVD/CD

**Trade In**

1. Toshiba Aquilon 4CT

## Functional Requirements for **Radiology Ultrasound**

### **System Requirements:**

1. Capable of processing multiple data stream simultaneously built for 2D, 3D, MPR
2. All imaging modes available on a single transducer
  - 2.1. 2D
  - 2.2. 3D (freehand and automatic)
  - 2.3. Harmonic Imaging
3. Doppler Displays
  - 3.1. Frequency
  - 3.2. Velocity
  - 3.3. Power
  - 3.4. Duplex
  - 3.5. Triplex
4. Digital Calipers
5. Selectable dynamic range
6. Adjustable transmit focus
7. Dynamic receive focus
8. Pan/Zoom
9. Minimum monitor 20 inches
10. Split screen
11. Image Storage
12. One-button image optimization
13. One button equalization of Doppler
14. Programmable protocols
15. 3 active transducer ports

### **Transducers/ Probe Types**

1. Linear Array
2. Convex/curved Array
3. Phased Array
4. Multi-frequency
5. Endocavity
6. X-plane

### **Analysis Packages:**

1. Abdominal
2. Urology
3. Vascular – measurement and analysis of vessels

4. OB/GYN – measurement and analysis of fetal structures

**Support and other Documentation to Provide:**

1. Provide DICOM Conformance Statement
2. Provide completed Pre-procurement Assessment form (6550) and MDS<sup>2</sup> document
3. Provide information about your companies support structure during the warranty period (i.e. a listing of Field Service Engineer locations and availability, support 800 phone number(s), remote support, etc.)
4. Please provide version/platform long-range plan
5. Two complete sets of the operator and maintenance manuals
  - 5.1. One set of each must be hardcopy and the other set must be on a DVD/CD

**Training**

1. On-site applications during GO LIVE – minimum 32 hour
2. Follow up equipment/applications training to be provided after technologists have hands-on experience with the system – minimum 16 hours
3. One Biomed technician training (tuition, lodging, and travel).

**Optional Training Items**

1. All prerequisite courses are including in the training costs.

**Trade In**

1. None

## IR Suite

### Technical Requirements

1. System
  - 1.1. Single Plane
  - 1.2. Ability to offer either floor and/or ceiling mounted systems
  - 1.3. High-capacity x-ray tube
  - 1.4. 100 kW Generator
  - 1.5. Flat Panel Detector ( $\geq 30\text{cm} \times 30\text{cm}$ )
  - 1.6. 1 Large display monitor (56 inch or greater) with inputs for at least six sources
  - 1.7. Backup monitors (at least 2 each)
  - 1.8. Multiple options of high resolution image/data viewing configurations
  - 1.9. 3D continuous rotational acquisition
  - 1.10. Cone-beam CT reconstruction with head-to-toe coverage
  - 1.11. Run-off capability with automated bolus chasing
  - 1.12. Ceiling mounted radiation shield and under the table shield
  - 1.13. Wireless headset intercom system
2. Table
  - 2.1. 500 lb weight limit (minimum)
  - 2.2. Ability to tilt cranial and caudal  $\geq 15$  degrees
  - 2.3. Cradeling
  - 2.4. Rotation  $\geq 180$  degrees
  - 2.5. Multiple options for controls (i.e. foot, at tableside, etc.)
  - 2.6. Integrated ultrasound capability
  - 2.7. Remote control capabilities (i.e. for exposure and monitors)
  - 2.8. Table must include arm rests for supine and prone procedures, including a head rest
  - 2.9. Mattress pad
  - 2.10. Autopositioning
  - 2.11. Arm boards and head holder
  - 2.12. Table side floor mats that are specifically antimicrobial
3. Hardware/Software
  - 3.1. Operators console with expanded memory
  - 3.2. Fusion between modalities, i.e., CT, MRI, & PET and Dynamic CT, shown on screen with real-time fluoro overlay, ability to use the built in laser guidance with loaded images.
  - 3.3. Laser guidance for biopsies from 3D roadmap.
  - 3.4. Workstation UPS for operators console
  - 3.5. Integrated System Shielding
    - 3.5.1. Soft and hard shutter shielding
    - 3.5.2. Filters necessary for radiation safety efficacy
  - 3.6. HL7 and necessary licenses for integration ancillary equipment
  - 3.7. Dose reduction features including fluoro save, pulse fluoro
  - 3.8. Software:
    - 3.8.1. Digital Subtraction Angiography
    - 3.8.2. Stenosis Measurement

- 3.8.3. Vessel Analysis/Mapping
- 3.8.4. Peripheral Angiography
- 3.9. System UPS to maintain total system functionality for 10 minutes without facility power
- 3.10. Power conditioner as recommended by vendor
- 3.11. Patient Center items (audio sound system)
- 3.12. Rubber leaf filters
- 3.13. Workstations runs on Windows 7 or latest version
- 4. Interface Specifications
  - 4.1. Must be on the Vista Imaging Approved DICOM Modality Interface List
  - 4.2. Ability to interface with PACS
  - 4.3. 3<sup>rd</sup> party post processing workstation integration
  - 4.4. HL7 integration/HIS/RIS (Worklist)
  - 4.5. VPN/Remote access for service
  - 4.6. Ability to interface with 3<sup>rd</sup> party integration system
  - 4.7. Ability to integrate with Bayer injectors

### **Advanced Applications**

- 1. Latest needle tracking, cryoablation software, and multi-modality software included
- 2. The ability to fuse images from CT, MRI and ultrasound
- 3. Software to aide with positioning of a needle using an ultrasound device
- 4. Cone Beam/3D image capable/CT-IR Imaging/Cross-beam for needle localization
- 5. Post processing workstation
- 6. Ability to integrate multiple modalities into the software/workstation of the IR unit
- 7. IVUS integration (Volcano)
- 8. Ability to do rotational imaging
- 9. Neuroradiological Software

### **Optional Items**

- 1. Staff Dose Display System
- 2. Zero gravity personnel protection device

### **Training**

- 1. Off site – Basic Clinical Training for two technologists on main system to include tuition, lodging, and travel
- 2. On site – Clinical Training for four physicians (minimum 24 hours)
- 3. On site Clinical Applications Training for technologists for startup (minimum 24 hours)
- 4. Follow up applications training to be performed after technologists have hands-on experience with the system
- 5. Off-site training for one Biomedical Engineering staff to include tuition, lodging, and travel

### **Optional Training Items**

- 1. All prerequisite courses are including in the training costs.

### **Support and other Documentation to Provide:**

- 1. Provide DICOM Conformance Statement

2. Provide completed Pre-procurement Assessment form (6550) and MDS<sup>2</sup> document
3. Provide information about your companies support structure during the warranty period (i.e. a listing of Field Service Engineer locations and availability, support 800 phone number(s), remote support, etc.)
4. Please provide version/platform long-range plan
5. Two complete sets of the operator, maintenance manuals and service software
  - 5.1. One set of each must be hardcopy and the other set must be on a DVD/CD

**Trade In**

1. None

## **PET/CT Specifications**

### **Technical Requirements**

1. Time of Flight PET system with list mode acquisition
2. Minimum transaxial and axial resolutions:  $\leq 5$  mm FWHM
3. 4D (respiratory gating) for PET and CT
4. ECG cardiac gating for PET and CT
5. Minimum 40 slice CT configuration
6. Cardiac CTA software
7. OSEM reconstruction with PSF modeling
8. CT iterative reconstruction dose reduction software
9. Gantry opening diameter  $\geq$  to 70cm
10. Patient table limit  $> 400$  lbs.
11. UPS to maintain total system functionality for 10 minutes without facility power
12. CT injector interface
13. Radiation Therapy Planning flat pallet
14. Patient comfort table pads
15. Respiratory gating for PET & CT
16. Structured DICOM dose reporting features
17. Thin client workstation/server setup
18. Workstations runs on Windows 7 or latest version

### **Software Application Options**

1. Tumor Tracking with auto tumor segmentation
2. Quantitative software
3. Cardiac quantitative software
4. Neuro quantitative software
5. Oncology quantitative software
6. Quality control and performance tracking for PET and CT
7. Metal artifact reduction

### **Optional Items**

1. Uptake room or exam room anxiety reducing technology
2. CT simulation lasers (3 movable)
3. Extended warranty of 6 months
4. Partnership with Biomed for first call service
5. VPN Capability
6. Single source dual energy
7. Continuous bed motion
8. Raw data access and transfer
9. Customized reconstruction

### **Training**

1. Training does not have an expiration date for scheduling or completion.

2. On-site or off-site applications training for physicians (2 physicians – tuition, lodging, and travel)
3. Pre-installation clinical education for technologists (2 technologists – tuition, lodging, and travel)
4. On-site clinical education for technologists training for activation (4 technologists)
5. Follow up on-site clinical education and applications training (72 hours)
6. Full Biomed Systems training PET/CT image review server (2 engineers – tuition, lodging, and travel)

**Optional Training Items**

1. All prerequisite courses are including in the training costs.
2. Training for 1 medical physicist (tuition, lodging, and travel)

**Support and other Documentation to Provide**

1. Provide DICOM Conformance Statement
2. Provide Completed Pre-Procurement Assessment form (6550) and MDS2 Document
3. VPN connected remote service and applications support
4. Documentation of file formats
5. Two complete sets of the operator, maintenance manuals and service software
  - 5.1. One set of each must be electronic.

**Trade-In**

1. None

## **Specifications for 1.5T Extremity MRI**

### **1.5Tesla**

1.  $\geq 70$  cm wide bore
2. Helium Save Technology
3. Noise Reduction Technology
4. Power Conditioning as recommended by MRI Scanner Provider
5. UPS to maintain total system functionality for 10 minutes without facility power
6. HL7 Integration (HIS/RIS)
7. DICOM and IHE-Q/R, MWM, STORE COMMIT SCU, and MPPS
8. Advanced exam planning technology
9. Real-Time MIP, MPR, and 3D surface rendering
10. Advanced MR viewing environment for viewing, processing and file generation
11. Active self-shielding
12. Fat/water separation techniques
13. 3D FSE-based sequence for isotropic resolution in all contrasts
14. Bolus tracing system
15. Knee Coil (8 channel or higher)
16. Foot/Ankle Coil (8 channel or higher)
17. Wrist Coil (4 channel or higher)
18. Elbow Coil (4 channel or higher)
19. Workstations runs on Windows 7 or latest version
20. QA phantom
21. Coil :
  - 21.1. 80 mm
  - 21.2. 100 mm
  - 21.3. 123 mm
  - 21.4. 145 mm
  - 21.5. 160 mm
  - 21.6. 180 mm
22. RF coil holder for minimum of three coils
23. Knee rest
24. Extremity rest
25. Elbow pads

### **Advanced Applications**

1. MRI Ortho
2. Integration to 3<sup>rd</sup> party advanced visualization system

### **Training**

1. On-site training for technicians and physicians (4 days)
2. Follow-up training for technicians and physicians (3 days)
3. Full Biomed Engineer System MRI training (1 engineer- tuition, lodging, and travel)

### **Optional Items**

1. Flex coil technology
2. VPN connected remote service and applications support
3. Patient comfort focused scanning environment
4. Extended Warranty for 6 months

**Optional Training Items**

1. All prerequisite courses are including in the training costs.

**Support and other Documentation to Provide:**

1. Provide DICOM Conformance Statement
2. Provide completed Pre-procurement Assessment form (6550) and MDS<sup>2</sup> document
3. Provide information about your companies support structure during the warranty period (i.e. a listing of Field Service Engineer locations and availability, support 800 phone number(s), remote support, etc.)
4. Please provide version/platform long-range plan
5. Two complete sets of the operator and maintenance manuals and service software
  - 5.1. One set of each must be hardcopy and the other set must be on a DVD/CD

**Trade In**

1. None

## **Digital Radiographic Specifications**

### **Technical Requirements**

1. System with two detectors
  - 1.1. Fixed detector in the wall stand and wireless digital detector in table preferred
  - 1.2. Detector sharing capability
2. Minimum 80kW generator with integrated tube cooling fans
3. UPS to maintain total system functionality for 10 minutes without facility power
4. Table
  - 4.1. Height adjustable – define range of movement
  - 4.2. Four way table float (positioning)
  - 4.3. Minimum patient weight in all positions, 400 lbs
  - 4.4. Lock position to disengage footswitch
  - 4.5. Fixed or wireless digital detector
  - 4.6. Fixed pedestal table
5. Ceiling suspended tube carrier
6. Control Room Workstation
  - 6.1. DICOM store, storage commit, query/retrieve, worklist management
  - 6.2. MPPS
  - 6.3. Structured DICOM Dose Reporting
  - 6.4. Repeat/Reject Analysis Software
7. Vertical Wall Stand
  - 7.1. Motorized tilting – define tilt range
  - 7.2. Motorized tracking
  - 7.3. Vertical travel
  - 7.4. Removable patient grip
  - 7.5. Fixed digital detector
8. Wireless detector accessories
9. Detector protector for weight bearing studies
10. Table fixation support for cross table lateral exams
11. Detachable grids (landscape and portrait)
12. Workstations runs on Windows 7 or latest version

### **Training**

1. On-site training for go-live (32 hrs)
2. On-site follow up training (16 hours)
3. One (1) Biomedical Engineering Training (tuition, lodging, and travel)

### **Optional Items**

1. Extended 6 months warranty

### **Optional Training Items**

1. All prerequisite courses are including in the training costs.

### **Support and other Documentation to Provide**

1. Provide DICOM Conformance Statement
2. Provide completed Pre-procurement Assessment form (6550) and MDS<sup>2</sup> document
3. Provide information about your companies support structure during the warranty period (i.e. a listing of Field Service Engineer locations and availability, support 800 phone number(s), remote support, etc.)
4. Please provide version/platform long-range plan
5. Two complete sets of the operator, maintenance manuals and service software
  - 5.1. One set of each must be hardcopy and the other set must be on a DVD/CD

**Trade In**

1. None

## Cath Lab Specifications

### Technical Requirements

1. System
  - 1.1. Bi-Plane
  - 1.2. Ability to offer either floor and/or ceiling mounted systems
  - 1.3. High-capacity x-ray tube
  - 1.4. 80 kW Generator
  - 1.5. Flat Panel Detector ( $\leq 30\text{cm} \times 40\text{cm}$ )
  - 1.6. 1 Large display monitor (56 inch or greater) with inputs for at least six sources
  - 1.7. Backup monitors (at least 2 each)
  - 1.8. Multiple options of high resolution image/data viewing configurations
  - 1.9. 3D continuous rotational acquisition
  - 1.10. Ceiling mounted radiation shield and under the table shield
  - 1.11. Wireless headset intercom system
2. Table
  - 2.1. 500 lb weight limit (minimum)
  - 2.2. Ability to tilt cranial and caudal
  - 2.3. Multiple options for controls (i.e. foot, at tableside, etc.)
  - 2.4. Integrated ultrasound/X-ray guidance capability
  - 2.5. Remote control capabilities (i.e. for exposure and monitors)
  - 2.6. Table must include arm rests for supine and prone procedures, including a head rest
  - 2.7. Mattress pad
  - 2.8. Table side floor mats that are specifically antimicrobial
3. Hardware/Software
  - 3.1. Operators console with expanded memory
  - 3.2. Workstation UPS for operators console
  - 3.3. Integrated system collimator
    - 3.3.1.1. Soft and hard shutter collimation
    - 3.3.1.2. Beam filters necessary for radiation safety efficacy
  - 3.4. HL7 and necessary licenses for integration ancillary equipment
  - 3.5. Dose reduction features including fluoro save, pulse fluoro
  - 3.6. Structured DICOM dose reporting
  - 3.7. Software:
    - 3.7.1. Digital Subtraction Angiography
    - 3.7.2. Stenosis Measurement
    - 3.7.3. Vessel Analysis/Mapping
    - 3.7.4. Peripheral Angiography
  - 3.8. System UPS to maintain total system functionality for 10 minutes without facility power
  - 3.9. Power conditioner as recommended by vendor
  - 3.10. Patient Center items (audio sound system)
  - 3.11. Workstations runs on Windows 7 or latest version
4. Interface Specifications
  - 4.1. Must be on the Vista Imaging Approved DICOM Modality Interface List
  - 4.2. Ability to interface with PACS

- 4.3. 3<sup>rd</sup> party post processing workstation integration
- 4.4. HL7 integration/HIS/RIS (Worklist)
- 4.5. VPN/Remote access for service
- 4.6. Ability to interface with 3<sup>rd</sup> party integration system

### **Advanced Applications**

1. The ability to fuse images from CT, MRI and ultrasound
2. Software to aide with positioning of a needle using an ultrasound device
3. Cone Beam/3D image capable/Cross-beam for needle localization
4. Post processing workstation
5. Ability to integrate multiple modalities into the software/workstation of the IR unit
6. IVUS integration (Volcano)

### **Optional Items**

1. Staff Dose Display System
2. Zero gravity personnel protection device

### **Training**

1. Off site – Basic Clinical Training for two technologists on main system to include tuition, lodging, and travel
2. On site – Clinical Training for four physicians (minimum 24 hours)
3. On site Clinical Applications Training for technologists for startup (minimum 24 hours)
4. Follow up applications training to be performed after technologists have hands-on experience with the system
5. Off-site training for one Biomedical Engineering staff to include tuition, lodging, and travel

### **Optional Training Items**

1. All prerequisite courses are including in the training costs.

### **Support and other Documentation to Provide:**

1. Provide DICOM Conformance Statement
2. Provide completed Pre-procurement Assessment form (6550) and MDS<sup>2</sup> document
3. Provide information about your companies support structure during the warranty period (i.e. a listing of Field Service Engineer locations and availability, support 800 phone number(s), remote support, etc.)
4. Please provide version/platform long-range plan
5. Two complete sets of the operator, maintenance manuals and service software
  - 5.1. One set of each must be hardcopy and the other set must be on a DVD/CD

## Functional Requirements for Digital Mobile C-arm

### Technical Requirements

1. Flat panel detector
2. Maximum field of view
3. X- ray tube, to include low profile tube housing
4. Dual articulating flat panel monitors, minimum 18" high resolution monitors with touch screen control
5. Integrated keyboard on workstation allowing back up functionality to touch screen control system.
6. Minimum 60 kHz high frequency generator
7. Minimum 15 kW continuous power
8. Minimum 0.3 mm and 0.6 mm focal spots
9. Digital Subtraction Angiography (DSA)
10. Pulsed cine Bolus chase and roadmap capability for vascular and interventional procedures
11. Measurement software
12. Automatic image playback
13. HL7 integration (HIS/RIS)
14. Digital image rotation, reversal and image invert
15. Selectable mode settings for high level pulse, low dose and 20 fps or greater
16. Easy positioning of C-arm
17. laser aimer/ localizer
18. DVD/CD Read and Write capability
19. Bayer-Medrad injector interface option for angiographic imaging
20. Wireless remote control
21. Motorized rotation
22. Structured DICOM dose reporting

### Training

1. Minimum 2 days onsite clinical training per unit
2. Minimum 1 day follow up applications training to be provided after technologists have completed hands on experience with the C-arm system
3. Technical Biomedical Engineering training, tuition and travel

### Optional Items

1. Extended 6 months warranty

### Optional Training Items

1. All prerequisite courses are including in the training costs.

### Support and other Documentation to Provide:

1. Provide DICOM Conformance Statement
2. Provide completed Pre-procurement Assessment form (6550) and MDS<sup>2</sup> document

3. Provide information about your companies support structure during the warranty period (i.e. a listing of Field Service Engineer locations and availability, support 800 phone number(s), remote support, etc.)
4. Please provide version/platform long-range plan
5. Two complete sets of the operator, maintenance manuals and service software
  - 5.1. One set of each must be hardcopy and the other set must be on a DVD/CD

**Trade In**

1. None

## **Digital R/F Specifications**

### **Technical Requirements**

1. System with two digital detectors
  - 1.1. Fixed detector for table
  - 1.2. At least one wireless digital detector required for standing radiography
  - 1.3. Detector sharing capability
2. Minimum of 80kW generator
3. UPS to maintain total system functionality for 10 minutes without facility power
4. Digital fluoroscopy acquisition
  - 4.1. Flat detector
5. Table
  - 5.1. Fixed digital detector in table for radiographic acquisitions
  - 5.2. Four-way float
  - 5.3. +90/-45 degree trendelenberg
  - 5.4. Minimum patient weight capacity in all positions, 400 lbs
6. X-ray Generator
  - 6.1. Pulsed fluoroscopy
  - 6.2. rectangular collimators
  - 6.3. Last image hold during fluoroscopy
7. Image Display
  - 7.1. Ceiling suspended dual monitor display
  - 7.2. Minimum 18" flat panel monitors
8. Control Room Workstation
  - 8.1. DICOM store, storage commit, query/retrieve, worklist management
  - 8.2. MPPS
  - 8.3. Structured DICOM Dose Reporting
  - 8.4. Runs on Windows 7 or latest version
  - 8.5. Repeat/Reject analysis software
  - 8.6. Handheld wireless remote control
9. Vertical Wall Stand
  - 9.1. Tilting wall stand – define tilt range
  - 9.2. Table fixation support for cross table lateral exams
  - 9.3. Detachable grids (landscape and portrait)
10. Workstations runs on Windows 7 or latest version

### **Training**

1. On-site training for go-live (40 hours)
2. On-site follow up training (24 hours)
3. One (1) Biomedical Engineering Training (tuition, lodging, and travel) including pre-requisite courses.

### **Optional Training Items**

1. All prerequisite courses are including in the training costs.

### **Support and other Documentation to Provide:**

1. Provide DICOM Conformance Statement
2. Provide completed Pre-procurement Assessment form (6550) and MDS<sup>2</sup> document
3. Provide information about your companies support structure during the warranty period (i.e. a listing of Field Service Engineer locations and availability, support 800 phone number(s), remote support, etc.)
4. Please provide version/platform long-range plan
5. Two complete sets of the operator, maintenance manuals and service software
  - 5.1. One set of each must be hardcopy and the other set must be on a DVD/CD

**Trade In**

1. None

## **Digital Mammography Specifications**

### **Technical Requirements**

1. Digital Detector
  - 1.1. Detector Size, W x H, cm 24 x 30
  - 1.2. Image bit depth: 14
  - 1.3. Pixel size,  $\mu\text{m}$ :  $\leq 50$
  - 1.4. DQE > 10 lp/mm: >20% @ 28 kV
  - 1.5. MTF @ 5 lp/mm: 50 %
2. Positioning Assembly
  - 2.1. Collimation
  - 2.2. 18 x 24 cm: Yes
  - 2.3. 24 x 30 cm: Yes
  - 2.4. Movement Locks: Electromagnetic
  - 2.5. Rotation, degrees: -135 to + 180
  - 2.6. Vertical, cm (in): 100 (39.4)
  - 2.7. SID, cm: 66
  - 2.8. Scale guide: Distance and pressure
3. AEC Detector: Yes
  - 3.1. Parameters controlled: kV, mAs, tungsten anode capable of 3D/filter
4. Hard Disk Storage:  $\geq 100$  GB
5. DICOM 3.0: Yes
6. Radiation Output
  - 6.1. mR/sec @ 28 kVp:  $\geq 800$
7. Compression System
  - 7.1. Force, N: 200
8. Grid Ratio: 5:01
9. Bucky: For both film sizes
10. Magnification Device: Yes
11. Integrated upright biopsy capability
12. High frequency generator
13. UPS to maintain total system functionality for 10 minutes without facility power
14. Workstations runs on Windows 7 or latest version

### **Optional Items**

1. Extended 6 months warranty
2. Stereotactic Device

### **Optional Training Items**

1. All prerequisite courses are including in the training costs.

### **Support and other Documentation to Provide**

1. Provide DICOM Conformance Statement
2. Provide completed Pre-procurement Assessment form (6550) and MDS<sup>2</sup> document

3. Provide information about your companies support structure during the warranty period (i.e. a listing of Field Service Engineer locations and availability, support 800 phone number(s), remote support, etc.)
4. Please provide version/platform long-range plan
5. Two complete sets of the operator, maintenance manuals and service software
  - 5.1. One set of each must be hardcopy and the other set must be on a DVD/CD

**Trade In**

1. None