

# Equipment Specifications

## Magnetic Resonance Imaging

### VISN 23

#### A. REQUIREMENT OVERVIEW

This document highlights the technical specifications and services being requested by VISN 23 for consideration toward purchase of magnetic resonance imaging (MRI) equipment. Offerors under this proposal shall provide all equipment and accessories, installation services, training, and project management support.

Facility	Quantity	Type
Black Hills VA Healthcare System – Fort Meade (568)	1	Replacement
Black Hills VA Healthcare System – Hot Springs (568A4)	1 (mobile)	Replacement
Fargo VA Healthcare System (437)	1	Replacement
Nebraska Western Iowa (NWI) VA Healthcare System – Omaha (636)	2	Replacement and Additional
Sioux Falls VA Healthcare System (438)	1	Replacement

#### B. TECHNICAL REQUIREMENTS

##### 1. Unit physical specifications

a. Magnetic field strength [T]	Varies by site. Please see table below.
b. Minimum bore width [cm]	≥70cm
c. Minimum field of view [cm]	≥50cm
d. Minimum number of channels	64 channel system or digital upgrade equivalent
e. Maximum patient weight withstood [lb]	≥ 200kg or 440 lb – vendor encouraged to submit bid with highest weight support available

##### 2. Additional specifications

<input checked="" type="checkbox"/>	a. Motion correction technology
<input checked="" type="checkbox"/>	b. Helium save technology
<input checked="" type="checkbox"/>	c. Noise reduction technology
<input checked="" type="checkbox"/>	d. Uninterruptible power supply (designed to cover the time required to switch to Emergency Power)
<input checked="" type="checkbox"/>	e. Vector ECG (VCG), Respiratory, and Peripheral Pulse grating/triggering
<input checked="" type="checkbox"/>	f. Advanced exam planning technology
<input checked="" type="checkbox"/>	g. Geometry linking (multi-station exams)



<input checked="" type="checkbox"/>	h. Real-time MIP, MPR, and 3D surface rendering
<input checked="" type="checkbox"/>	i. Advanced MR viewing environment for viewing, processing, and film generation
<input checked="" type="checkbox"/>	j. Shielding <input checked="" type="radio"/> Active
<input checked="" type="checkbox"/>	k. Patient-specific shimming
<input checked="" type="checkbox"/>	l. Dixon-type technology for body, neuro, and musculoskeletal imaging
<input checked="" type="checkbox"/>	m. Advanced non-contrast MRA imaging technology
<input checked="" type="checkbox"/>	n. 3D FSE-based sequence for isotropic resolution in all contrasts
<input checked="" type="checkbox"/>	o. Bolus tracking system
<input checked="" type="checkbox"/>	p. Tabletop integrated coil design and ports
<input checked="" type="checkbox"/>	q. Integrated music system, to include the following: Control room controls Speech communication for patient direction Speakers in both the exam room and control room Headphone jack on patient table MRI-safe headphones
<input checked="" type="checkbox"/>	r. Video camera system for monitoring inside the exam room from the control room
<input checked="" type="checkbox"/>	s. Control room workstation with UPS
<input checked="" type="checkbox"/>	t. MRI-compatible patient monitor (including ECG) – <b>only required for certain sites see table below</b>
<input checked="" type="checkbox"/>	u. MRI-compatible injector (Please specify all available MRI-compatible injector options.)
<input checked="" type="checkbox"/>	v. Cryogenics (Vendors are expected to provide and install all cryogenics.)
<input checked="" type="checkbox"/>	w. Chiller meeting or exceeding MRI needs
<input checked="" type="checkbox"/>	x. All phantoms required for proper calibration and performance verification (Vendors are expected to provide phantoms for all system requirements and options identified in this document that require phantoms.)
<input checked="" type="checkbox"/>	y. Power conditioning as recommended by vendor, to include the following: Protection from electrical failures, emergency power tests, power peaks and drops, electrical storms, etc. Prevention of image quality degradation

### 3. Coil Requirements

All coils are to be lightweight

<input checked="" type="checkbox"/>	a. Torso
<input checked="" type="checkbox"/>	b. Knee
<input checked="" type="checkbox"/>	c. Shoulder
<input checked="" type="checkbox"/>	d. Head/neck/spine/array
<input checked="" type="checkbox"/>	e. Neuro vascular
<input checked="" type="checkbox"/>	f. Run-off
<input checked="" type="checkbox"/>	g. Foot/ankle
<input checked="" type="checkbox"/>	h. Wrist
<input checked="" type="checkbox"/>	i. Elbow
<input checked="" type="checkbox"/>	j. Cardiac



<input checked="" type="checkbox"/>	k. Prostate imaging
<input checked="" type="checkbox"/>	l. Extremity, flexible
<input checked="" type="checkbox"/>	m. Transmit/receive
<input checked="" type="checkbox"/>	n. Flexible

Each vendor is to respond with coils that meet the criteria listed above. Please include all other coils (e.g. adjustable neurovascular head coil, coils for whole body imaging, etc.) offered by your company in the optional section on the quotes.

#### 4. Table Requirements

<input checked="" type="checkbox"/>	a. 2 tables per VA location (except for the mobile unit)
<input checked="" type="checkbox"/>	b. Detachable
<input checked="" type="checkbox"/>	c. Motorized
<input checked="" type="checkbox"/>	d. Adjustable height when table is attached or detached
<input checked="" type="checkbox"/>	e. Tabletop integrated coil design and ports

#### 5. Safety Requirements

<input checked="" type="checkbox"/>	a. Safety system for magnet quenching and emergency shutdown, to include the following: Alarms for low cryogen levels, temperature limits, scans in progress Indicators for cryogen levels Heat sensor shut-offs for room temperature problems Oxygen monitor in gantry room
<input checked="" type="checkbox"/>	b. Fire suppression system meeting NFPA standards and all applicable codes (the system must connect to the facility fire alarm system)

#### 6. Advanced Applications

<input checked="" type="checkbox"/>	a. Neuro
<input checked="" type="checkbox"/>	b. Ortho
<input checked="" type="checkbox"/>	c. Body
<input checked="" type="checkbox"/>	d. Vascular
<input checked="" type="checkbox"/>	e. MRA
<input checked="" type="checkbox"/>	f. Integration to third party Advanced Visualization System - TeraRecon

Each vendor is to respond with advanced applications that meet the criteria listed above. Please include all other advanced applications (e.g. fiber tracking software, etc.) offered by your company in the optional section on the quotes.

#### 7. Mobile Trailer Requirement (Only for Hot Springs)

<input checked="" type="checkbox"/>	a. Semi-Trailer Truck equipped with stabilizing shocks to prevent disruption of the machinery
-------------------------------------	---

STATION WILL PROVIDE ADDITIONAL DETAILS OF TRAILER SPECS



## 8. Security/Connectivity Requirements

<input checked="" type="checkbox"/>	a. OEM-supported operating system
<input checked="" type="checkbox"/>	b. DICOM 3.0 print, store, commit, and modality worklist
<input checked="" type="checkbox"/>	c. HL7 integration (HIS/RIS)
<input checked="" type="checkbox"/>	d. Encrypted hard drive
<input checked="" type="checkbox"/>	e. PACS compatibility - Visage

## C. TRAINING REQUIREMENTS

Description	No. of Personnel
1. On-site clinical applications training for technologists during go-live	Varies by site. See table below.
2. On-site follow-up clinical applications training to be provided after technologists have hands-on experience with the system	Varies by site. See table below.
3. Off-site clinical applications training for technologists (to include tuition)	Varies by site. See table below.
4. Biomedical technician training package (to include tuition)	Varies by site. See table below.

Biomedical technician training shall include any prerequisites required prior to the training and shall be equivalent to the training received by OEM field service representatives. Technicians shall be given all service manuals, schematics, diagrams, diagnostic software, other special tools, and keys equivalent to what OEM field service representatives have available to diagnose, troubleshoot, repair, and maintain the equipment.

Technologists who complete the clinical applications training shall receive continuing education credits (CMEs).

Vendors shall be responsible for accommodating different personnel shifts for clinical applications training during go-live.

Off-site training will not be purchased at the time of award. Vendors must demonstrate that they can provide any required off-site training listed above, therefore off-site training should be quoted as an optional item. Travel for VA employees is not authorized under the HTME contracts. In no case should any training include expenses for travel or travel for VA personnel at no cost.

## D. SERVICE REQUIREMENTS

1. VPN/Remote Access – The vendor shall provide, at no additional cost, any and all equipment service programs, such as remote diagnostics, during the warranty period. The vendor shall provide post-warranty remote diagnostic service program as an “Add Option” with the offer. The system shall provide vendor remote diagnostics via VPN. The vendor shall either utilize the VA national site-to-site VPN or work with the Office of Cyber and Information Security and the VAMC Information Systems Security Officer to establish a client-based VPN.



2. Service and Operator Manuals – The vendor shall provide the following documentation for the proposed systems:
  - a. Two (2) copies of operator instruction manuals (one (1) electronic and one (1) physical copy)
  - b. Two (2) copies of a system manager (super user) manual outlining back-up procedures, managing privilege group limits, routine tasks, etc.
3. Minimum Warranty – The system and accessories shall be covered under the manufacturer's warranty and shall include all parts and labor for one year following acceptance by the VAMC. This warranty must include PMs as required by the manufacturer. The manufacturer's factory-trained field service representatives shall perform installation and maintenance during the warranty period.

Vendors are encouraged to include any offerings for service, warranty, and training that may exceed the requirements with their proposals. Vendors who do not include any added value offerings for service, warranty, and training will not be docked or excluded from consideration. However, any such offerings will be evaluated based on added value.

## E. OTHER INFORMATION/DOCUMENTATION REQUESTED

1. Product brochures
2. Technical specification sheets, to include dimensions and weight of the system
3. DICOM Conformance Statement
4. IHE integration statement
5. FIPS 140-2 certification
6. Completed pre-procurement assessment form (6550)
7. Completed MDS2 form
8. Version/platform long-term plan
9. Detailed information about the curriculum and length of the biomedical technical training
10. Details on any off-site training offered for technologists
11. Information about your company's support structure during the warranty period
  - a. Describe on-line or telephonic applications support and availability (include third party coverage)
  - b. Provide a listing of field service engineer locations and availability
  - c. Provide a listing of part depots
12. Information about your company's support options following the warranty period, including a description of on-line or telephonic applications support and availability
13. Version/platform long-range plan
14. Two (2) copies of the product service manual (1 hard copy and 1 digital copy)
15. Information on any FDA safety recalls associated with the proposed equipment

## F. TRADE-IN

<input checked="" type="checkbox"/>	a. In instances where sanitization of ePHI compromises the OS and/or application software, or requires the removal of internal storage media, the vendor accepts the equipment "as is" and can elect at their own discretion to contract with the original equipment manufacturer (OEM) to restore the system.
-------------------------------------	--

The following equipment is available for trade-in. Please reflect any credits provided for trade-in equipment in the proposal.



Station	Black Hills – Fort Meade (568)
Manufacturer	Philips
Model	Achieva XR 1.5T
EE/Asset Number	36563/218609
Site ID	53397160
Serial Number	35079
Room	104-165-FM

Station	Black Hills – Hot Springs (568A4)
Manufacturer	Philips
Model	Achieva XR 1.5T mobile
EE/Asset Number	27865/217362
Site ID	548359
Serial Number	21491
Room	D020-12-HS

Station	Fargo (437)
Manufacturer	Philips
Model	Achieva XR 1.5T
EE/Asset Number	20414/238800
Site ID	47699900
Serial Number	UF3000462
Room	1B66

Station	NWI-Omaha (636)
Manufacturer	Philips
Model	Achieva XR 1.5T
EE/Asset Number	2987782/359368
Site ID	43440486
Serial Number	43440486
Room	1806-25

Station	Sioux Falls (438)
Manufacturer	Philips
Model	Achieva XR 1.5T
EE/Asset Number	19909/336274
Site ID	49803751
Serial Number	3505G
Room	A15-5

## G. SUMMARY OF REQUIREMENTS

Facility	PO Number	B.1.a Magnetic Field Strength (Tesla)	B.2.t Patient Monitor	B.7.a Mobile unit	C.1-3 Technologists for Clinical Apps	C.4 Biomedical Technical Training
----------	-----------	--	-----------------------------	-------------------------	---	--



					(go-live/follow-up and Off site)	
Fort Meade (568)	618-B89015	1.5	Yes	No	3	1
Hot Springs (568A4)	618-B89016	1.5 (mobile)	No	Yes	1	0
Fargo (437)	618-B89018	1.5	No	No	2	1
NWI-Omaha (636)	618-B89017	1.5	No	No	6	1
NWI-Omaha (636)	618-B89025	3.0	Yes	No	6	1
Sioux Falls (438)	618-B89014	1.5	No	No	6	1

