

# Equipment Specifications

Magnetic Resonance Imaging  
[VISN7 534/Charleston VAMC]  
[534-B92034]

## A. REQUIREMENT OVERVIEW

Mobile 1.5T MRI needed for new Community Based Outpatient Clinic (CBOC) in Myrtle Beach, SC. New facility, construction began in summer 2019, expected to complete in spring 2021. Equipment delivery post-award will be coordinated with builder and project activation timelines. Requirements for MRI system and mobile trailer listed below. Coordinate with construction of new CBOC medical center in Myrtle Beach, SC. Multi-application modality: neuro, angio/vascular, cardiac, body, onco, abdominal, mammary, ortho, scientific.

Facility	Quantity
534- Ralph H. Johnson VAMC – Myrtle Beach CBOC	1

## B. TECHNICAL REQUIREMENTS

### 1. Unit physical specifications

a. Magnetic field strength [T]	1.5 T
b. Minimum bore width [cm]	70 cm
c. Minimum bore depth [cm]	145 cm
d. Minimum scan range [cm]	205 cm
e. Minimum slew rate [T/m/s]	200 T/m/s
f. Minimum number of channels (coil elements)	204
g. Maximum patient weight withstood [lb]	550 lbs
h. Minimum UPS time at full functionality [min] 480Vdc Battery System – 500A Circuit Breaker	Full load back-up time @ 180kW of 5.1 min
i. Maximum room dimensions for system [ft <sup>2</sup> ]	See Sec. 8 for Mobile Trailer
j. Maximum system weight (in operation) [kg]	4400
k. Number of tables required	1

### 2. Additional specifications

<input checked="" type="checkbox"/>	a. Compressed sense
<input checked="" type="checkbox"/>	b. Motion correction technology
<input checked="" type="checkbox"/>	c. Helium save technology
<input checked="" type="checkbox"/>	d. Noise reduction technology



<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 type="radio"/> Passive
<input checked="" type="checkbox"/>	k. Dixon-type technology for body, neuro, and musculoskeletal imaging	
<input checked="" type="checkbox"/>	l. Advanced non-contrast MRA imaging technology	
<input checked="" type="checkbox"/>	m. 3D FSE-based sequence for isotropic resolution in all contrasts	
<input checked="" type="checkbox"/>	n. Bolus tracking system	
<input checked="" type="checkbox"/>	o. Tabletop integrated coil design and ports	
<input checked="" type="checkbox"/>	p. Comprehensive pads and safety straps for stable patient positioning	
<input checked="" type="checkbox"/>	q. Patient positioning and support aids	
<input checked="" type="checkbox"/>	r. Stepping capable table	
<input checked="" type="checkbox"/>	s. 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"/>	t. Video camera system for monitoring inside the exam room from the control room	
<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	
<input checked="" type="checkbox"/>	z. Uninterruptible power supply	
<input checked="" type="checkbox"/>	aa. MRI-compatible stretcher	
<input checked="" type="checkbox"/>	bb. MRI-compatible wheelchair	
<input checked="" type="checkbox"/>	cc. MRI-compatible infusion pump	



<input checked="" type="checkbox"/>	dd. Fixed or mobile wand solution for metal detection
<input checked="" type="checkbox"/>	ee. MR theater or equivalent patient experience audio/visual procedural system

### 3. Workstation Requirements

<input checked="" type="checkbox"/>	a. Minimum acquisition workstation monitor size [in]	19
<input checked="" type="checkbox"/>	b. Minimum pixel display resolution	1280 x 1024
<input checked="" type="checkbox"/>	c. Minimum acquisition workstation hard drive space [GB]	300 each for system SW, database, and images
<input checked="" type="checkbox"/>	d. Minimum Random-access memory (RAM) for host computer [GB]	16
<input checked="" type="checkbox"/>	e. Minimum number of processing/reading workstations	2
<input checked="" type="checkbox"/>	f. Minimum processing/reading workstation monitor size [in]	19
<input checked="" type="checkbox"/>	g. Minimum processing/reading workstation hard drive space [GB]	400
<input checked="" type="checkbox"/>	h. Minimum RAM for measurement and reconstruction system [GB]	48
<input checked="" type="checkbox"/>	i. High-end computing option for image reconstruction computer. RAM and hard disc storage [GB]	64 and 500
<input checked="" type="checkbox"/>	j. Workstation UPS	
<input checked="" type="checkbox"/>	k. MRI-compatible patient monitor (including ECG)	

### 4. Coil Requirements

<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. Breast
<input checked="" type="checkbox"/>	l. Prostate imaging
<input checked="" type="checkbox"/>	m. Carotid
<input checked="" type="checkbox"/>	n. Periphery vascular
<input checked="" type="checkbox"/>	o. Extremity, flexible



<input checked="" type="checkbox"/>	p. Transmit/receive
<input checked="" type="checkbox"/>	q. Adjustable neurovascular head
<input checked="" type="checkbox"/>	r. Whole body imaging

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

#### 5. Table Requirements

<input checked="" type="checkbox"/>	a. Detachable/Dockable
<input checked="" type="checkbox"/>	b. Motorized
<input checked="" type="checkbox"/>	c. Adjustable height when table is attached and detached
<input checked="" type="checkbox"/>	d. Tabletop integrated coil design and ports
<input checked="" type="checkbox"/>	e. Integrated infusion stand and arm rests

#### 6. Safety Requirements

<input checked="" type="checkbox"/>	a. Safety system for magnet quenching and emergency shutdown. Requested features 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)

#### 7. Advanced Applications

<input checked="" type="checkbox"/>	a. 3D processing for all modality datasets
<input checked="" type="checkbox"/>	b. Neuro
<input checked="" type="checkbox"/>	c. Ortho
<input checked="" type="checkbox"/>	d. Body
<input checked="" type="checkbox"/>	e. Cardiac
<input checked="" type="checkbox"/>	f. Angio
<input checked="" type="checkbox"/>	g. Muscular
<input checked="" type="checkbox"/>	h. Oncology
<input checked="" type="checkbox"/>	i. Vascular
<input checked="" type="checkbox"/>	j. Scientific
<input checked="" type="checkbox"/>	k. Breast
<input checked="" type="checkbox"/>	l. MRA
<input checked="" type="checkbox"/>	m. Elastography
<input checked="" type="checkbox"/>	n. Spectroscopy



<input checked="" type="checkbox"/>	o. Phase contrast MRI and flow analysis
<input checked="" type="checkbox"/>	p. Parametric prostate imaging
<input checked="" type="checkbox"/>	q. Mobile trailer requirements

Each vendor is to respond with advanced applications that meet the criteria listed above. Please include all other advanced applications offered by your company in the optional section of the quotes.

#### 8. Mobile Trailer Requirements

<input checked="" type="checkbox"/>	a. Sem-trailer truck equipped with stabilizing shocks to prevent disruption of the machine
<input checked="" type="checkbox"/>	b. Sinks: Cabinet Self-Contained and Portable Self-Contained
<input checked="" type="checkbox"/>	c. Hospital-Certified Oxygen/Suction System
<input checked="" type="checkbox"/>	d. Emergency Exit Hatch and street-side emergency exit door
<input checked="" type="checkbox"/>	e. Sliding Patient Entrance Door
<input checked="" type="checkbox"/>	f. Automatic Generator/Shoreline Transfer Switch
<input checked="" type="checkbox"/>	g. Air Filtration
<input checked="" type="checkbox"/>	h. Patient Dressing Area
<input checked="" type="checkbox"/>	i. Weather-Protected Patient Lift
<input checked="" type="checkbox"/>	j. Contrast Injector Installation Kit
<input checked="" type="checkbox"/>	k. Canopy Over Lift
<input checked="" type="checkbox"/>	l. Auto Reset Chiller

#### 9. Security/Connectivity Requirements

<input checked="" type="checkbox"/>	a. OEM-supported operating system
<input checked="" type="checkbox"/>	b. Latest DICOM print, store, commit, and modality worklist
<input checked="" type="checkbox"/>	c. Wireless connectivity to VA network – Compatible with 802.11b/g/n and FIPS 140-2 compliant
<input checked="" type="checkbox"/>	d. Encrypted hard drive
<input checked="" type="checkbox"/>	e. PACS compatibility – [currently VistaRAD]

#### 10. Added Value

Specifications listed below are not required, but preferred. Vendors who do not include the below specifications in the submitted offer will not be docked or excluded from consideration. Specifications listed below will be evaluated based on added value.

<input checked="" type="checkbox"/>	a. Additional year(s) of warranty – <a href="#">2 years or more preferred</a>
<input checked="" type="checkbox"/>	b. Version/platform long-range plan – <a href="#">software upgrades included in service agreements</a>

## C. TRAINING REQUIREMENTS



## 1. Clinical Training

<input checked="" type="checkbox"/>	a. On-site clinical applications training for [4] technologists during go-live
<input checked="" type="checkbox"/>	b. On-site follow-up clinical applications training for [4] technologists once technologists have hands-on experience with the system
<input checked="" type="checkbox"/>	c. Off-site clinical applications training for [2] technologists (to include tuition)
<input checked="" type="checkbox"/>	d. Off-site clinical applications training for [2] physicians (to include tuition)
<input checked="" type="checkbox"/>	e. Technologists who complete the clinical applications training shall receive continuing education credits (CMEs).
<input checked="" type="checkbox"/>	f. Vendors shall be responsible for accommodating different personnel shifts for clinical applications training during go-live.

## 2. Biomedical Technician Training

**Please reference the “Instructions to Offers” section 2.8.g for further information about the type of information to provide by equipment type not by specific request. Please also reference the “Instructions to Offers” section 7.3.3. for response format.**

Technical training information to include detailed information about the curriculum and length of the biomedical technical training required for each equipment type.

Although the NAC will not award this training along with the equipment, it is imperative that the customer is informed that this training is available. Vendors must demonstrate that they can provide any required off-site training, therefore off-site training should be quoted as an optional item. Off-site training will be purchased at the time of need via a modification (if the original order remains open) or via a separate order. No travel expenses for any VA employees will be included in any HTME equipment or training order.

## D. SERVICE REQUIREMENTS

- VPN/Remote Access – The vendor shall provide 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.
- Service and Operator Manuals – The vendor shall provide the following documentation for the proposed systems:
  - Two (2) copies of operator instruction manuals (one (1) electronic and one (1) physical copy)
  - Two (2) copies of a service manuals (one (1) electronic and one (1) physical copy)

\*Vendors can include the physical copy as a priced line item in their quote as applicable.
- 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 minimum requirements, to include information on their service support structure during and after the warranty period. 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

**Please reference the “Instructions to Offers” section 2.8a-h for further information about the type of information to provide by equipment type not by specific request. Please also reference the “Instructions to Offers” section 7.3.3. for response format.**

1. Completed pre-procurement assessment form (6550 Appendix A)
2. Completed Manufacture Disclosure Statement for Medical Device Security (MDS2) form
3. Federal Information Processing Standard (FIPS) 140-2 certification
4. Product brochures
5. Technical specification sheets, to include dimensions and weight of the system
6. Typical drawings (pdf version of the CAD drawings)
7. Technical training- Biomedical: information to include detailed information about the curriculum and length of the biomedical technical training required for each equipment type.
  - Although the NAC will not award this training along with the equipment, it is imperative that the customer is informed that this training is available. Vendors must demonstrate that they can provide any required off-site training, therefore off-site training should be quoted as an optional item. Off-site training will be purchased at the time of need via a modification (if the original order remains open) or via a separate order. No travel expenses for any VA employees will be included in any HTME equipment or training order.
8. Support information to include your company’s support structure during and after the warranty period
  - On-line or telephonic applications support and availability (include third party coverage)
  - A listing of field service engineer locations and availability
  - A listing of part depots

## F. TRADE-IN

<input checked="" type="checkbox"/>	a. VA has no trade-in units to offer.
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