North Carolina Department of Health and Human Services
Division of Health Service Regulation

Pat McCrory
Governor

Aldona Z. Wos, M.D.
Ambassador (Ret.)
Secretary DHHS

Drexdal Pratt
Division Director

May 6, 2014

Elizabeth Kirkman
Assistant Vice President, CHS Management Company
2709 Water Ridge Parkway, Suite 200
Charlotte, NC 28217

Exempt from Review - Replacement Equipment

Facility:	Carolinas Medical Center (CMC)
Project Description:	Replace MRI Scanner currently housed and in use in the Morehead Imaging Center (MIC) on the first floor of the Morehead Medical Plaza (MMP) on CMC's main campus
County:	Mecklenburg
FID #:	943070

Dear Ms. Kirkman

In response to your letter of April 28, 2014 the above referenced proposal is exempt from certificate of need review in accordance with N.C.G.S 131E-184(f). Therefore, you may proceed to acquire, without a certificate of need, the Wide-bore GE 1.5T MRI to replace the existing Open GE .7T MRI [Model #HFO5 and Serial #T183]. This determination is based on your representations that the existing unit will be removed from North Carolina and will not be used again in the State without first obtaining a certificate of need. Further please be advised that as soon as the replacement equipment is acquired, you must provide the CON Section and the Medical Facilities Planning Branch with the serial number of the new equipment to update the inventory, if not already provided.

Moreover, you need to contact the Construction and Acute and Home Care Licensure and Certification Section to determine if they have any requirements for development of the proposed project.

It should be noted that this Agency's position is based solely on the facts represented by you and that any change in facts as represented would require further consideration by this Agency and a separate determination. If you have any questions concerning this matter, please feel free to contact this office.

Sincerely,

Fatimah Wilson
Project Analyst

Martha J. Frisone, Interim Chief
Certificate of Need Section

cc: Construction Section, DHSR
Acute and Home Care Licensure and Certification Section, DHSR
Medical Facilities Planning Branch, DHSR

Carolinas HealthCare System

April 28, 2014

Ms. Martha Frisone, Interim Chief
Certificate of Need Section
Division of Health Service Regulation
N.C. Department of Health & Human Services
809 Ruggles Drive
Raleigh, NC 27603

RE: Carolinas Medical Center – Exemption Notice for Acquisition of Replacement Magnetic Resonance Imaging Equipment, Mecklenburg County

Dear Ms. Frisone:

The Charlotte-Mecklenburg Hospital Authority d/b/a Carolinas Medical Center ("CMC"), seeks to acquire a General Electric ("GE") Optima 450w 1.5 Tesla MRI unit with GEM features ("GE Optima") ("Replacement Equipment"). Please see Attachment A for a copy of CMC's current hospital license. The Replacement Equipment will replace CMC's current GE Signa Open Speed .7 Tesla MRI scanner ("Existing Equipment"). The Existing Equipment is currently housed and in use in the Morehead Imaging Center on the first floor of the Morehead Medical Plaza ("MMP") on CMC's main campus located at 1000 Blythe Boulevard in Charlotte, NC 28203 (see Attachment B). The Replacement Equipment will be located in the same space.

The purpose of this letter is to provide the Agency with notice and to request a determination that CMC's purchase of the Replacement Equipment is exempt from Certificate of Need ("CON") review under the replacement equipment exemption provisions contained in Session Law 2013-360, Section 12G.3(b) and Session Law 2013-363, Section 4.6 (which are codified at N.C. Gen. Stat. 131E-184(f)(1)-(3)).

The General Assembly has chosen to exempt certain, otherwise reviewable events from CON review. Among those exemptions is the acquisition of "replacement equipment," defined as follows in the CON law:

> "Replacement equipment" means equipment that costs less than two million dollars ($2,000,000) and is purchased for the sole purpose of replacing comparable medical equipment currently in use which will be sold or otherwise disposed of when replaced.

See N.C. Gen. Stat. 131E-176(22a). Under the new provisions found at N.C. Gen. Stat. 131E-184(f)(1)-(3), the CON law provides:

> (f) The Department shall exempt from certificate of need review the purchase of any replacement equipment that exceeds the two million dollar ($2,000,000) threshold set forth in G.S. 131E-176(22) if all of the following conditions are met:
>
> (1) The equipment being replaced is located on the main campus.
> (2) The Department has previously issued a certificate of need for the equipment being replaced. This subdivision does not apply if a certificate of need was not required at the time the equipment being replaced was initially purchased by the licensed health service facility.
> (3) The licensed health service facility proposing to purchase the replacement equipment shall provide prior written notice to the Department, along with supporting documentation to demonstrate that it meets the exemption criteria of this subsection.

See Session Law 2013-360, Section 12G.3(b) and Session Law 2013-363, Section 4.6. The term "main campus" was defined in Session Law 2013-360, Section 13G.3(a) (codified N.C. Gen. Stat. 131E-176(14n)) as follows:

> (14n) "Main campus" means all of the following for the purposes of G.S. 131E-184(f) and (g) only:
>
> a. The site of the main building from which a licensed health service facility provides clinical patient services and exercises financial and administrative control over the entire facility, including the buildings and grounds adjacent to that main building.
> b. Other areas and structures that are not strictly contiguous to the main building but are located within 250 yards of the main building.

The Existing Equipment is currently located on the first floor of the Morehead Medical Plaza within the Morehead Imaging Center on CMC's main campus and the Replacement Equipment will be located within the same space (see Attachment B). The main hospital building from which Carolinas Medical Center exercises financial and administrative control over Carolinas Medical Center services is located at 1000 Blythe Boulevard, Charlotte, NC 28203 (see Attachment

B). Carolinas Medical Center's President's office is located on the second floor of the main hospital building.

In addition to the foregoing, to qualify for this exemption, the replacement equipment must be "comparable" to the equipment it replaces and the equipment being replaced must be "sold or otherwise disposed of when replaced." CMC's proposal qualifies for this exemption.

A. Cost of the Replacement Equipment

The purchase price of the Replacement Equipment is $1,711,250 ($1,532,587.50 MRI + $50,000 Chiller + $13,925 Rigging + $114,737.50 Tax). Quotes for the MRI and Chiller from General Electric are provided in Attachment C. The projected total capital cost of the project is $2,635,100 and includes the removal of the existing equipment, renovation of the space and installation of the Replacement Equipment. The total capital cost schedule and the certified cost estimate of the renovation required to install the new equipment are provided in Attachment D.

B. Equipment Being Replaced is Located on the Main Campus

The Existing Equipment is currently located on the first floor of the Morehead Medical Plaza within the Morehead Imaging Center on CMC's main campus (see Attachment B). The Replacement Equipment will be located in the same space on the first floor of the Morehead Medical Plaza on CMC's main campus (see Attachment B).

C. Certificate of Need Issued for Equipment Being Replaced

This proposal also fits within the new exemption criterion in Section 131E-184(f)(2) because the Department issued a Certificate of Need for the Existing Equipment (see Attachment E). The original Certificate, issued in 2002, was for an MRI planned for CMC's main hospital building. After further consideration, CMC submitted a Declaratory Ruling Request on November 8, 2005 to move the location of the MRI to the Morehead Medical Plaza on CMC's main campus (see Attachment F). The Declaratory Ruling authorizing the change in location was issued on January 9, 2006 (see Attachment G). The Existing Equipment became operational on February 27, 2006 and remains in the same location today.

D. Comparable Equipment

The CON rule codified as 10A N.C.A.C. 14C.0303 (the "Regulation") defines "comparable medical equipment" in subsection (c) as follows:

> "Comparable medical equipment" means equipment which is functionally similar and which is used for the same diagnostic or treatment purposes.

CMC intends to use the Replacement Equipment for substantially the same MRI procedures for which it currently uses the Existing Equipment. The Existing Equipment is a GE Signa Open Speed .7 Tesla MRI that was installed new in 2006. This Existing Equipment has been used for MRI procedures since installation.

The Replacement Equipment will perform all procedures currently performed on the Existing Equipment. Although it possesses some expanded capabilities due to technological improvements and the ability to accommodate heavier patients, the Replacement Equipment will perform the same MRI procedures. (see Attachment H for the Equipment Brochure) The Replacement Equipment is therefore "comparable medical equipment" as defined in Subsection (c).

Furthermore, CMC does not intend to increase patient charges or per procedure operating expenses within the first 12 months after equipment acquisition. For further equipment comparison, please refer to Attachment I, the Equipment Comparison Chart.

Subsection (d) of the regulation further provides:

(1) it has the same technology as the equipment currently in use, although it may possess expanded capabilities due to technological improvements; and
(2) it is functionally similar and is used for the same diagnostic or treatment purposes as the equipment currently in use and is not used to provide a new health service; and
(3) the acquisition of the equipment does not result in more than a 10.0 percent increase in patient charges or per procedure operating expenses within the first twelve months after the replacement equipment is acquired.

The Replacement Equipment will meet all three of tests set out in Subsection (d). The Replacement Equipment satisfies the technology and functionality tests in Subsection (1) and (2) as discussed above and identified in the Comparison Chart (Attachment I). Moreover, CMC represents the use of the Replacement Equipment will not result in the types of expense or charge increases described in Subsection (d)(3).

The Existing Equipment is currently in use and documentation provided in Attachment J indicates that 2,580 procedures were performed in 2013.

E. Disposition of Equipment

Please see Attachment K for a letter documenting the Existing Equipment will be taken out of service and will not be re-sold or re-installed in North Carolina without appropriate certificate of need approval.

CONCLUSION:

Based on the foregoing information, CMC hereby requests that the Agency provide a written response confirming that the acquisition of the Replacement Equipment described herein is exempt from CON

review. If the Agency needs additional information to assist in its consideration of this request, please let us know.

Thank you for your consideration of this notice.

Sincerely,

Elizabeth V. Kirkman

Elizabeth V. Kirkman
Assistant Vice President
CHS Management Company

Attachments

cc: F. Del Murphy, Jr., CHS Management Company
W. Spencer Lilly, President Carolinas Medical Center

Attachment A

State of North Carolina

Department of Health and Human Services
Division of Health Service Regulation

Effective April 07, 2014, this license is issued to

The Charlotte-Mecklenburg Hospital Authority

to operate a hospital known as

Carolinas Medical Center/Center for Mental Health

located in Charlotte, North Carolina, Mecklenburg County.

This license is issued subject to the statutes of the State of North Carolina, is not transferable and shall remain in effect until amended by the issuing agency.

Facility ID: 943070

License Number: H0071

Bed Capacity: *1132*

General Acute 976, Rehabilitation 13 , Psych 132, Substance Abuse 11,

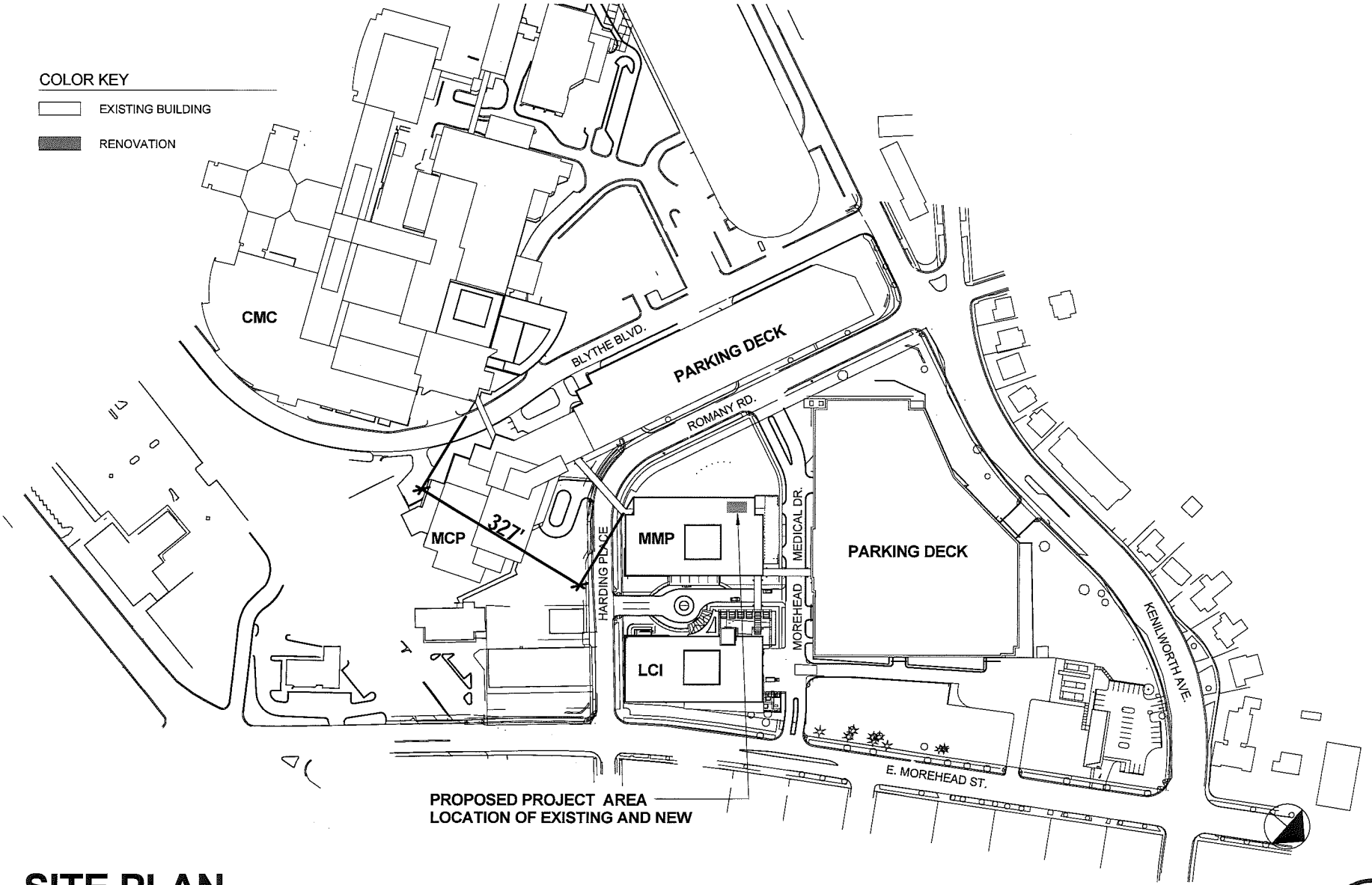
Dedicated Inpatient Surgical Operating Rooms: 10
Dedicated Ambulatory Surgical Operating Rooms: 11
Shared Surgical Operating Rooms: 41
Dedicated Endoscopy Rooms: 12

Authorized by:

Secretary, N.C. Department of Health and Human Services

Director, Division of Health Service Regulation

Attachment B



SITE PLAN

MOREHEAD MEDICAL PLAZA (MMP) MRI 2 REPLACEMENT

Carolinas HealthCare System

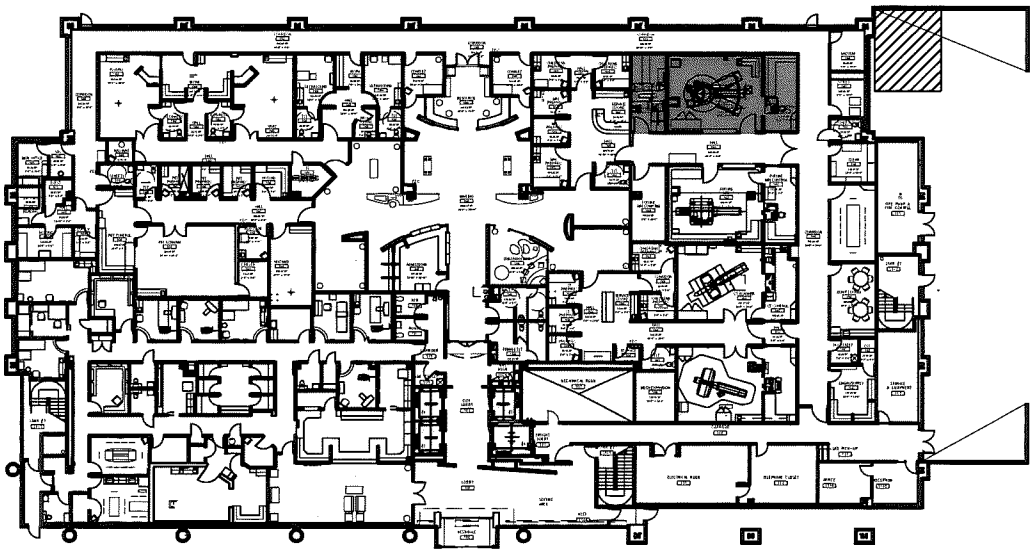
MARCH 24, 2014

Charlotte, NC

COLOR KEY

EXISTING BUILDING

RENOVATION



0' 8' 16' 32' 64'

MMP FIRST FLOOR

MOREHEAD MEDICAL PLAZA (MMP) MRI 2 REPLACEMENT

Carolinas HealthCare System

MARCH 24, 2014

Charlotte, NC

Attachment C

GE Healthcare

QUOTATION

Quotation Number: PR10-C14373 V 4

Carolinas Medical Center
1000 Blythe Blvd
Charlotte NC 28203-5812

Attn: Jeff Aho
Director of Radiology
Radiology
1000 Blythe Blvd
Charlotte NC 28203

Date: 12-20-2013

This Agreement (as defined below) is by and between the Customer and the GE Healthcare business ("GE Healthcare"), each as identified herein. GE Healthcare agrees to provide and Customer agrees to pay for the Products listed in this GE Healthcare Quotation ("Quotation"). "Agreement" is defined as this Quotation and the terms and conditions set forth in either (i) the Governing Agreement identified below or (ii) if no Governing Agreement is identified, the following documents:

1) This Quotation that identifies the Product offerings purchased or licensed by Customer;

2) The following documents, as applicable, if attached to this Quotation: (i) GE Healthcare Warranty(ies); (ii) GE Healthcare Additional Terms and Conditions; (iii) GE Healthcare Product Terms and Conditions; and (iv) GE Healthcare General Terms and Conditions.

In the event of conflict among the foregoing items, the order of precedence is as listed above.

This Quotation is subject to withdrawal by GE Healthcare at any time before acceptance. Customer accepts by signing and returning this Quotation or by otherwise providing evidence of acceptance satisfactory to GE Healthcare. Upon acceptance, this Quotation and the related terms and conditions listed above (or the Governing Agreement, if any) shall constitute the complete and final agreement of the parties relating to the Products identified in this Quotation. The parties agree that they have not relied on any oral or written terms, conditions, representations or warranties outside those expressly stated or incorporated by reference in this Agreement in making their decisions to enter into this Agreement. No agreement or understanding, oral or written, in any way purporting to modify this Agreement, whether contained in Customer's purchase order or shipping release forms, or elsewhere, shall be binding unless hereafter agreed to in writing by authorized representatives of both parties. Each party objects to any terms inconsistent with this Agreement proposed by either party unless agreed to in writing and signed by authorized representatives of both parties, and neither the subsequent lack of objection to any such terms, nor the delivery of the Products, shall constitute an agreement by either party to any such terms.

By signing below, each party certifies that it has not made any handwritten modifications. Manual changes or mark-ups on this Agreement (except signatures in the signature blocks and an indication in the form of payment section below) will be void.

- Terms of Delivery: FOB Destination
- Billing Terms: 100% billing at Ship Completion (Fulfillment) / Delivery
- Payment Terms: 60 DAYS NET
- Governing Agreement: CSS-GEHC MVA July 15 2011

Each party has caused this agreement to be signed by an authorized representative on the date set forth below. Please submit purchase orders to GE Healthcare
3200 N. Grandview Blvd., Mail Code WT-897, Waukesha, WI 53188

GE HEALTHCARE

Scott Ramsey
Product Sales Specialist

US
Phone: +1 919 621 1657
Fax: 919-869-1618
Floyd.Ramsey@med.ge.com

CUSTOMER

Authorized Customer Date

Print Name and Title

PO #

Desired Equipment First Use Date

GE Healthcare will use reasonable efforts to meet Customer's desired equipment first use date. The actual delivery date will be mutually agreed upon by the parties.

INDICATE FORM OF PAYMENT:
(If there is potential to finance with a lease transaction, GE HFS or otherwise, select lease.)
____ Cash * ____ Lease ____ HFS Loan
If financing please provide name of finance company below*:

*Selecting Cash or not identifying GE HFS as the finance company declines option for GE HFS financing.

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Quotation Number: PR10-C14373 V 4

Item No.	Qty	Description
		Optima MR450w 1.5T GEM 24.0
	1	**Optima MR450w 1.5T GEM 24.0**
1	1	Optima MR450w GEM 1.5T MR System with Silent ES Platform

The Optima MR450w GEM 1.5T MRI system from GE Healthcare is designed to deliver a comfortable patient-friendly environment while also delivering uncompromised clinical performance and streamlined workflow.

The ES platform package delivers the system electronics, operating software, imaging software, post-processing software and RF coil suite for the Optima MR450w GEM system:

- eXtreme Gradient Technology
- Acoustic Reduction Technology
- OpTix RF Receive Technology
- Volume Reconstruction Engine
- Computing Platform and DICOMM
- GEM Express Patient Table with IntelliTouch
- GEM Suite - ES Coil Package
- Express 2.0 Workflow and In-Room Operator Console
- ScanTools and ES Tools, including Silent Neuro Exam

eXtreme Gradient Technology: The Optima MR450w GEM system utilizes the 34/150 gradient driver technology to deliver premium clinical performance. The eXtreme gradients are non-resonant and actively shielded to minimize eddy currents. The gradients deliver high fidelity reproducibility through a digital control architecture that features a dedicated active feedback loop that regulates current errors, and a feed-forward model that matches amplifier output to gradient coil. The gradient coil and the RF body coil are integrated into a single module that is both water and air cooled.

- Peak amplitude per axis: 34 mT/m
- Peak slew rate per axis: 150 T/m/s
- Peak current: 660 Amps
- Peak voltage: 1650 Volts
- Maximum FOV: 50cm
- Duty Cycle: 100%

Acoustic Noise Reduction Technology: The Optima MR450w GEM system features five levels of acoustic reduction technology to deliver an enhanced patient environment. Magnet interaction with the building is addressed through the vibro-acoustic

Item No.	Qty	Description

dampening pad. Resonance module interaction with support structures within the magnet is addressed through design that clearly separates the components. Mass-dampened acoustic barriers further reduce noise for the patient, and ScanTools provide a user selectable gradient waveform optimization.

- Gradient coil isolation
- RF coil isolation
- Acoustic dampening material
- Vibro-acoustic isolation
- Gradient waveform optimization

OpTix RF Receive Technology: The Optima MR450w GEM system utilizes the OpTix RF receive chain to enable high bandwidth, high channel count reception with improved SNR over conventional MR receiver designs. The MR signal is digitized within the scan room and then optically transmitted to the reconstruction engine in the electronics room increasing SNR for all volume acquisitions, independent of which surface coil is being used.

- Coil input ports: 138
- Simultaneous channel/receivers: 32
- Receiver sampling per channel: 80 MHz
- Receiver dynamic range at 1 Hz BW: >165 dB
- Receiver resolution: up to 32 bits
- Digital quadrature demodulation

Volume Reconstruction Engine: The Optima MR450w GEM system features a powerful volume reconstruction engine with onboard memory and local raw data storage to support and maintain simultaneous data acquisition and reconstruction under the most demanding applications. VRE uses 64-bit computing, delivering high acquisition memory and fast performance. Parallel processing and high speed interconnects provide scalable memory and throughput. The acquisition to disk feature automatically expands the memory per the demands of the application.

- 13,000 2D FFTs/second 256x256 full FOV
- 72GB ECC DDR3 1333 memory
- 4 x 146GB hard disk storage

Computing Platform and DICOM: The Optima MR450w GEM system computing platform is designed for efficiency and built upon a parallel, multiprocessor design that delivers the simultaneity and speed needed for advanced clinical operation. Productivity, efficiency and streamlined data management are assured through simultaneous scanning, reconstruction, filming, archiving, networking and post-processing. The scan control keyboard features intercom speaker, microphone,

Item No.	Qty	Description

volume controls, start scan, pause scan, stop scan and table advance to iso-center controls. Please refer to the Optima MR450w GEM product data sheet for greater detail.

- Single tower configuration
- 24" flat panel LCD widescreen
- 1920 x 1200 resolution
- 8GB DDR3 memory
- 146GB SAS disk subsystem
- DVD interchange

The Optima MR450w GEM system generates MR Image, Secondary Capture, Structured Report, and Gray Scale Softcopy Presentation State DICOM objects. The DICOM networking supports both send and query retrieve as well as send with storage commit to integrate with PACS archive. Additionally, the Optima MR450w GEM system supports the CT and PET image objects for display allowing the user to refer to previous exams. Please refer to the DICOM Compliance Statement for Optima MR450w GEM for further details.

GEM Express Patient Table with IntelliTouch: The Optima MR450w GEM system features the GEM Express table which is a mobile patient transport device with an embedded high-density, GEM Posterior RF Array and touch sensitive IntelliTouch land-marking.

The fully detachable GEM Express table is easily docked and undocked by a single operator and simple to move in and out of the exam room for patient transport and preparation. These features can be vital in instances where multiple patient transfers can negatively impact patient care or when emergency extraction is required.

The GEM Express table and embedded GEM PA coil are designed to accommodate head-first or feet-first imaging for all supported exams. The table features three high-density coil connection ports: one at each end and one embedded for the GEM PA. Two additional coil connection ports are included in the docking mechanism.

The GEM Express table features a set of Patient Comfort pads designed with variable density foam that uniquely compresses based on patient geometry and weight. The pad coating is strong, easily cleaned, and processed with an Ultra-Fresh treatment. An anti-skid undersurface reduces pad movement.

- Maximum patient weight for scanning: 500 lbs
- Maximum patient weight mobile: 500 lbs
- Maximum patient weight for lift: 500 lbs
- 205 cm symmetrical scan range

Item No.	Qty	Description

- Automated vertical and longitudinal power drive
- Fast longitudinal speed: 30 cm/sec
- Slow longitudinal speed: 0.5 cm/sec
- Integrated arm boards
- Integrated non-ferrous IV pole
- IntelliTouch land-marking
- Laser alignment land-marking
- Variable density patient comfort pads with Ultra-Fresh coating and anti-skid undersurface

The Optima MR450w GEM system has automated many routine tasks to simplify patient preparation and gain productivity. With IntelliTouch technology, In-Room Operator Console and dual-sided controls the technologist can touch the table sensor and the advance to scan button to complete the following:

- Landmark the patient
- Activate the surface coil
- Center the patient in the bore
- Start scanning
- Acquire, process and network images

GEM Suite - ES Coil Package: The Geometry Embracing Method - GEM - Suite of coils for the Optima MR450w GEM system was designed to enhance patient comfort and image quality while simplifying workflow. The GEM design ensures that the geometry of the surface coil matches the geometry of the patient. In addition, the GEM Suite is fully integrated into the GEM Express table, and the system automatically selects the coil mode configuration that best fits the selected region of interest.

The ES Coil Package includes:

- GEM Posterior Array
- GEM Head and Neck Unit
- GEM Anterior Array
- GEM Standard Flex Suite
- 3-channel Shoulder Array

The GEM Posterior Array is designed to provide optimal element geometry for each targeted anatomy by using different element geometries for the cervical-to-thoracic spine transition, thoracic and lumbar spine, and the body. This approach maximizes the SNR by matching the geometry of the coil elements to the size and shape geometry of the anatomy. The GEM PA supports parallel imaging in all three scan planes.

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Item No.	Qty	Description

- Elements: 40
- Length: 100 cm
- Width: 40 cm
- S/I coverage: 100cm head-first or feet-first
- Parallel imaging in all three scan planes
- Head-first or feet-first positioning

The GEM PA is designed to be used in conjunction with the GEM HNU, GEM AA or GEM Small AA (purchased separately), and the GEM PV Array (purchased separately), In addition, the GEM PA is invisible to additional surface coils when they are placed directly on top of the surface. Unique electronic decoupling circuits ensure there is no interference between the coils enabling the GEM PA to remain in place for all exams.

The GEM Head and Neck Unit comprises the head base-plate and three anatomically optimized anterior arrays: the anterior Neuro-vascular array, the anterior cervical spine array, the anterior open-face array.

The GEM HNU may be positioned at either end of the GEM Express table to support head-first or feet-first imaging and may remain in place for all body, vascular, spine, and the majority of MSK exams. The GEM HNU base plate supports the patient's head and contains three rows of elements separated in both the superior/inferior and right/left dimensions. The Comfort Tilt variable-degree ramp can be positioned under the HNU base plate to elevate the superior end of the coil to match the patient's head and neck position.

- Elements: up to 28 combined with PA and AA
- Length: 49.5 cm
- Width: 38.8 cm
- Height with NV Array: 36.8 cm
- Height with Cervical Array: 33.6 cm
- Height with Open Array: 25.7 cm
- S/I coverage: up to 50 cm with PA and AA
- Parallel imaging in all three scan planes
- Head-first or feet-first positioning

The GEM Large Anterior Array facilitates chest, abdomen, pelvis, and cardiac imaging. The GEM AA is lightweight, thin and flexible, and pre-formed to conform to the patient's size and shape. With 54 cm of S/I coverage, the GEM AA permits upper abdomen and pelvis imaging without repositioning the coil.

- Elements: up to 36 combined with PA
- Length: 55.6 cm

Item No.	Qty	Description

- Width: 67.3 cm
- Height: 3.6 cm
- S/I coverage: 54 cm
- R/L coverage: up to the full 50 cm FOV
- Parallel imaging in all three scan planes
- Head-first or feet-first positioning

The GEM Flex Suite is a versatile set of high-density 16CH receive arrays designed to provide high quality imaging in a wide range of

clinical applications. The high degree of flexibility is particularly advantageous when imaging patients that do not fit the constraints of rigid coils, improving the patient and technologist experience. Consistent with the GEM design philosophy, the size and shape of the elements in each flexible coil have been optimized for high SNR and parallel imaging.

This standard set includes two coil sizes and a knee stabilization fixture designed for compatibility with the GEM Express table.

- Large Flex Array: 23 cm x 70 cm
- Medium Flex Array: 23 cm x 48 cm
- GEM Flex Interface Module P-Connector
- GEM Flex Knee Stabilization Fixture
- GEM Flex Strap and Interface Module Cover
- GEM Flex Cable Take-up Pad and General Purpose Stabilization Pad

The 3-channel Shoulder Array offers the increased signal-to-noise characteristic of phased-array technology, along with unique sleeve design that delivers exceptional joint-imaging capabilities.

Express 2.0 Workflow and In-Room Operator Console: The Optima MR450w GEM system incorporates features designed to streamline and automate workflow. At the same time, the flexibility of the interface helps ensure the acquisition is tailored to every patient while the steps to set-up are consistent. Express Exam Workflow includes the following:

- In-Room Operator Console and controls.
- Protocol Management: Protocol Libraries, ProtoCopy, Protocol Notes, Modality Worklist.
- Workflow Management and Auto Features: Workflow Manager, Linking, AutoStart, AutoScan, Auto Coil Prescription, AutoVoice, Auto-Calibration.
- Inline Processing and Inline Viewing.

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Item No.	Qty	Description

The In-Room Operator Console mounted on the front of the magnet and dual-sided controls enable interaction with the host computer from the magnet room. The user has direct control or selection of:

- Display of patient name, ID, study description
- Display and entry of patient weight
- Display and entry of patient orientation and position
- Cardiac gating waveform display
- EKG lead confirmation with gating control: trigger select, invert, and reset
- Respiratory waveform display
- IntelliTouch Landmarking
- AutoStart
- Display of coil connection and status
- Display of table location and scan time
- Screen saver

The Optima MR450w GEM system enables complete control of protocols for simple prescription, archiving, searching, and sharing. Protocols are organized into two libraries: GE authored and Site Authored. In addition, ProtoCopy enables a complete exam protocol, from either a library or previous exam, to be shared with a mouse click, and Protocol Notes allows customized notes to be saved with the protocol parameters. The Modality Worklist provides an automated method of linking exam and protocol information for a patient directly from a DICOM Worklist server.

The Workflow Manager controls the execution of scan prescription, acquisition, processing, viewing and networking and may automate these steps, when requested by the user, through the selection of Linking and AutoScan. Auto Coil Prescription will automatically select the optimum subset of elements for scanning based on the prescribed FOV once the landmark has been set, and AutoStart will automatically start the first acquisition as soon as the technologist exits the magnet room. In addition, AutoVoice ensures that consistent and repeatable instructions are delivered to the patient, and Auto Calibration will automatically acquire a calibration scan for ASSET and/or PURE when needed.

Processing steps are automatically completed with Inline Processing once the data have been reconstructed and the images saved into the database. For certain tasks, the user must accept the results or complete additional steps prior to saving the images. These automatic Inline Processing steps can be saved into the Protocol Library.

Inline Viewing allows the user to conveniently view, compare, and analyze images from the Scan Desktop by selecting the desired series from the Workflow Manager.

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Item No.	Qty	Description

ScanTools and ES Tools for Optima MR450w GEM comprise a comprehensive package of pulse sequences, core applications, imaging options and post-processing capability optimized for 1.5T performance. Please refer to the Optima MR450w GEM product data sheet for detailed descriptions.

- Spin Echo and Fast-Spin Echo suites: SE, FSE, FSE XL, Fast Recovery FSE, FSE Inversion Recovery, 3D FSE, Single-Shot FSE, Single-Shot FSE IR.
- T1 FLAIR and T2 FLAIR CNS imaging.
- Gradient Echo suite: 2D and 3D GRE, 2D and 3D Fast GRE, 2D and 3D Spoiled PGR, 2D and 3D Fast SPGR.
- 2D and 3D Dual Gradient Echo body imaging.
- SPECIAL spectral-spatial, inversion-based fat suppression for 3D FGRE sequences.
- Echo Planar Imaging suite: SE-based EPI, GRE-based EPI, Single-Shot EPI, Multi-Shot EPI, Multi-Phase EPI, FLAIR EPI.
- Diffusion-Weighted EPI imaging with b-values up to 10,000 s/mm2.
- FIESTA steady-state imaging includes 2D FIESTA cardiac imaging, 2D FatSat FIESTA body imaging, 3D FIESTA Neuro imaging, 3D FatSat FIESTA coronary imaging.
- PROPELLER 3.0 motion-insensitive imaging with T1 FLAIR, T2, T2 FLAIR or PD-weighted contrast - enabled in all scan planes.
- PROPELLER 3.0 DWI FSE-based diffusion weighted imaging with radial k-space filling.
- 3D Cube 2.0 high-resolution FSE-based imaging with T1, T2, T2 FLAIR or PD-weighted contrast.
- 3D BRAVO high-resolution SPGR-based T1-weighted brain imaging.
- ReadyBrain automated scan prescription for brain exams.
- 2D and 3D MERGE multi-echo GRE-based CNS imaging.
- 3D COSMIC high-resolution GRE-based cervical spine imaging.
- 3D LAVA single breath-hold, high-resolution SPGR-based T1-weighted liver imaging with SPECIAL fat suppression.
- Time-of-Flight MRA Suite: 2D TOF, 2D Gated TOF, 3D TOF and Enhanced 3D TOF.
- Phase Contrast MRA Suite: 2D PC, 3D PC, Cine PC.
- SmartPrep automated bolus detection.
- Fluoro-Trigger MRA real time bolus monitoring with interactive triggering.
- QuickSTEP automated multi-station acquisition.
- iDrive Pro real time interactive imaging.
- Double/Triple IR black-blood cardiac imaging with/without fat suppression.

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Item No.	Qty	Description

- FastCINE functional cardiac imaging with full R-wave coverage.
- 2D and 3D GradWarp automated distortion correction.
- ARC acceleration 3D data-based, auto calibrating parallel imaging technique with acceleration factors up to 3X and extended factors with Turbo ARC.
- ASSET image-based parallel imaging technique with acceleration factors up to 3X.
- Cardiac gating/triggering, compensation, blood suppression, flow compensation.
- Respiratory gating/triggering, compensation.
- Pencil Beam Body Navigators track diaphragm motion to acquire data when diaphragm is within an acceptable range.
- DE Prep, IR Prep, T2 Prep.
- ZIP 1024, ZIP 512, 2X Slice ZIP, 4X Slice ZIP.
- IVI inline, interactive post-processing for vascular MRA data sets.
- Multi-Planar Volume Reformat inline, interactive post-processing for 3D volume data sets.
- FuncTool Performance advanced post processing algorithms: ADC maps, eADC maps, Negative Enhancement Integral, Positive Enhance Integral, Mean Time to Enhance, Signal Enhancement Ratio, Maximum Slope Increase, Maximum Difference Function, Correlation Coefficients, Diffusion Tensor, and 2D/3D CSI.
- MR Pasting automated integration of multi-station exams into a single image.
- Image Fusion overlays multiple images from separate acquisitions on one another for enhanced visualization.
- BrainStat GVF automated calculation of parametric maps for Cerebral Blood Flow, Blood Volume, Mean Transit Time and Time to Peak signal intensity using a gamma variant fitting algorithm.
- BrainStat AIF calculation of parametric maps for Cerebral Blood Flow, Blood Volume, Mean Transit Time and Time-to-Peak signal intensity using an automated or manually specified arterial input function algorithm.

Silent Neuro Exam comprises a comprehensive set of sequences designed to generate high-resolution images with T1, T2, T2 FLAIR, and PD-weighted contrasts. The Silenz imaging sequence delivers 3D isotropic images with T1 or PD contrast with sound levels that are within 3dB of the ambient conditions. Newly enhanced gradient waveforms have been employed to minimize the acoustic signature of FSE, 3D Cube, and PROPELLER-based acquisitions to generate T2 and T2 FLAIR weighted images. In addition, the localizer, Prescan, and calibration sequences have been optimized as well to deliver a complete Neuro exam at nearly silent levels.

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Item No.	Qty	Description
2	1	Optima MR450w with GEM Magnet Design

To improve the patient experience and provide high image quality, no other component of an MRI system has greater impact than the magnet. The Optima MR450w system features a short, wide bore magnet that delivers a large field of view. The magnet geometry has been optimized to reduce patient anxiety by providing more space in the bore and more exams with the patient's head outside of the magnet. The 50cm field of view provides uniform image quality and can reduce exam times since fewer acquisitions may be necessary to cover large areas of anatomy. Complemented by GE's active shielding technology, the Optima MR450w has very flexible installation specifications to provide easy siting. And with zero-boil-off magnet technology, helium refills are effectively eliminated, thus reducing operating costs and maximizing uptime.

Magnet:

- Manufactured by GE Healthcare.
- Operating field strength 1.5T (63.86 MHz).
- Active magnet shielding.
- Zero boil-off Cryogens.
- Magnet length 145cm.
- Patient Aperture 76 cm.
- Patient Bore Diameter 70cm.
- Patient Bore Length 105cm.
- Maximum Field of View 50 cm x 50 cm x 50 cm.

Magnet Homogeneity: Typical ppm and Guaranteed ppm shown.

- 10cm DSV 0.007 and 0.02.
- 20cm DSV 0.035 and 0.06.
- 30cm DSV 0.11 and 0.18.
- 40cm DSV 0.5 and 0.7.
- 45cm DSV 1.2 and 1.6.
- 50x50x45cm 2.3 and 3.6.
- 50cm DSV 3.3.

DSV = Diameter Spherical Volume. Homogeneity for an elliptical volume of 50cm (x,y) by 45cm (z) dimension volume is shown for reference. Fringe field (axial x radial):

- 5 Gauss = 4.0 m x 2.5 m.
- 1 Gauss = 6.2 m x 3.7 m.

Quiet Technology: GE has implemented Quiet Technology on critical components of

Item No.	Qty	Description
		the Optima MR system to reduce acoustic noise and improve the patient environment. This technology enables full use of the eXtreme Gradient Platform for excellent image quality, while maintaining a safe environment for the patient. The technology encompasses the gradient coil, RF body coil, and magnet mounting.
3	1	Preinstallation Collector and Cable Concealment Kit The Preinstallation Collector delivers to the site in advance of the magnet and main electronic components. This facilitates the later delivery and installation of supporting electronics. The following are the main components in the Preinstallation collector: • Heat exchange cabinet for distribution of chilled water. • Primary Penetration wall panel for support of the penetration cabinet. • Secondary Penetration wall panel for support of gradient filters, helium cables, and chilled air and water. • Helium cryocooler hose kit. The Cable Concealment Kit accommodates a wide-range of scan room ceiling heights and is designed to provide a clean-look installation by concealing the overhead cabling from view.
4	1	MR450w Dock and 32-Channel Switch Collector The MR450w Dock and 32-Channel Switch collector provides the interface between the magnet and GEM Express Patient Table with IntelliTouch. Also included is the RF signal switching hardware that routes the input signals to the respective OpTix receivers.
5	1	Optima MR450w Cable Configuration - A To accommodate various electronic and scan room configurations and sizes, the MR450w has preset lengths of cables and connector kits to speed system installation. This cable collection is compatible with fixed and relocatable building configurations.
6	1	Vibroacoustic Damping Kit Material in the Vibroacoustic Damping Kit can significantly attenuate the transmission of gradient-generated acoustic noise through the building structure to nearby areas, including adjacent rooms and floors above or below the MR suite. If this kit is applied during the installation of a new magnet, no additional service charges are necessary. However, installation of the Vibroacoustic Damping kit under an existing magnet requires special steps. The steps to prepare the site and steps to install, such as modifications to the RF screen room, and other magnet rigging, modifications to the RF screen room, and other finishing work, are not covered in the pricing.

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Item No.	Qty	Description
7	1	Main Disconnect Panel The Main Disconnect Panel safeguards the MR system's critical electrical components, by providing complete power distribution and emergency-off control.
8	1	English Keyboard Required for our operator console. This keyboard is ergonomically designed to keep your staff comfortable even through the longest shifts. The scan control keyboard assembly has an intercom speaker, microphone, volume controls and emergency stop switch.
9	1	1.5T Calibration Phantom Kit This 1.5T calibration kit contains a large volume shim phantom, a daily quality assurance phantom, an echo-planar calibration phantom, and the associated loader shells.
10	1	Calibration Kit Phantom Holder Cart
11	1	Spectroscopy Elite Package • PROBE-PRESS and STEAM Single Voxel Spectroscopy • PROBE 2D CSI • PROBE 3D CSI PROBE-PRESS and STEAM Single-Voxel Spectroscopy allows you to non-invasively evaluate the relative concentrations of invivo metabolites. It lets you acquire and display volume localized, water-suppressed 1H spectra in single-voxel mode. This package includes PROBE P (PRESS) and PROBE-S (STEAM) pulse sequences, as well as automated reconstruction, acquisition set-up and graphic prescription of spectroscopic volumes. PROBE 2D CSI expands proton brain spectroscopy capability enabling simultaneous acquisition of multiple in-plane voxels. PROBE 2D CSI uses the PRESS pulse sequence to acquire and display volume-localized, water suppressed 1H spectra in a multi-voxel mode for the non-invasive assessment of invivo metabolites. Metabolite maps are automatically generated in FuncTool on the operator console. PROBE 3D CSI extends your PROBE-P 2D CSI spectroscopic capabilities by allowing you to perform 3-dimensional multi-voxel acquisitions. Post-processing, including the creation of metabolite maps, is automatically generated with FuncTool Performance Package (included as part of ScanTools).
12	1	Neuro Expert Package

Item No.	Qty	Description

- eDWI
- SWAN
- DTI
- FiberTrak

The eDWI application includes the acquisition sequence and post-processing tools. It is designed to provide high signal-to-noise-ratio diffusion images of the brain and liver with short-acquisition time. Its multi-B feature is designed to provide measurement of apparent diffusion coefficient (ADC) map with reduced effect of perfusion. In addition, "3 in 1" B value combining technique, applies diffusion weighting to all three gradients simultaneously, helping improve sensitivity. Its smart NEX feature significantly reduces the acquisition time. Inversion recovery has been deployed to provide robust fat suppression.

SWAN is a volumetric 3D acquisition technique that is sensitive to differences in susceptibility between different tissues. This technique acquires multiple-echoes at different echo times to highlight regions with increased T2* (susceptibility-induced) decay. Utilizing multiple-echoes, SWAN generates images with higher SNR when compared with similar techniques that rely on a single echo.

Diffusion Tensor Imaging (DTI) creates contrast based on the degree of diffusion anisotropy in cerebral tissues such as white matter. The DTI method expands Echo planar imaging capability to include diffusion imaging sequence using motion sensing gradient pulses along 6 to 155 orientations in order to generate tensor component images. With the Express Workflow, fractional anisotropy (FA) and Volume Ratio Anisotropy (VRA) maps may be automatically created after image acquisition without any user intervention.

FiberTrak is a host computer post processing tool expands the capability of Diffusion Tensor imaging by generation of 2D color orientation maps, 2D eigenvector maps, and 3D tractography maps from the diffusion tensor image data. The resulting datasets may be easily saved and archived for later use.

13 1 Angio-Vascular Expert Package

- Inhance Suite 2.0
- TRICKS
- Flow Analysis

The Inhance Suite application consists of several sequences designed to provide high-resolution images of the vasculature with short-acquisition times and excellent vessel detail. These sequences include: Inhance Inflow IR: Inhance Inflow IR is an angiographic method, which has been developed to image renal arteries with ability

Item No.	Qty	Description

to suppress static background tissue and venous flow. This sequence is based on 3D FIESTA, which improves SNR, as well as produce bright blood images.

Inhance 3D Velocity: Inhance 3D Velocity is designed to acquire angiography images in brain and renal arteries with excellent background suppression in a short scan time. By combining a volumetric 3D phase contrast acquisition with parallel imaging, efficient k-space traversal, and pulse sequence optimization, Inhance 3D Velocity is capable of obtaining complete Neurovascular imaging in 5-6 minutes.

Inhance 3D Deltaflow is a 3D non-contrast enhanced MRA application for peripheral arterial imaging. Inhance 3D Deltaflow is based on the 3D Fast Spin Echo technique and it utilizes the systolic and diastolic flow differences to help generate arterial signal contrast. A subtraction of the systolic phase from the diastolic phase images results in arterial only images, with venous and background suppression.

Inhance 2D Inflow: The Inhance 2D Inflow pulse sequence is designed to acquire angiography images of arteries, which follow almost a straight path, i.e. femoral, popliteal, carotid arteries, etc.

TRICKS provides high resolution multi-phase 3D volumes of any anatomy for fast accurate visualization of the vasculature. With segmented complex data recombination, TRICKS can accelerate 3D dynamic vascular imaging without compromising spatial detail. TRICKS also uses elliptic centric data collection for optimized contrast resolution and auto-subtraction for optimized background suppression. The result is time course imaging that does not require timing or triggering, provides high temporal and high spatial resolution, and enables the extraction of optimum phases of data. As a result, TRICKS enables reliable, high quality vascular imaging.

Flow Analysis automates the review and analysis of gated phase contrast magnetic resonance (MR) images and generates a report for the referring physician. This version is available on the host computer.

Flow Analysis has an automated edge detection algorithm that propagates through all the phases of the cine phase contrast series.

The flow analysis measurement tab displays a summary chart of peak velocities in addition to individual velocity results from each phase of the cardiac cycle. A background correction may also be applied which is particularly suited to slow flowing fluid such as cerebrospinal fluid.

Customizable Macros are a feature of Flow Analysis 4.0. These Marcos allow the user to quickly write a report specific to the patient being assessed with simple mouse clicks. The macros are customizable to reflect the language used by the reporting physician.

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Item No.	Qty	Description
		Flow Analysis offers the capability to archive reports or cine images as seen in a DICOM format so they may be viewed on any DICOM viewer.
14	1	Body Expert Package • IDEAL & Flex • StarMap IDEAL and Flex generates consistent tissue contrast and reduces the number of series in an exam. The IDEAL acquisition and reconstruction methods can generate a water-only, fat-only, in-phase and out-of-phase data sets for clear tissue differentiation in a single series. In addition, susceptibility artifacts common to MR imaging such as incomplete or inaccurate fat saturation, and chemical shift can be eliminated. The IDEAL application acquires multiple echoes and uses unique reconstruction routines to generate the four image contrasts and correct for errors due to tissue susceptibility. For fast T1w multi-phase imaging of the abdomen and pelvis, LAVA Flex acquisition uses 2D ARC parallel imaging to reduce artifacts from breath hold misregistration and incorrect FOV placement while providing up to four types of T1w-based tissue contrasts: water-only, fat-only, in-phase and out-of-phase. For fast T1w multi-phase imaging of the breast, VIBRANT Flex acquisition uses 2D ARC parallel imaging to enable higher acceleration factors over ASSET parallel imaging, and reduce artifacts from breath hold misregistration and eliminates artifacts due to incorrect FOV placement, while providing up to four types of T1w-based tissue contrasts: water-only, fat-only, in-phase and out-of-phase. VIBRANT Flex requires VIBRANT, which must be purchased separately. StarMap enables the acquisition of multiple gradient echo images at each 2D slice at a range of echo-times. The resultant images can be processed using FuncTool to provide T2* maps within the anatomy of interest.
15	1	FOCUS FOCUS delivers a highly efficient method for increasing the resolution in Single Shot DW EPI sequences. The outcome delivers robust high resolution results while removing artifacts typically induced from motion, image backfolding or unsuppressed tissue. In addition, with the higher efficiency of the application, the reduced field of view imaging leads to a reduction in blurring that translates into an overall improvement to the image quality result. The sequence utilizes 2D selective excitation pulses in DW-EPI acquisitions to limit the prescribed phase encoded field of view at both 1.5T and 3.0T field strengths.

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Item No.	Qty	Description
16	1	3D PROMO 3D PROMO provides a real time 3D navigator based motion correction algorithm correcting for the six rigid body terms where re-acquisition of severely corrupted data provides robust, high quality, motion free, 3D outcomes. 3D PROMO is compatible with both T2 and T2 FLAIR Cube acquisitions.
17	1	IDEAL IQ IDEAL IQ is an acquisition and reconstruction software package that generates water and fat images, relative fat concentration, and R2* relaxation maps. This technique builds upon GE's IDEAL (Iterative Decomposition of water and fat with Echo Asymmetry and Least-squares estimation) technology by incorporating a fast, volumetric multi-echo imaging sequence and an enhanced reconstruction algorithm to improve the visualization of regional fat deposits in-vivo. IDEAL IQ incorporates the following features and functionality: • A fast, multi-echo 3D gradient echo imaging sequence to generate volumetric data. • Parallel imaging to improve acquisition speed and allow breath hold acquisitions. • A low flip angle excitation scheme to reduce T1 bias in the fat, water, and fat fraction maps. • Multi-echo reconstruction processing to calculate R2* decay rate maps. • Magnitude fitting to reduce the influence of phase errors due to system imperfections. • A multi-peak fat model to account for the multiple resonant peaks of fat. • Fully automated, generation and storage of R2* corrected fat and water maps, fat fraction maps, and R2* maps from the data acquired. The IDEAL IQ reconstruction generates R2* corrected fat and water maps as well as an R2* map depicting the signal decay at each voxel in the image. Water and fat images produce the fat fraction map, a relative measure of the quantity of fat to total signal (water and fat signal combined) at each voxel in the image. The fat fraction image is scaled such that a full-scale value represents a voxel containing only fat while a value of zero represents no fat in that voxel.
18	1	MAVRIC SL MAVRIC SL is a new advanced magnetic resonance imaging technique for imaging soft tissue and bone near MR conditional metallic devices. MAVRIC SL is designed to greatly reduce susceptibility artifacts, compared to conventional fast spin echo techniques, and is suitable for use on all patients cleared for MR exams.

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Item No.	Qty	Description
19	1	MR-Touch MR-Touch is a non-invasive method to measure relative tissue stiffness with MR. MR-Touch is a new acquisition and reconstruction technique that combines hardware, and acquisition and reconstruction algorithms to produce Elastograms, color-coded anatomical images showing varying degrees of elasticity or stiffness. The image contrast is related to relative stiffness of soft tissue and is generated from the real-time data acquisition during tissue palpation with low amplitude and low frequency sound waves. The hardware component is comprised of an active sound wave generator and a passive transducer that produces small vibrations in the area of the patient to be scanned. The MR-Touch acquisition software is an evolutionary improvement to the gradient echo sequence. The acquisition software also triggers the sound wave generator to produce synchronized vibrations on the surface of the patient during the data acquisition. The reconstruction algorithms generate images that show the propagation of sound waves through the tissue (phase images) and also the corresponding strain wave and relative stiffness images. Parallel imaging is used to accelerate image acquisition and provide for whole liver coverage in a few breath holds. MR-Touch is designed to evaluate relative liver and muscle tissue stiffness. MR-Touch is compatible with the Optima MR450w, Discovery MR450, and HDxt 23.0 1.5T systems.
20	1	1.5T MSK Coil 2-Pak for MR450w GEM The MSK Coil 2-Pak for MR450w GEM includes the following: • 8-channel Foot and Ankle Array • 8-channel GEM Wrist Array The 1.5T compatible foot/ankle coil produces high-resolution images of the foot and ankle by incorporating an 8-channel phased array design in a unique "ski" boot design. The unique coil design has excellent distal coverage and supports multiple foot positions for optimizing studies. Parallel imaging is supported to reduce acquisition times. The 8-Channel GEM Wrist Array generates high definition images of the hand and wrist. The one-piece, ovoid, hinged design is optimal for small-FOV imaging and provides 12-cm S/I coverage. The coil can be positioned overhead or at the patient's side in either a vertical or horizontal orientation. The array is compatible with PURE processing for uniform signal intensity, and ASSET and ARC parallel imaging methods for accelerated acquisition speed.

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Item No.	Qty	Description
21	1	Medrad Spectris Solaris EP MR Injection System Medrad Spectris Solaris EP MR injector for use use in all MR scanner field strengths up to and including 3.0T. Optimized touch-screen for fewer keystrokes, KVO (keep vein open) allows patient to be prepared before beginning the scan. Larger 115 ml saline syringe for longer KVO or multiple flushes. Includes cables and starter kit...E NOTE: GE is responsible for unpacking, assembly, and installation of equipment. Medrad will be available for technical assistance by phone at (412)767-2400. An additional charge will apply for on-site installation assistance. Medrad will be responsible for operational checkout, final calibration, in-service of the equipment, and initial applications training. Please contact the local Medrad office two weeks in advance of installation.
22	1	Magnacoustics Genesis ULTRA Communication & Music System The Magnacoustics Genesis ULTRA is the only MRI Communication & Music System to interface directly with GE's MRI hardware and software. This allows software driven Auto Voice Commands from GE's computer to be delivered directly into the patient's ears for breath-hold sequences. This same interface allows the Technologist to talk directly to the patient through the console Mic even while the scan is in progress. The Genesis ULTRA also features an exclusive Patient Ready Signal. By simply depressing a small button on the handheld control an audible and visual signal is transmitted to the Technologist indicating the patient's readiness for the scan to begin. This simple step streamlines the breath-hold exam which amounts to approximately 30% of all exams. Patient Handheld Volume and Media Selection Controls with Voice Feedback interface with an FM/AM stereo, CD player, and iPod interface. This distracts even the most apprehensive of your patients by allowing them to be in control of their own environment. Additionally, the Auto Gain feature automatically raises and lowers the volume level for the patient based on the Sound Pressure Level of the MRI. Magnacoustics also provides the only patented 8-driver transducer that provides the highest sound directly to the patients ears with the MagnaLink Headset System. This patented system includes a stethoscope-style headset with the MagnaPlug (replaceable earplug) that provides 29dB of attenuation and complies with GE Healthcare MR Safety Guide Operator Manual. The Genesis ULTRA's See-In-the-Dark GUI Electroluminescent Backlit Technologist Control Unit enhances operation in the normally low-lit MRI environment allowing the Technologist to operate the entire system with the touch of a button. The Genesis ULTRA includes an integral interface for fMRI with built-in input for audio stimulation and output for responses...E
23	1	TiP Discovery and Optima Family Training 6 Days Onsite Plus 10 Hrs TVA

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Item No.	Qty	Description
		The TiP Training Choices program is designed for CURRENT GE customers WITH HD/HDx experience who purchase a Discovery or Optima system. Training is delivered onsite at the customer's facility and focuses on new system features and applications. Extended TVA support ensures learners maintain performance over the long term. This training program must be scheduled and completed within 36 months after the date of product delivery.
24	1	TiP Applications Onsite ACR Accreditation Program The TiP Applications onsite ACR accreditation program is designated to provide the learner with the skills necessary to successfully complete the ACR accreditation program. This training program assumes a base working knowledge of the GE MR system on which training will take place. This program is applicable to any GE MR system of any field strength. Onsite training provided from 8AM to 5PM, Monday through Friday. Includes T&L expenses. This training program must be scheduled and completed within 12 months after the date of product delivery.
25	1	TiP Applications Onsite MR Training 2 Days per year over 3 Years Two consecutive days of TiP Applications Onsite MR training presented during the 2nd, 3rd, and 4th year after system purchase. Onsite training provided from 8AM to 5PM, Monday through Friday. Includes T&L expenses.
26	1	Discovery MR750/MR450 and Optima MR450w Full Service Class and Lab This 9-day training program will be available to all MR Service Engineers with sites upgrading to Discovery MR750, Discovery MR450 and Optima MR450w, as well as those receiving Discovery MR750, Discovery MR450 and Optima MR450w as part of forward production. The Discovery MR750, Discovery MR450 and Optima MR450w System class/lab provides the instructional and hands-on opportunities for the student to acquire the fundamental competencies to effectively and safely service the Discovery MR750, Discovery MR450 and Optima MR450w Systems.

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Item No.	Qty	Description
		3D ASL
	1	**MR Promotions**
27	3	3D ASL (Arterial Spin Labeling) for MR750/MR450 3D ASL utilizes water in arterial blood as an endogenous contrast media to help visualize tissue perfusion and provide quantitative assessment of cerebral blood flow (CBF) in ml/100 g/min. The quantitative CBF maps can be generated and stored in DICOM format. 3D ASL deploys stacked spiral FSE readout with modulated flip angle to acquire 3D data with increased SNR and less image distortion compared to conventional 2D EPI-based ASL techniques. A pulsed-continuous labeling is applied to label arterial blood close to the imaging volume thus improving conspicuity of flowing blood. Selective, interwoven pulses are then used to saturate and invert the imaging volume, in order to achieve better background suppression, and reduce sensitivity to motion. The isotropic 3D volume data can be reformatted to axial, sagittal, coronal or oblique planes. 3D ASL helps generate robust, reproducible images and perfusion maps with high SNR, reduced motion artifacts and less distortion in high magnetic susceptibility regions.

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Item No.	Qty	Description
		CMC Mercy Software
	1	**Optima MR450w 1.5T IB Options**
28	1	MR450w 24.0 Software and Tech Pubs
29	1	FOCUS FOCUS delivers a highly efficient method for increasing the resolution in Single Shot DW EPI sequences. The outcome delivers robust high resolution results while removing artifacts typically induced from motion, image backfolding or unsuppressed tissue. In addition, with the higher efficiency of the application, the reduced field of view imaging leads to a reduction in blurring that translates into an overall improvement to the image quality result. The sequence utilizes 2D selective excitation pulses in DW-EPI acquisitions to limit the prescribed phase encoded field of view at both 1.5T and 3.0T field strengths.
30	1	3D PROMO 3D PROMO provides a real time 3D navigator based motion correction algorithm correcting for the six rigid body terms where re-acquisition of severely corrupted data provides robust, high quality, motion free, 3D outcomes. 3D PROMO is compatible with both T2 and T2 FLAIR Cube acquisitions.
31	1	Diffusion Tensor Imaging Diffusion Tensor imaging (DTI) creates contrast based on the degree of diffusion anisotropy in cerebral tissues such as white matter. The DTI method expands Echo planar imaging capability to include diffusion imaging sequence using motion sensing gradient pulses along 6 to 155 orientations in order to generate tensor component images. With the Express Workflow, fractional anisotropy (FA) and Volume Ratio Anisotropy (VRA) maps may be automatically created after image acquisition without any user intervention.
32	1	PROBE-PRESS and STEAM Single-Voxel Spectroscopy PROBE-PRESS and STEAM Single-Voxel Spectroscopy for EXCITE allows you to non-invasively evaluate the relative concentrations of invivo metabolites. It lets you acquire and display volume-localized, water-suppressed 1H spectra in single-voxel mode. This package includes PROBE-P (PRESS) and PROBE-S (STEAM) pulse sequences, as well as automated reconstruction, acquisition set-up and graphic prescription of spectroscopic volumes.

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Item No.	Qty	Description
		Extra HNU and AA Arrays
	1	**Optima MR450w 1.5T IB Options**
33	1	MR450w GEM Head and Neck Unit with Comfort Tilt

The GEM Head and Neck Unit (HNU) is a component of the GEM Suite. The HNU consists of four imaging components, a HNU Base Plate and three anatomy-optimized anterior components. The inclusion of separate anterior components ensure that the geometry of the surface coil matches the geometry of the patient to improve both image quality and patient comfort. The three anterior components are the Neuro Vascular Array, a dedicated Cervical Array, and the Open Face Adapter.

The HNU Base Plate supports the patient's head and includes three rows of elements separated in both the superior/inferior and right/left dimensions. Any of the three separate anterior arrays may be connected to the Base Plate.

The Comfort Tilt is a variable-degree ramp that may be positioned under the HNU. The Comfort Tilt can elevate the superior end of the coil to match the curvature of the patient's head and thoracic spine angulations. The operator may easily adjust the angle of tilt with a single motion.

The HNU Base Plate, Comfort Tilt, and any of the anterior components may be positioned at either end of the GEM Express Patient Table to support head-first or feet-first imaging. The HNU Base plate may remain in place for all body, vascular, spine, and the majority of musculoskeletal exams for either patient orientation.

GEM Head and Neck Unit Coil Specifications:

- Length: 49.5 cm (19.5 in).
- Width: 38.8 cm (15.3 in).
- Height: 36.8 cm (14.5 in).
- Height: 33.6cm (13.2in) with Cervical Array.
- Height: 25.7cm (10.1in) with Open Face Adapter.
- Weight: 8.8kg (19.4 lb).
- S/I Coverage: 42 cm.
- R/L Coverage: 50 cm.
- Head or feet-first imaging.
- Elements: up to 28 elements in the field of view.

The GEM HNU is designed to be used in conjunction with the GEM Anterior Array, the GEM Small Anterior Array and the GEM Peripheral Vascular Array (each purchased separately). In addition, the HNU may co-reside with a many dedicated

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Item No.	Qty	Description
		anatomy-specific coils to further reduce the number of coil exchanges between exams. Additional GEM HNU coils may be purchased for use in additional patient tables.
34	1	MR450w GEM Anterior Array The GEM Anterior Array (AA) is a standard component of the GEM Suite that facilitates chest, abdomen, pelvis, and cardiac imaging. The GEM AA is lightweight, flexible, thin, and pre formed to conform to the patient's size and shape. With 54 cm of S/I coverage, the coil permits upper abdominal and pelvic imaging without repositioning the patient or the coil. GEM Anterior Array Specifications: • Length: 56.2 cm (22.1 in). • Width: 69.8 cm (27.5 in). • Height: 4.4 cm (1.7 in). • Weight: 2.4 kg (5.3 lb) resting on patient. • Weight: 3.6 kg (7.9 lb) with cable. • S/I Coverage: 54 cm. • Head or feet-first imaging. • Elements: up to 36 elements in the field of view when used with the GEM Posterior Array. The GEM AA may also be used with the GEM Head Neck Unit and GEM Peripheral Vascular Array for additional anatomical coverage.

Quote Summary:

3D PROMO & FOCUS NPI	**($65,000.00)**
Openspeed 0.7T HFO5	**($10,000.00)**
Total Quote Net Selling Price	**$1,532,587.50**

(Quoted prices do not reflect state and local taxes if applicable. Total Net Selling Price Includes Trade In allowance, if applicable.)

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Options

(These items are not included in the total quotation amount)

Item No.	Qty	Description	Ext Sell Price
35	1	**Optima MR450w 1.5T GEM 24.0** MR450w GEM Head and Neck Unit with Comfort Tilt The GEM Head and Neck Unit (HNU) is a component of the GEM Suite. The HNU consists of four imaging components, a HNU Base Plate and three anatomy-optimized anterior components. The inclusion of separate anterior components ensure that the geometry of the surface coil matches the geometry of the patient to improve both image quality and patient comfort. The three anterior components are the Neuro Vascular Array, a dedicated Cervical Array, and the Open Face Adapter. The HNU Base Plate supports the patient's head and includes three rows of elements separated in both the superior/inferior and right/left dimensions. Any of the three separate anterior arrays may be connected to the Base Plate. The Comfort Tilt is a variable-degree ramp that may be positioned under the HNU. The Comfort Tilt can elevate the superior end of the coil to match the curvature of the patient's head and thoracic spine angulations. The operator may easily adjust the angle of tilt with a single motion. The HNU Base Plate, Comfort Tilt, and any of the anterior components may be positioned at either end of the GEM Express Patient Table to support head-first or feet-first imaging. The HNU Base plate may remain in place for all body, vascular, spine, and the majority of musculoskeletal exams for either patient orientation. GEM Head and Neck Unit Coil Specifications: • Length: 49.5 cm (19.5 in). • Width: 38.8 cm (15.3 in). • Height: 36.8 cm (14.5 in). • Height: 33.6cm (13.2in) with Cervical Array. • Height: 25.7cm (10.1in) with Open Face Adapter. • Weight: 8.8kg (19.4 lb). • S/I Coverage: 42 cm.	$35,150.00

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Item No.	Qty	Description	Ext Sell Price
		• R/L Coverage: 50 cm. • Head or feet-first imaging. • Elements: up to 28 elements in the field of view. The GEM HNU is designed to be used in conjunction with the GEM Anterior Array, the GEM Small Anterior Array and the GEM Peripheral Vascular Array (each purchased separately). In addition, the HNU may co-reside with a many dedicated anatomy-specific coils to further reduce the number of coil exchanges between exams. Additional GEM HNU coils may be purchased for use in additional patient tables.	
36	1	MR450w GEM Anterior Array The GEM Anterior Array (AA) is a standard component of the GEM Suite that facilitates chest, abdomen, pelvis, and cardiac imaging. The GEM AA is lightweight, flexible, thin, and pre formed to conform to the patient's size and shape. With 54 cm of S/I coverage, the coil permits upper abdominal and pelvic imaging without repositioning the patient or the coil. GEM Anterior Array Specifications: • Length: 56.2 cm (22.1 in). • Width: 69.8 cm (27.5 in). • Height: 4.4 cm (1.7 in). • Weight: 2.4 kg (5.3 lb) resting on patient. • Weight: 3.6 kg (7.9 lb) with cable. • S/I Coverage: 54 cm. • Head or feet-first imaging. • Elements: up to 36 elements in the field of view when used with the GEM Posterior Array. The GEM AA may also be used with the GEM Head Neck Unit and GEM Peripheral Vascular Array for additional anatomical coverage.	$20,350.00
37	1	GE MR Heat Exchanger Manual Cryogen Compressor Water Bypass Option Add a level of magnet protection with a Manual Cryogen Compresor Bypass. In case of a power failure, you can cycle municipal or facility water through the cryogen compresor and reduce cryogen loss and reduce the likelihood of quenching.	$5,000.00

Quotation Number: PR10-C14373 V 4

Item No.	Qty	Description	Ext Sell Price
		FEATURES AND BENEFITS • Easy to install and simple to use • Helps switch over water supply to your cryogen compressor in the event of loss of power to reduce cryogen loss • Includes fluid supply pressure gauge, temperature gauge and flow rate meter for easy verification of operation • Manual operation reduces unintentional switch-overs and coolant dumping during brown-outs and supply power glitches COMPATIBILITY Must be used with a GE MR Heat Exchanger: • E8911CA • E8911CB • E8911CC • E8911CD • E8912CA • E8912CB • E8912CC • E8912CD NOTES: • Item is NON-RETURNABLE and NON-REFUNDABLE	
38	1	GE Optima MR450w Heat Exchangers - 49kW (20 Tons) Cooling for your GE Healthcare MR system has never been so easy. GE Healthcare has partnered with the Glen Dimplex Group, a world leader in cooling systems, to offer heat exchangers designed to meet the needs of your Discovery MR System. Now you can look to GE Healthcare for your entire MR purchase and support. This heat exchanger is highly reliable and the only unit verified to perform with the new platform of GE Healthcare MR systems. As part of your integrated GE Healthcare solution, you'll work with a single contact throughout the whole installation. A Project Manager of Installation will help with building layout, room designs, delivery and installation - every step until your system is ready to scan. Our team will work seamlessly with architects, contractors and your	$45,000.00

Item No. Qty	Description	Ext Sell Price

internal team to help ensure timely, cost-effective completion.

Once your cooling system is running, you'll get fast, highly-skilled service support managed through GE Healthcare - with the same quality and response time you expect from your MR system.

FEATURES AND BENEFITS

- Designed to provide stable fully dedicated cooling for your MR system's needs
- Water/glycol outdoor-air-cooled heat exchangers to support your highest exam volumes and your full range of diagnostic procedures
- Redundant fluid pumps with automatic switchover let you keep operating with no loss of cooling even if one pump goes down
- Quad compressor, dual tandem refrigeration circuit design saves on energy while your system smoothly transitions through the 10% to 100% heat load capacity cycles of patient scanning and idling
- Quiet operation between patient exams and overnight - ideal for facilities in residential areas
- Comes with installation support, installation visits, preventative maintenance visit and 1 full year of parts and labor warranty
- Installation support includes: support through GE's Project Manager of Install, GE's Design Center, technical support from the Glen Dimplex company, two (2) installation visits
- Comprehensive and quality service rapidly delivered through our CARES service solution
- 65 gallons of 100% glycol concentrate for complete system filling and diluting
- Wall mounted remote display panel provides the ability to monitor the system's operation and indicates possible system errors
- Filter kit with flow meter helps to ensure purity of water prior to entry to the MR system
- Highly recommended that Vibration Isolation Spring Kit (E8911CJ) be added for systems that will be roof top mounted

SPECIFICATIONS

Quotation Number: PR10-C14373 V 4

Item No.	Qty	Description	Ext Sell Price

- Net Cooling Capacity: 49 kW / 20 Ton
- Maximum Coolant Flow: 35 gpm (132 l/m)
- Coolant Outlet Temperature: 48 F (8.9 C)
- Coolant Temp Stability: E 1.8 F (E1.0 C)
- Max Coolant Pressure : 70 Psi (4.8 Bar)
- Refrigerant: R407C
- Ambient Temp Range: -20 to 120 F (-30 to 50 C)
- Condenser Air Flow (Approx): 18,000 Cfm
- Tank Capacity: 100 gal (378 l)
- Flow Meter Range: 4-40 gpm
- Filters: 50 micron cartridge filters
- Supply Voltage: 460v / 3 phase / 60 Hz
- Coolant Connections: 2" NPTF
- Overall Size (L x W x H) 44" x 136" x 84.5"

COMPATIBILITY:

- GE Optima MR450w 1.5T MR System

NOTES:

- Item is NON-RETURNABLE and NON-REFUNDABLE

(Quoted prices do not reflect state and local taxes if applicable. Total Net Selling Price Includes Trade In allowance, if applicable.)

GE Healthcare

For Third Party Products and Services Only: If GE Healthcare has agreed to provide any third party products and/or services (other than GE Healthcare accessories and supplies) to Customer as part of the Quotation, including but not limited to any Commitment Account/Non-Inventory items, (i) GE Healthcare is acquiring such products and/or services on Customer's behalf and not as a supplier of such products and/or services; (ii) GE Healthcare makes no warranties of any kind, express or implied, with respect to such products and/or services (warranties, if any, on such products and/or services will be provided by the manufacturer or service provider, as applicable); (iii) Customer is solely responsible for ensuring that the acquisition and use of such products and/or services is in compliance with applicable laws and regulations, including applicable FDA regulations; and (iv) Customer is solely responsible for any and all claims resulting from or related to the acquisition or use of such products and/or services.

For Mobile Systems Only: For products that are approved by GE Healthcare for use as transportable, relocatable and mobile systems, GE Healthcare will deliver the system to Customer's van manufacturer and furnish final assembly services to place the system in Customer's van. At the time of order, Customer must notify GE Healthcare of the van manufacturer to which the system is to be shipped. It is Customer's responsibility to make arrangements with the van manufacturer for delivery of the van and to comply with any additional planning requirements of the van manufacturer. For MR systems, GE Healthcare's product tests will be performed when assembly in the van is completed and MR system operation will be re-checked when the van is delivered to Customer.

For MR Products Only:

a. MR Systems. Customer will provide a site and surroundings suitable for installation and operation of an MR system producing strong magnetic and electric fields, and Customer will be required to provide a water chiller meeting GE Healthcare specifications.

b. Magnetic Resonance Imaging (MR) Site. Customer will provide a site and surroundings suitable for installation and operation of an MR system producing strong magnetic and electric fields, and Customer will be required to provide a water chiller meeting GE Healthcare specifications. Customer acknowledges that the magnetic fields of MR systems attract ferro-magnetic articles and are capable of rapidly accelerating such articles toward the magnet, creating corresponding physical danger to persons in the vicinity and possible damage to such systems. In addition, the magnetic and radio frequency fields of such systems may adversely affect the operation of pacemakers, equipment containing magnetic reed switches, and aneurysm or surgical clips.

c. Magnet Maintenance and Cryogens. The price of MR systems includes all cryogens necessary for final assembly and testing of the MR system. Cryogen loss attributable to power loss or water chiller failure for the MR system's shield cooler or condenser system during installation is Customer's responsibility, and Customer will be billed for cryogen replacement plus the associated cryogen transfill labor at GE Healthcare's then applicable rates. After final assembly, Customer will be responsible to supply and install all cryogens, unless cryogen loss is caused by a defect in material or workmanship within the scope of GE Healthcare's applicable MR system warranty. Following final assembly, provided cryogen boil-off rates have not been adversely affected by actions of Customer, its representatives or contractors, or any third party not authorized by GE Healthcare, GE Healthcare will provide a super-conductive magnet which, at the expiration of the warranty period, has cryogen boil-off rates not exceeding those stated in GE Healthcare's applicable magnet specifications. GE Healthcare has no responsibility to Customer for cryogen boil-off rates subsequent to expiration or termination of the applicable MR system warranty, unless Customer elects to receive magnet maintenance and cryogen service under a separate agreement with GE Healthcare.

For PET and PET/Cyclotron Systems Only: For PET Cyclotron/Chemistry systems, any target or gas processing system purchased with the system must be installed with the original system prior to system checkout. Installation after this time will require a separate quotation by GE Healthcare and is billable to Customer at GE Healthcare's then-current rates. Further, any system storage fees associated with this order are solely the responsibility of Customer. PET Cyclotron/Chemistry systems are sold for

General Electric Company, GE Healthcare Division
3200 N. Grandview Blvd., Mail Code WT-897, Waukesha, WI 53188

use in generating radiotracers for diagnostic imaging applications only. GE Healthcare does not sell or intend such systems or any part(s) thereof for use in radiation therapy.

For PET/CT and PET Radiopharmacy Sites Only: Customer will provide a site and surroundings suitable for installation and operation of such a systems using and/or producing radiation. Further, Customer will be responsible for obtaining all required federal, state, and local licenses and permits for radioactive sealed sources and radioisotopes used with such system. If permitted under applicable licensing requirements, GE Healthcare representatives will work under Customer's license and supervision when handling any radioactive substance for which a license is required, or Customer will provide such handling itself under an appropriate license. Customer will provide all radioactive sources and radioisotopes for calibration and performance checks of such system. Customer acknowledges that such systems utilize radioactive materials. As with all systems utilizing radioactive materials, hazards exist creating possible physical danger to persons in the vicinity.

For iCenter and iLinq Only: GE Healthcare will provide iCenter and/or iLinq information management Services at no additional charge during the term of the applicable product warranty, subject to then-applicable terms and conditions for such services.

For Healthcare IT Products Only:

a. Payment. Unless specified separately in the Quotation, fees for non-GE Healthcare software and hardware shall be due one hundred percent (100%) on delivery of the applicable software or hardware.

b. Audit Rights. Upon forty-five (45) days notice GE Healthcare may audit Customer's use of the software. Customer agrees to cooperate with GE Healthcare's audit and to provide reasonable assistance and access to information. If the audit uncovers underpaid or unpaid fees owe to GE Healthcare, Customer agrees to pay those fees and GE Healthcare's costs incurred in conducting the audit within thirty (30) days of written notification of the amounts owed. If Customer does not pay the amounts owed, GE Healthcare may terminate Customer's license to use the applicable software. Customer agrees to permit GE Healthcare to obtain certain reasonable information regarding the users and other use information regarding the software. All of such information shall be treated as confidential information, shall be used solely for the purposes of technical support and auditing the use of the software, and shall not be disclosed to any third party (other than third-party vendors of software licensed to Customer under this Agreement) without Customer's consent.

General Electric Company, GE Healthcare Division
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GE Healthcare General Terms and Conditions

GE Healthcare

References herein to "Products" and "Services" mean the Products (including equipment and software) and Services identified on the applicable GE Healthcare Quotation ("Quotation").

1. General Terms

1.1. Confidentiality. Each party will treat the terms of this Agreement and the other party's written, proprietary business information as confidential if marked as confidential or proprietary. Customer will treat GE Healthcare (and GE Healthcare's third party vendors') software and technical information as confidential information whether or not marked as confidential and shall not use or disclose to any third parties any such confidential information except as specifically permitted in this Agreement or as required by law (with reasonable prior notice to GE Healthcare). The receiving party shall have no obligations with respect to any information which (i) is or becomes within the public domain through no act of the receiving party in breach of this Agreement, (ii) was in the possession of the receiving party prior to its disclosure or transfer and the receiving party can so prove, (iii) is independently developed by the receiving party and the receiving party can so prove, or (iv) is received from another source without any restriction on use or disclosure.

1.2. Governing Law. The law of the state where the Product is installed or the Service is provided will govern this Agreement.

1.3. Force Majeure. Neither party is liable for delays or failures in performance (other than payment obligations) under this Agreement due to a cause beyond its reasonable control. In the event of such delay, the time for performance shall be extended as reasonably necessary to enable performance.

1.4. Assignment; Use of Subcontractors. Neither party may assign any of its rights or obligations under this Agreement without the prior written consent of the other party, which consent shall not be unreasonably withheld; provided, however, that either party may transfer and assign this Agreement without the other party's consent to any person or entity (except to a GE Healthcare competitor) that is an affiliate of such party or that acquires substantially all of the stock or assets of such party's applicable business if any such assignees agree, in writing, to be bound by the terms of this Agreement. Subject to such limitation, this Agreement shall be binding upon and inure to the benefit of the parties and their respective successors and permitted assigns. GE Healthcare may hire subcontractors to perform work under this Agreement, provided that GE Healthcare will at all times remain responsible for the performance of its obligations and duties under this Agreement.

1.5. Amendment; Waiver; Survival. This Agreement may be amended only in writing signed by both parties. Any failure to enforce any provision of this Agreement is not a waiver of that provision or of either party's right to later enforce each and every provision. The terms of this Agreement that by their nature are intended to survive its expiration (such as the confidentiality provisions included herein) will continue in full force and effect after its expiration.

1.6. Termination. If either party materially breaches this Agreement and the other party seeks to terminate this Agreement for such breach, such other party shall notify the breaching party in writing, setting out the breach, and the breaching party will have sixty (60) days following receipt of such notice to remedy the breach. If the breaching party fails to remedy the breach during that period, the other party may, subject to the terms of Section 1.4.5 of the GE Healthcare Product Terms and Conditions, terminate this Agreement by written notice to the breaching party. For the avoidance of doubt, this Agreement is not terminable for convenience and may only be terminated in accordance with this Agreement. If GE Healthcare determines in good faith at any time that there are legal or regulatory compliance and/or material credit issues with this Agreement, if any, GE Healthcare may terminate this Agreement (including warranty services hereunder) immediately upon written notice to Customer.

2. Compliance

2.1. Generally. This Agreement is subject to (i) GE Healthcare's on-going credit review and approval and (ii) GE Healthcare's on-going determination that Customer and this Agreement comply with all applicable laws and regulations, including those relating to workplace safety, FDA matters, Federal Healthcare Program Anti-kickback compliance, export/import control and money laundering prevention. CUSTOMER ACKNOWLEDGES THAT THE PRODUCTS ARE OR MAY BE SUBJECT TO REGULATION BY THE FDA AND OTHER FEDERAL OR STATE AGENCIES. CUSTOMER SHALL NOT USE OR PERMIT THE PRODUCTS TO BE USED IN ANY MANNER THAT DOES NOT COMPLY WITH APPLICABLE FDA OR OTHER REGULATIONS OR FOR ANY NON-MEDICAL, ENTERTAINMENT, OR AMUSEMENT PURPOSES. Further, Customer represents that it is purchasing the Products for its own use consistent with the terms of this Agreement and that it does not intend to re-sell the Products to any other party or to export the Products outside the country to which GE Healthcare delivers the Products.

2.2. Cost Reporting. Customer represents and warrants that it shall comply with (a) the applicable requirements of the Discount Statutory Exception, 42 U.S.C. 1320a-7b(b)(3)(A), and the Discount Safe Harbor, 42 C.F.R. § 1001.952(h), with respect to any discounts Customer may receive under this Agreement and (b) the Warranties Safe Harbor, 42 C.F.R. § 1001.952(g), with respect to any price reductions of an item (including a free item) which were obtained as part of a warranty under this Agreement. Customer agrees that, if Customer is required to report its costs on a cost report, then (i) the discount must be based on purchases of the same good bought within a fiscal year; (ii) Customer must claim the benefit in the fiscal year in which the discount is earned or in the following year; (iii) Customer must fully and accurately report the discount in the applicable cost report; and (iv) Customer must provide, upon request, certain information required to be provided to the Customer by GE Healthcare as a seller or offeror, as appropriate. If Customer is an individual or entity in whose name a claim or request for payment is submitted for the discounted items, the discount must be made at the time of the sale of the good; and the Customer must provide, upon request, certain information required to be provided to the Customer by GE Healthcare as a seller or offeror, as appropriate. GE

Healthcare agrees to comply with the applicable requirements for sellers or offerors under the Discount Safe Harbor, as appropriate.

2.3. Site Access Control and Network Security. Customer shall be solely responsible for establishing and maintaining security, virus protection, backup and disaster recovery plans for any data, images, software or equipment. GE Healthcare's Services do not include recovery of lost data or images. Customer shall comply with all applicable laws and regulations related to site access control.

2.4. Environmental Health and Safety. Customer shall provide and maintain a suitable, safe and hazard-free location and environment for the GE Healthcare Products and Services in material compliance with any written requirements provided by GE Healthcare, perform GE Healthcare recommended routine maintenance and operator adjustments, and ensure that any non-GE Healthcare provided Service is performed by, and GE Healthcare Products are used by, qualified personnel in accordance with applicable user documentation. GE Healthcare shall have no obligation to perform Services until Customer has complied with its obligations under this Section.

2.5. GE Healthcare-Supplied Parts. GE Healthcare can make no assurances that Product performance will not be affected by the use of non-GE Healthcare-supplied parts. In some instances, use of non-GE Healthcare-supplied parts may affect Product performance or functionality.

2.6. Training. Any Product training identified in the Quotation shall be in accordance with GE Healthcare's then-current training program offerings and terms. Unless otherwise stated in the catalog description, training must be completed within twelve (12) months after (i) the date of Product delivery for training purchased with Products and (ii) the start date for Services for training purchased with Services. If training is not completed within the applicable time period, GE Healthcare's obligation to provide the training will expire without refund.

2.7. Medical Diagnosis and Treatment. All clinical and medical treatment and diagnostic decisions are the responsibility of Customer and its professional healthcare providers.

3. Disputes; Liability; and Indemnity

3.1. Waiver of Jury Trial. EACH PARTY EXPRESSLY WAIVES ALL RIGHTS TO A JURY TRIAL IN CONNECTION WITH ANY DISPUTE ARISING UNDER THIS AGREEMENT.

3.2. Limitation of Liability. GE HEALTHCARE'S (AND ITS REPRESENTATIVES') LIABILITY UNDER THIS AGREEMENT, REGARDLESS OF THE FORM OF ACTION, SHALL NOT EXCEED: (A) FOR PRODUCTS OR SERVICES OTHER THAN SERVICES UNDER AN ANNUAL SERVICE CONTRACT, THE PRICE FOR THE PRODUCT OR SERVICE THAT IS THE BASIS FOR THE CLAIM; OR (B) FOR ANNUAL SERVICE CONTRACTS, THE ANNUAL CONTRACT PRICE FOR THE SERVICE THAT IS THE BASIS FOR THE CLAIM. NEITHER CUSTOMER NOR GE HEALTHCARE (NOR THEIR RESPECTIVE REPRESENTATIVES) SHALL BE LIABLE TO THE OTHER PARTY UNDER THIS AGREEMENT (OR OTHERWISE IN CONNECTION WITH THE PRODUCTS AND SERVICES) FOR ANY INDIRECT, SPECIAL, PUNITIVE, INCIDENTAL OR CONSEQUENTIAL DAMAGES, OR FOR LOSS OF PROFITS, REVENUE, TIME, OPPORTUNITY OR DATA, WHETHER IN AN ACTION IN CONTRACT, TORT, PRODUCT LIABILITY, STATUTE, EQUITY OR OTHERWISE. THE LIMITATION OF LIABILITY AND EXCLUSION OF DAMAGES SHALL APPLY EVEN IF THE LIMITED REMEDIES FAIL OF THEIR ESSENTIAL PURPOSE.

3.3. IP Indemnification. GE Healthcare will defend, indemnify and hold harmless Customer from any third party claims for infringement of intellectual property rights arising from Customer's use of GE Healthcare manufactured equipment and/or GE Healthcare proprietary software listed in the Quotation in accordance with their specifications and within the license scope granted in this Agreement. If any such claim materially interferes with Customer's use of such equipment and/or software, GE Healthcare shall, at its option: (i) substitute functionally equivalent non-infringing products; (ii) modify the infringing Product so that it no longer infringes but remains functionally equivalent; (iii) obtain for Customer at GE Healthcare's expense the right to continue to use the infringing Product; or (iv) if the foregoing are not commercially reasonable, refund to Customer the purchase price, as depreciated (based on five (5) year straight-line depreciation), for the infringing Product. Any such claims arising from Customer's use of such infringing Product after GE Healthcare has notified Customer to discontinue use of such infringing Product and offered one of the remedies set forth in clauses (i) through (iv) above are the sole responsibility of Customer. This Section represents Customer's sole and exclusive remedy (and GE Healthcare's sole and exclusive liability) regarding any infringement claim associated with such infringing Product. The above indemnification obligation is conditional upon Customer providing GE Healthcare prompt written notice of the infringement claim after receiving notice of such claim, allowing GE Healthcare to control the defense of such claim, and reasonably cooperating with GE Healthcare in such defense. Notwithstanding any other provision in this Agreement, GE Healthcare shall not have any obligation to Customer hereunder for infringement claims based on or resulting from: (a) use of such infringing Product in combination with any computer software, tools, hardware, equipment, materials, or services, not furnished or authorized in writing for use by GE Healthcare; (b) use of such infringing Product in a manner or environment or for any purpose for which GE Healthcare did not design or license it, or in violation of GE Healthcare's use instructions; or (c) any modification of such infringing Product by Customer or any third party. GE Healthcare shall not be responsible for any compromise or settlement or claim made by Customer without GE Healthcare's written consent. This indemnification obligation is expressly limited to the GE Healthcare manufactured equipment and/or GE Healthcare proprietary software listed in the Quotation.

4. Payment and Finance

4.1. Generally. The payment and billing terms for the Product(s) and/or Service(s) are stated in the Quotation.

4.2. Affiliate Billing. If Customer's order includes Products manufactured by more than one GE Healthcare affiliated company, each affiliated company may invoice Customer separately for the portion of the total price under the Quotation attributable to its Products, under the same payment terms specified in the Quotation. There shall be no additional fees or charges to Customer for such separate invoicing.

4.3. Late Payment. Failure to make timely payment is a material breach of this Agreement, for which (in addition to other available remedies) GE Healthcare may suspend performance under any or all GE Healthcare agreements until all past due amounts are brought current. If GE Healthcare so suspends, GE Healthcare will not be responsible for the completion of planned maintenance due to be performed during the suspension period and any product downtime will not be included in the calculation of any uptime commitment. Interest shall accrue on past-due amounts at a rate equal to the lesser of one-and-one-half percent (1.5%) per month or the maximum rate permitted by applicable law. Customer will reimburse GE Healthcare for reasonable costs (including attorneys' fees) relating to collection of past due amounts. Any credits that may be due to Customer under an agreement may be applied first to any outstanding balance. If Customer has a good faith dispute

regarding payment for a particular Product (or subsystem thereof) or Service, such dispute shall not entitle Customer to withhold payment for any other Product (or subsystem thereof) or Service provided by GE Healthcare. GE Healthcare may revoke credit extended to Customer because of Customer's failure to pay for any Products or Services when due, and in such event all subsequent shipments and Services shall be paid for on receipt.

4.4. Taxes. Prices do not include sales, use, gross receipts, excise, valued-added, services, or any similar transaction or consumption taxes ("Taxes"). Customer shall be responsible for the payment of any such Taxes to GE Healthcare unless it otherwise timely provides GE Healthcare with a valid exemption certificate or direct pay permit. In the event GE Healthcare is assessed Taxes, interest or penalty by any taxing authority, Customer shall reimburse GE Healthcare for any such Taxes, including any interest or penalty assessed thereon. Each party is responsible for any personal property or real estate taxes on property that the party owns or leases, for franchise and privilege taxes on its business, and for taxes based on its net income or gross receipts.

GE Healthcare Product Terms and Conditions

GE Healthcare

References herein to "Products" and "Services" mean the Products (including equipment and software) and Services identified on the applicable GE Healthcare Quotation ("Quotation"). References herein to "Healthcare IT Products" are (i) those software products identified in the Quotation as a "Centricity" product, any third party software licensed for use in connection with the Centricity software, all hardware used to operate the Centricity or the third party software, and services provided with respect to the implementation, installation or support and maintenance of the Centricity or the third party software, and/or (ii) any software, product or service that is included in a Quotation which Quotation is designated as an "Healthcare IT Quotation".

1. Commercial Logistics

1.1. Order Cancellation and Modification.

1.1.1. Cancellation and Payments. Except for Healthcare IT Products, if Customer cancels an order without GE Healthcare's prior written consent, Customer will pay a cancellation charge of fifteen percent (15%) of the price of the Products ordered. GE Healthcare will retain as a credit any payments received up to the amount of the cancellation charge. If Customer cancels an order for Products for which GE Healthcare has provided site evaluation services, Customer will also pay GE Healthcare reasonable charges for such services performed prior to cancellation. If applicable for the order, Customer will pay all progress payments (other than the final payment) prior to final Product calibration, and GE Healthcare may, at its option, delay final calibration until required progress payments are received. If Customer fails to schedule a delivery date with GE Healthcare within six (6) months after order entry, GE Healthcare may cancel Customer's order upon written notice to Customer.

1.1.2. Order Modifications. No modifications may be made to an order without GE Healthcare's prior written consent. The Product configuration listed in the Quotation is based upon information furnished to GE Healthcare by Customer, and Customer is responsible to provide and pay for modifications, if any, to the configuration due to inaccuracies or incompleteness of the information furnished to GE Healthcare by Customer, changes in Customer's needs or requirements, or for other reasons attributable to Customer.

1.2. Site Preparation. If applicable, Customer will be responsible, at its sole expense, for evaluating and preparing the site where the Products will be installed in accordance with GE Healthcare's site preparation requirements and applicable laws. Customer must provide GE Healthcare with prompt written notice if Customer is unable to prepare the site before the mutually agreed installation date. Upon receipt of such notice, GE Healthcare will reschedule the installation to a mutually agreed date. Customer shall be liable for any costs or expenses GE Healthcare or its representatives incur resulting from Customer's failure to provide GE Healthcare with timely notice of Customer's failure to properly prepare the site. GE Healthcare may, in its discretion, delay delivery or installation if GE Healthcare determines that the site has not been properly prepared or there are any other impediments to installation; provided that GE Healthcare gives Customer written notice of such delay stating the reasons therefor. If GE Healthcare provides site evaluation services, such services are intended only to assist Customer in fulfilling Customer's responsibility to ensure that the site complies with GE Healthcare's applicable site preparation requirements.

1.3. Transportation, Title and Risk of Loss; Delivery; Returns.

1.3.1. Transportation, Title and Risk of Loss. Unless otherwise indicated in the Quotation, shipping terms are FOB Destination. Title and risk of loss to equipment passes to Customer upon delivery to Customer's designated delivery location. Software is licensed to Customer; no title to or other ownership interest in such software passes to Customer.

1.3.2. Delivery. When feasible, GE Healthcare reserves the right to make delivery in installments. All such installments shall be separately invoiced and paid for when due, without regard to subsequent deliveries. At the time of such delivery, Customer will pay GE Healthcare for any amounts due upon delivery. Delivery dates are approximate. For GE Healthcare software or documentation, delivery means the first to occur of: (i) communication to Customer through electronic means, that allows Customer to take possession of the first copy or product master, or (ii) delivery to Customer's designated delivery location.

1.3.3. Product Returns. Customer shall not have any right to return Products for a refund after delivery except for products shipped in error that are different from the Products listed in the Quotation.

1.4. Installation and Certification. GE Healthcare will provide product assembly, installation and calibration, as required, at no additional charge, except for items excluded herein. GE Healthcare installation Services provided under the Quotation will be performed in accordance with applicable GE Healthcare installation guides and/or project plans. Customer will review the applicable GE Healthcare installation guides, and/or project plans, and perform Customer's obligations as set forth in those materials. Upon completion of assembly, installation and calibration, and prior to turnover of the Products to Customer for clinical use, as applicable, GE Healthcare will perform prescribed tests using its own performance specifications, instruments and procedures to verify that the Products meet GE Healthcare's applicable performance specifications.

1.4.1. Customer-Supplied Items.

- Customer will install necessary system cable and assemble any necessary equipment or hardware not provided by GE Healthcare, unless agreed otherwise in writing by the parties.
- For Products that will be operated on or in connection with Customer supplied hardware or software, Customer is responsible

for ensuring that such hardware and software conform to GE Healthcare's minimum hardware and software requirements as made available to Customer.

- Unless GE Healthcare has agreed in writing to maintain responsibility for an applicable service, Customer will be responsible for enabling the connectivity and interoperability between Customer-supplied hardware or software or other systems or devices and the Product, including, without limitation, procuring and installing any modifications, interfaces or upgrades consistent with GE Healthcare's written specifications.
- Unless otherwise agreed in writing by GE Healthcare, Customer is solely responsible for the performance of and payment for any applicable rigging and/or facility costs. GE Healthcare will not install accessory items unless otherwise agreed in writing by GE Healthcare.
- If applicable for the Product, electrical wiring and outlets, computer network infrastructure, conduit, cabinetry modification, wall mounts, ventilation and any other site preparation are not included in the purchase price and are the responsibility of Customer, unless otherwise agreed in writing by GE Healthcare.

1.4.2. Network. Unless Customer has elected to purchase network preparation and certification Services from GE Healthcare as set forth in the Quotation, Customer is solely responsible for ensuring that Customer's network is adequate for the proper operation and performance of the Products and otherwise meets GE Healthcare's written network configuration requirements.

1.4.3. License, Permits, and Approvals. Customer shall obtain and maintain all licenses, permits and other approvals necessary for installation, use, and disposal/recycling of the Products provided under this Agreement, including, but not limited to, any government licenses required to use radioactive sources for Products that require the use of such sources. GE Healthcare will ship such sources to Customer only after Customer provides GE Healthcare with satisfactory evidence that Customer has obtained all required licenses for such sources In addition, Customer will provide all radioactive sources for calibration and performance checks of Products that require the use of such sources. GE Healthcare will file any required Federal and State reports relating to its installation activities. GE Healthcare will not install, test, certify or provide its own software license or warranty for Products that are not listed in its on-line catalog or price pages at the time of sale (such Products are normally identified by NL or NW series numbers), unless otherwise agreed in writing by GE Healthcare.

1.4.4. Non-GE Healthcare Labor. If local labor conditions make it impractical to, or GE Healthcare is directed not to, use GE Healthcare's employees or pre-qualified contractors for the installation, all work will be performed by Customer's laborers or outside labor at Customer's expense; provided that GE Healthcare will, at Customer's request, furnish guidance for installation. GE Healthcare is not responsible for the quality or adequacy of any work performed by any party other than GE Healthcare or its pre-qualified contractors.

1.4.5. Non-GE Healthcare Installation. For Products that GE Healthcare is obligated to install under the terms of this Agreement, if GE Healthcare delivers the Product but fails to perform its installation obligations, then in such event Customer shall nevertheless be obligated to pay GE Healthcare an amount equal to (a) the Product purchase price set forth in the Quotation, if the Product purchase price and the installation Services price are shown as separate line items in the Quotation, or (b) if the Product purchase price and installation Services price are not shown as separate line items in the Quotation, then the Product purchase price less the fair market value of the applicable installation Services, taking into account the type of Product and level of installation required ("Installation Service FMV"). An independent third party shall determine the Installation Service FMV. Notwithstanding any other provision of this Agreement to the contrary, either the discharge of Customer's obligation to pay for installation Services shown as a separate line item(s) in the Quotation or the deduction of the Installation Service FMV, as applicable, shall be Customer's sole and exclusive remedy (and GE Healthcare's sole and exclusive liability) in the event GE Healthcare fails to perform its installation obligations under this Agreement.

1.5. Acceptance. Unless expressly provided otherwise in this Agreement, Customer shall be deemed to have accepted a Product delivered by GE Healthcare under this Agreement on the earlier of: (i) if GE Healthcare installs the Product, five (5) days after GE Healthcare notifies Customer that it has completed assembly and the Product is operating substantially in accordance with GE Healthcare's published performance specifications; (ii) if GE Healthcare does not install the Product, five (5) days after delivery of the Product to Customer; or (iii) the date Customer first uses the Product for patient use.

1.6. Warranties. Product warranties (if applicable) are set forth in the GE Healthcare warranty forms delivered with the Quotation. GE Healthcare may use refurbished parts in new Products as long as it uses the same quality control procedures and warranties as for new Products. Any part for which GE Healthcare has supplied a replacement shall become GE Healthcare property.

1.7. Data Access. If applicable, Customer shall permit GE Healthcare to connect to the Products, or to otherwise access Product performance data through a Customer-furnished telephone line or Broadband connection. The data collected by GE Healthcare will be used, during and after the term of this Agreement, in accordance with all applicable laws and regulations and in a manner that will maintain confidentiality.

2. Software License

2.1. License Grant. GE Healthcare grants to Customer a non-exclusive, non-transferable license to use for Customer's internal business purposes the GE Healthcare software, third-party software and Documentation at the location (or, for mobile systems, in the specific vehicle) identified in the Quotation, subject to the license scope and other restrictions set forth in this Agreement. "Documentation" means the GE Healthcare user manuals, on-line help functions, technical specifications and user instructions regarding the operation, installation and use of the software as made available by GE Healthcare to Customer. Customer may only use third-party software provided by GE Healthcare together with the GE Healthcare software and will comply with all third-party software license terms included in any click or shrink wrap license or of which GE Healthcare otherwise makes Customer aware. To the extent permitted by applicable law, licensors of third-party software shall be third-party beneficiaries of this Agreement with respect to third-party software sublicensed under this Agreement. Customer may permit its employees, agents, independent contractors and healthcare providers with privileges at Customer's facilities to use the software and Documentation; provided, however, that Customer shall be responsible for any acts of such third parties that are inconsistent

with this Agreement. Notwithstanding the foregoing, independent contractors that supply products comparable to the software shall be provided access to the software only with GE Healthcare's prior written consent and subject to any conditions GE Healthcare deems appropriate to protect its confidential and proprietary information.

2.2. Additional License Terms. Without GE Healthcare's prior written consent, Customer may not: (i) copy, sublicense, distribute, rent, lease, loan, resell, modify or translate the software or create derivative works based thereon, except that to the extent applicable, the software may be configured as specifically permitted in the Documentation; (ii) directly or indirectly decompile, disassemble, reverse engineer or otherwise attempt to learn the source code, structure, algorithms or ideas underlying the software; (iii) provide service bureau, time share or subscription services based on the software; (iv) remove, obscure or modify any markings, labels or any notice of the proprietary rights, including copyright, patent and trademark notices of GE Healthcare or its licensors; (v) electronically transfer the software outside Customer's intranet or network dedicated for the software, unless otherwise authorized in writing by GE Healthcare; or (vi) publicly release the results of any testing or benchmarking of the software without the prior written consent of GE Healthcare. Customer may transfer authorized copies of the software, and Documentation to a party that purchases or otherwise acquires the equipment and accepts any applicable license terms, except for software and Documentation that are (a) not a part of the base system standard operating software or Documentation for the equipment and (b) generally provided by GE Healthcare to its customers for a separate fee or charge. Advanced service software is subject to a separate fee and eligibility criteria and licensed under a separate agreement with GE Healthcare.

2.3. Backups. Customer may make a reasonable number of copies of the software in machine-readable form solely for backup, training, testing or archival purposes, so long as applicable license fees are paid. Customer shall reproduce on any such copy the copyright notice and any other proprietary legends that were on the original copy. GE Healthcare and its licensors, as applicable, retain all ownership and intellectual property rights to the software and Documentation. If Customer acquires any rights to the software or Documentation, Customer hereby assigns all of those rights to GE Healthcare or its licensors, as applicable. No license rights are granted (whether by implied license or otherwise), to Customer, except as specifically provided in this Section.

2.4. Remedies. Customer agrees that a violation of GE Healthcare's license, confidentiality or intellectual property rights will cause irreparable harm to GE Healthcare for which the award of money damages alone are inadequate. In the event of any breach of this provision, GE Healthcare shall be entitled to seek injunctive relief in addition to immediately terminating the license granted herein and requiring that Customer cease use of the software and return all copies of stand-alone software in any media in addition to seeking any other legal or equitable remedies available to GE Healthcare. This paragraph shall survive the termination of this Agreement.

3. Payment and Finance

3.1. Security Interest; Upgrade Pricing. Customer grants GE Healthcare a purchase money security interest in all items of hardware or equipment listed in the Quotation until full payment is received, and Customer shall perform all acts and execute all documents as may be necessary to perfect GE Healthcare's security interest. Except for Healthcare IT Products, prices for upgrades and revisions assume that Customer returns the replaced component and transfers title to GE Healthcare at no charge to GE Healthcare. If, after Product delivery, Customer does not make any payments for the Products within forty-five (45) days after such payments are due, GE Healthcare may, upon ten (10) days prior written notice to Customer, either (a) enter upon Customer's site and remove the Products or (b) temporarily disable the Products so that they are not operational.

3.2. Leases. If Customer is acquiring use of Products through an equipment lease (a "Lease") with an equipment lessor (a "Lessor"), certain provisions of this Agreement (including, but not limited to, terms related to payment, title transfer, warranties, and software licenses) may be modified as agreed to in writing between GE Healthcare, the applicable Lessor, and/or Customer, as the case may be. Acceptance of the equipment as between GE Healthcare and Lessor will be defined by this Agreement; acceptance of the equipment as between Lessor and Customer will be defined by the lease agreement. Notwithstanding the foregoing, if the Lessor does not comply with the terms of this Agreement, Customer shall continue to be responsible for the payment obligations hereunder.

4. Product Specific Terms

4.1. MUSE CV Information Technology Professional Services (ITPS). MUSE CV Product ITPS shall be performed within six (6) months of the date Customer orders the Services. Without limiting the foregoing, Customer agrees that, if the Services have not been performed within one (1) year of the date Customer orders the Services for reasons other than GE Healthcare's failure to perform, GE Healthcare shall be relieved of its obligation to perform the Services and the Customer shall not be entitled to a refund for such unperformed Services. ITPS Services include clinical applications training, project management, HL7/HIS systems integration, database conversion, and network design and integration (ND&I).

4.2. Pre-Owned Products. Products identified as pre-owned/refurbished/remanufactured Products have been previously owned and used; they are not new. When delivered to Customer, such Products may have received mechanical, electrical, and/or cosmetic reconditioning, as necessary, and will meet their original specifications. Since pre-owned Products may be offered simultaneously to several customers, their sale to Customer is subject to their continued availability at the time Customer offers to purchase such Products. If the pre-owned Products are no longer available, (i) GE Healthcare will attempt to identify other pre-owned Products in its inventory that meet Customer's needs, and (ii) if substitute pre-owned Products are not acceptable to Customer, GE Healthcare will cancel the order and refund any deposit Customer has paid for such Products.

4.3. CT and X-Ray Products. Certain Products that use x-ray or image intensifier tubes have been designed to recognize GE Healthcare-supplied tubes and report to the user the presence of a non-GE Healthcare-supplied tube. This will permit the user to make any adjustments to Product use that the user deems appropriate. Use of the Products with non-GE Healthcare-supplied tubes is always at the user's discretion; however, Customer acknowledges that advanced scanner functionality may be impaired or disabled by the use of non-GE Healthcare-supplied tubes. GE Healthcare assumes no liability for the use of non-GE-Healthcare-supplied tubes and disclaims any responsibility for any effect such tubes may have on Product performance.

GE Healthcare

GE Healthcare Additional Terms and Conditions: Uptime Commitment

This Uptime Commitment incorporates GE Healthcare's General Terms and Conditions and GE Healthcare's Product Terms and Conditions and will apply to eligible diagnostic imaging systems covered by the Quotation, as identified in the Quotation ("Eligible Systems").

1. Scope. GE Healthcare will provide Customer with expanded warranty protection for Eligible Systems in consideration of Customer's commitment to provide a broadband network connection to enable GE Healthcare to better provide warranty service for the Eligible Systems during the warranty period. The following provisions will apply only to Eligible Systems and only during the warranty period.

2. Eligibility. To be eligible for this expanded warranty protection, Customer must: (a) establish (if not previously established) and maintain a broadband network connection at Customer's site that connects to the Eligible System, which broadband connection meets GE Healthcare's minimum specifications, (b) provide GE Healthcare with access to the Eligible System through Customer's broadband network connection and maintain security for Customer's broadband network connection in accordance with appropriate industry best practices, (c) provide necessary support to maintain such broadband network connection, including designation of a primary Customer contact person, (d) provide GE Healthcare with at least two (2) business days advance notice of any planned changes to Customer's network that may impact such broadband connection and with notice of any unplanned changes (e.g., power outages, computer viruses, system crashes) to Customer's network that may impact such broadband connection within two (2) business days after the occurrence of the unplanned changes, (e) reasonably cooperate with GE Healthcare in maintaining such broadband connection during all such planned and unplanned changes, and (f) use reasonable efforts to ensure that Customer's connection to the Internet and LAN systems operate at a maximum of 75% of capacity and have an uptime rate of at least 98%.

3. Uptime Commitment. If Customer performs these responsibilities, GE Healthcare will provide Customer, at no additional charge and in addition to other remedies available under GE Healthcare's warranty, an uptime commitment of 97% (95% for all covered nuclear imaging systems and all covered X-ray systems except digital mammography, digital radiographic and vascular X-ray systems), and uptime remedies, as described below.

4. Definitions. "Uptime Commitment" means GE Healthcare's commitment on Eligible System uptime during the warranty period, as defined below. "Uptime Remedy" is, in addition to the other remedies specified in the warranty, Customer's sole and exclusive remedy if GE Healthcare fails to meet any Uptime Commitment over a 26-week measurement period during the warranty period. Should the Eligible System fail to achieve the Uptime Commitment as calculated by the Uptime Commitment Calculation, GE Healthcare will provide an extension of Customer's service agreement with GE Healthcare for the Eligible System (or, if Customer has not entered into a service agreement with GE Healthcare, the warranty period for the Eligible System) at no additional charge, as follows:

% < Uptime Commitment	Extension
0	0 weeks
0.1 - 3.0	1 week
3.1 - 8.0	2 weeks
8.1 - 13.0	4 weeks
> 13.0	6 weeks

"Uptime Commitment Calculation" means the calculation used to determine achievement of the Uptime Commitment, as follows: The basis for each measurement period is GE Healthcare's standard warranty service coverage hours of A hours per day, B days per week for 26 weeks, less C hours spent on planned maintenance ("PM") during that interval:

Hours1 = A hours per day X B days per week X 26 weeks
Hours2 = Hours1 - C hours for planned maintenance
Required in-service hours at Customer's % commitment: Hours3 = Hours2 X Customer's %

5. Eligible System. An Eligible System will be considered inoperable and out of service under the Uptime Commitment if, due to GE Healthcare's design, manufacturing, material, or service or maintenance performance failure, the Eligible System is unavailable for scanning patients and diagnosing images on the Eligible System display console or operator's console. Peripheral equipment such as remote consoles, magnetic tape drives, hard copy devices, and multi-format and laser cameras are excluded from the terms of the Uptime Commitment. Repair and adjustments required for anything other than Eligible System failure, and damage or inoperability due to any cause other than GE Healthcare's design, manufacturing, material, or service or maintenance performance failure, will be excluded from the Uptime Commitment Calculation, including without limitation damage through misuse, operator error, inadequate environmental or air conditioning protection, power failure, and acts of God. PM time will not be included in the calculation of downtime. If GE Healthcare's responding representative agrees the Eligible System is inoperable due to GE Healthcare's design, manufacturing, material, or service or maintenance performance failure, the Eligible System will be considered out of service from the time the request for service was received by GE Healthcare until the Eligible System is again turned over to Customer for operation. If Customer fails to give GE Healthcare immediate and unencumbered access to the Eligible System or continues to obtain scans after notifying GE Healthcare of any Eligible System failure, the Eligible System will be considered to be in service.

GE Healthcare

GE Healthcare Additional Terms and Conditions: Healthcare IT

References herein to "Products" and "Services" mean the Products (including hardware and software) and Services purchased by Customer as identified on the applicable GE Healthcare Quotation ("Quotation"). References herein to "Healthcare IT Products" are (i) those software products identified in the Quotation as a "Centricity" product, any third party software licensed for use in connection with the Centricity software, all hardware used to operate the Centricity or the third party software, and services provided with respect to the implementation, installation or support and maintenance of the Centricity or the third party software, and/or (ii) any software, product or service that is included in a Quotation which Quotation is designated as an "Healthcare IT Quotation".

These Additional Terms and Conditions incorporate the GE Healthcare General Terms and Conditions as well as the GE Healthcare Product Terms and Conditions and will apply only to the license, purchase and use of Healthcare IT Products.

1. Healthcare IT Product Specific Terms. The following terms apply only to the purchase of Healthcare IT Products.

1.1. Statement of Work (SOW). Following the effective date of this Agreement, the parties may enter into a written statement of work ("SOW") signed by the parties that describe the professional services to be provided by pursuant to the quotation, which may include, among other things, an installation and implementation project work plan, identification of installation and implementation services, and other related professional services. GE Healthcare shall perform the professional services and provide any deliverables described in any such SOW and shall use commercially reasonable efforts to do so according to any delivery schedule in the SOW. GE Healthcare is responsible for the assignment of personnel to perform all services and may make any change in staffing it deems necessary provided that such change does not compromise the level of expertise required to complete the applicable SOW. Each SOW may include descriptions of the following: (i) professional services to be performed; (ii) deliverables; (iii) Customer's additional responsibilities; (iv) project work scope, (v) estimated performance schedule and applicable milestones; (vi) Customer's site and any site preparation requirements; (vii) network, hardware or other environmental or infrastructure requirements; (viii) preliminary implementation plans; or (ix) key assumptions. The terms and conditions of this Agreement shall prevail over those of the SOW. A SOW may only be modified in writing signed by authorized representatives of both parties and must be made pursuant to mutually agreed change control procedures. Changes to a SOW may require a change in fees reflecting the change in scope and/or change in schedule of delivery of the professional services or deliverables and/or change in Customer's responsibilities. From time to time during the term of this Agreement, the parties may enter into additional SOWs relating to services purchased by Customer under Change Orders to this Agreement. Each such additional SOW shall constitute a separate and independent work engagement and contractual obligation.

1.2. Project Managers. If required by the SOW, Customer and GE Healthcare shall each designate a project manager who will be responsible for day-to-day communications regarding the subject matter of the applicable SOW. The project managers will be responsible for monitoring the schedules and progress of services pursuant to the Agreement and/or SOW and will have the authority to act for the respective parties in all aspects of the engagement. The project managers for the parties will meet in person or via conference call as necessary. The responsibilities of the project managers include to: (i) serve as the single point of contact for all departments in their organization participating in this project; (ii) administer the change-of-control procedure; (iii) participate in project status meetings; (iv) obtain and provide information, data, decisions and approvals, within seven working days of the other party's request unless GE Healthcare and Customer mutually agree to an extended response time; (v) resolve deviations from project plans that may be caused by the parties' respective organizations; (vi) help resolve project issues and escalate issues within the parties' respective organizations, as necessary; (vii) monitor and report project status on a regular basis to the respective organizations as appropriate; and (viii) provide and coordinate technical and specialist resources as necessary.

1.3. HITECH Certification. GE Healthcare will use diligent efforts to obtain certification under the Health Information Technology for Economic and Clinical Health Act (the "HITECH Act") to the extent that certification standards are established for the applicable functionality included as part of GE Healthcare's EMR or Centricity Practice Solutions software licensed by Customer, including those product updates that GE Healthcare provides generally to Customer of such products as part of support and maintenance. If GE Healthcare fails to obtain certification for the applicable components within ninety (90) days after the beginning of the first Reporting Period in a Payment Year that Customer is actively seeking to demonstrate Meaningful Use, GE Healthcare will credit the standard support services fees for such software for each month during which the software is not certified (up to a maximum of 6 months) against future support fees. The foregoing is Customer's sole and exclusive remedy in the event GE Healthcare fails to obtain certification. For the avoidance of doubt, Customer's payment obligations under this Agreement are not conditioned on receipt of HITECH incentive payments, certification of the software or demonstration of meaningful use. GE Healthcare will keep Customer informed of GE Healthcare's certification status by posting such status at www.gehealthcare.com/hitech (or some other location that of which GE Healthcare may inform Customer). It is Customer's responsibility to ensure Customer meets all the requirements to qualify for the incentive payments, including "meaningful use", and to confirm that the GE Healthcare software Customer is using is certified according to HITECH criteria. GE Healthcare's obligations under this section apply only to the then-most current version of GE Healthcare's Centricity EMR or Centricity Practice Solution software products. GE Healthcare's obligations are contingent upon Customer then-receiving and paying for support services and complying with the requirements of the GE Healthcare service policy and, if GE Healthcare so requires, upon Customer installing software fixes, patches or updates or migrating to a new or different GE Healthcare software offering, and on Customer otherwise having installed all functionality not part of the GE Healthcare software that would have been required to show Meaningful Use. All capitalized terms shall the definitions set forth in this Agreement, the HITECH Act or any applicable implementing regulations.

1.4. Ownership Rights. GE Healthcare shall retain ownership of all deliverables (including any intellectual property embodied in the

deliverables or related to them) and any intellectual property developed under a SOW or during the course of performing the services whether or not the services are performed by GE Healthcare alone or jointly with Customer or others. In addition, GE Healthcare shall own all improvements, enhancements and derivative works of any GE Healthcare intellectual property. Customer hereby assigns, and will cause Customer's employees and independent contractors to assign, to GE Healthcare all of Customer's rights in and to such deliverables and intellectual property. GE Healthcare grants to Customer a nonexclusive, nontransferable, license, without the right to sublicense, to use the deliverables solely for Customer's internal business purposes and subject to the limitations described in this Agreement and the relevant SOW. Customer agrees to provide reasonable assistance to GE Healthcare in obtaining and enforcing GE Healthcare's rights to such deliverables and intellectual property. GE Healthcare will acquire no rights to any of Customer's confidential information that may be included in any deliverable unless expressly agreed to otherwise by Customer.

1.5. Software Product Testing and Acceptance. Commencing on the date that GE Healthcare gives notice of installation of the GE Healthcare software (or on the date as otherwise provided for in the applicable SOW) and implementation by GE Healthcare of appropriate option and parameter selections made by Customer, Customer will have thirty (30) days to test each unit or module of the GE Healthcare software. Customer shall be deemed to have accepted GE Healthcare proprietary software the earlier of (i) Customer's written acceptance, (ii) the expiration of the test period identified in the preceding sentence without GE Healthcare receiving written notice from Customer of the existence of any errors and a reasonable description of such error(s), or (iii) the date Customer first uses the software to process actual data in the operation of Customer's business (e.g. to register a patient, to produce a bill, to record a treatment or diagnosis or to process or view a medical image). As used in this section, an "error' is the failure of the software to perform substantially in accordance with the documentation. Acceptance tests will be conducted using test data, preferably from Customer's historical operations, in a non-productive environment and according to test protocol to be mutually agreed upon by the parties. Upon discovering an error, Customer shall promptly notify GE Healthcare in writing of the error, which notice shall include a reasonable description of the error. Upon GE Healthcare's timely receipt of Customer's written notice, GE Healthcare shall promptly correct such failures identified by Customer therein. An acceptance test for amendments or alterations provided by GE Healthcare as a result of testing may be conducted by Customer for a period of not more than five (5) days after delivery of such amendment or alteration, and the test period shall be extended for this purpose. Upon the occurrence of acceptance, all payments associated with acceptance, if any, shall be due and payable.

1.6 Software Support. GE Healthcare will provide to Customer the software support services as described in the applicable GE Healthcare service policy for the GE Healthcare software and the support period as specified in the applicable quotation for which Customer has paid the applicable fees. Software that is identified on the quotation and either (i) is delivered to Customer in a third-party developer/supplier's packaging and with its labeling or (ii) for which GE Healthcare expressly indicates (either in the quotation or in the product documentation) that the software is provided with the third-party developer/supplier's software support services in lieu of GE Healthcare software support services is not covered under this Agreement unless specifically stated otherwise in the applicable quotation. GE Healthcare support services will automatically renew for another annual term upon payment of the applicable renewal support fees, unless either party provides sixty (60) days prior written notice of non-renewal. GE Healthcare may increase its charges for support and maintenance fees for each successive annual software renewal support term. In connection with any annual renewal of support services, GE Healthcare may increase its annual charges for maintenance and support by no more than CPI plus two percent (2%). CPI shall mean the U.S. City Average (December to December percent) for ALL Urban Consumers (CPI-U). If GE Healthcare announces to its customers that it will no longer offer support ("end of product life") for a product or component, then upon at least twelve (12) months' prior written notice to Customer, GE Healthcare may, at its option, remove any such item from all GE Healthcare service agreements, with an appropriate adjustment of charges, without otherwise affecting such agreements.

1.7 Medical Diagnosis and Treatment. Customer acknowledges that: (a) the software does not make clinical, or other decisions and is not a substitute for competent, properly trained and knowledgeable staff who bring professional judgment and analysis to the information presented by the software; (b) Customer is responsible for verifying the accuracy of all patient information and determining the data necessary for Customer and Customer's users to make medical and diagnostic decisions, as well as for complying with all laws, regulations and licensing requirements applicable to Customer's delivery of healthcare services; (c) Customer is responsible for establishing and maintaining reasonable quality control procedures to ensure the accuracy of input to the software; (d) Customer and Customer's staff will consider all relevant information including information presented to Customer and Customer's staff by the software and may give whatever weight Customer and Customer's staff deem appropriate to the information produced by the software in the performance of Customer's and Customer's staff's functions; (e) any and all financial and management information produced by the software must be tested for reasonableness and accuracy before any actions are taken or reliance placed on it; (f) Customer has reviewed and will communicate to users who use and access the software any software information, which may be provided to Customer by GE Healthcare from time to time; (g) although GE Healthcare and its third-party vendors have used reasonable care in obtaining information from sources believed to be reliable, Customer acknowledges that it is Customer's obligation to be informed about any changes or developments in clinical information or guidelines that may not be reflected in the software and that the absence of an alert or warning for a given course of treatment, drug or drug combination should not be construed to indicate that the treatment, drug or drug combination is safe, appropriate or effective in any given patient; (h) Customer is solely responsible for the proper, complete and accurate submission of claims, including without limitation the determination of proper billing, diagnosis and procedure codes and the maintenance of patient medical records containing appropriate documentation of the Services billed; (i) when selecting a narrative condition or coded diagnosis or procedure, Customer must make an independent and informed judgment based upon the patient's condition and symptoms and/or a physician's submitted diagnosis, to select a code appropriate for that patient (GE Healthcare does not make any representation or warranty regarding the appropriateness of any of the narrative or codes displayed for any or all patients); (j) since it is possible that a payor's local medical review policies may be in effect prior to their receipt or update by GE Healthcare or its licensors, Customer, as a provider under Federal health care programs, assumes responsibility for the accuracy of all claims submitted for Services performed for Medicare beneficiaries. Customer shall use the Products only for clinical diagnostic purposes in the diagnosis or treatment of a disease or condition, and not for any entertainment or amusement purposes. GE Healthcare will not deliver, install, service or provide training on use of the Products if GE Healthcare discovers the Products have been or are intended to be used for non-clinical purposes

in violation of the preceding sentence.

1.8 Return of Software. Upon termination of this Agreement for any reason, Customer shall immediately return to GE Healthcare any and all software for which license grant immediately terminates.

2. Healthcare IT Warranty. The following warranties apply only to Healthcare IT products and are in lieu of any other standard GE Healthcare warranties.

2.1. Express Warranties. GE Healthcare makes the following express warranties to Customer:

2.1.1. GE Healthcare warrants that its services will be performed by trained individuals in a professional, workman-like manner.

2.1.2. Except as indicated otherwise below, GE Healthcare warrants that (i) GE Healthcare has the right to license or sublicense the software to Customer for the purposes and subject to the terms and conditions set forth herein, (ii) for 90 days following the warranty commencement date, the software will perform substantially in accordance with the applicable documentation, (iii) it has not inserted any disabling code (as defined herein) into the software, and (iv) it will use reasonable commercial efforts consistent with industry standards to scan for and remove any software viruses before installation of the software. As used herein, (a) "disabling code" means computer code that is designed to delete, interfere with, or disable the normal operation of the software; provided, however, that code included in the software that prohibits use outside of the license scope purchased for the software will not be deemed to be disabling code, and (b) "warranty commencement date" means the date upon which Customer first uses the software to process actual data in the operation of Customer's business (e.g., to register a patient, to produce a bill, to record a treatment or diagnosis or to process or view a medical image). The warranty period for any software or component furnished to correct a warranty failure will be the unexpired term of the warranty applicable to the repaired or replaced software.

2.1.3. Except for the right to license warranty above, the above warranties do not cover equipment or third-party software delivered with the GE Healthcare software. Third-party software is identified with a separate part number on the quotation (i) delivered to Customer in the third-party manufacturer/supplier's packaging and with its labeling, or (ii) for which GE Healthcare expressly indicates (either in the quotation or in the product documentation) that the software or equipment is provided with the third-party manufacturer/supplier's warranty in lieu of a GE Healthcare warranty. Such products are covered by the third-party manufacturer/supplier's warranties, to the extent available.

2.2. No Other Warranties. NO OTHER EXPRESS OR IMPLIED WARRANTIES, INCLUDING IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, QUIET ENJOYMENT, SYSTEM INTEGRATION AND DATA ACCURACY, WILL APPLY.

2.3. Sole and Exclusive Remedies for Breach of Warranties. The remedies set forth below are Customer's sole and exclusive remedies and GE Healthcare's sole and exclusive liability for warranty claims. These exclusive remedies shall not have failed of their essential purpose (as that term is used in the Uniform Commercial Code) as long as GE Healthcare remains willing to repair or replace defective warranted products or re-perform any non-conforming services for no charge, as applicable, within a commercially reasonable time after being notified of Customer's warranty claim.

2.3.1. If there is any breach of a warranty contained in Section 2.1.1, GE Healthcare will promptly re-perform any non-conforming services for no charge as long as Customer provides reasonably prompt written notice to GE Healthcare.

2.3.2. If there is a breach of warranty contained in Section 2.1.2(i) GE Healthcare will indemnify Customer in accordance with Section 3.3 of the General Terms and Conditions to included as part of this Agreement.

2.3.3. If there is any breach of a warranty contained in Section 2.1.2(ii) – (iv) and Customer promptly notifies GE Healthcare of Customer's warranty claim during the warranty period and makes the software available for service, GE Healthcare will, at its option, with respect to the GE Healthcare software, either correct the non-conformity or replace the applicable software. Unless agreed otherwise, warranty service will be performed without charge from 8:00 a.m. to 5:00 p.m. (local site time), Monday-Friday, excluding GE Healthcare holidays, and outside those hours at GE Healthcare's then prevailing service rates and subject to the availability of personnel. For certain licensed software, GE Healthcare will perform warranty service only at an authorized service center or, in some instances, via a secure, remote connection to a GE Healthcare online center.

2.4. Limitations. GE Healthcare shall not have any obligation to Customer hereunder if the warranty claim results from or arises out of: (i) the use of the software in combination with any software, tools, hardware, equipment, supplies, accessories or any other materials or services not furnished by GE Healthcare or recommended in writing by GE Healthcare; (ii) the use of the software in a manner or environment, or for any purpose, for which GE Healthcare did not design or license it, or in violation of GE Healthcare's written recommendations or instructions on use; (iii) any alteration, modification or enhancement of the software by Customer or any third party not authorized or approved in writing by GE Healthcare (iv) inadequate back-up or virus protection or any other cause external to the software or beyond GE Healthcare's reasonable control. In addition, the warranties set forth above do not cover the software to the extent it is used in any country other than the country to which GE Healthcare ships the licensed software (unless GE Healthcare expressly agrees otherwise in writing). GE Healthcare does not guarantee that the software will operate without error or interruption.

GE Healthcare

Warranty Statement (United States)

1. **Warranted Products.** These warranties cover the purchase and use of the following GE Healthcare products:

- Magnetic Resonance
- Computed Tomography
- Mammography
- Positron Emission Tomography (including scanners, cyclotrons & chemistry labs)
- Nuclear
- X-ray
- Surgical Navigation Systems
- Cardiology
- Ultrasound
- Bone Mineral Densitometry
- Physiological Monitoring
- Small Animal Imaging
- C-Arms
- Advantage Workstation and Server
- Anesthesia Delivery
- Respiratory Care
- Gold Seal
- Phototherapy and other infant care accessories
- Microenvironments, including Giraffe®, Care Plus®, Ohio® Infant Warmer Systems and Panda™ Baby Warmers

2. **GE Healthcare Warranties.**

2.1 Scope. This warranty statement incorporates GE Healthcare's General Terms and Conditions and GE Healthcare's Product Terms and Conditions. GE Healthcare warrants that its services will be performed by trained individuals in a professional, workman-like manner. GE Healthcare will promptly re-perform any non-conforming services for no charge as long as Customer provides reasonably prompt written notice to GE Healthcare. The foregoing service remedy, together with any remedy provided herein, are Customer's sole and exclusive remedies (and GE Healthcare's sole and exclusive liability) for warranty claims. These exclusive remedies shall not have failed of their essential purpose (as that term is used in the Uniform Commercial Code) as long as GE Healthcare remains willing to repair or replace defective warranted products or re-perform any non-conforming services for no charge, as applicable, within a commercially reasonable time after being notified of Customer's warranty claim. NO OTHER EXPRESS OR IMPLIED WARRANTIES, INCLUDING IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, QUIET ENJOYMENT, SYSTEM INTEGRATION AND DATA ACCURACY, WILL APPLY.

2.2 Term Usage. "Warranted Product" is a collective term which includes both the above-listed manufactured equipment and licensed software, with the exception of Healthcare IT Products, purchased by and/or licensed to (as applicable) Customer under the relevant GE Healthcare Quotation. Where an item of equipment has software code embedded in it, the code will only be considered licensed software under this warranty statement if the applicable GE Healthcare Quotation provides a separate part number for that software.

2.3 Equipment Warranty. Except as indicated otherwise below, GE Healthcare warrants the equipment will be free from defects in title and that for 1 year from the Warranty Commencement Date (as defined below) (i) the equipment will be free from defects in material and workmanship under normal use and service and (ii) except for equipment manufactured in compliance with Customer's designs or specifications, the equipment will perform substantially in accordance with GE Healthcare's written technical specifications for the equipment (as such specifications exist on the date the equipment is shipped) (the "Specifications"). This warranty covers both parts and labor and is available only to end-users that purchase the equipment from GE Healthcare or its authorized distributors. Customers purchasing through an authorized distributor must contact GE Healthcare promptly following such purchase to enable this warranty.

2.4 Software Warranty. Except as indicated otherwise below, GE Healthcare warrants for 90 days from the Warranty Commencement Date that (i) the licensed software will perform substantially in accordance with the applicable Documentation (as defined herein), (ii) it has not inserted any Disabling Code (as defined herein) into the licensed software and (iii) it will use reasonable commercial efforts consistent with industry standards to scan for and remove any software viruses before installation of the applicable Warranted Product. Except as indicated otherwise below, GE Healthcare warrants that it has the right to license or sublicense the licensed software to Customer for the purposes and subject to the terms and conditions set forth in GE Healthcare's General Terms and Conditions. As used in this warranty statement, (i) "Disabling Code" means computer code that is designed to delete, interfere with, or disable the normal operation of the Warranted Product; provided, however, that code included in the licensed software that prevents use outside of the license scope purchased for the software will not be deemed to be Disabling Code and (ii) "Documentation" means the GE Healthcare user manuals, on-line help functions, technical specifications and user instructions regarding the operation, installation and use of the software as made available by GE Healthcare to Customer.

2.5 Pre-owned Equipment. GE Healthcare's Gold Seal Preferred Products (certain pre-owned GE Healthcare equipment) and GE Healthcare's certified pre-owned Bone Mineral Densitometry Products are provided with GE Healthcare's standard warranties carrying the same duration as the new equipment warranty, but in no event exceeding 1 year (unless otherwise provided in writing by GE Healthcare). Except as expressly provided in this paragraph or in the applicable GE Healthcare Quotation, used and/or pre-owned equipment is not warranted by GE Healthcare.

2.6 Healthcare IT and X-Ray Tubes. GE Healthcare X-ray and Image Intensifier Tubes, Maxiray X-ray Tubes and GE Healthcare IT Products are covered by a separate warranty statement provided in an applicable GE Healthcare Quotation.

2.7 Third-Party Software and Equipment. This warranty statement does not cover Third-Party Software and Equipment (as defined herein) delivered with the Warranted Products (commonly identified by NL or NW series numbers in GE Healthcare's Quotation). "Third-Party Software and Equipment" means any non-GE Healthcare software or equipment (i) delivered to Customer in the third-party manufacturer/supplier's packaging and with its labeling or (ii) for which GE Healthcare expressly indicates (either in the GE Healthcare Quotation or in the product documentation) that the software or equipment is provided with the third-party manufacturer/supplier's warranty in lieu of a GE Healthcare warranty. Such products are covered by the third-party manufacturer/supplier's warranties, to the extent available. Anesthesia monitor mounting solutions Third-Party Software and Equipment purchased directly from GE Healthcare will not be treated as Third-Party Software or Equipment.

3. Warranty Commencement. Unless expressly provided otherwise in this warranty statement or the applicable GE Healthcare Quotation, the warranty period begins (the "Warranty Commencement Date") on the earlier of: (i) if GE Healthcare installs the Warranted Product, 5 days after GE Healthcare notifies Customer that it has completed assembly and the Warranted Product is operating substantially in accordance with GE Healthcare's Specifications; (ii) if GE Healthcare does not install the Warranted Product, 5 days after delivery of the Warranted Product to Customer; (iii) the date Customer first uses the Warranted Product for patient use; or (iv) if GE Healthcare is contractually required to install the Warranted Product, the 30th day following shipment to the end-user Customer if installation is delayed for reasons beyond GE Healthcare's reasonable control. The warranty period for any Warranted Product or component furnished to correct a warranty failure will be the unexpired term of the warranty applicable to the repaired or replaced Warranted Product. The warranty period for Vital Signs, Inc. Products begins on the date such products are shipped to Customer.

4. Remedies. If Customer promptly notifies GE Healthcare of Customer's warranty claim during the warranty period and makes the Warranted Product available for service, GE Healthcare will, at its option (i) with respect to equipment, either repair, adjust or replace (with new or exchange replacement parts) the non-conforming Warranted Product or components of the Warranted Product and (ii) with respect to GE Healthcare's licensed software, either correct the non-conformity or replace the applicable licensed software. Warranty service will be performed without charge from 8:00 a.m. to 5:00 p.m. (local site time), Monday-Friday, excluding GE Healthcare holidays, and outside those hours at GE Healthcare's then prevailing service rates and subject to the availability of personnel. For certain Warranted Products, GE Healthcare will perform warranty service only at an authorized service center or, in some instances, via a secure, remote connection to a GE Healthcare online center. With respect to GE Healthcare's warranty for the services it provides to Customer, Customer's exclusive remedy is set forth in Section 2.1 above.

Warranty claims for the Warranted Products should be directed through GE CARES at 1-800-437-1171. Warranty claims for accessories and supplies items should be directed through 1-800-558-5102.

5. Limitations. GE Healthcare shall not have any obligation to Customer hereunder if the warranty claim results from or arises out of: (i) the use of the Warranted Product in combination with any software, tools, hardware, equipment, supplies, accessories or any other materials or services not furnished by GE Healthcare or recommended in writing by GE Healthcare; (ii) the use of the Warranted Product in a manner or environment, or for any purpose, for which GE Healthcare did not design or license it, or in violation of GE Healthcare's recommendations or instructions on use; or (iii) any alteration, modification or enhancement of the Warranted Product by Customer or any third party not authorized or approved in writing by GE Healthcare. In addition, this warranty does not cover the Warranted Product to the extent it is used in any country other than the country to which GE Healthcare ships the Warranted Product (unless GE Healthcare expressly agrees otherwise in writing). GE Healthcare does not guarantee that licensed software will operate without error or interruption.

In addition, these warranties do not cover: (i) any defect or deficiency (including failure to conform to Specifications and/or Documentation, as applicable) that results, in whole or in part, from any improper storage or handling, failure to maintain the Warranted Products in the manner described in any applicable instructions or specifications, inadequate back-up or virus protection or any cause external to the Warranted Products or beyond GE Healthcare's reasonable control, including, but not limited to, power failure and failure to keep Customer's site clean and free of dust, sand and other particles or debris; (ii) the payment or reimbursement of any facility costs arising from repair or replacement of the Warranted Products or parts; (iii) any adjustment, such as alignment, calibration, or other normal preventative maintenance required of Customer; (iv) expendable supply items; (v) stockpiling of replacement parts; (vi) any failure of the Warranted Products to use or correctly process dates; and (vii) products not listed in GE Healthcare's Accessories and/or Supplies catalogs at the time of sale, and all service manuals are provided AS IS. For network and antenna installations not provided by GE Healthcare or its authorized agent(s), network and antenna system troubleshooting will be billable at GE Healthcare's standard service rates.

For MR systems, these warranties do not cover (i) any defect or deficiency that results, in whole or in part, from failure of any water chiller system supplied by Customer, (ii) service to any water chiller systems supplied by Customer and (iii) for MR systems with LHe/LN or shield cooler configured superconducting magnets (except for MR Systems with LCC magnets), any cryogen supply, cryogenic service or service to the magnet, cryostat, coldhead, shield cooler compressor or superconductive or resistive shim coils unless the need for such supply or service is caused by a defect in material or workmanship covered by these warranties (GE Healthcare's MR Magnet Maintenance and Cryogen Service Agreement is available to provide supplemental coverage during the warranty period). For Proteus XR/a, Definium and Precision 500D x-ray systems, these warranties do not cover collimator bulbs.

6. Exceptions to GE Healthcare Standard Warranties Described Above.

CT Partial System Equipment Upgrades*: Six (6) months
MR Partial System Equipment Upgrades*: Six (6) months
X-ray Partial System Equipment Upgrades*; High Voltage Rectifiers and TV Camera Pick-Up Tubes: Six (6) months
PET Partial System Equipment Upgrades* (Scanners, Cyclotrons and Chemistry Labs): Six (6) months
Nuclear Partial System Equipment Upgrades*: Six (6) months
GE OEC New or Exchange Service/Maintenance Parts: Ninety (90) days
HealthNet Lan, Advantage Review — Remote Products: Ninety (90) days

GE Ultrasound Exchange Probes and Transducers, Ultrasound Water Path attachment Kit: Ninety (90) days
GE Ultrasound Service Replacement Parts: Thirty (30) days
LOGIQBook and Other Handheld/Compact Ultrasound Products: Standard warranty includes (i) repair services at GE Healthcare service facilities, (ii) three (3) business day turnaround repair time for systems shipped via overnight delivery (where available), measured from the date of shipment (GE Healthcare is not responsible for delays in overnight shipment), (iii) seventy-two (72) hour loaner systems or probe replacement service via Fed Ex (shipping charges included), (iv) technical support via telephone from 7:00 am to 7:00 pm Central Time, Monday-Friday, excluding GE Healthcare holidays, (iv) field support/service is available for an additional charge and (v) preventative maintenance for an additional charge. For an additional charge, GE Healthcare will also provide the following enhanced warranty features as part of the system warranty: coverage for system damage due to accidental dropping or mishandling, with a maximum of two (2) replacement systems during the term of the warranty.
Ultrasound Partial System Equipment Upgrades*: Ninety (90) days (Customer will not be credited the value of this warranty against pre-existing warranties or service agreements).
Dash, Solar 8000M, 8000i & Tram: Additional two (2) years of parts only coverage, excluding displays (United States only)
DINAMAP ProCare Vital Signs Monitors: Two (2) years
DINAMAP Pro 100-400V2 Series Monitors: Three (3) years
Enterprise Access: One (1) year parts, ninety (90) days labor
MAC 1600: Three (3) years
MAC 1200: Three (3) years (United States only)
Batteries: Ninety (90) days, except (i) for LOGIQBook batteries, which are warranted for twelve (12) months and (ii) for Nickel cadmium or lead acid batteries for X-ray and mammography systems (which will carry a sixty (60)-month warranty prorated as shown below). For Nickel cadmium or lead acid batteries for X-ray and mammography systems, warranty service will be performed without charge from 8:00 a.m. to 5:00 p.m. (local site time), Monday-Friday, excluding GE Healthcare holidays, and outside those hours at GE Healthcare's then prevailing service rates and subject to the availability of personnel only during the first twelve (12) months of the sixty (60)-month warranty period. For X-ray and mammography systems, if nickel cadmium or lead acid batteries need replacement during their applicable warranty period, Customer will pay the price of the replacement battery in effect on its delivery date less a Pro Rata Credit Allowance (as defined herein). The Pro Rata Credit Allowance for batteries that fail less than twelve (12) months after the warranty begins is one hundred percent (100%). The Pro Rata Credit Allowance for batteries that fail more than twelve (12) months after the warranty begins is:

1 - (# of Mos. After Warranty Commencement /60) x 100%

For the purpose of Pro Rata Credit Allowance, a fraction of a month less than fifteen (15) days will be disregarded, and a fraction of a month equal to or greater than fifteen (15) days will be regarded as a full month.
Care Plus® Incubator: Three (3) years parts, one (1) year labor
Ohio® Infant Warmer Systems and Panda™ Warmers: Lifetime parts warranty on heater cal rod
BiliBlanket® Plus High Output Phototherapy System: Two (2) years on Light Box and eighteen (18) months on Fiberoptic Pad
Microenvironment and Phototherapy expendable components, this includes but is not limited to patient probes, probe covers and light bulbs: Thirty (30) days
GE OEC refurbished c-arms: Twelve (12) months after installation
Oximeters: Three (3) years from installation, or thirty-nine (39) months from GE Healthcare invoice, whichever occurs sooner
Tec 7 Vaporizers: Three (3) years
Tec 6 Plus Vaporizers: Two (2) years
X-ray and Image Intensifier Tubes and Maxiray X-ray Tubes: See GE Healthcare Warranty Statement X-Ray an Image Intensifier Tubes
Accessories and Supplies: GE Healthcare's catalog and/or website includes a "Service/Warranty Code" which identifies the installation, warranty, applications and post-warranty service, if any, provided for each accessory and supply product. Following are the warranty periods for accessories and supplies:

Service/Warranty Code T	100 Years
Service/Warranty Code V	25 Years
Service/Warranty Codes X	15 Years
Service/Warranty Codes F	3 Years
Service/Warranty Codes D, J, N, O, R or Z	2 Years
Service/Warranty Codes A, B, C, E, G, L, P, Q, S or Y	1 Year
Service/Warranty Code H	6 Months
Service/Warranty Code K and all Vital Signs, Inc. products	3 Months
Service/Warranty Code M	1 Month
Service/Warranty Code W	Out of Box Failure Only

*** NOTE: For partial system equipment upgrades, the warranty applies only to the upgraded components**

GE Healthcare

Warranty Codes For Accessories And Supplies

Service / Warranty Codes. If Customer promptly notifies GE Healthcare of its warranty claim and makes the Product available for service, GE Healthcare will provide the warranty service indicated in the applicable Service/Warranty Code description. The terms and conditions of GE Healthcare's Warranty Statement(s) apply to all warranty claims. Basic Service Premise for Products – GE Healthcare Field Engineers will take the first call for service and either provide direct support or arrange for support from the manufacturer or its dealers as indicated by the individual Service/Warranty Code. If the Service/Warranty Code calls for Product return for repair or in-warranty exchange, Customer must return the Product as GE Healthcare directs. GE Healthcare provides warranty service from 8:00 AM to 5:00 PM local time Monday-Friday EXCLUDING GE HEALTHCARE HOLIDAYS. If a Service/Warranty Code provides for warranty service to be performed on Customer's site, such service is available outside the above hours at GE Healthcare's prevailing service rates and subject to the availability of personnel.

A GE Healthcare directly, or through a sub-contractor, provides the following:

Installation; parts; on-site warranty service to repair, adjust or replace (at GE Healthcare's option and using new or exchange replacement parts) non-conforming products or parts; applications training in some cases (with additional charge); and post-warranty service, at prevailing hourly billed service ("HBS") rates and, in some cases, under GE Healthcare service contracts.

B GE Healthcare directly provides the following through GE Healthcare's Global Parts Operation (GPO):

New or exchange replacement parts at no charge to correct non-conforming products or parts during the warranty period; new or exchange replacement parts at GE Healthcare's normal prices for post-warranty repairs. ***Note:*** *Installation, applications training and on-site service is the Customer's responsibility. However, GE Healthcare's Field Engineers may be available at prevailing HBS rates. Contact GE CARES for availability.*

C GE Healthcare arranges for the third-party Product Manufacturer or its dealers to provide the following:

Installation (in some cases with an additional charge); parts; on-site warranty service to repair, adjust, or replace (at the manufacturer's or dealer's option and using new or exchange replacement parts) non-conforming products or parts; applications training in some cases (some with additional charge); and post-warranty service at prevailing service rates.

D GE Healthcare refers to the Product Manufacturer warranty, which provides the following:

Basic functional troubleshooting (no technical labor) with supplier phone support and repair or replacement (at the manufacturer's or dealer's option) of defective products or parts. ***Note:*** *The battery for Service/Warranty Code **D** has a 1-year warranty. For detailed warranty information, please refer to the Product Manufacturer's warranty certificate.*

E GE Healthcare directly, or through a sub-contractor, provides:

Installation (in some cases with an additional charge); basic functional troubleshooting (no technical labor) with supplier phone support; and coordination of unit exchange or loaner program for in-factory service.

GE Healthcare arranges for the third-party Product Manufacturer or its dealers to provide in-factory service:

At no charge during the warranty period and at manufacturers or dealer's prevailing service rates outside of the warranty period. Products must be returned to the manufacturer or dealer, at GE Healthcare's expense during warranty and Customer's expense after warranty, for repair.

F GE Healthcare refers to the Product Manufacturer warranty, which provides the following:

Basic functional troubleshooting (no technical labor) with supplier phone support and replacement of non-conforming products or parts, which Customer returns to the manufacturer or dealer during the warranty period. ***Note:*** *For detailed warranty information, please refer to the Product Manufacturer's warranty certificate.*

G, J, O and Q GE Healthcare refers to the Product Manufacturer warranty, which provides the following:

Start up and commissioning; basic functional troubleshooting (no technical labor) with supplier phone support 24/7; and warranty service to repair, adjust, or replace (at the manufacturer's or dealer's option) non-conforming products or parts (excluding installation, time and material). ***Note:*** *The UPS battery for Service/Warranty Code **G** has a 9-year pro-rated warranty to cover non-conforming material. Start up and commissioning for Service/Warranty Code **O** applies only to 10 KVA and above. The UPS battery for Service/Warranty Codes **O** and **Q** has a 1-year warranty to replace the product. For detailed warranty information, please refer to the Product Manufacturer's warranty certificate. Warranty service for Service/Warranty Codes **G** and **O** is provided On-site. For detailed warranty information, please refer to the Product Manufacturer's warranty certificate.*

H, K, L and M GE Healthcare directly provides the following:

Exchange of non-conforming products, which Customer returns to GE Healthcare during the warranty period. ***Note:*** *Installation, parts, applications training, and on-site service is the Customer's responsibility.*

N, R and S GE Healthcare refers to the Product Manufacturer warranty, which provides the following:

Installation; Preventative Maintenance; and parts and labor. ***Note:*** *Post-warranty service, at manufacturer's prevailing HBS rates, and in some cases, under GE Healthcare service contracts. The battery for Service/Warranty Code R has a 1-year warranty. For detailed warranty information, please refer to the Product Manufacturer's warranty certificate.*

P GE Healthcare directly provides the following:

Replacement of non-conforming components. ***Note:*** *Installation, parts, applications training, and on-site service is the Customer's responsibility.*

T, V and X GE Healthcare directly provides the following:

Replacement of Product only; GE Healthcare will not replace patient records; and product is warranted only for image legibility. ***Note:*** *Installation, parts, applications training, and on-site service is the Customer's responsibility.*

W GE Healthcare directly provides the following:

Replacement of Product only for Out of Box failure. ***Note:*** *Installation, parts, applications training, and on-site service is the Customer's responsibility.*

Y and Z GE Healthcare refers to the Product Manufacturer warranty, which provides the following:

Basic functional troubleshooting (no technical labor) with supplier phone support and replacement of non-conforming components. ***Note:*** *All electrical components (excluding the UPS) for Service/Warranty Code **Z** have a 1-year warranty. For detailed warranty information, please refer to the Product Manufacturer's warranty certificate.*

GE Healthcare

Warranty Statement for X-Ray And Image Intensifier Tubes (United States And Canada)

1. Warranty Scope. These warranties cover each GE Healthcare X-ray or image intensifier tube ("Tube") listed in the GE Healthcare Quotation. This warranty statement incorporates GE Healthcare's General Terms and Conditions and GE Healthcare's Product Terms and Conditions.

GE Healthcare warrants that, starting with the Warranty Commencement Date and for the Warranty Period (as defined below): (i) the Tube will be free from defects in title, material and workmanship under normal use and service and (ii) except for Tubes manufactured in compliance with Customer's designs or specifications, the Tube will perform substantially in accordance with GE Healthcare's written technical specifications for the Tube (as such specifications exist on the date the Tube is shipped) ("Tube Specifications"). This warranty statement defines GE Healthcare's warranty obligations for both parts and labor and is available only to end-users that purchase Tubes from GE Healthcare or its authorized distributors. The Warranty Period for all warranties, except the warranty of title and the Patent and Copyright Warranty, is limited in time as shown below.

2. Warranty Commencement Date and Warranty Periods. The Warranty Period start date ("Warranty Commencement Date") for Tubes supplied as part of a new system installation will be the system installation date. The Warranty Commencement Date for replacement Tubes is determined by (i) the date GE Healthcare installs the Tube or (ii) if the date of installation is unknown, then the date of GE Healthcare's invoice to Customer or GE Healthcare's authorized distributor, as applicable, and in all cases not later than six (6) months following shipment of the Tube by GE Healthcare. The Warranty Periods are determined as follows:

- Customer Receives A New Tube As Part Of A New System Installation: For Tubes furnished to Customer as part of a new system installation, the Warranty Period for the replacement Tube will be the full term of the warranty, as shown in the chart below.
- Customer Pays A Portion Of The Cost For The New Tube (Pro Rata Calculation Table Applies): For Tubes purchased by Customer with A PRO-RATA ALLOWANCE, the Warranty Period for the new Tube will be the full term of the warranty, as shown in the chart below.
- Customer Pays The Entire Cost For The New Tube: For Tubes purchased by Customer with NO PRO-RATA ALLOWANCE, the Warranty Period for the new Tube will be the full term of the warranty, as shown in the chart below.
- GE Healthcare Pays The Entire Cost For The New Tube: For Tubes furnished to Customer under terms of the FULL WARRANTY PERIOD, as described in the chart, the Warranty Period for the new Tube will be the unexpired term of the warranty applicable to the last Tube for which Customer paid all or a portion of the cost of that Tube. (Note that the Warranty Period is not "reset" for Tubes supplied when GE Healthcare pays the entire cost for the replacement Tube.)
- GE Healthcare Supplied Tubes Under A GE Healthcare Tube Contract: For Tubes furnished to Customer under terms of a GE Healthcare Tube contract, refer to the Tube contract terms for discussion of any warranty provisions for the Tube. (Note that in general, at Tube contract termination, GE Healthcare provides no warranty of any kind on the Tube(s) remaining in the system.)

3. Remedies

3.1. General Remedies Terms. If, within 10 days after Tube failure, Customer notifies GE Healthcare of Customer's warranty claim during the Warranty Period, provides GE Healthcare with the information shown below, and makes the Tube available for service, GE Healthcare will, at its option, either repair, adjust or replace (with new or exchange replacement parts) the non-conforming Tube or parts of the Tube. Customer must provide GE Healthcare in writing (i) GE Healthcare's serial number of the Tube, (ii) the location and GE Healthcare's serial number of the system on which the Tube was installed, (iii) the date the Tube failed, (iv) the date the Tube was removed from service, and (v) the exposure counter reading when the Tube was removed. Warranty service will be performed as detailed below (with some types of service for a charge and other types of service on a no charge basis, as listed below) during GE Healthcare's standard service coverage hours of 8:00 a.m. to 5:00 p.m. (local site time), Monday-Friday, excluding GE Healthcare holidays ("Standard Coverage Hours"), and outside of Standard Coverage Hours at GE Healthcare's then-prevailing service rates (except as otherwise stated herein) and subject to the availability of personnel.

Customer must: (i) use the Tube in accordance with GE Healthcare service instructions and recommendations for the Tube and the system on which it is installed (including warm up and calibration procedures); (ii) perform preventive and corrective maintenance of the Tube utilizing maintenance procedures in accordance with GE Healthcare service instructions and recommendations and using GE Healthcare replacement parts or replacements parts of equivalent quality; and (iii) keep and make available to GE Healthcare, upon request records documenting the above maintenance.

Customer's failure to (i) properly use the Tube, (ii) perform the maintenance described above, (iii) maintain the information required above, (iv) provide the above information or any other information required by this warranty within the designated time periods, or (v) permit GE Healthcare, to verify such information during GE Healthcare's normal working hours will invalidate this warranty.

3.2. Determining Tube Charge For Replacement Tubes. Customer will pay the price of the replacement Tube in effect on its delivery date less the applicable Pro Rata Warranty Allowance (if applicable) described in the table that follows. For the purpose of the Pro Rata Warranty Allowance, a fraction of a month less than 15 days will be disregarded, and a fraction of a month equal to or greater than 15 days will be regarded as a full month.

3.3. Non-CT Tubes (Radiographic, Radiographic & Fluoroscopic, Vascular, and Mammographic). For Non-CT Tubes, warranty service does not include installation of the replacement Tube in Customer's system, but upon Customer's request, GE Healthcare, will install the Tube at GE Healthcare's then-prevailing service rates. If a replacement Tube is not installed by GE Healthcare, Customer must, not later than 10 days after its installation date, provide GE Healthcare, in writing (i) GE Healthcare's serial number of the replacement Tube, (ii) the location and GE Healthcare's serial number of the system on which the replacement Tube has been installed, (iii) the date of installation, and (iv) the exposure counter reading on the installation date.

3.4. CT Tubes Replaced During Full Warranty Period.

3.4.1. Determining Labor Charges For Tubes Replaced During Full Warranty Period. No service charges for the installation of the replacement Tube will be billed to Customer for CT Tubes replaced during the Full Warranty Period when those Tubes are replaced during Standard Coverage Hours.

3.4.2. GE Healthcare Pays The Entire Cost For The CT Tube. For CT Tubes furnished to Customer under terms of the FULL WARRANTY PERIOD as described in the chart, there is no charge to Customer for GE Healthcare installation costs for installation during Standard Coverage Hours. For services performed outside the Standard Coverage Hours, the service will be provided at GE Healthcare's prevailing service rates at the time of service, less a credit for the comparable service had it been rendered during the Standard Coverage Hours, so that Customer will pay the net difference. No refund or payment will be issued to Customer or other parties who choose to utilize either in-house or third party service providers for installation of the replacement Tube.

3.5. CT Tubes Replaced During Pro Rata Warranty Period.

3.5.1. Determining Labor Charges For CT Tubes Replaced During Pro Rata Warranty Period: Customer will pay GE Healthcare a service charge for the installation of the replacement CT Tube in effect on the date the service is rendered, less the applicable Pro Rata Labor Allowance. (Note that the Pro Rata Labor Allowance may be applied only to charges by GE Healthcare for GE Healthcare supplied labor.) No refund or payment will be issued to Customer or other parties who choose to utilize either in-house or third party service providers for installation of the replacement Tube. GE Healthcare will make a credit allowance at the billing rate for services performed for installation during Standard Coverage Hours. For services performed outside of Standard Coverage Hours, the service will be performed at GE Healthcare's prevailing service rates at the time of service, less a credit for the comparable service had it been rendered during Standard Coverage Hours, so that Customer will pay the net difference.

3.5.2. Customer Pays A Portion Of The Cost For The Replacement Tube: For Tubes furnished to Customer with A PRO-RATA WARRANTY ALLOWANCE to correct the warranty failure, the labor allowance multiplier will be calculated at the same pro-rata rate as is applicable to the part that is being replaced or repaired. That allowance will be applied to the prevailing service rates at time of service. Customer will pay the service charge less the Pro-Rata Labor Allowance amount.

4. Limitations. GE Healthcare shall not have any obligation to Customer hereunder if the warranty claim results from or arises out of: (i) the use of the Tube in combination with any hardware, equipment, supplies, accessories or any other materials or services not furnished by GE Healthcare or recommended in writing by GE Healthcare; (ii) the use of the Tube in a manner or environment, or for any purpose, for which GE Healthcare did not design or manufacture it, or in violation of GE Healthcare's recommendations or instructions on use; or (iii) any alteration, modification or enhancement of the Tube by Customer or any third party not authorized or approved in writing by GE Healthcare. In addition, this warranty does not cover the Tube to the extent it is used in any country other than the country to which GE Healthcare ships the Tube (unless GE Healthcare expressly agrees otherwise in writing). In addition, these warranties do not cover: (i) any defect or deficiency (including failure to conform to Tube Specifications that results, in whole or in part, from any improper storage or handling, failure to maintain the Tubes in the manner described in any applicable instructions or specifications or any cause external to the Tubes or beyond GE Healthcare's reasonable control, including, but not limited to, power failure and failure to keep Customer's site clean and free of dust, sand and other particles or debris; (ii) any adjustment, such as alignment, calibration, or other normal preventative maintenance required of Customer; (iii) expendable supply items; and (iv) stockpiling of replacement parts.

5. Warranty Periods

TUBE TYPE OR SYSTEM DESCRIPTION (a)	FULL WARRANTY PERIOD (b)	PRO RATA WARRANTY PERIOD (c)
Radiographic	30 days	24 months
Radiographic & Fluoroscopic	30 days	24 months
Vascular	30 days	24 months
Mammographic	30 days (d)	12 months
MX150 Vascular	36 months	N/A
Performix 160A (MX160)	36 months	N/A
MX120 Fluoroscopic	30 days	18 months
CT Max	4,000 slices	40,000 slices or 12 months

TUBE TYPE OR SYSTEM DESCRIPTION (a)	FULL WARRANTY PERIOD (b)	PRO RATA WARRANTY PERIOD (c)
CT 8800/9000 Metal	4,000 slices	40,000 slices or 12 months
CT 8800/9000 Graphite	4,000 slices	40,000 slices or 12 months
GE CGR Graphite	4,000 slices	40,000 slices or 12 months
GE Technicare CT	4,000 slices	40,000 slices or 12 months
CT Pace/Sytec 2000-4000	5,000 slices	80,000 slices or 12 months
CT SRi/Synergy	6,000 slices	80,000 slices or 12 months
CT 9800 Graphite	5,000 slices	80,000 slices or 12 months
HiLight Advantage	5,000 slices	80,000 slices or 12 months
Pegasus on CT/e	5,000 slices	50,000 slices or 12 months
Pegasus on CT/e Dual	30 days	50,000 slices or 12 months
ProSpeed/Sytec 6000-8000	9,000 slices	110,000 slices or 12 months
HiSpeed Advantage on HiSpeed Advantage and CT/I	9,000 slices	140,000 slices or 12 months
Solarix on LX/I, FX/I, DX/I	10,000 slices	100,000 slices or 12 months
Solarix 630 on HiSpeed ZX/I	10,000 slices	100,000 slices or 12 months
Solarix 630 on NX/I Pro	30 days	12 months or 15,000 amp-seconds
Performix-ADV on CT/I	6 months or 100,000 slices, whichever occurs first	N/A
Performix-ADV QX/i	6 months or 30,000 amp-seconds, whichever occurs first	N/A
Performix Ultra on LightSpeed 16, LightSpeed Ultra, LightSpeed Plus, LightSpeed QX/I, HiSpeed QX/I, Discovery LS, Discovery ST	12 months or 70,000 amp-seconds, whichever occurs first	N/A
Performix Ultra on BrightSpeed 16 (Elite), BrightSpeed 8 (Edge), BrightSpeed 4 (Excel)	12 months or 6,000 patient exams, whichever occurs first	N/A
Performix Pro80 (D3634T) on LightSpeed Pro 16, LightSpeed RT	12 months or 70,000 amp-seconds, whichever occurs first	N/A
Performix Pro VCT100 (D3194T) on LightSpeed Pro16	12 months or 70,000 amp-seconds, whichever occurs first	N/A
Performix Pro VCT100 (D3194T) on LightSpeed VCT, LightSpeed VCT Select, LightSpeed RT16, LightSpeed Xtra, Discovery VCT	12 months or 6,000 patient exams, whichever occurs first	N/A
Image Intensifier	30 days	24 months

COMMENTS

(a) For actual catalog numbers, please contact your local GE Healthcare representative.
(b) Initial period of time or amount of use after warranty begins during which a full 100% warranty is provided for a Tube that fails.
(c) Maximum period of time or amount of use during which a Pro Rata Warranty Allowance is provided for a Tube that fails. The Pro Rata Warranty Allowance and the Pro Rata Labor Allowance are calculated as follows:

$$1 - \frac{\text{Number of months between date of warranty commencement and date of failure}}{\text{Complete Warranty Time Period}} \times 100$$

OR

$$1 - \frac{\text{Slices Taken or Amp-Seconds}}{\text{Complete Pro Rata Warranty Slice or Amp-Second Amount}} \times 100$$

The Pro Rata Warranty period ends at the expiration of the maximum time period or the maximum usage amount identified in column (c) above, whichever occurs first.

(d) Mammography tubes included with new systems have a full 12 month, non-prorated warranty. Mammography replacement tubes carry a 30 day full warranty/12 month prorated warranty.

GE Healthcare

QUOTATION

Quotation Number: PR2-C19294 V 1

Carolinas Medical Center 1000 Blythe Blvd Charlotte NC 28203-5812	Attn: John Palmer 1000 Blythe Blvd Charlotte NC 28203	Date: 02-28-2014

This Agreement (as defined below) is by and between the Customer and the GE Healthcare business ("GE Healthcare"), each as identified herein. GE Healthcare agrees to provide and Customer agrees to pay for the Products listed in this GE Healthcare Quotation ("Quotation"). "Agreement" is defined as this Quotation and the terms and conditions set forth in either (i) the Governing Agreement identified below or (ii) if no Governing Agreement is identified, the following documents:

1) This Quotation that identifies the Product offerings purchased or licensed by Customer;

2) The following documents, as applicable, if attached to this Quotation: (i) GE Healthcare Warranty(ies); (ii) GE Healthcare Additional Terms and Conditions; (iii) GE Healthcare Product Terms and Conditions; and (iv) GE Healthcare General Terms and Conditions.

In the event of conflict among the foregoing items, the order of precedence is as listed above.

This Quotation is subject to withdrawal by GE Healthcare at any time before acceptance. Customer accepts by signing and returning this Quotation or by otherwise providing evidence of acceptance satisfactory to GE Healthcare. Upon acceptance, this Quotation and the related terms and conditions listed above (or the Governing Agreement, if any) shall constitute the complete and final agreement of the parties relating to the Products identified in this Quotation. The parties agree that they have not relied on any oral or written terms, conditions, representations or warranties outside those expressly stated or incorporated by reference in this Agreement in making their decisions to enter into this Agreement. No agreement or understanding, oral or written, in any way purporting to modify this Agreement, whether contained in Customer's purchase order or shipping release forms, or elsewhere, shall be binding unless hereafter agreed to in writing by authorized representatives of both parties. Each party objects to any terms inconsistent with this Agreement proposed by either party unless agreed to in writing and signed by authorized representatives of both parties, and neither the subsequent lack of objection to any such terms, nor the delivery of the Products, shall constitute an agreement by either party to any such terms.

By signing below, each party certifies that it has not made any handwritten modifications. Manual changes or mark-ups on this Agreement (except signatures in the signature blocks and an indication in the form of payment section below) will be void.

- Terms of Delivery: FOB Destination
- Quotation Expiration Date: 05-29-2014
- Billing Terms: 100% billing at Ship Completion (Fulfillment) / Delivery
- Payment Terms: 60 DAYS NET
- Governing Agreement: CSS-GEHC MVA July 15 2011

Each party has caused this agreement to be signed by an authorized representative on the date set forth below. Please submit purchase orders to GE Healthcare

Please submit Purchase Orders to: General Electric Company, GE Healthcare, 3000 N. Grandview Blvd., Mail Code WT-897, Waukesha, WI 53188

GE HEALTHCARE

Scott Ramsey

Product Sales Specialist

CUSTOMER

Authorized Customer Date

Print Name and Title

PO #

Desired Equipment First Use Date

GE Healthcare will use reasonable efforts to meet Customer's desired equipment first use date. The actual delivery date will be mutually agreed upon by the parties.

INDICATE FORM OF PAYMENT:

(If there is potential to finance with a lease transaction, GE HFS or otherwise, select lease.)

____ Cash * ____ Lease ____ HFS Loan

If financing please provide name of finance company below*:

*Selecting Cash or not identifying GE HFS as the finance company declines option for GE HFS financing.

Quotation Number: PR2-C19294 V 1

Item No.	Qty	Catalog No.	Description
			MR Accessories
	1		**MR Accessories**
1	1	E8911CG	GE MR Heat Exchanger Manual Cryogen Compressor Water Bypass Option Add a level of magnet protection with a Manual Cryogen Compresor Bypass. In case of a power failure, you can cycle municipal or facility water through the cryogen compresor and reduce cryogen loss and reduce the likelihood of quenching. FEATURES AND BENEFITS • Easy to install and simple to use • Helps switch over water supply to your cryogen compressor in the event of loss of power to reduce cryogen loss • Includes fluid supply pressure gauge, temperature gauge and flow rate meter for easy verification of operation • Manual operation reduces unintentional switch-overs and coolant dumping during brown-outs and supply power glitches COMPATIBILITY Must be used with a GE MR Heat Exchanger: • E8911CA • E8911CB • E8911CC • E8911CD • E8912CA • E8912CB • E8912CC • E8912CD NOTES: • Item is NON-RETURNABLE and NON-REFUNDABLE
2	1	E8912CA	GE Optima MR450w Heat Exchangers - 49kW (20 Tons) Cooling for your GE Healthcare MR system has never been so easy. GE Healthcare has partnered with the Glen Dimplex Group, a world leader in cooling systems, to offer heat exchangers designed to meet the needs of your Discovery MR System. Now you can look to GE Healthcare for your entire MR purchase and support. This heat exchanger is highly reliable and the only unit verified to perform with the

Item No.	Qty	Catalog No.	Description

new platform of GE Healthcare MR systems. As part of your integrated GE Healthcare solution, you'll work with a single contact throughout the whole installation. A Project Manager of Installation will help with building layout, room designs, delivery and installation - every step until your system is ready to scan. Our team will work seamlessly with architects, contractors and your internal team to help ensure timely, cost-effective completion.

Once your cooling system is running, you'll get fast, highly-skilled service support managed through GE Healthcare - with the same quality and response time you expect from your MR system.

FEATURES AND BENEFITS

- Designed to provide stable fully dedicated cooling for your MR system's needs
- Water/glycol outdoor-air-cooled heat exchangers to support your highest exam volumes and your full range of diagnostic procedures
- Redundant fluid pumps with automatic switchover let you keep operating with no loss of cooling even if one pump goes down
- Quad compressor, dual tandem refrigeration circuit design saves on energy while your system smoothly transitions through the 10% to 100% heat load capacity cycles of patient scanning and idling
- Quiet operation between patient exams and overnight - ideal for facilities in residential areas
- Comes with installation support, installation visits, preventative maintenance visit and 1 full year of parts and labor warranty
- Installation support includes: support through GE's Project Manager of Install, GE's Design Center, technical support from the Glen Dimplex company, two (2) installation visits
- Comprehensive and quality service rapidly delivered through our CARES service solution
- 65 gallons of 100% glycol concentrate for complete system filling and diluting
- Wall mounted remote display panel provides the ability to monitor the system's operation and indicates possible system errors
- Filter kit with flow meter helps to ensure purity of water prior to entry to the MR system
- Highly recommended that Vibration Isolation Spring Kit (E8911CJ) be added for systems that will be roof top mounted

SPECIFICATIONS

- Net Cooling Capacity: 49 kW / 20 Ton

Quotation Number: PR2-C19294 V 1

Item No.	Qty	Catalog No.	Description

- Maximum Coolant Flow: 35 gpm (132 l/m)
- Coolant Outlet Temperature: 48 F (8.9 C)
- Coolant Temp Stability: E 1.8 F (E1.0 C)
- Max Coolant Pressure : 70 Psi (4.8 Bar)
- Refrigerant: R407C
- Ambient Temp Range: -20 to 120 F (-30 to 50 C)
- Condenser Air Flow (Approx): 18,000 Cfm
- Tank Capacity: 100 gal (378 l)
- Flow Meter Range: 4-40 gpm
- Filters: 50 micron cartridge filters
- Supply Voltage: 460v / 3 phase / 60 Hz
- Coolant Connections: 2" NPTF
- Overall Size (L x W x H) 44" x 136" x 84.5"

COMPATIBILITY:

- GE Optima MR450w 1.5T MR System

NOTES:

- Item is NON-RETURNABLE and NON-REFUNDABLE

Quote Summary:

Total Quote Net Selling Price **$50,000.00**

(Quoted prices do not reflect state and local taxes if applicable. Total Net Selling Price Includes Trade In allowance, if applicable.)

GE Healthcare

NOTICE REGARDING NUCLEAR MEDICINE PRODUCTS

This notice applies to the following GE Healthcare Nuclear Medicine products only: Discovery NM 670 and Discovery NM 630 (the "Products").

GE Healthcare has reclassified several advanced software tools and associated documentation to a GE Healthcare Technical Service Technology package that we feel will bring greater value and interest to our customers. GE Healthcare will continue to provide trained customer employees with access to the GE Healthcare Technical Service Technology package under a separate agreement.

GE Healthcare will continue to provide customers and their third party service providers with access to software tools and associated documentation in order to perform basic service on the Products upon a request for registration for such access. This will allow GE Healthcare to react faster to the future service needs of GE Healthcare customers.

If you have any questions, you can contact your sales Service Specialist.

GE Healthcare

For Third Party Products and Services Only: If GE Healthcare has agreed to provide any third party products and/or services (other than GE Healthcare accessories and supplies) to Customer as part of the Quotation, including but not limited to any Commitment Account/Non-Inventory items, (i) GE Healthcare is acquiring such products and/or services on Customer's behalf and not as a supplier of such products and/or services; (ii) GE Healthcare makes no warranties of any kind, express or implied, with respect to such products and/or services (warranties, if any, on such products and/or services will be provided by the manufacturer or service provider, as applicable); (iii) Customer is solely responsible for ensuring that the acquisition and use of such products and/or services is in compliance with applicable laws and regulations, including applicable FDA regulations; and (iv) Customer is solely responsible for any and all claims resulting from or related to the acquisition or use of such products and/or services.

For Mobile Systems Only: For products that are approved by GE Healthcare for use as transportable, relocatable and mobile systems, GE Healthcare will deliver the system to Customer's van manufacturer and furnish final assembly services to place the system in Customer's van. At the time of order, Customer must notify GE Healthcare of the van manufacturer to which the system is to be shipped. It is Customer's responsibility to make arrangements with the van manufacturer for delivery of the van and to comply with any additional planning requirements of the van manufacturer. For MR systems, GE Healthcare's product tests will be performed when assembly in the van is completed and MR system operation will be re-checked when the van is delivered to Customer.

For MR Products Only:

a. MR Systems. Customer will provide a site and surroundings suitable for installation and operation of an MR system producing strong magnetic and electric fields, and Customer will be required to provide a water chiller meeting GE Healthcare specifications.

b. Magnetic Resonance Imaging (MR) Site. Customer will provide a site and surroundings suitable for installation and operation of an MR system producing strong magnetic and electric fields, and Customer will be required to provide a water chiller meeting GE Healthcare specifications. Customer acknowledges that the magnetic fields of MR systems attract ferro-magnetic articles and are capable of rapidly accelerating such articles toward the magnet, creating corresponding physical danger to persons in the vicinity and possible damage to such systems. In addition, the magnetic and radio frequency fields of such systems may adversely affect the operation of pacemakers, equipment containing magnetic reed switches, and aneurysm or surgical clips.

c. Magnet Maintenance and Cryogens. The price of MR systems includes all cryogens necessary for final assembly and testing of the MR system. Cryogen loss attributable to power loss or water chiller failure for the MR system's shield cooler or condenser system during installation is Customer's responsibility, and Customer will be billed for cryogen replacement plus the associated cryogen transfill labor at GE Healthcare's then applicable rates. After final assembly, Customer will be responsible to supply and install all cryogens, unless cryogen loss is caused by a defect in material or workmanship within the scope of GE Healthcare's applicable MR system warranty. Following final assembly, provided cryogen boil-off rates have not been adversely affected by actions of Customer, its representatives or contractors, or any third party not authorized by GE Healthcare, GE Healthcare will provide a super-conductive magnet which, at the expiration of the warranty period, has cryogen boil-off rates not exceeding those stated in GE Healthcare's applicable magnet specifications. GE Healthcare has no responsibility to Customer for cryogen boil-off rates subsequent to expiration or termination of the applicable MR system warranty, unless Customer elects to receive magnet maintenance and cryogen service under a separate agreement with GE Healthcare.

For PET and PET/Cyclotron Systems Only: For PET Cyclotron/Chemistry systems, any target or gas processing system purchased with the system must be installed with the original system prior to system checkout. Installation after this time will require a separate quotation by GE Healthcare and is billable to Customer at GE Healthcare's then-current rates. Further, any system storage fees associated with this order are solely the responsibility of Customer. PET Cyclotron/Chemistry systems are sold for

use in generating radiotracers for diagnostic imaging applications only. GE Healthcare does not sell or intend such systems or any part(s) thereof for use in radiation therapy.

For PET/CT and PET Radiopharmacy Sites Only: Customer will provide a site and surroundings suitable for installation and operation of such a systems using and/or producing radiation. Further, Customer will be responsible for obtaining all required federal, state, and local licenses and permits for radioactive sealed sources and radioisotopes used with such system. If permitted under applicable licensing requirements, GE Healthcare representatives will work under Customer's license and supervision when handling any radioactive substance for which a license is required, or Customer will provide such handling itself under an appropriate license. Customer will provide all radioactive sources and radioisotopes for calibration and performance checks of such system. Customer acknowledges that such systems utilize radioactive materials. As with all systems utilizing radioactive materials, hazards exist creating possible physical danger to persons in the vicinity.

For iCenter and iLinq Only: GE Healthcare will provide iCenter and/or iLinq information management Services at no additional charge during the term of the applicable product warranty, subject to then-applicable terms and conditions for such services.

For Healthcare IT Products Only:

a. Payment. Unless specified separately in the Quotation, fees for non-GE Healthcare software and hardware shall be due one hundred percent (100%) on delivery of the applicable software or hardware.

b. Audit Rights. Upon forty-five (45) days notice GE Healthcare may audit Customer's use of the software. Customer agrees to cooperate with GE Healthcare's audit and to provide reasonable assistance and access to information. If the audit uncovers underpaid or unpaid fees owe to GE Healthcare, Customer agrees to pay those fees and GE Healthcare's costs incurred in conducting the audit within thirty (30) days of written notification of the amounts owed. If Customer does not pay the amounts owed, GE Healthcare may terminate Customer's license to use the applicable software. Customer agrees to permit GE Healthcare to obtain certain reasonable information regarding the users and other use information regarding the software. All of such information shall be treated as confidential information, shall be used solely for the purposes of technical support and auditing the use of the software, and shall not be disclosed to any third party (other than third-party vendors of software licensed to Customer under this Agreement) without Customer's consent.

General Electric Company, GE Healthcare Division
3200 N. Grandview Blvd., Mail Code WT-897, Waukesha, WI 53188

GE Healthcare General Terms and Conditions

GE Healthcare

References herein to "Products" and "Services" mean the Products (including equipment and software) and Services identified on the applicable GE Healthcare Quotation ("Quotation").

1. General Terms

1.1. Confidentiality. Each party will treat the terms of this Agreement and the other party's written, proprietary business information as confidential if marked as confidential or proprietary. Customer will treat GE Healthcare (and GE Healthcare's third party vendors') software and technical information as confidential information whether or not marked as confidential and shall not use or disclose to any third parties any such confidential information except as specifically permitted in this Agreement or as required by law (with reasonable prior notice to GE Healthcare). The receiving party shall have no obligations with respect to any information which (i) is or becomes within the public domain through no act of the receiving party in breach of this Agreement, (ii) was in the possession of the receiving party prior to its disclosure or transfer and the receiving party can so prove, (iii) is independently developed by the receiving party and the receiving party can so prove, or (iv) is received from another source without any restriction on use or disclosure.

1.2. Governing Law. The law of the state where the Product is installed or the Service is provided will govern this Agreement.

1.3. Force Majeure. Neither party is liable for delays or failures in performance (other than payment obligations) under this Agreement due to a cause beyond its reasonable control. In the event of such delay, the time for performance shall be extended as reasonably necessary to enable performance.

1.4. Assignment; Use of Subcontractors. Neither party may assign any of its rights or obligations under this Agreement without the prior written consent of the other party, which consent shall not be unreasonably withheld; provided, however, that either party may transfer and assign this Agreement without the other party's consent to any person or entity (except to a GE Healthcare competitor) that is an affiliate of such party or that acquires substantially all of the stock or assets of such party's applicable business if any such assignees agree, in writing, to be bound by the terms of this Agreement. Subject to such limitation, this Agreement shall be binding upon and inure to the benefit of the parties and their respective successors and permitted assigns. GE Healthcare may hire subcontractors to perform work under this Agreement, provided that GE Healthcare will at all times remain responsible for the performance of its obligations and duties under this Agreement.

1.5. Amendment; Waiver; Survival. This Agreement may be amended only in writing signed by both parties. Any failure to enforce any provision of this Agreement is not a waiver of that provision or of either party's right to later enforce each and every provision. The terms of this Agreement that by their nature are intended to survive its expiration (such as the confidentiality provisions included herein) will continue in full force and effect after its expiration.

1.6. Termination. If either party materially breaches this Agreement and the other party seeks to terminate this Agreement for such breach, such other party shall notify the breaching party in writing, setting out the breach, and the breaching party will have sixty (60) days following receipt of such notice to remedy the breach. If the breaching party fails to remedy the breach during that period, the other party may, subject to the terms of Section 1.4.5 of the GE Healthcare Product Terms and Conditions, terminate this Agreement by written notice to the breaching party. For the avoidance of doubt, this Agreement is not terminable for convenience and may only be terminated in accordance with this Agreement. If GE Healthcare determines in good faith at any time that there are legal or regulatory compliance and/or material credit issues with this Agreement, if any, GE Healthcare may terminate this Agreement (including warranty services hereunder) immediately upon written notice to Customer.

2. Compliance

2.1. Generally. This Agreement is subject to (i) GE Healthcare's on-going credit review and approval and (ii) GE Healthcare's on-going determination that Customer and this Agreement comply with all applicable laws and regulations, including those relating to workplace safety, FDA matters, Federal Healthcare Program Anti-kickback compliance, export/import control and money laundering prevention. CUSTOMER ACKNOWLEDGES THAT THE PRODUCTS ARE OR MAY BE SUBJECT TO REGULATION BY THE FDA AND OTHER FEDERAL OR STATE AGENCIES. CUSTOMER SHALL NOT USE OR PERMIT THE PRODUCTS TO BE USED IN ANY MANNER THAT DOES NOT COMPLY WITH APPLICABLE FDA OR OTHER REGULATIONS OR FOR ANY NON-MEDICAL, ENTERTAINMENT, OR AMUSEMENT PURPOSES. Further, Customer represents that it is purchasing the Products for its own use consistent with the terms of this Agreement and that it does not intend to re-sell the Products to any other party or to export the Products outside the country to which GE Healthcare delivers the Products.

2.2. Cost Reporting. Customer represents and warrants that it shall comply with (a) the applicable requirements of the Discount Statutory Exception, 42 U.S.C. 1320a-7b(b)(3)(A), and the Discount Safe Harbor, 42 C.F.R. § 1001.952(h), with respect to any discounts Customer may receive under this Agreement and (b) the Warranties Safe Harbor, 42 C.F.R. § 1001.952(g), with respect to any price reductions of an item (including a free item) which were obtained as part of a warranty under this Agreement. Customer agrees that, if Customer is required to report its costs on a cost report, then (i) the discount must be based on purchases of the same good bought within a fiscal year; (ii) Customer must claim the benefit in the fiscal year in which the discount is earned or in the following year; (iii) Customer must fully and accurately report the discount in the applicable cost report; and (iv) Customer must provide, upon request, certain information required to be provided to the Customer by GE Healthcare as a seller or offeror, as appropriate. If Customer is an individual or entity in whose name a claim or request for payment is submitted for the discounted items, the discount must be made at the time of the sale of the good; and the Customer must provide, upon request, certain information required to be provided to the Customer by GE Healthcare as a seller or offeror, as appropriate. GE

Healthcare agrees to comply with the applicable requirements for sellers or offerors under the Discount Safe Harbor, as appropriate.

2.3. Site Access Control and Network Security. Customer shall be solely responsible for establishing and maintaining security, virus protection, backup and disaster recovery plans for any data, images, software or equipment. GE Healthcare's Services do not include recovery of lost data or images. Customer shall comply with all applicable laws and regulations related to site access control.

2.4. Environmental Health and Safety. Customer shall provide and maintain a suitable, safe and hazard-free location and environment for the GE Healthcare Products and Services in material compliance with any written requirements provided by GE Healthcare, perform GE Healthcare recommended routine maintenance and operator adjustments, and ensure that any non-GE Healthcare provided Service is performed by, and GE Healthcare Products are used by, qualified personnel in accordance with applicable user documentation. GE Healthcare shall have no obligation to perform Services until Customer has complied with its obligations under this Section.

2.5. GE Healthcare-Supplied Parts. GE Healthcare can make no assurances that Product performance will not be affected by the use of non-GE Healthcare-supplied parts. In some instances, use of non-GE Healthcare-supplied parts may affect Product performance or functionality.

2.6. Training. Any Product training identified in the Quotation shall be in accordance with GE Healthcare's then-current training program offerings and terms. Unless otherwise stated in the catalog description, training must be completed within twelve (12) months after (i) the date of Product delivery for training purchased with Products and (ii) the start date for Services for training purchased with Services. If training is not completed within the applicable time period, GE Healthcare's obligation to provide the training will expire without refund.

2.7. Medical Diagnosis and Treatment. All clinical and medical treatment and diagnostic decisions are the responsibility of Customer and its professional healthcare providers.

3. Disputes; Liability; and Indemnity

3.1. Waiver of Jury Trial. EACH PARTY EXPRESSLY WAIVES ALL RIGHTS TO A JURY TRIAL IN CONNECTION WITH ANY DISPUTE ARISING UNDER THIS AGREEMENT.

3.2. Limitation of Liability. GE HEALTHCARE'S (AND ITS REPRESENTATIVES') LIABILITY UNDER THIS AGREEMENT, REGARDLESS OF THE FORM OF ACTION, SHALL NOT EXCEED: (A) FOR PRODUCTS OR SERVICES OTHER THAN SERVICES UNDER AN ANNUAL SERVICE CONTRACT, THE PRICE FOR THE PRODUCT OR SERVICE THAT IS THE BASIS FOR THE CLAIM; OR (B) FOR ANNUAL SERVICE CONTRACTS, THE ANNUAL CONTRACT PRICE FOR THE SERVICE THAT IS THE BASIS FOR THE CLAIM. NEITHER CUSTOMER NOR GE HEALTHCARE (NOR THEIR RESPECTIVE REPRESENTATIVES) SHALL BE LIABLE TO THE OTHER PARTY UNDER THIS AGREEMENT (OR OTHERWISE IN CONNECTION WITH THE PRODUCTS AND SERVICES) FOR ANY INDIRECT, SPECIAL, PUNITIVE, INCIDENTAL OR CONSEQUENTIAL DAMAGES, OR FOR LOSS OF PROFITS, REVENUE, TIME, OPPORTUNITY OR DATA, WHETHER IN AN ACTION IN CONTRACT, TORT, PRODUCT LIABILITY, STATUTE, EQUITY OR OTHERWISE. THE LIMITATION OF LIABILITY AND EXCLUSION OF DAMAGES SHALL APPLY EVEN IF THE LIMITED REMEDIES FAIL OF THEIR ESSENTIAL PURPOSE.

3.3. IP Indemnification. GE Healthcare will defend, indemnify and hold harmless Customer from any third party claims for infringement of intellectual property rights arising from Customer's use of GE Healthcare manufactured equipment and/or GE Healthcare proprietary software listed in the Quotation in accordance with their specifications and within the license scope granted in this Agreement. If any such claim materially interferes with Customer's use of such equipment and/or software, GE Healthcare shall, at its option: (i) substitute functionally equivalent non-infringing products; (ii) modify the infringing Product so that it no longer infringes but remains functionally equivalent; (iii) obtain for Customer at GE Healthcare's expense the right to continue to use the infringing Product; or (iv) if the foregoing are not commercially reasonable, refund to Customer the purchase price, as depreciated (based on five (5) year straight-line depreciation), for the infringing Product. Any such claims arising from Customer's use of such infringing Product after GE Healthcare has notified Customer to discontinue use of such infringing Product and offered one of the remedies set forth in clauses (i) through (iv) above are the sole responsibility of Customer. This Section represents Customer's sole and exclusive remedy (and GE Healthcare's sole and exclusive liability) regarding any infringement claim associated with such infringing Product. The above indemnification obligation is conditional upon Customer providing GE Healthcare prompt written notice of the infringement claim after receiving notice of such claim, allowing GE Healthcare to control the defense of such claim, and reasonably cooperating with GE Healthcare in such defense. Notwithstanding any other provision in this Agreement, GE Healthcare shall not have any obligation to Customer hereunder for infringement claims based on or resulting from: (a) use of such infringing Product in combination with any computer software, tools, hardware, equipment, materials, or services, not furnished or authorized in writing for use by GE Healthcare; (b) use of such infringing Product in a manner or environment or for any purpose for which GE Healthcare did not design or license it, or in violation of GE Healthcare's use instructions; or (c) any modification of such infringing Product by Customer or any third party. GE Healthcare shall not be responsible for any compromise or settlement or claim made by Customer without GE Healthcare's written consent. This indemnification obligation is expressly limited to the GE Healthcare manufactured equipment and/or GE Healthcare proprietary software listed in the Quotation.

4. Payment and Finance

4.1. Generally. The payment and billing terms for the Product(s) and/or Service(s) are stated in the Quotation.

4.2. Affiliate Billing. If Customer's order includes Products manufactured by more than one GE Healthcare affiliated company, each affiliated company may invoice Customer separately for the portion of the total price under the Quotation attributable to its Products, under the same payment terms specified in the Quotation. There shall be no additional fees or charges to Customer for such separate invoicing.

4.3. Late Payment. Failure to make timely payment is a material breach of this Agreement, for which (in addition to other available remedies) GE Healthcare may suspend performance under any or all GE Healthcare agreements until all past due amounts are brought current. If GE Healthcare so suspends, GE Healthcare will not be responsible for the completion of planned maintenance due to be performed during the suspension period and any product downtime will not be included in the calculation of any uptime commitment. Interest shall accrue on past-due amounts at a rate equal to the lesser of one-and-one-half percent (1.5%) per month or the maximum rate permitted by applicable law. Customer will reimburse GE Healthcare for reasonable costs (including attorneys' fees) relating to collection of past due amounts. Any credits that may be due to Customer under an agreement may be applied first to any outstanding balance. If Customer has a good faith dispute

regarding payment for a particular Product (or subsystem thereof) or Service, such dispute shall not entitle Customer to withhold payment for any other Product (or subsystem thereof) or Service provided by GE Healthcare. GE Healthcare may revoke credit extended to Customer because of Customer's failure to pay for any Products or Services when due, and in such event all subsequent shipments and Services shall be paid for on receipt.

4.4. Taxes. Prices do not include sales, use, gross receipts, excise, valued-added, services, or any similar transaction or consumption taxes ("Taxes"). Customer shall be responsible for the payment of any such Taxes to GE Healthcare unless it otherwise timely provides GE Healthcare with a valid exemption certificate or direct pay permit. In the event GE Healthcare is assessed Taxes, interest or penalty by any taxing authority, Customer shall reimburse GE Healthcare for any such Taxes, including any interest or penalty assessed thereon. Each party is responsible for any personal property or real estate taxes on property that the party owns or leases, for franchise and privilege taxes on its business, and for taxes based on its net income or gross receipts.

GE Healthcare Product Terms and Conditions

GE Healthcare

References herein to "Products" and "Services" mean the Products (including equipment and software) and Services identified on the applicable GE Healthcare Quotation ("Quotation"). References herein to "Healthcare IT Products" are (i) those software products identified in the Quotation as a "Centricity" product, any third party software licensed for use in connection with the Centricity software, all hardware used to operate the Centricity or the third party software, and services provided with respect to the implementation, installation or support and maintenance of the Centricity or the third party software, and/or (ii) any software, product or service that is included in a Quotation which Quotation is designated as an "Healthcare IT Quotation".

1. Commercial Logistics

1.1. Order Cancellation and Modification.

1.1.1. Cancellation and Payments. Except for Healthcare IT Products, if Customer cancels an order without GE Healthcare's prior written consent, Customer will pay a cancellation charge of fifteen percent (15%) of the price of the Products ordered. GE Healthcare will retain as a credit any payments received up to the amount of the cancellation charge. If Customer cancels an order for Products for which GE Healthcare has provided site evaluation services, Customer will also pay GE Healthcare reasonable charges for such services performed prior to cancellation. If applicable for the order, Customer will pay all progress payments (other than the final payment) prior to final Product calibration, and GE Healthcare may, at its option, delay final calibration until required progress payments are received. If Customer fails to schedule a delivery date with GE Healthcare within six (6) months after order entry, GE Healthcare may cancel Customer's order upon written notice to Customer.

1.1.2. Order Modifications. No modifications may be made to an order without GE Healthcare's prior written consent. The Product configuration listed in the Quotation is based upon information furnished to GE Healthcare by Customer, and Customer is responsible to provide and pay for modifications, if any, to the configuration due to inaccuracies or incompleteness of the information furnished to GE Healthcare by Customer, changes in Customer's needs or requirements, or for other reasons attributable to Customer.

1.2. Site Preparation. If applicable, Customer will be responsible, at its sole expense, for evaluating and preparing the site where the Products will be installed in accordance with GE Healthcare's site preparation requirements and applicable laws. Customer must provide GE Healthcare with prompt written notice if Customer is unable to prepare the site before the mutually agreed installation date. Upon receipt of such notice, GE Healthcare will reschedule the installation to a mutually agreed date. Customer shall be liable for any costs or expenses GE Healthcare or its representatives incur resulting from Customer's failure to provide GE Healthcare with timely notice of Customer's failure to properly prepare the site. GE Healthcare may, in its discretion, delay delivery or installation if GE Healthcare determines that the site has not been properly prepared or there are any other impediments to installation; provided that GE Healthcare gives Customer written notice of such delay stating the reasons therefor. If GE Healthcare provides site evaluation services, such services are intended only to assist Customer in fulfilling Customer's responsibility to ensure that the site complies with GE Healthcare's applicable site preparation requirements.

1.3. Transportation, Title and Risk of Loss; Delivery; Returns.

1.3.1. Transportation, Title and Risk of Loss. Unless otherwise indicated in the Quotation, shipping terms are FOB Destination. Title and risk of loss to equipment passes to Customer upon delivery to Customer's designated delivery location. Software is licensed to Customer; no title to or other ownership interest in such software passes to Customer.

1.3.2. Delivery. When feasible, GE Healthcare reserves the right to make delivery in installments. All such installments shall be separately invoiced and paid for when due, without regard to subsequent deliveries. At the time of such delivery, Customer will pay GE Healthcare for any amounts due upon delivery. Delivery dates are approximate. For GE Healthcare software or documentation, delivery means the first to occur of: (i) communication to Customer through electronic means, that allows Customer to take possession of the first copy or product master, or (ii) delivery to Customer's designated delivery location.

1.3.3. Product Returns. Customer shall not have any right to return Products for a refund after delivery except for products shipped in error that are different from the Products listed in the Quotation.

1.4. Installation and Certification. GE Healthcare will provide product assembly, installation and calibration, as required, at no additional charge, except for items excluded herein. GE Healthcare installation Services provided under the Quotation will be performed in accordance with applicable GE Healthcare installation guides and/or project plans. Customer will review the applicable GE Healthcare installation guides, and/or project plans, and perform Customer's obligations as set forth in those materials. Upon completion of assembly, installation and calibration, and prior to turnover of the Products to Customer for clinical use, as applicable, GE Healthcare will perform prescribed tests using its own performance specifications, instruments and procedures to verify that the Products meet GE Healthcare's applicable performance specifications.

1.4.1. Customer-Supplied Items.

- Customer will install necessary system cable and assemble any necessary equipment or hardware not provided by GE Healthcare, unless agreed otherwise in writing by the parties.
- For Products that will be operated on or in connection with Customer supplied hardware or software, Customer is responsible

for ensuring that such hardware and software conform to GE Healthcare's minimum hardware and software requirements as made available to Customer.

- Unless GE Healthcare has agreed in writing to maintain responsibility for an applicable service, Customer will be responsible for enabling the connectivity and interoperability between Customer-supplied hardware or software or other systems or devices and the Product, including, without limitation, procuring and installing any modifications, interfaces or upgrades consistent with GE Healthcare's written specifications.
- Unless otherwise agreed in writing by GE Healthcare, Customer is solely responsible for the performance of and payment for any applicable rigging and/or facility costs. GE Healthcare will not install accessory items unless otherwise agreed in writing by GE Healthcare.
- If applicable for the Product, electrical wiring and outlets, computer network infrastructure, conduit, cabinetry modification, wall mounts, ventilation and any other site preparation are not included in the purchase price and are the responsibility of Customer, unless otherwise agreed in writing by GE Healthcare.

1.4.2. Network. Unless Customer has elected to purchase network preparation and certification Services from GE Healthcare as set forth in the Quotation, Customer is solely responsible for ensuring that Customer's network is adequate for the proper operation and performance of the Products and otherwise meets GE Healthcare's written network configuration requirements.

1.4.3. License, Permits, and Approvals. Customer shall obtain and maintain all licenses, permits and other approvals necessary for installation, use, and disposal/recycling of the Products provided under this Agreement, including, but not limited to, any government licenses required to use radioactive sources for Products that require the use of such sources. GE Healthcare will ship such sources to Customer only after Customer provides GE Healthcare with satisfactory evidence that Customer has obtained all required licenses for such sources In addition, Customer will provide all radioactive sources for calibration and performance checks of Products that require the use of such sources. GE Healthcare will file any required Federal and State reports relating to its installation activities. GE Healthcare will not install, test, certify or provide its own software license or warranty for Products that are not listed in its on-line catalog or price pages at the time of sale (such Products are normally identified by NL or NW series numbers), unless otherwise agreed in writing by GE Healthcare.

1.4.4. Non-GE Healthcare Labor. If local labor conditions make it impractical to, or GE Healthcare is directed not to, use GE Healthcare's employees or pre-qualified contractors for the installation, all work will be performed by Customer's laborers or outside labor at Customer's expense; provided that GE Healthcare will, at Customer's request, furnish guidance for installation. GE Healthcare is not responsible for the quality or adequacy of any work performed by any party other than GE Healthcare or its pre-qualified contractors.

1.4.5. Non-GE Healthcare Installation. For Products that GE Healthcare is obligated to install under the terms of this Agreement, if GE Healthcare delivers the Product but fails to perform its installation obligations, then in such event Customer shall nevertheless be obligated to pay GE Healthcare an amount equal to (a) the Product purchase price set forth in the Quotation, if the Product purchase price and the installation Services price are shown as separate line items in the Quotation, or (b) if the Product purchase price and installation Services price are not shown as separate line items in the Quotation, then the Product purchase price less the fair market value of the applicable installation Services, taking into account the type of Product and level of installation required ("Installation Service FMV"). An independent third party shall determine the Installation Service FMV. Notwithstanding any other provision of this Agreement to the contrary, either the discharge of Customer's obligation to pay for installation Services shown as a separate line item(s) in the Quotation or the deduction of the Installation Service FMV, as applicable, shall be Customer's sole and exclusive remedy (and GE Healthcare's sole and exclusive liability) in the event GE Healthcare fails to perform its installation obligations under this Agreement.

1.5. Acceptance. Unless expressly provided otherwise in this Agreement, Customer shall be deemed to have accepted a Product delivered by GE Healthcare under this Agreement on the earlier of: (i) if GE Healthcare installs the Product, five (5) days after GE Healthcare notifies Customer that it has completed assembly and the Product is operating substantially in accordance with GE Healthcare's published performance specifications; (ii) if GE Healthcare does not install the Product, five (5) days after delivery of the Product to Customer; or (iii) the date Customer first uses the Product for patient use.

1.6. Warranties. Product warranties (if applicable) are set forth in the GE Healthcare warranty forms delivered with the Quotation. GE Healthcare may use refurbished parts in new Products as long as it uses the same quality control procedures and warranties as for new Products. Any part for which GE Healthcare has supplied a replacement shall become GE Healthcare property.

1.7. Data Access. If applicable, Customer shall permit GE Healthcare to connect to the Products, or to otherwise access Product performance data through a Customer-furnished telephone line or Broadband connection. The data collected by GE Healthcare will be used, during and after the term of this Agreement, in accordance with all applicable laws and regulations and in a manner that will maintain confidentiality.

2. Software License

2.1. License Grant. GE Healthcare grants to Customer a non-exclusive, non-transferable license to use for Customer's internal business purposes the GE Healthcare software, third-party software and Documentation at the location (or, for mobile systems, in the specific vehicle) identified in the Quotation, subject to the license scope and other restrictions set forth in this Agreement. "Documentation" means the GE Healthcare user manuals, on-line help functions, technical specifications and user instructions regarding the operation, installation and use of the software as made available by GE Healthcare to Customer. Customer may only use third-party software provided by GE Healthcare together with the GE Healthcare software and will comply with all third-party software license terms included in any click or shrink wrap license or of which GE Healthcare otherwise makes Customer aware. To the extent permitted by applicable law, licensors of third-party software shall be third-party beneficiaries of this Agreement with respect to third-party software sublicensed under this Agreement. Customer may permit its employees, agents, independent contractors and healthcare providers with privileges at Customer's facilities to use the software and Documentation; provided, however, that Customer shall be responsible for any acts of such third parties that are inconsistent

with this Agreement. Notwithstanding the foregoing, independent contractors that supply products comparable to the software shall be provided access to the software only with GE Healthcare's prior written consent and subject to any conditions GE Healthcare deems appropriate to protect its confidential and proprietary information.

2.2. Additional License Terms. Without GE Healthcare's prior written consent, Customer may not: (i) copy, sublicense, distribute, rent, lease, loan, resell, modify or translate the software or create derivative works based thereon, except that to the extent applicable, the software may be configured as specifically permitted in the Documentation; (ii) directly or indirectly decompile, disassemble, reverse engineer or otherwise attempt to learn the source code, structure, algorithms or ideas underlying the software; (iii) provide service bureau, time share or subscription services based on the software; (iv) remove, obscure or modify any markings, labels or any notice of the proprietary rights, including copyright, patent and trademark notices of GE Healthcare or its licensors; (v) electronically transfer the software outside Customer's intranet or network dedicated for the software, unless otherwise authorized in writing by GE Healthcare; or (vi) publicly release the results of any testing or benchmarking of the software without the prior written consent of GE Healthcare. Customer may transfer authorized copies of the software, and Documentation to a party that purchases or otherwise acquires the equipment and accepts any applicable license terms, except for software and Documentation that are (a) not a part of the base system standard operating software or Documentation for the equipment and (b) generally provided by GE Healthcare to its customers for a separate fee or charge. Advanced service software is subject to a separate fee and eligibility criteria and licensed under a separate agreement with GE Healthcare.

2.3. Backups. Customer may make a reasonable number of copies of the software in machine-readable form solely for backup, training, testing or archival purposes, so long as applicable license fees are paid. Customer shall reproduce on any such copy the copyright notice and any other proprietary legends that were on the original copy. GE Healthcare and its licensors, as applicable, retain all ownership and intellectual property rights to the software and Documentation. If Customer acquires any rights to the software or Documentation, Customer hereby assigns all of those rights to GE Healthcare or its licensors, as applicable. No license rights are granted (whether by implied license or otherwise), to Customer, except as specifically provided in this Section.

2.4. Remedies. Customer agrees that a violation of GE Healthcare's license, confidentiality or intellectual property rights will cause irreparable harm to GE Healthcare for which the award of money damages alone are inadequate. In the event of any breach of this provision, GE Healthcare shall be entitled to seek injunctive relief in addition to immediately terminating the license granted herein and requiring that Customer cease use of the software and return all copies of stand-alone software in any media in addition to seeking any other legal or equitable remedies available to GE Healthcare. This paragraph shall survive the termination of this Agreement.

3. Payment and Finance

3.1. Security Interest; Upgrade Pricing. Customer grants GE Healthcare a purchase money security interest in all items of hardware or equipment listed in the Quotation until full payment is received, and Customer shall perform all acts and execute all documents as may be necessary to perfect GE Healthcare's security interest. Except for Healthcare IT Products, prices for upgrades and revisions assume that Customer returns the replaced component and transfers title to GE Healthcare at no charge to GE Healthcare. If, after Product delivery, Customer does not make any payments for the Products within forty-five (45) days after such payments are due, GE Healthcare may, upon ten (10) days prior written notice to Customer, either (a) enter upon Customer's site and remove the Products or (b) temporarily disable the Products so that they are not operational.

3.2. Leases. If Customer is acquiring use of Products through an equipment lease (a "Lease") with an equipment lessor (a "Lessor"), certain provisions of this Agreement (including, but not limited to, terms related to payment, title transfer, warranties, and software licenses) may be modified as agreed to in writing between GE Healthcare, the applicable Lessor, and/or Customer, as the case may be. Acceptance of the equipment as between GE Healthcare and Lessor will be defined by this Agreement; acceptance of the equipment as between Lessor and Customer will be defined by the lease agreement. Notwithstanding the foregoing, if the Lessor does not comply with the terms of this Agreement, Customer shall continue to be responsible for the payment obligations hereunder.

4. Product Specific Terms

4.1. MUSE CV Information Technology Professional Services (ITPS). MUSE CV Product ITPS shall be performed within six (6) months of the date Customer orders the Services. Without limiting the foregoing, Customer agrees that, if the Services have not been performed within one (1) year of the date Customer orders the Services for reasons other than GE Healthcare's failure to perform, GE Healthcare shall be relieved of its obligation to perform the Services and the Customer shall not be entitled to a refund for such unperformed Services. ITPS Services include clinical applications training, project management, HL7/HIS systems integration, database conversion, and network design and integration (ND&I).

4.2. Pre-Owned Products. Products identified as pre-owned/refurbished/remanufactured Products have been previously owned and used; they are not new. When delivered to Customer, such Products may have received mechanical, electrical, and/or cosmetic reconditioning, as necessary, and will meet their original specifications. Since pre-owned Products may be offered simultaneously to several customers, their sale to Customer is subject to their continued availability at the time Customer offers to purchase such Products. If the pre-owned Products are no longer available, (i) GE Healthcare will attempt to identify other pre-owned Products in its inventory that meet Customer's needs, and (ii) if substitute pre-owned Products are not acceptable to Customer, GE Healthcare will cancel the order and refund any deposit Customer has paid for such Products.

4.3. CT and X-Ray Products. Certain Products that use x-ray or image intensifier tubes have been designed to recognize GE Healthcare-supplied tubes and report to the user the presence of a non-GE Healthcare-supplied tube. This will permit the user to make any adjustments to Product use that the user deems appropriate. Use of the Products with non-GE Healthcare-supplied tubes is always at the user's discretion; however, Customer acknowledges that advanced scanner functionality may be impaired or disabled by the use of non-GE Healthcare-supplied tubes. GE Healthcare assumes no liability for the use of non-GE-Healthcare-supplied tubes and disclaims any responsibility for any effect such tubes may have on Product performance.

GE Healthcare

GE Healthcare Additional Terms and Conditions: Uptime Commitment

This Uptime Commitment incorporates GE Healthcare's General Terms and Conditions and GE Healthcare's Product Terms and Conditions and will apply to eligible diagnostic imaging systems covered by the Quotation, as identified in the Quotation ("Eligible Systems").

1. Scope. GE Healthcare will provide Customer with expanded warranty protection for Eligible Systems in consideration of Customer's commitment to provide a broadband network connection to enable GE Healthcare to better provide warranty service for the Eligible Systems during the warranty period. The following provisions will apply only to Eligible Systems and only during the warranty period.

2. Eligibility. To be eligible for this expanded warranty protection, Customer must: (a) establish (if not previously established) and maintain a broadband network connection at Customer's site that connects to the Eligible System, which broadband connection meets GE Healthcare's minimum specifications, (b) provide GE Healthcare with access to the Eligible System through Customer's broadband network connection and maintain security for Customer's broadband network connection in accordance with appropriate industry best practices, (c) provide necessary support to maintain such broadband network connection, including designation of a primary Customer contact person, (d) provide GE Healthcare with at least two (2) business days advance notice of any planned changes to Customer's network that may impact such broadband connection and with notice of any unplanned changes (e.g., power outages, computer viruses, system crashes) to Customer's network that may impact such broadband connection within two (2) business days after the occurrence of the unplanned changes, (e) reasonably cooperate with GE Healthcare in maintaining such broadband connection during all such planned and unplanned changes, and (f) use reasonable efforts to ensure that Customer's connection to the Internet and LAN systems operate at a maximum of 75% of capacity and have an uptime rate of at least 98%.

3. Uptime Commitment. If Customer performs these responsibilities, GE Healthcare will provide Customer, at no additional charge and in addition to other remedies available under GE Healthcare's warranty, an uptime commitment of 97% (95% for all covered nuclear imaging systems and all covered X-ray systems except digital mammography, digital radiographic and vascular X-ray systems), and uptime remedies, as described below.

4. Definitions. "Uptime Commitment" means GE Healthcare's commitment on Eligible System uptime during the warranty period, as defined below. "Uptime Remedy" is, in addition to the other remedies specified in the warranty, Customer's sole and exclusive remedy if GE Healthcare fails to meet any Uptime Commitment over a 26-week measurement period during the warranty period. Should the Eligible System fail to achieve the Uptime Commitment as calculated by the Uptime Commitment Calculation, GE Healthcare will provide an extension of Customer's service agreement with GE Healthcare for the Eligible System (or, if Customer has not entered into a service agreement with GE Healthcare, the warranty period for the Eligible System) at no additional charge, as follows:

% < Uptime Commitment	Extension
0	0 weeks
0.1 - 3.0	1 week
3.1 - 8.0	2 weeks
8.1 - 13.0	4 weeks
> 13.0	6 weeks

"Uptime Commitment Calculation" means the calculation used to determine achievement of the Uptime Commitment, as follows: The basis for each measurement period is GE Healthcare's standard warranty service coverage hours of A hours per day, B days per week for 26 weeks, less C hours spent on planned maintenance ("PM") during that interval:

Hours1 = A hours per day X B days per week X 26 weeks
Hours2 = Hours1 - C hours for planned maintenance
Required in-service hours at Customer's % commitment: Hours3 = Hours2 X Customer's %

5. Eligible System. An Eligible System will be considered inoperable and out of service under the Uptime Commitment if, due to GE Healthcare's design, manufacturing, material, or service or maintenance performance failure, the Eligible System is unavailable for scanning patients and diagnosing images on the Eligible System display console or operator's console. Peripheral equipment such as remote consoles, magnetic tape drives, hard copy devices, and multi-format and laser cameras are excluded from the terms of the Uptime Commitment. Repair and adjustments required for anything other than Eligible System failure, and damage or inoperability due to any cause other than GE Healthcare's design, manufacturing, material, or service or maintenance performance failure, will be excluded from the Uptime Commitment Calculation, including without limitation damage through misuse, operator error, inadequate environmental or air conditioning protection, power failure, and acts of God. PM time will not be included in the calculation of downtime. If GE Healthcare's responding representative agrees the Eligible System is inoperable due to GE Healthcare's design, manufacturing, material, or service or maintenance performance failure, the Eligible System will be considered out of service from the time the request for service was received by GE Healthcare until the Eligible System is again turned over to Customer for operation. If Customer fails to give GE Healthcare immediate and unencumbered access to the Eligible System or continues to obtain scans after notifying GE Healthcare of any Eligible System failure, the Eligible System will be considered to be in service.

GE Healthcare

GE Healthcare Additional Terms and Conditions: Healthcare IT

References herein to "Products" and "Services" mean the Products (including hardware and software) and Services purchased by Customer as identified on the applicable GE Healthcare Quotation ("Quotation"). References herein to "Healthcare IT Products" are (i) those software products identified in the Quotation as a "Centricity" product, any third party software licensed for use in connection with the Centricity software, all hardware used to operate the Centricity or the third party software, and services provided with respect to the implementation, installation or support and maintenance of the Centricity or the third party software, and/or (ii) any software, product or service that is included in a Quotation which Quotation is designated as an "Healthcare IT Quotation".

These Additional Terms and Conditions incorporate the GE Healthcare General Terms and Conditions as well as the GE Healthcare Product Terms and Conditions and will apply only to the license, purchase and use of Healthcare IT Products.

1. Healthcare IT Product Specific Terms. The following terms apply only to the purchase of Healthcare IT Products.

1.1. Statement of Work (SOW). Following the effective date of this Agreement, the parties may enter into a written statement of work ("SOW") signed by the parties that describe the professional services to be provided by pursuant to the quotation, which may include, among other things, an installation and implementation project work plan, identification of installation and implementation services, and other related professional services. GE Healthcare shall perform the professional services and provide any deliverables described in any such SOW and shall use commercially reasonable efforts to do so according to any delivery schedule in the SOW. GE Healthcare is responsible for the assignment of personnel to perform all services and may make any change in staffing it deems necessary provided that such change does not compromise the level of expertise required to complete the applicable SOW. Each SOW may include descriptions of the following: (i) professional services to be performed; (ii) deliverables; (iii) Customer's additional responsibilities; (iv) project work scope, (v) estimated performance schedule and applicable milestones; (vi) Customer's site and any site preparation requirements; (vii) network, hardware or other environmental or infrastructure requirements; (viii) preliminary implementation plans; or (ix) key assumptions. The terms and conditions of this Agreement shall prevail over those of the SOW. A SOW may only be modified in writing signed by authorized representatives of both parties and must be made pursuant to mutually agreed change control procedures. Changes to a SOW may require a change in fees reflecting the change in scope and/or change in schedule of delivery of the professional services or deliverables and/or change in Customer's responsibilities. From time to time during the term of this Agreement, the parties may enter into additional SOWs relating to services purchased by Customer under Change Orders to this Agreement. Each such additional SOW shall constitute a separate and independent work engagement and contractual obligation.

1.2. Project Managers. If required by the SOW, Customer and GE Healthcare shall each designate a project manager who will be responsible for day-to-day communications regarding the subject matter of the applicable SOW. The project managers will be responsible for monitoring the schedules and progress of services pursuant to the Agreement and/or SOW and will have the authority to act for the respective parties in all aspects of the engagement. The project managers for the parties will meet in person or via conference call as necessary. The responsibilities of the project managers include to: (i) serve as the single point of contact for all departments in their organization participating in this project; (ii) administer the change-of-control procedure; (iii) participate in project status meetings; (iv) obtain and provide information, data, decisions and approvals, within seven working days of the other party's request unless GE Healthcare and Customer mutually agree to an extended response time; (v) resolve deviations from project plans that may be caused by the parties' respective organizations; (vi) help resolve project issues and escalate issues within the parties' respective organizations, as necessary; (vii) monitor and report project status on a regular basis to the respective organizations as appropriate; and (viii) provide and coordinate technical and specialist resources as necessary.

1.3. HITECH Certification. GE Healthcare will use diligent efforts to obtain certification under the Health Information Technology for Economic and Clinical Health Act (the "HITECH Act") to the extent that certification standards are established for the applicable functionality included as part of GE Healthcare's EMR or Centricity Practice Solutions software licensed by Customer, including those product updates that GE Healthcare provides generally to Customer of such products as part of support and maintenance. If GE Healthcare fails to obtain certification for the applicable components within ninety (90) days after the beginning of the first Reporting Period in a Payment Year that Customer is actively seeking to demonstrate Meaningful Use, GE Healthcare will credit the standard support services fees for such software for each month during which the software is not certified (up to a maximum of 6 months) against future support fees. The foregoing is Customer's sole and exclusive remedy in the event GE Healthcare fails to obtain certification. For the avoidance of doubt, Customer's payment obligations under this Agreement are not conditioned on receipt of HITECH incentive payments, certification of the software or demonstration of meaningful use. GE Healthcare will keep Customer informed of GE Healthcare's certification status by posting such status at www.gehealthcare.com/hitech (or some other location that of which GE Healthcare may inform Customer). It is Customer's responsibility to ensure Customer meets all the requirements to qualify for the incentive payments, including "meaningful use", and to confirm that the GE Healthcare software Customer is using is certified according to HITECH criteria. GE Healthcare's obligations under this section apply only to the then-most current version of GE Healthcare's Centricity EMR or Centricity Practice Solution software products. GE Healthcare's obligations are contingent upon Customer then-receiving and paying for support services and complying with the requirements of the GE Healthcare service policy and, if GE Healthcare so requires, upon Customer installing software fixes, patches or updates or migrating to a new or different GE Healthcare software offering, and on Customer otherwise having installed all functionality not part of the GE Healthcare software that would have been required to show Meaningful Use. All capitalized terms shall the definitions set forth in this Agreement, the HITECH Act or any applicable implementing regulations.

1.4. Ownership Rights. GE Healthcare shall retain ownership of all deliverables (including any intellectual property embodied in the

deliverables or related to them) and any intellectual property developed under a SOW or during the course of performing the services whether or not the services are performed by GE Healthcare alone or jointly with Customer or others. In addition, GE Healthcare shall own all improvements, enhancements and derivative works of any GE Healthcare intellectual property. Customer hereby assigns, and will cause Customer's employees and independent contractors to assign, to GE Healthcare all of Customer's rights in and to such deliverables and intellectual property. GE Healthcare grants to Customer a nonexclusive, nontransferable, license, without the right to sublicense, to use the deliverables solely for Customer's internal business purposes and subject to the limitations described in this Agreement and the relevant SOW. Customer agrees to provide reasonable assistance to GE Healthcare in obtaining and enforcing GE Healthcare's rights to such deliverables and intellectual property. GE Healthcare will acquire no rights to any of Customer's confidential information that may be included in any deliverable unless expressly agreed to otherwise by Customer.

1.5. Software Product Testing and Acceptance. Commencing on the date that GE Healthcare gives notice of installation of the GE Healthcare software (or on the date as otherwise provided for in the applicable SOW) and implementation by GE Healthcare of appropriate option and parameter selections made by Customer, Customer will have thirty (30) days to test each unit or module of the GE Healthcare software. Customer shall be deemed to have accepted GE Healthcare proprietary software the earlier of (i) Customer's written acceptance, (ii) the expiration of the test period identified in the preceding sentence without GE Healthcare receiving written notice from Customer of the existence of any errors and a reasonable description of such error(s), or (iii) the date Customer first uses the software to process actual data in the operation of Customer's business (e.g. to register a patient, to produce a bill, to record a treatment or diagnosis or to process or view a medical image). As used in this section, an "error' is the failure of the software to perform substantially in accordance with the documentation. Acceptance tests will be conducted using test data, preferably from Customer's historical operations, in a non-productive environment and according to test protocol to be mutually agreed upon by the parties. Upon discovering an error, Customer shall promptly notify GE Healthcare in writing of the error, which notice shall include a reasonable description of the error. Upon GE Healthcare's timely receipt of Customer's written notice, GE Healthcare shall promptly correct such failures identified by Customer therein. An acceptance test for amendments or alterations provided by GE Healthcare as a result of testing may be conducted by Customer for a period of not more than five (5) days after delivery of such amendment or alteration, and the test period shall be extended for this purpose. Upon the occurrence of acceptance, all payments associated with acceptance, if any, shall be due and payable.

1.6 Software Support. GE Healthcare will provide to Customer the software support services as described in the applicable GE Healthcare service policy for the GE Healthcare software and the support period as specified in the applicable quotation for which Customer has paid the applicable fees. Software that is identified on the quotation and either (i) is delivered to Customer in a third-party developer/supplier's packaging and with its labeling or (ii) for which GE Healthcare expressly indicates (either in the quotation or in the product documentation) that the software is provided with the third-party developer/supplier's software support services in lieu of GE Healthcare software support services is not covered under this Agreement unless specifically stated otherwise in the applicable quotation. GE Healthcare support services will automatically renew for another annual term upon payment of the applicable renewal support fees, unless either party provides sixty (60) days prior written notice of non-renewal. GE Healthcare may increase its charges for support and maintenance fees for each successive annual software renewal support term. In connection with any annual renewal of support services, GE Healthcare may increase its annual charges for maintenance and support by no more than CPI plus two percent (2%). CPI shall mean the U.S. City Average (December to December percent) for ALL Urban Consumers (CPI-U). If GE Healthcare announces to its customers that it will no longer offer support ("end of product life") for a product or component, then upon at least twelve (12) months' prior written notice to Customer, GE Healthcare may, at its option, remove any such item from all GE Healthcare service agreements, with an appropriate adjustment of charges, without otherwise affecting such agreements.

1.7 Medical Diagnosis and Treatment. Customer acknowledges that: (a) the software does not make clinical, or other decisions and is not a substitute for competent, properly trained and knowledgeable staff who bring professional judgment and analysis to the information presented by the software; (b) Customer is responsible for verifying the accuracy of all patient information and determining the data necessary for Customer and Customer's users to make medical and diagnostic decisions, as well as for complying with all laws, regulations and licensing requirements applicable to Customer's delivery of healthcare services; (c) Customer is responsible for establishing and maintaining reasonable quality control procedures to ensure the accuracy of input to the software; (d) Customer and Customer's staff will consider all relevant information including information presented to Customer and Customer's staff by the software and may give whatever weight Customer and Customer's staff deem appropriate to the information produced by the software in the performance of Customer's and Customer's staff's functions; (e) any and all financial and management information produced by the software must be tested for reasonableness and accuracy before any actions are taken or reliance placed on it; (f) Customer has reviewed and will communicate to users who use and access the software any software information, which may be provided to Customer by GE Healthcare from time to time; (g) although GE Healthcare and its third-party vendors have used reasonable care in obtaining information from sources believed to be reliable, Customer acknowledges that it is Customer's obligation to be informed about any changes or developments in clinical information or guidelines that may not be reflected in the software and that the absence of an alert or warning for a given course of treatment, drug or drug combination should not be construed to indicate that the treatment, drug or drug combination is safe, appropriate or effective in any given patient; (h) Customer is solely responsible for the proper, complete and accurate submission of claims, including without limitation the determination of proper billing, diagnosis and procedure codes and the maintenance of patient medical records containing appropriate documentation of the Services billed; (i) when selecting a narrative condition or coded diagnosis or procedure, Customer must make an independent and informed judgment based upon the patient's condition and symptoms and/or a physician's submitted diagnosis, to select a code appropriate for that patient (GE Healthcare does not make any representation or warranty regarding the appropriateness of any of the narrative or codes displayed for any or all patients); (j) since it is possible that a payor's local medical review policies may be in effect prior to their receipt or update by GE Healthcare or its licensors, Customer, as a provider under Federal health care programs, assumes responsibility for the accuracy of all claims submitted for Services performed for Medicare beneficiaries. Customer shall use the Products only for clinical diagnostic purposes in the diagnosis or treatment of a disease or condition, and not for any entertainment or amusement purposes. GE Healthcare will not deliver, install, service or provide training on use of the Products if GE Healthcare discovers the Products have been or are intended to be used for non-clinical purposes

in violation of the preceding sentence.

1.8 Return of Software. Upon termination of this Agreement for any reason, Customer shall immediately return to GE Healthcare any and all software for which license grant immediately terminates.

2. Healthcare IT Warranty. The following warranties apply only to Healthcare IT products and are in lieu of any other standard GE Healthcare warranties.

2.1. Express Warranties. GE Healthcare makes the following express warranties to Customer:

2.1.1. GE Healthcare warrants that its services will be performed by trained individuals in a professional, workman-like manner.

2.1.2. Except as indicated otherwise below, GE Healthcare warrants that (i) GE Healthcare has the right to license or sublicense the software to Customer for the purposes and subject to the terms and conditions set forth herein, (ii) for 90 days following the warranty commencement date, the software will perform substantially in accordance with the applicable documentation, (iii) it has not inserted any disabling code (as defined herein) into the software, and (iv) it will use reasonable commercial efforts consistent with industry standards to scan for and remove any software viruses before installation of the software. As used herein, (a) "disabling code" means computer code that is designed to delete, interfere with, or disable the normal operation of the software; provided, however, that code included in the software that prohibits use outside of the license scope purchased for the software will not be deemed to be disabling code, and (b) "warranty commencement date" means the date upon which Customer first uses the software to process actual data in the operation of Customer's business (e.g., to register a patient, to produce a bill, to record a treatment or diagnosis or to process or view a medical image). The warranty period for any software or component furnished to correct a warranty failure will be the unexpired term of the warranty applicable to the repaired or replaced software.

2.1.3. Except for the right to license warranty above, the above warranties do not cover equipment or third-party software delivered with the GE Healthcare software. Third-party software is identified with a separate part number on the quotation (i) delivered to Customer in the third-party manufacturer/supplier's packaging and with its labeling, or (ii) for which GE Healthcare expressly indicates (either in the quotation or in the product documentation) that the software or equipment is provided with the third-party manufacturer/supplier's warranty in lieu of a GE Healthcare warranty. Such products are covered by the third-party manufacturer/supplier's warranties, to the extent available.

2.2. No Other Warranties. NO OTHER EXPRESS OR IMPLIED WARRANTIES, INCLUDING IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, QUIET ENJOYMENT, SYSTEM INTEGRATION AND DATA ACCURACY, WILL APPLY.

2.3. Sole and Exclusive Remedies for Breach of Warranties. The remedies set forth below are Customer's sole and exclusive remedies and GE Healthcare's sole and exclusive liability for warranty claims. These exclusive remedies shall not have failed of their essential purpose (as that term is used in the Uniform Commercial Code) as long as GE Healthcare remains willing to repair or replace defective warranted products or re-perform any non-conforming services for no charge, as applicable, within a commercially reasonable time after being notified of Customer's warranty claim.

2.3.1. If there is any breach of a warranty contained in Section 2.1.1, GE Healthcare will promptly re-perform any non-conforming services for no charge as long as Customer provides reasonably prompt written notice to GE Healthcare.

2.3.2. If there is a breach of warranty contained in Section 2.1.2(i) GE Healthcare will indemnify Customer in accordance with Section 3.3 of the General Terms and Conditions to included as part of this Agreement.

2.3.3. If there is any breach of a warranty contained in Section 2.1.2(ii) – (iv) and Customer promptly notifies GE Healthcare of Customer's warranty claim during the warranty period and makes the software available for service, GE Healthcare will, at its option, with respect to the GE Healthcare software, either correct the non-conformity or replace the applicable software. Unless agreed otherwise, warranty service will be performed without charge from 8:00 a.m. to 5:00 p.m. (local site time), Monday-Friday, excluding GE Healthcare holidays, and outside those hours at GE Healthcare's then prevailing service rates and subject to the availability of personnel. For certain licensed software, GE Healthcare will perform warranty service only at an authorized service center or, in some instances, via a secure, remote connection to a GE Healthcare online center.

2.4. Limitations. GE Healthcare shall not have any obligation to Customer hereunder if the warranty claim results from or arises out of: (i) the use of the software in combination with any software, tools, hardware, equipment, supplies, accessories or any other materials or services not furnished by GE Healthcare or recommended in writing by GE Healthcare; (ii) the use of the software in a manner or environment, or for any purpose, for which GE Healthcare did not design or license it, or in violation of GE Healthcare's written recommendations or instructions on use; (iii) any alteration, modification or enhancement of the software by Customer or any third party not authorized or approved in writing by GE Healthcare (iv) inadequate back-up or virus protection or any other cause external to the software or beyond GE Healthcare's reasonable control. In addition, the warranties set forth above do not cover the software to the extent it is used in any country other than the country to which GE Healthcare ships the licensed software (unless GE Healthcare expressly agrees otherwise in writing). GE Healthcare does not guarantee that the software will operate without error or interruption.

GE Healthcare

Warranty Statement (United States)

1. **Warranted Products.** These warranties cover the purchase and use of the following GE Healthcare products:

- Magnetic Resonance
- Computed Tomography
- Mammography
- Positron Emission Tomography (including scanners, cyclotrons & chemistry labs)
- Nuclear
- X-ray
- Surgical Navigation Systems
- Cardiology
- Ultrasound
- Bone Mineral Densitometry
- Physiological Monitoring
- Small Animal Imaging
- C-Arms
- Advantage Workstation and Server
- Anesthesia Delivery
- Respiratory Care
- Gold Seal
- Phototherapy and other infant care accessories
- Microenvironments, including Giraffe®, Care Plus®, Ohio® Infant Warmer Systems and Panda™ Baby Warmers

2. **GE Healthcare Warranties.**

2.1 Scope. This warranty statement incorporates GE Healthcare's General Terms and Conditions and GE Healthcare's Product Terms and Conditions. GE Healthcare warrants that its services will be performed by trained individuals in a professional, workman-like manner. GE Healthcare will promptly re-perform any non-conforming services for no charge as long as Customer provides reasonably prompt written notice to GE Healthcare. The foregoing service remedy, together with any remedy provided herein, are Customer's sole and exclusive remedies (and GE Healthcare's sole and exclusive liability) for warranty claims. These exclusive remedies shall not have failed of their essential purpose (as that term is used in the Uniform Commercial Code) as long as GE Healthcare remains willing to repair or replace defective warranted products or re-perform any non-conforming services for no charge, as applicable, within a commercially reasonable time after being notified of Customer's warranty claim. NO OTHER EXPRESS OR IMPLIED WARRANTIES, INCLUDING IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, QUIET ENJOYMENT, SYSTEM INTEGRATION AND DATA ACCURACY, WILL APPLY.

2.2 Term Usage. "Warranted Product" is a collective term which includes both the above-listed manufactured equipment and licensed software, with the exception of Healthcare IT Products, purchased by and/or licensed to (as applicable) Customer under the relevant GE Healthcare Quotation. Where an item of equipment has software code embedded in it, the code will only be considered licensed software under this warranty statement if the applicable GE Healthcare Quotation provides a separate part number for that software.

2.3 Equipment Warranty. Except as indicated otherwise below, GE Healthcare warrants the equipment will be free from defects in title and that for 1 year from the Warranty Commencement Date (as defined below) (i) the equipment will be free from defects in material and workmanship under normal use and service and (ii) except for equipment manufactured in compliance with Customer's designs or specifications, the equipment will perform substantially in accordance with GE Healthcare's written technical specifications for the equipment (as such specifications exist on the date the equipment is shipped) (the "Specifications"). This warranty covers both parts and labor and is available only to end-users that purchase the equipment from GE Healthcare or its authorized distributors. Customers purchasing through an authorized distributor must contact GE Healthcare promptly following such purchase to enable this warranty.

2.4 Software Warranty. Except as indicated otherwise below, GE Healthcare warrants for 90 days from the Warranty Commencement Date that (i) the licensed software will perform substantially in accordance with the applicable Documentation (as defined herein), (ii) it has not inserted any Disabling Code (as defined herein) into the licensed software and (iii) it will use reasonable commercial efforts consistent with industry standards to scan for and remove any software viruses before installation of the applicable Warranted Product. Except as indicated otherwise below, GE Healthcare warrants that it has the right to license or sublicense the licensed software to Customer for the purposes and subject to the terms and conditions set forth in GE Healthcare's General Terms and Conditions. As used in this warranty statement, (i) "Disabling Code" means computer code that is designed to delete, interfere with, or disable the normal operation of the Warranted Product; provided, however, that code included in the licensed software that prevents use outside of the license scope purchased for the software will not be deemed to be Disabling Code and (ii) "Documentation" means the GE Healthcare user manuals, on-line help functions, technical specifications and user instructions regarding the operation, installation and use of the software as made available by GE Healthcare to Customer.

2.5 Pre-owned Equipment. GE Healthcare's Gold Seal Preferred Products (certain pre-owned GE Healthcare equipment) and GE Healthcare's certified pre-owned Bone Mineral Densitometry Products are provided with GE Healthcare's standard warranties carrying the same duration as the new equipment warranty, but in no event exceeding 1 year (unless otherwise provided in writing by GE Healthcare). Except as expressly provided in this paragraph or in the applicable GE Healthcare Quotation, used and/or pre-owned equipment is not warranted by GE Healthcare.

2.6 Healthcare IT and X-Ray Tubes. GE Healthcare X-ray and Image Intensifier Tubes, Maxiray X-ray Tubes and GE Healthcare IT Products are covered by a separate warranty statement provided in an applicable GE Healthcare Quotation.

2.7 Third-Party Software and Equipment. This warranty statement does not cover Third-Party Software and Equipment (as defined herein) delivered with the Warranted Products (commonly identified by NL or NW series numbers in GE Healthcare's Quotation). "Third-Party Software and Equipment" means any non-GE Healthcare software or equipment (i) delivered to Customer in the third-party manufacturer/supplier's packaging and with its labeling or (ii) for which GE Healthcare expressly indicates (either in the GE Healthcare Quotation or in the product documentation) that the software or equipment is provided with the third-party manufacturer/supplier's warranty in lieu of a GE Healthcare warranty. Such products are covered by the third-party manufacturer/supplier's warranties, to the extent available. Anesthesia monitor mounting solutions Third-Party Software and Equipment purchased directly from GE Healthcare will not be treated as Third-Party Software or Equipment.

3. Warranty Commencement. Unless expressly provided otherwise in this warranty statement or the applicable GE Healthcare Quotation, the warranty period begins (the "Warranty Commencement Date") on the earlier of: (i) if GE Healthcare installs the Warranted Product, 5 days after GE Healthcare notifies Customer that it has completed assembly and the Warranted Product is operating substantially in accordance with GE Healthcare's Specifications; (ii) if GE Healthcare does not install the Warranted Product, 5 days after delivery of the Warranted Product to Customer; (iii) the date Customer first uses the Warranted Product for patient use; or (iv) if GE Healthcare is contractually required to install the Warranted Product, the 30th day following shipment to the end-user Customer if installation is delayed for reasons beyond GE Healthcare's reasonable control. The warranty period for any Warranted Product or component furnished to correct a warranty failure will be the unexpired term of the warranty applicable to the repaired or replaced Warranted Product. The warranty period for Vital Signs, Inc. Products begins on the date such products are shipped to Customer.

4. Remedies. If Customer promptly notifies GE Healthcare of Customer's warranty claim during the warranty period and makes the Warranted Product available for service, GE Healthcare will, at its option (i) with respect to equipment, either repair, adjust or replace (with new or exchange replacement parts) the non-conforming Warranted Product or components of the Warranted Product and (ii) with respect to GE Healthcare's licensed software, either correct the non-conformity or replace the applicable licensed software. Warranty service will be performed without charge from 8:00 a.m. to 5:00 p.m. (local site time), Monday-Friday, excluding GE Healthcare holidays, and outside those hours at GE Healthcare's then prevailing service rates and subject to the availability of personnel. For certain Warranted Products, GE Healthcare will perform warranty service only at an authorized service center or, in some instances, via a secure, remote connection to a GE Healthcare online center. With respect to GE Healthcare's warranty for the services it provides to Customer, Customer's exclusive remedy is set forth in Section 2.1 above.

Warranty claims for the Warranted Products should be directed through GE CARES at 1-800-437-1171. Warranty claims for accessories and supplies items should be directed through 1-800-558-5102.

5. Limitations. GE Healthcare shall not have any obligation to Customer hereunder if the warranty claim results from or arises out of: (i) the use of the Warranted Product in combination with any software, tools, hardware, equipment, supplies, accessories or any other materials or services not furnished by GE Healthcare or recommended in writing by GE Healthcare; (ii) the use of the Warranted Product in a manner or environment, or for any purpose, for which GE Healthcare did not design or license it, or in violation of GE Healthcare's recommendations or instructions on use; or (iii) any alteration, modification or enhancement of the Warranted Product by Customer or any third party not authorized or approved in writing by GE Healthcare. In addition, this warranty does not cover the Warranted Product to the extent it is used in any country other than the country to which GE Healthcare ships the Warranted Product (unless GE Healthcare expressly agrees otherwise in writing). GE Healthcare does not guarantee that licensed software will operate without error or interruption.

In addition, these warranties do not cover: (i) any defect or deficiency (including failure to conform to Specifications and/or Documentation, as applicable) that results, in whole or in part, from any improper storage or handling, failure to maintain the Warranted Products in the manner described in any applicable instructions or specifications, inadequate back-up or virus protection or any cause external to the Warranted Products or beyond GE Healthcare's reasonable control, including, but not limited to, power failure and failure to keep Customer's site clean and free of dust, sand and other particles or debris; (ii) the payment or reimbursement of any facility costs arising from repair or replacement of the Warranted Products or parts; (iii) any adjustment, such as alignment, calibration, or other normal preventative maintenance required of Customer; (iv) expendable supply items; (v) stockpiling of replacement parts; (vi) any failure of the Warranted Products to use or correctly process dates; and (vii) products not listed in GE Healthcare's Accessories and/or Supplies catalogs at the time of sale, and all service manuals are provided AS IS. For network and antenna installations not provided by GE Healthcare or its authorized agent(s), network and antenna system troubleshooting will be billable at GE Healthcare's standard service rates.

For MR systems, these warranties do not cover (i) any defect or deficiency that results, in whole or in part, from failure of any water chiller system supplied by Customer, (ii) service to any water chiller systems supplied by Customer and (iii) for MR systems with LHe/LN or shield cooler configured superconducting magnets (except for MR Systems with LCC magnets), any cryogen supply, cryogenic service or service to the magnet, cryostat, coldhead, shield cooler compressor or superconductive or resistive shim coils unless the need for such supply or service is caused by a defect in material or workmanship covered by these warranties (GE Healthcare's MR Magnet Maintenance and Cryogen Service Agreement is available to provide supplemental coverage during the warranty period). For Proteus XR/a, Definium and Precision 500D x-ray systems, these warranties do not cover collimator bulbs.

6. Exceptions to GE Healthcare Standard Warranties Described Above.

CT Partial System Equipment Upgrades*: Six (6) months
MR Partial System Equipment Upgrades*: Six (6) months
X-ray Partial System Equipment Upgrades*; High Voltage Rectifiers and TV Camera Pick-Up Tubes: Six (6) months
PET Partial System Equipment Upgrades* (Scanners, Cyclotrons and Chemistry Labs): Six (6) months
Nuclear Partial System Equipment Upgrades*: Six (6) months
GE OEC New or Exchange Service/Maintenance Parts: Ninety (90) days
HealthNet Lan, Advantage Review — Remote Products: Ninety (90) days

GE Ultrasound Exchange Probes and Transducers, Ultrasound Water Path attachment Kit: Ninety (90) days
GE Ultrasound Service Replacement Parts: Thirty (30) days
LOGIQBook and Other Handheld/Compact Ultrasound Products: Standard warranty includes (i) repair services at GE Healthcare service facilities, (ii) three (3) business day turnaround repair time for systems shipped via overnight delivery (where available), measured from the date of shipment (GE Healthcare is not responsible for delays in overnight shipment), (iii) seventy-two (72) hour loaner systems or probe replacement service via Fed Ex (shipping charges included), (iv) technical support via telephone from 7:00 am to 7:00 pm Central Time, Monday-Friday, excluding GE Healthcare holidays, (iv) field support/service is available for an additional charge and (v) preventative maintenance for an additional charge. For an additional charge, GE Healthcare will also provide the following enhanced warranty features as part of the system warranty: coverage for system damage due to accidental dropping or mishandling, with a maximum of two (2) replacement systems during the term of the warranty.
Ultrasound Partial System Equipment Upgrades*: Ninety (90) days (Customer will not be credited the value of this warranty against pre-existing warranties or service agreements).
Dash, Solar 8000M, 8000i & Tram: Additional two (2) years of parts only coverage, excluding displays (United States only)
DINAMAP ProCare Vital Signs Monitors: Two (2) years
DINAMAP Pro 100-400V2 Series Monitors: Three (3) years
Enterprise Access: One (1) year parts, ninety (90) days labor
MAC 1600: Three (3) years
MAC 1200: Three (3) years (United States only)
Batteries: Ninety (90) days, except (i) for LOGIQBook batteries, which are warranted for twelve (12) months and (ii) for Nickel cadmium or lead acid batteries for X-ray and mammography systems (which will carry a sixty (60)-month warranty prorated as shown below). For Nickel cadmium or lead acid batteries for X-ray and mammography systems, warranty service will be performed without charge from 8:00 a.m. to 5:00 p.m. (local site time), Monday-Friday, excluding GE Healthcare holidays, and outside those hours at GE Healthcare's then prevailing service rates and subject to the availability of personnel only during the first twelve (12) months of the sixty (60)-month warranty period. For X-ray and mammography systems, if nickel cadmium or lead acid batteries need replacement during their applicable warranty period, Customer will pay the price of the replacement battery in effect on its delivery date less a Pro Rata Credit Allowance (as defined herein). The Pro Rata Credit Allowance for batteries that fail less than twelve (12) months after the warranty begins is one hundred percent (100%). The Pro Rata Credit Allowance for batteries that fail more than twelve (12) months after the warranty begins is:

1 - (# of Mos. After Warranty Commencement /60) x 100%

For the purpose of Pro Rata Credit Allowance, a fraction of a month less than fifteen (15) days will be disregarded, and a fraction of a month equal to or greater than fifteen (15) days will be regarded as a full month.
Care Plus® Incubator: Three (3) years parts, one (1) year labor
Ohio® Infant Warmer Systems and Panda™ Warmers: Lifetime parts warranty on heater cal rod
BiliBlanket® Plus High Output Phototherapy System: Two (2) years on Light Box and eighteen (18) months on Fiberoptic Pad
Microenvironment and Phototherapy expendable components, this includes but is not limited to patient probes, probe covers and light bulbs: Thirty (30) days
GE OEC refurbished c-arms: Twelve (12) months after installation
Oximeters: Three (3) years from installation, or thirty-nine (39) months from GE Healthcare invoice, whichever occurs sooner
Tec 7 Vaporizers: Three (3) years
Tec 6 Plus Vaporizers: Two (2) years
X-ray and Image Intensifier Tubes and Maxiray X-ray Tubes: See GE Healthcare Warranty Statement X-Ray an Image Intensifier Tubes
Accessories and Supplies: GE Healthcare's catalog and/or website includes a "Service/Warranty Code" which identifies the installation, warranty, applications and post-warranty service, if any, provided for each accessory and supply product. Following are the warranty periods for accessories and supplies:

Service/Warranty Code T	100 Years
Service/Warranty Code V	25 Years
Service/Warranty Codes X	15 Years
Service/Warranty Codes F	3 Years
Service/Warranty Codes D, J, N, O, R or Z	2 Years
Service/Warranty Codes A, B, C, E, G, L, P, Q, S or Y	1 Year
Service/Warranty Code H	6 Months
Service/Warranty Code K and all Vital Signs, Inc. products	3 Months
Service/Warranty Code M	1 Month
Service/Warranty Code W	Out of Box Failure Only

*** NOTE: For partial system equipment upgrades, the warranty applies only to the upgraded components**

GE Healthcare

Warranty Codes For Accessories And Supplies

Service / Warranty Codes. If Customer promptly notifies GE Healthcare of its warranty claim and makes the Product available for service, GE Healthcare will provide the warranty service indicated in the applicable Service/Warranty Code description. The terms and conditions of GE Healthcare's Warranty Statement(s) apply to all warranty claims. Basic Service Premise for Products – GE Healthcare Field Engineers will take the first call for service and either provide direct support or arrange for support from the manufacturer or its dealers as indicated by the individual Service/Warranty Code. If the Service/Warranty Code calls for Product return for repair or in-warranty exchange, Customer must return the Product as GE Healthcare directs. GE Healthcare provides warranty service from 8:00 AM to 5:00 PM local time Monday-Friday EXCLUDING GE HEALTHCARE HOLIDAYS. If a Service/Warranty Code provides for warranty service to be performed on Customer's site, such service is available outside the above hours at GE Healthcare's prevailing service rates and subject to the availability of personnel.

A GE Healthcare directly, or through a sub-contractor, provides the following:

Installation; parts; on-site warranty service to repair, adjust or replace (at GE Healthcare's option and using new or exchange replacement parts) non-conforming products or parts; applications training in some cases (with additional charge); and post-warranty service, at prevailing hourly billed service ("HBS") rates and, in some cases, under GE Healthcare service contracts.

B GE Healthcare directly provides the following through GE Healthcare's Global Parts Operation (GPO):

New or exchange replacement parts at no charge to correct non-conforming products or parts during the warranty period; new or exchange replacement parts at GE Healthcare's normal prices for post-warranty repairs. ***Note:*** *Installation, applications training and on-site service is the Customer's responsibility. However, GE Healthcare's Field Engineers may be available at prevailing HBS rates. Contact GE CARES for availability.*

C GE Healthcare arranges for the third-party Product Manufacturer or its dealers to provide the following:

Installation (in some cases with an additional charge); parts; on-site warranty service to repair, adjust, or replace (at the manufacturer's or dealer's option and using new or exchange replacement parts) non-conforming products or parts; applications training in some cases (some with additional charge); and post-warranty service at prevailing service rates.

D GE Healthcare refers to the Product Manufacturer warranty, which provides the following:

Basic functional troubleshooting (no technical labor) with supplier phone support and repair or replacement (at the manufacturer's or dealer's option) of defective products or parts. ***Note:*** *The battery for Service/Warranty Code **D** has a 1-year warranty. For detailed warranty information, please refer to the Product Manufacturer's warranty certificate.*

E GE Healthcare directly, or through a sub-contractor, provides:

Installation (in some cases with an additional charge); basic functional troubleshooting (no technical labor) with supplier phone support; and coordination of unit exchange or loaner program for in-factory service.

GE Healthcare arranges for the third-party Product Manufacturer or its dealers to provide in-factory service:

At no charge during the warranty period and at manufacturers or dealer's prevailing service rates outside of the warranty period. Products must be returned to the manufacturer or dealer, at GE Healthcare's expense during warranty and Customer's expense after warranty, for repair.

F GE Healthcare refers to the Product Manufacturer warranty, which provides the following:

Basic functional troubleshooting (no technical labor) with supplier phone support and replacement of non-conforming products or parts, which Customer returns to the manufacturer or dealer during the warranty period. ***Note:*** *For detailed warranty information, please refer to the Product Manufacturer's warranty certificate.*

G, J, O and Q GE Healthcare refers to the Product Manufacturer warranty, which provides the following:

Start up and commissioning; basic functional troubleshooting (no technical labor) with supplier phone support 24/7; and warranty service to repair, adjust, or replace (at the manufacturer's or dealer's option) non-conforming products or parts (excluding installation, time and material). ***Note:*** *The UPS battery for Service/Warranty Code **G** has a 9-year pro-rated warranty to cover non-conforming material. Start up and commissioning for Service/Warranty Code **O** applies only to 10 KVA and above. The UPS battery for Service/Warranty Codes **O** and **Q** has a 1-year warranty to replace the product. For detailed warranty information, please refer to the Product Manufacturer's warranty certificate. Warranty service for Service/Warranty Codes **G** and **O** is provided On-site. For detailed warranty information, please refer to the Product Manufacturer's warranty certificate.*

H, K, L and M GE Healthcare directly provides the following:

Exchange of non-conforming products, which Customer returns to GE Healthcare during the warranty period. ***Note:*** *Installation, parts, applications training, and on-site service is the Customer's responsibility.*

N, R and S GE Healthcare refers to the Product Manufacturer warranty, which provides the following:

Installation; Preventative Maintenance; and parts and labor. ***Note:*** *Post-warranty service, at manufacturer's prevailing HBS rates, and in some cases, under GE Healthcare service contracts. The battery for Service/Warranty Code R has a 1-year warranty. For detailed warranty information, please refer to the Product Manufacturer's warranty certificate.*

P GE Healthcare directly provides the following:

Replacement of non-conforming components. ***Note:*** *Installation, parts, applications training, and on-site service is the Customer's responsibility.*

T, V and X GE Healthcare directly provides the following:

Replacement of Product only; GE Healthcare will not replace patient records; and product is warranted only for image legibility. ***Note:*** *Installation, parts, applications training, and on-site service is the Customer's responsibility.*

W GE Healthcare directly provides the following:

Replacement of Product only for Out of Box failure. ***Note:*** *Installation, parts, applications training, and on-site service is the Customer's responsibility.*

Y and Z GE Healthcare refers to the Product Manufacturer warranty, which provides the following:

Basic functional troubleshooting (no technical labor) with supplier phone support and replacement of non-conforming components. ***Note:*** *All electrical components (excluding the UPS) for Service/Warranty Code **Z** have a 1-year warranty. For detailed warranty information, please refer to the Product Manufacturer's warranty certificate.*

GE Healthcare

Warranty Statement for X-Ray And Image Intensifier Tubes (United States And Canada)

1. Warranty Scope. These warranties cover each GE Healthcare X-ray or image intensifier tube ("Tube") listed in the GE Healthcare Quotation. This warranty statement incorporates GE Healthcare's General Terms and Conditions and GE Healthcare's Product Terms and Conditions.

GE Healthcare warrants that, starting with the Warranty Commencement Date and for the Warranty Period (as defined below): (i) the Tube will be free from defects in title, material and workmanship under normal use and service and (ii) except for Tubes manufactured in compliance with Customer's designs or specifications, the Tube will perform substantially in accordance with GE Healthcare's written technical specifications for the Tube (as such specifications exist on the date the Tube is shipped) ("Tube Specifications"). This warranty statement defines GE Healthcare's warranty obligations for both parts and labor and is available only to end-users that purchase Tubes from GE Healthcare or its authorized distributors. The Warranty Period for all warranties, except the warranty of title and the Patent and Copyright Warranty, is limited in time as shown below.

2. Warranty Commencement Date and Warranty Periods. The Warranty Period start date ("Warranty Commencement Date") for Tubes supplied as part of a new system installation will be the system installation date. The Warranty Commencement Date for replacement Tubes is determined by (i) the date GE Healthcare installs the Tube or (ii) if the date of installation is unknown, then the date of GE Healthcare's invoice to Customer or GE Healthcare's authorized distributor, as applicable, and in all cases not later than six (6) months following shipment of the Tube by GE Healthcare. The Warranty Periods are determined as follows:

- Customer Receives A New Tube As Part Of A New System Installation: For Tubes furnished to Customer as part of a new system installation, the Warranty Period for the replacement Tube will be the full term of the warranty, as shown in the chart below.
- Customer Pays A Portion Of The Cost For The New Tube (Pro Rata Calculation Table Applies): For Tubes purchased by Customer with A PRO-RATA ALLOWANCE, the Warranty Period for the new Tube will be the full term of the warranty, as shown in the chart below.
- Customer Pays The Entire Cost For The New Tube: For Tubes purchased by Customer with NO PRO-RATA ALLOWANCE, the Warranty Period for the new Tube will be the full term of the warranty, as shown in the chart below.
- GE Healthcare Pays The Entire Cost For The New Tube: For Tubes furnished to Customer under terms of the FULL WARRANTY PERIOD, as described in the chart, the Warranty Period for the new Tube will be the unexpired term of the warranty applicable to the last Tube for which Customer paid all or a portion of the cost of that Tube. (Note that the Warranty Period is not "reset" for Tubes supplied when GE Healthcare pays the entire cost for the replacement Tube.)
- GE Healthcare Supplied Tubes Under A GE Healthcare Tube Contract: For Tubes furnished to Customer under terms of a GE Healthcare Tube contract, refer to the Tube contract terms for discussion of any warranty provisions for the Tube. (Note that in general, at Tube contract termination, GE Healthcare provides no warranty of any kind on the Tube(s) remaining in the system.)

3. Remedies

3.1. General Remedies Terms. If, within 10 days after Tube failure, Customer notifies GE Healthcare of Customer's warranty claim during the Warranty Period, provides GE Healthcare with the information shown below, and makes the Tube available for service, GE Healthcare will, at its option, either repair, adjust or replace (with new or exchange replacement parts) the non-conforming Tube or parts of the Tube. Customer must provide GE Healthcare in writing (i) GE Healthcare's serial number of the Tube, (ii) the location and GE Healthcare's serial number of the system on which the Tube was installed, (iii) the date the Tube failed, (iv) the date the Tube was removed from service, and (v) the exposure counter reading when the Tube was removed. Warranty service will be performed as detailed below (with some types of service for a charge and other types of service on a no charge basis, as listed below) during GE Healthcare's standard service coverage hours of 8:00 a.m. to 5:00 p.m. (local site time), Monday-Friday, excluding GE Healthcare holidays ("Standard Coverage Hours"), and outside of Standard Coverage Hours at GE Healthcare's then-prevailing service rates (except as otherwise stated herein) and subject to the availability of personnel.

Customer must: (i) use the Tube in accordance with GE Healthcare service instructions and recommendations for the Tube and the system on which it is installed (including warm up and calibration procedures); (ii) perform preventive and corrective maintenance of the Tube utilizing maintenance procedures in accordance with GE Healthcare service instructions and recommendations and using GE Healthcare replacement parts or replacements parts of equivalent quality; and (iii) keep and make available to GE Healthcare, upon request records documenting the above maintenance.

Customer's failure to (i) properly use the Tube, (ii) perform the maintenance described above, (iii) maintain the information required above, (iv) provide the above information or any other information required by this warranty within the designated time periods, or (v) permit GE Healthcare, to verify such information during GE Healthcare's normal working hours will invalidate this warranty.

3.2. Determining Tube Charge For Replacement Tubes. Customer will pay the price of the replacement Tube in effect on its delivery date less the applicable Pro Rata Warranty Allowance (if applicable) described in the table that follows. For the purpose of the Pro Rata Warranty Allowance, a fraction of a month less than 15 days will be disregarded, and a fraction of a month equal to or greater than 15 days will be regarded as a full month.

3.3. Non-CT Tubes (Radiographic, Radiographic & Fluoroscopic, Vascular, and Mammographic). For Non-CT Tubes, warranty service does not include installation of the replacement Tube in Customer's system, but upon Customer's request, GE Healthcare, will install the Tube at GE Healthcare's then-prevailing service rates. If a replacement Tube is not installed by GE Healthcare, Customer must, not later than 10 days after its installation date, provide GE Healthcare, in writing (i) GE Healthcare's serial number of the replacement Tube, (ii) the location and GE Healthcare's serial number of the system on which the replacement Tube has been installed, (iii) the date of installation, and (iv) the exposure counter reading on the installation date.

3.4. CT Tubes Replaced During Full Warranty Period.

3.4.1. Determining Labor Charges For Tubes Replaced During Full Warranty Period. No service charges for the installation of the replacement Tube will be billed to Customer for CT Tubes replaced during the Full Warranty Period when those Tubes are replaced during Standard Coverage Hours.

3.4.2. GE Healthcare Pays The Entire Cost For The CT Tube. For CT Tubes furnished to Customer under terms of the FULL WARRANTY PERIOD as described in the chart, there is no charge to Customer for GE Healthcare installation costs for installation during Standard Coverage Hours. For services performed outside the Standard Coverage Hours, the service will be provided at GE Healthcare's prevailing service rates at the time of service, less a credit for the comparable service had it been rendered during the Standard Coverage Hours, so that Customer will pay the net difference. No refund or payment will be issued to Customer or other parties who choose to utilize either in-house or third party service providers for installation of the replacement Tube.

3.5. CT Tubes Replaced During Pro Rata Warranty Period.

3.5.1. Determining Labor Charges For CT Tubes Replaced During Pro Rata Warranty Period: Customer will pay GE Healthcare a service charge for the installation of the replacement CT Tube in effect on the date the service is rendered, less the applicable Pro Rata Labor Allowance. (Note that the Pro Rata Labor Allowance may be applied only to charges by GE Healthcare for GE Healthcare supplied labor.) No refund or payment will be issued to Customer or other parties who choose to utilize either in-house or third party service providers for installation of the replacement Tube. GE Healthcare will make a credit allowance at the billing rate for services performed for installation during Standard Coverage Hours. For services performed outside of Standard Coverage Hours, the service will be performed at GE Healthcare's prevailing service rates at the time of service, less a credit for the comparable service had it been rendered during Standard Coverage Hours, so that Customer will pay the net difference.

3.5.2. Customer Pays A Portion Of The Cost For The Replacement Tube: For Tubes furnished to Customer with A PRO-RATA WARRANTY ALLOWANCE to correct the warranty failure, the labor allowance multiplier will be calculated at the same pro-rata rate as is applicable to the part that is being replaced or repaired. That allowance will be applied to the prevailing service rates at time of service. Customer will pay the service charge less the Pro-Rata Labor Allowance amount.

4. Limitations. GE Healthcare shall not have any obligation to Customer hereunder if the warranty claim results from or arises out of: (i) the use of the Tube in combination with any hardware, equipment, supplies, accessories or any other materials or services not furnished by GE Healthcare or recommended in writing by GE Healthcare; (ii) the use of the Tube in a manner or environment, or for any purpose, for which GE Healthcare did not design or manufacture it, or in violation of GE Healthcare's recommendations or instructions on use; or (iii) any alteration, modification or enhancement of the Tube by Customer or any third party not authorized or approved in writing by GE Healthcare. In addition, this warranty does not cover the Tube to the extent it is used in any country other than the country to which GE Healthcare ships the Tube (unless GE Healthcare expressly agrees otherwise in writing). In addition, these warranties do not cover: (i) any defect or deficiency (including failure to conform to Tube Specifications that results, in whole or in part, from any improper storage or handling, failure to maintain the Tubes in the manner described in any applicable instructions or specifications or any cause external to the Tubes or beyond GE Healthcare's reasonable control, including, but not limited to, power failure and failure to keep Customer's site clean and free of dust, sand and other particles or debris; (ii) any adjustment, such as alignment, calibration, or other normal preventative maintenance required of Customer; (iii) expendable supply items; and (iv) stockpiling of replacement parts.

5. Warranty Periods

TUBE TYPE OR SYSTEM DESCRIPTION (a)	FULL WARRANTY PERIOD (b)	PRO RATA WARRANTY PERIOD (c)
Radiographic	30 days	24 months
Radiographic & Fluoroscopic	30 days	24 months
Vascular	30 days	24 months
Mammographic	30 days (d)	12 months
MX150 Vascular	36 months	N/A
Performix 160A (MX160)	36 months	N/A
MX120 Fluoroscopic	30 days	18 months
CT Max	4,000 slices	40,000 slices or 12 months

TUBE TYPE OR SYSTEM DESCRIPTION (a)	FULL WARRANTY PERIOD (b)	PRO RATA WARRANTY PERIOD (c)
CT 8800/9000 Metal	4,000 slices	40,000 slices or 12 months
CT 8800/9000 Graphite	4,000 slices	40,000 slices or 12 months
GE CGR Graphite	4,000 slices	40,000 slices or 12 months
GE Technicare CT	4,000 slices	40,000 slices or 12 months
CT Pace/Sytec 2000-4000	5,000 slices	80,000 slices or 12 months
CT SRi/Synergy	6,000 slices	80,000 slices or 12 months
CT 9800 Graphite	5,000 slices	80,000 slices or 12 months
HiLight Advantage	5,000 slices	80,000 slices or 12 months
Pegasus on CT/e	5,000 slices	50,000 slices or 12 months
Pegasus on CT/e Dual	30 days	50,000 slices or 12 months
ProSpeed/Sytec 6000-8000	9,000 slices	110,000 slices or 12 months
HiSpeed Advantage on HiSpeed Advantage and CT/I	9,000 slices	140,000 slices or 12 months
Solarix on LX/I, FX/I, DX/I	10,000 slices	100,000 slices or 12 months
Solarix 630 on HiSpeed ZX/I	10,000 slices	100,000 slices or 12 months
Solarix 630 on NX/I Pro	30 days	12 months or 15,000 amp-seconds
Performix-ADV on CT/I	6 months or 100,000 slices, whichever occurs first	N/A
Performix-ADV QX/i	6 months or 30,000 amp-seconds, whichever occurs first	N/A
Performix Ultra on LightSpeed 16, LightSpeed Ultra, LightSpeed Plus, LightSpeed QX/I, HiSpeed QX/I, Discovery LS, Discovery ST	12 months or 70,000 amp-seconds, whichever occurs first	N/A
Performix Ultra on BrightSpeed 16 (Elite), BrightSpeed 8 (Edge), BrightSpeed 4 (Excel)	12 months or 6,000 patient exams, whichever occurs first	N/A
Performix Pro80 (D3634T) on LightSpeed Pro 16, LightSpeed RT	12 months or 70,000 amp-seconds, whichever occurs first	N/A
Performix Pro VCT100 (D3194T) on LightSpeed Pro16	12 months or 70,000 amp-seconds, whichever occurs first	N/A
Performix Pro VCT100 (D3194T) on LightSpeed VCT, LightSpeed VCT Select, LightSpeed RT16, LightSpeed Xtra, Discovery VCT	12 months or 6,000 patient exams, whichever occurs first	N/A
Image Intensifier	30 days	24 months

COMMENTS

(a) For actual catalog numbers, please contact your local GE Healthcare representative.
(b) Initial period of time or amount of use after warranty begins during which a full 100% warranty is provided for a Tube that fails.
(c) Maximum period of time or amount of use during which a Pro Rata Warranty Allowance is provided for a Tube that fails. The Pro Rata Warranty Allowance and the Pro Rata Labor Allowance are calculated as follows:

$$1 - \frac{\text{Number of months between date of warranty commencement and date of failure}}{\text{Complete Warranty Time Period}} \times 100$$

OR

$$1 - \frac{\text{Slices Taken or Amp-Seconds}}{\text{Complete Pro Rata Warranty Slice or Amp-Second Amount}} \times 100$$

The Pro Rata Warranty period ends at the expiration of the maximum time period or the maximum usage amount identified in column (c) above, whichever occurs first.

(d) Mammography tubes included with new systems have a full 12 month, non-prorated warranty. Mammography replacement tubes carry a 30 day full warranty/12 month prorated warranty.

Attachment D

PROPOSED TOTAL CAPITAL COST OF PROJECT

Project name: MMP MRI #2 Equipment Replacement

Provider/Company: Carolinas HealthCare System

A.	**Site Costs**			
(1)	Full purchase price of land			
	Acres	Price per Acre $		
(2)	Closing costs			
(3)	Site Inspection and Survey			
(4)	Legal fees and subsoil investigation			
(5)	Site Preparation Costs			
	Soil Borings			
	Clearing-Earthwork			
	Fine Grade for Slab			
	Roads-Paving			
	Concrete Sidewalks			
	Water and Sewer			
	Footing Excavation			
	Footing Backfill			
	Termite Treatment			
	Other (Specify)			
	Sub-Total Site Preparation Costs			
(6)	Other (Specify)			
(7)	**Sub-Total Site Costs**			**$0**
B.	**Construction Contract**			
(8)	Cost of Materials			
	General Requirements			
	Concrete/Masonary			
	Woods/Doors & Windows/Finishes			
	Thermal & Moisture Protection			
	Equipment/Specialty Items			
	Mechanical/Electrical			
	Other (Specify)			
	Sub-total Cost of Materials			
(9)	Cost of Labor			
(10)	Other (Specify)			
(11)	**Sub-Total Construction Contract**			$650,264
C.	**Miscellaneous Project Costs**			
(12)	Building Purchase			
(13)	Fixed Equipment Purchase/Lease			$1,711,250
(14)	Movable Equipment Purchase/Lease			
(15)	Furniture			
(16)	Landscaping			
(17)	Consultant Fees			
	Architect and Engineering Fees		$74,500	
	Legal Fees			
	Market Analysis			
	Other (Specify)		$15,245	
	Other (Abatement)			
	Sub-Total Consultant Fees			$89,745
(18)	Financing Costs (e.g., Bond, Loan, etc.)			
(19)	Interest During Construction			
(20)	Other (Contingency)			$183,841
(21)	**Sub-Total Miscellaneous**			$273,586
(22)	**Total Capital Cost of Project** (Sum A-C above)			$2,635,100

PROPOSED TOTAL CAPITAL COST OF PROJECT

Project Name: **MMP MRI #2 Equipment Replacement**
Provider/Company: **Carolinas HealthCare System**

I certify that, to the best of my knowledge, the above construction related costs of the proposed project named above are complete and correct.

(Signature of Licensed Architect or Engineer)

Attachment E

STATE OF NORTH CAROLINA

Department of Health and Human Services
Division of Facility Services

CERTIFICATE OF NEED
for
Project Identification Number F-6493-01
FID #944734

ISSUED TO: **The Charlotte-Mecklenburg Hospital Authority**
1000 Blythe Boulevard
Charlotte, NC 28203

Pursuant to N.C. Gen. Stat. § 131E-175, et. seq., the North Carolina Department of Health and Human Services hereby authorizes the person or persons named above (the "certificate holder") to develop the certificate of need project identified above. The certificate holder shall develop the project in a manner consistent with the representations in the project application and with the conditions contained herein and shall make good faith efforts to meet the timetable contained herein. The certificate holder shall not exceed the maximum capital expenditure amount specified herein during the development of this project, except as provided by N.C. Gen. Stat. § 131E-176(16)e. The certificate holder shall not transfer or assign this certificate to any other person except as provided in N.C. Gen. Stat. § 131E-189(c). This certificate is valid only for the scope, physical location, and person(s) described herein. The Department may withdraw this certificate pursuant to N.C. Gen. Stat. § 131E-189 for any of the reasons provided in that law.

SCOPE: **Construct an additional adjacent to the Radiology Department, renovate existing space in the Radiology Department, and acquire no more than one additional fixed magnetic resonance imaging (MRI) scanner for a total of no more than three fixed MRI scanners at Carolinas Medical Center/Mecklenburg County**

CONDITIONS: **See Reverse Side**

PHYSICAL LOCATION: **Carolinas Medical Center**
1000 Blythe Boulevard
Charlotte, NC 28203

MAXIMUM CAPITAL EXPENDITURE: **$3,576,293**

TIMETABLE: **See Reverse Side**

FIRST PROGRESS REPORT DUE: **May 15, 2003**

This certificate is effective as of the 27th day of December, 2002.

Lee B Hoffman by cbac
Chief, Certificate of Need Section
Division of Facility Services

Attachment F

Kennedy Covington

ATTORNEYS AT LAW

Gary S. Qualls
919.466.1182
gqualls@kennedycovington.com

November 8, 2005

VIA HAND DELIVERY
Robert Fitzgerald
Director
N.C. Department of Health and Human Services
Division of Facility Services
701 Barbour Drive
Raleigh, NC 27699-2706

RE: Request for Declaratory Ruling by Carolinas Medical Center For MRI Site Change

Dear Mr. Fitzgerald:

Enclosed please find a Request for Declaratory Ruling on behalf of Carolinas Medical Center ("CMC"), and proposed Declaratory Ruling. The Request asks that CMC be permitted to develop its third MRI scanner to a site not identified in the CON Application on the ground that such a site change would not be a material change in location for purposes of N.C.G.S. 131E-181(a).

Furthermore, we **request that you expedite** this request because CMC needs to act quickly to develop this project according to the newly proposed construction and installation schedule. If you have any questions, please let me know. Thank you for your attention to this matter.

Sincerely,

Gary S. Qualls

Gary S. Qualls

Enclosure

NORTH CAROLINA DEPARTMENT OF HEALTH AND HUMAN SERVICES
DIVISION OF FACILITY SERVICES
RALEIGH, NORTH CAROLINA

IN RE: REQUEST FOR DECLARATORY RULING BY CAROLINAS MEDICAL CENTER	)	**REQUEST FOR DECLARATORY RULING**

Pursuant to N.C.G.S. § 150B-4, Carolinas Medical Center ("CMC") respectfully requests that the North Carolina Department of Health and Human Services, Division of Facility Services (the "Department") issue a declaratory ruling as to the applicability of Chapter 131E, Article 9 of the North Carolina General Statutes, and of the Department's rules, to the facts described below. By way of background, CMC filed a certificate of need ("CON") application (the "Application") to acquire a third fixed magnetic resonance imaging ("MRI") scanner to be located in the Radiology Department of CMC ("CMC's MRI Project"). The Application was approved by the Department, and CMC's CON for the CMC MRI Project was issued on December 27, 2002. See Exhibit 1.

Specifically, the Applicant requests a ruling that CMC be permitted to relocate the MRI scanner to a site not identified in the Application on the ground that such a site change would not be a material change in location for purposes of N.C.G.S. §131E-181(a).

STATEMENT OF FACTS

CMC's CON authorizes the location of the MRI scanner to be on the 4th floor of CMC's main bed tower building, in the Radiology Department. The approved site is located at 1000 Blythe Boulevard, Charlotte, North Carolina (the "Original Site"). Campus maps are attached as Exhibits 3 and 4, which show the location of both the

original site and the new proposed site. Since issuance of the CON, several facts have changed, which prompt this request:

1) Upon further investigation of the Original Site, it was deemed less desirable for the following reasons: This MRI scanner is projected to be heavily utilized in an outpatient setting. The original location is not convenient for outpatients because the outpatient parking lot is on one side of the hospital and the patients would have to walk to the opposite side of the hospital to get to the Radiology Department. See Exhibit 3.

2) The Morehead Imaging Center ("MIC") at the corner of Morehead and Kenilworth on CMC's campus was first selected as an alternative location because it provided close parking and walk-in access. This proposed change in site was referenced in the Progress Report filed with the CON Section on November 2, 2004, attached as Exhibit 2.

3) However, after further investigation it was determined that MIC did not have space to accommodate the MRI scanner. As a result of the foregoing, CMC has located another site, the Morehead Medical Plaza ("MMP"), a new multi-story medical office building on the CMC campus at 1025 Morehead Medical Drive. See Exhibit 4, Building #26. This will consolidate outpatient imaging services on the first floor of the MMP. This relocation would dovetail with a separate project in which CMC is proposing to purchase new equipment and relocate existing equipment from the imaging center at Medical Center Plaza, an existing medical office building on the campus, and from the radiology department on the fourth floor of CMC that will allow provision of CMC's

outpatient radiology services in an outpatient-friendly environment at the MMP. The MMP is approximately 500 feet from the Original Site. See Exhibit 5.

Placing the relocated MRI Scanner at the Alternative Site rather than the Original Site will not increase the capital costs or the operating costs from the amounts proposed in the Application.

The Applicant asks that the Department approve the Alternative Site as a relocation site for the MRI scanner. CMC needs to act quickly and is prepared to move forward with installation of the MRI scanner as soon as possible.

DISCUSSION

N.C.G.S. §131E-181(a) provides that a "certificate of need shall be valid only for the defined scope, physical location and person in the named application." However, the Department has allowed parties wide latitude to make changes in the physical location named in their applications where convenience dictates or the objectives of the CON statute are otherwise advanced. This proposal to relocate CMC's MRI scanner from the Original Site to the Alternative Site does not constitute a material change in the physical location of the project for the following reasons:

1) the Original Site is in close proximity to the Alternative Site (approximately 500 feet away).

2) CMC will be developing its project in a manner consistent with the representations made in the Application and with any non-site-specific conditions that were placed on its CON. The change in site will not increase CMC's capital or operating costs associated with the approved project. Consequently, there would be no violation of the CON Statute by permitting this proposed site change and the change would be

consistent with the general objectives of the CON Statute because the new Alternative Site will be superior to the Original Site in terms of patient access and consolidation of imaging services.

3) access to the medically underserved and the remainder of the originally identified population will be equivalent because the same population as projected in the application will be served and because of the proximity of the two sites.

CONCLUSION

Based on the given state of facts set forth in this request and the authorities discussed above, CMC requests that the Department issue a declaratory ruling that CMC be permitted to develop CMC's MRI scanner authorized by CMC's MRI Project CON at the Alternative Site identified in this request instead of the Original Site identified in the Application.

Submitted this 8th day of November, 2005.

KENNEDY COVINGTON LOBDELL & HICKMAN, PLLC

By: Gary S. Qualls

Gary S. Qualls
N.C. State Bar No. 16798
2801 Slater Road, Suite 120
Morrisville, North Carolina 27602
Telephone: (919) 466-1182

ATTORNEYS FOR CAROLINAS MEDICAL CENTER

Exhibits

1. Original CON
2. Progress Report dated November 2, 2004
3. CMC Campus Map showing Radiology Department
4. CMC Campus Map showing proposed site of Morehead Medical Plaza
5. Information on Morehead Medical Plaza

EXHIBIT 1

STATE OF NORTH CAROLINA

Department of Health and Human Services
Division of Facility Services

CERTIFICATE OF NEED
for
Project Identification Number F-6493-01
FID #944734

ISSUED TO: **The Charlotte-Mecklenburg Hospital Authority**
1000 Blythe Boulevard
Charlotte, NC 28203

Pursuant to N.C. Gen. Stat. § 131E-175, et. seq., the North Carolina Department of Health and Human Services hereby authorizes the person or persons named above (the "certificate holder") to develop the certificate of need project identified above. The certificate holder shall develop the project in a manner consistent with the representations in the project application and with the conditions contained herein and shall make good faith efforts to meet the timetable contained herein. The certificate holder shall not exceed the maximum capital expenditure amount specified herein during the development of this project, except as provided by N.C. Gen. Stat. § 131E-176(16)e. The certificate holder shall not transfer or assign this certificate to any other person except as provided in N.C. Gen. Stat. § 131E-189(a). This certificate is valid only for the scope, physical location, and person(s) described herein. The Department may withdraw this certificate pursuant to N.C. Gen. Stat. § 131E-189 for any of the reasons provided in that law.

SCOPE: **Construct an additional adjacent to the Radiology Department, renovate existing space in the Radiology Department, and acquire no more than one additional fixed magnetic resonance imaging (MRI) scanner for a total of no more than three fixed MRI scanners at Carolinas Medical Center/Mecklenburg County**

CONDITIONS: **See Reverse Side**

PHYSICAL LOCATION: **Carolinas Medical Center**
1000 Blythe Boulevard
Charlotte, NC 28203

MAXIMUM CAPITAL EXPENDITURE: **$3,576,293**

TIMETABLE: **See Reverse Side**

FIRST PROGRESS REPORT DUE: **May 15, 2003**

This certificate is effective as of the 27th day of December, 2002.

Lee B. Hoffman, Jr., Esq.
Chief, Certificate of Need Section
Division of Facility Services

EXHIBIT
tabbies
2

Carolinas HealthCare System

November 2, 2004

Ms. Mary Edwards, Project Analyst
Certificate of Need Section
Division of Facility Services
N. C. Department of Human Resources
710 Barbour Drive
Raleigh, NC 27603

Dear Ms. Edwards:

I have attached a copy of Carolinas Medical Center's second progress report for the purchase and installation of the third magnetic resonance imaging (MRI) scanner. **(Project I.D. #F-6493-01, FID #944734).** Please note that the milestone schedule has been modified from the originally proposed. The need for this change is described in this report. The revised schedule is not expected to affect the estimated capital expenditure for the project or materially change the scope of the project as represented in our original CON application.

Should you have any questions or need additional information, please do not hesitate to call me at 704/355-0314.

Sincerely,

Greg S. Bass

Greg S. Bass, Director
CHS Management Company

CERTIFICATE OF NEED
PROGRESS REPORT FORM

County: Mecklenburg
Facility: Carolinas Medical Center
Project I.D. #: F-6493-01
Date of Progress Report: October 29, 2004
Facility I.D. #: 944734
Effective Date of Certificate: December 27, 2002
Project Description: Acquire a third fixed magnetic resonance imaging scanner at Carolinas Medical Center (CMC)

A. Status of the Project – Describe the current status of the project. If the project is not going to be developed exactly as proposed in the certificate of need application, describe all differences between the project as proposed in the application and the project as currently proposed. Such changes include, but are not limited to, changes in the: 1) design of the facility; 2) number or type of beds to be developed; 3) medical equipment to be acquired; 4) proposed charges; and 5) capital cost of the project. (See the Capital Cost Section of this form for additional questions regarding changes in the total capital cost of the project).

The project is being developed with a change in the location of the MRI scanner. The original proposal called for the scanner to be located in the Radiology Department in CMC. The new plan will locate the MRI scanner in the Morehead Imaging Center, a freestanding building on the CMC campus. The new location will allow more convenient access for outpatients.

B. Timetable

1. Complete the following. The first column must include the timetable dates found on the certificate of need. If the CON Section has authorized an extension of the timetable in writing, you may substitute the dates from that letter.

	Projected Completion Date (from the Certificate of Need) Month/Day/Year	Actual Date Completed Month/Day/Year
Obtained Funds for the Project		June 17, 2003
Approval of Final Drawings and Specifications	March 2, 2003	
Acquisition of land/facility		
Construction Contract Executed	May 1, 2003	
25% completion of construction	June 15, 2003	
50% completion of construction	September 1, 2003	
75% completion of construction	October 1, 2003	
Completion of construction	November 1, 2003	
Ordering of medical equipment		
Operation of medical equipment		
Occupancy/offering of services	December 1, 2003	
Licensure		
Certification		

2. If the project is experiencing significant delays in development:

   a. explain the reasons for the delay; and

The project has been delayed due to a facility planning process and a change in the proposed location of the MRI scanner. The original proposal called for the scanner to be located in the Radiology Department in CMC. The new plan is to locate the MRI scanner in Morehead Imaging Center on the campus of CMC. The building requires renovation to accommodate the MRI scanner. Renovation has been delayed to allow completion of the adjacent parking garage.

b. provide a revised timetable for the CON Section to consider.

	Projected Completion Date (revised) Month/Day/Year
Obtained Funds for the Project	
Approval of Final Drawings and Specifications	December 15, 2004
Acquisition of land/facility	
Construction Contract Executed	January 1, 2005
25% completion of construction	February 1, 2005
50% completion of construction	March 1, 2005
75% completion of construction	April 1, 2005
Completion of construction	April 15, 2005
Ordering of medical equipment	
Operation of medical equipment	
Occupancy/offering of services	May 15, 2005
Licensure	
Certification	

C. Medical Equipment Projects – If the project involves the acquisition of any of the following equipment: 1) major medical equipment as defined in NCGS §131E-176(14f); 2) the specific equipment listed in NCGS §131-176(16); 3) equipment that creates an oncology treatment center as defined in NCGS §131-176(18a); or 4) equipment that creates a diagnostic center as defined in NCGS §131E-176(7a), provide the following information for each piece or unit of equipment.

a. Manufacturer
b. Model
c. Serial Number
d. Date acquired

The MRI scanner has not yet been purchased.

D. Capital Expenditure

1. Complete the following table.
   a. Include all capital costs that have been paid to date as well as those that the applicant(s) are legally obligated to pay.
   b. If you have not already done so, provide copies of the executed construction contracts, including the one for architect and engineering services, and all final purchase orders for medical equipment costing more than $10,000/unit.
   c. If the project involves renovation or construction, provide copies of the Contractors Application for Payment [AIA G702] with Schedule of Values [AIA G703].

	Capital Expense Since Last Report	Total Cumulative Capital Expenditure
Site Costs		
Purchase price of land		
Closing costs		
Legal Fees		
Site preparation costs		
Landscaping		

Other site costs (identify)		
Subtotal Site Costs	$0	$0
Construction Costs		
Construction Contract		
Miscellaneous Costs		
Moveable Equipment		
Fixed Equipment		
Furniture		
Consultant Fees	$266,203	$274,347
Financing Costs		
Interest during Construction		
Other Misc. Costs (identify)		
Subtotal Misc. Costs	$266,203	$274,347
Total Capital Cost of the Project	$266,203	$274,347

2. As of the date of this progress report, what is your best estimate of the total actual capital cost of the project?

   At this time the total capital cost of the project is estimated to be $3,576,293, the original approved amount.

3. Will the total actual capital cost of the project exceed 115% of the approved capital expenditure on the certificate of need? If yes, explain the reasons for the difference.

   The total capital cost is not expected to exceed 115% of the approved capital expenditure on the certificate of need.

E. CERTIFICATION – The undersigned hereby certifies that the responses to the questions in this progress report and the attached documents are correct to the best of his or her knowledge and belief.

Signature of Officer: _____

Name and Title of Responsible Officer: E. Del Murphy, Jr., Vice President

Telephone Number of Responsible Officer: 704-355-6060

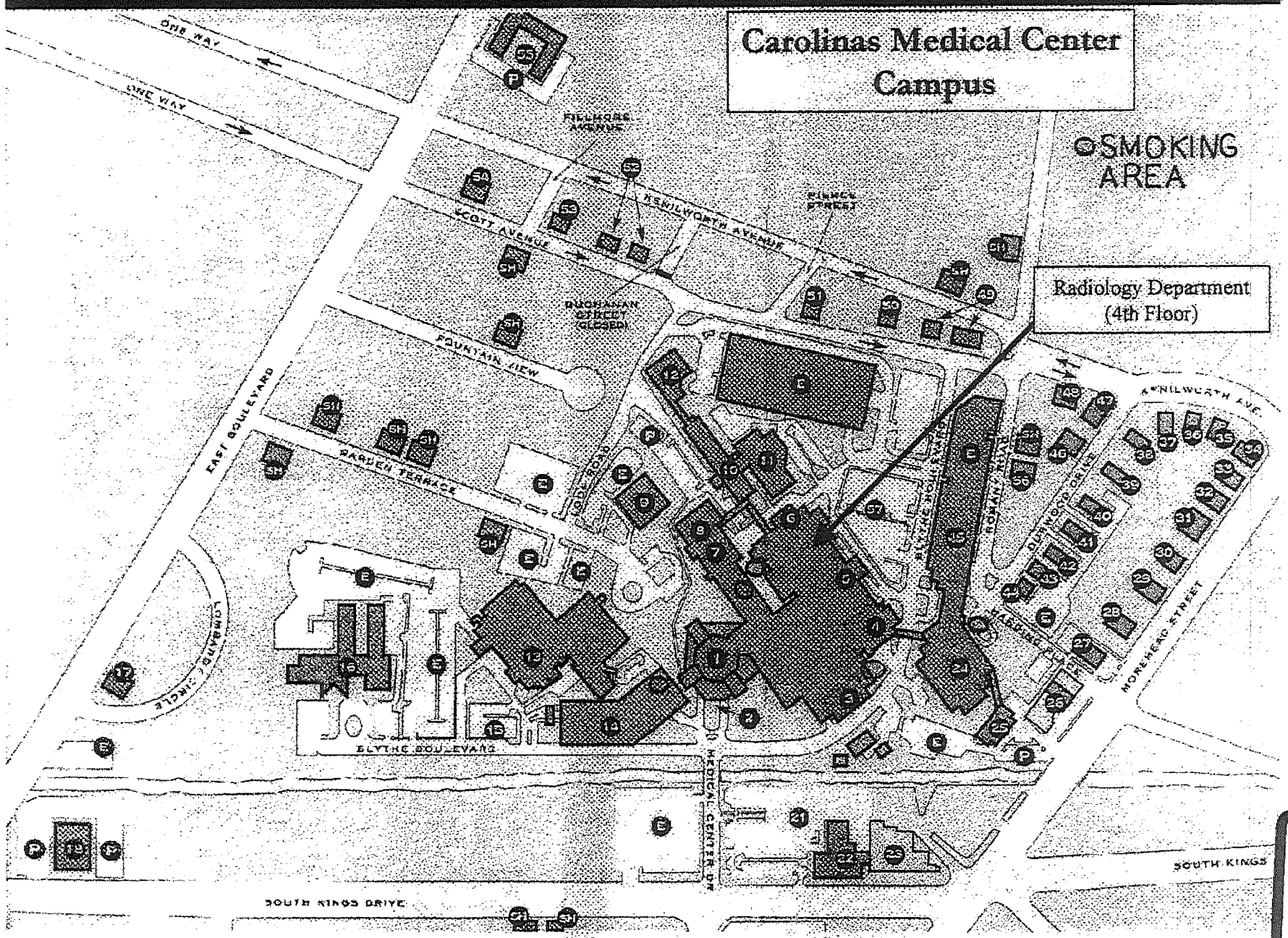
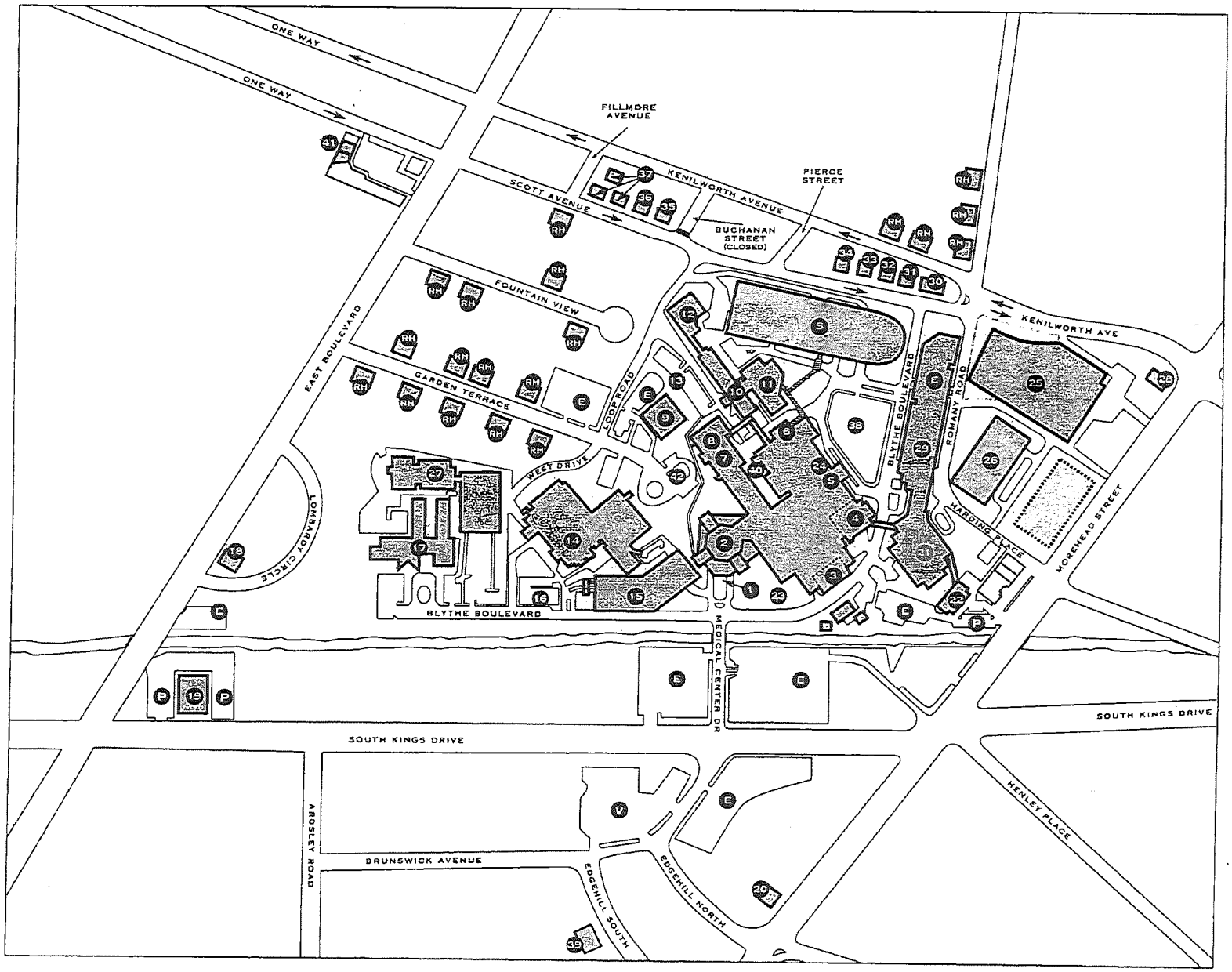

Carolinas Medical Center Campus
SMOKING AREA
Radiology Department (4th Floor)
ONE WAY
ONE WAY
FILLMORE AVENUE
KENILWORTH AVENUE
PINECK STREET
SCOTT AVENUE
BUCHANAN STREET (CLOSED)
FOUNTAIN VIEW
EAST BOULEVARD
HAWTHORNE LANE
ROWAN TERRACE
KENILWORTH AVE.
DUNWOODY DRIVE
MOREHEAD STREET
LOMBARDY CIRCLE
BLYTHE BOULEVARD
MEDICAL CENTER DR.
SOUTH KINGS
SOUTH KINGS DRIVE

EXHIBIT 3



Campus Map

1. Carolinas Medical Center Main Entrance
2. Rush S. Dickson Tower
3. Surgery Tower
4. Carolinas Heart Institute
5. Outpatient Entrance
6. Emergency Department
7. Cannon Research Center
8. Auditorium
9. Research/Office Building (1500 Caldwell Terrace)
10. Annex Office Building
11. Medical Education Building/Jennifer Pediatric Trauma Institute
12. Carolinas Neuroscience/MRI/PET Center (1337 South Ave.)
13. Parking (1 Lot)
14. Charlotte Institute of Rehabilitation
15. Venter Parking Deck (Blythe Deck)
16. Charlotte Institute of Rehabilitation Outpatient Parking
17. Rankin Education Center
    - Carolinas College of Health Sciences - School of Nurse Anesthesiology
18. Employee Assistance Program (1819 East Blvd.)
19. CMC-Mercy Park (1350 S. Kings Dr.)
    - Center for Cardiovascular Health
20. Carolinas Diabetes Center (1128 E. Morehead St.)
21. Medical Center Plaza
    - One Day Surgery, Medical Imaging Center
    - Center for Breast Diagnosis, Charlotte Medical Clinic
    - Carolinas Physical Therapy Network
22. McKay Urology (1100 E. Morehead St.)
23. Future site of Levine Children's Hospital
24. Children's Emergency Department Entrance
25. Morehead Medical Plaza Deck
26. Future site of Medical Office (1??)
27. Future site of Central Energy Plant
28. Morehead Imaging Center (1310 E. Morehead St.)
29. Medical Center Plaza Parking Deck
30. Campus Security / CMS Mail Services (1300 South Ave.)
31. CMS Transportation Transfer (1308 South Ave.)
32. Pharmacy Administration (1320 South Ave.)
33. Public Information / Marketing (1300 South Ave.)
34. Hospitality House of Charlotte (1412 South Ave.)
35. Pediatric Resource Center
36. Children's Miracle Network
37. Carolinas HealthCare Foundation (1408, 1410 & 1418 South Ave.)
38. Outpatient and Emergency Department Parking (1 Lot)
39. Charlotte Obstetrics and Gynecology Associates (1023 Edgehill Road S.)
40. Outpatient Parking (2 Lots)
41. Carolinas Integrative Health (1408 E. East Blvd.)
42. Loading Dock

P Ambulatory Patient Parking
RH Residential Housing
V Visitor Parking
E [illegible]
S [illegible]

tabbies

EXHIBIT

4

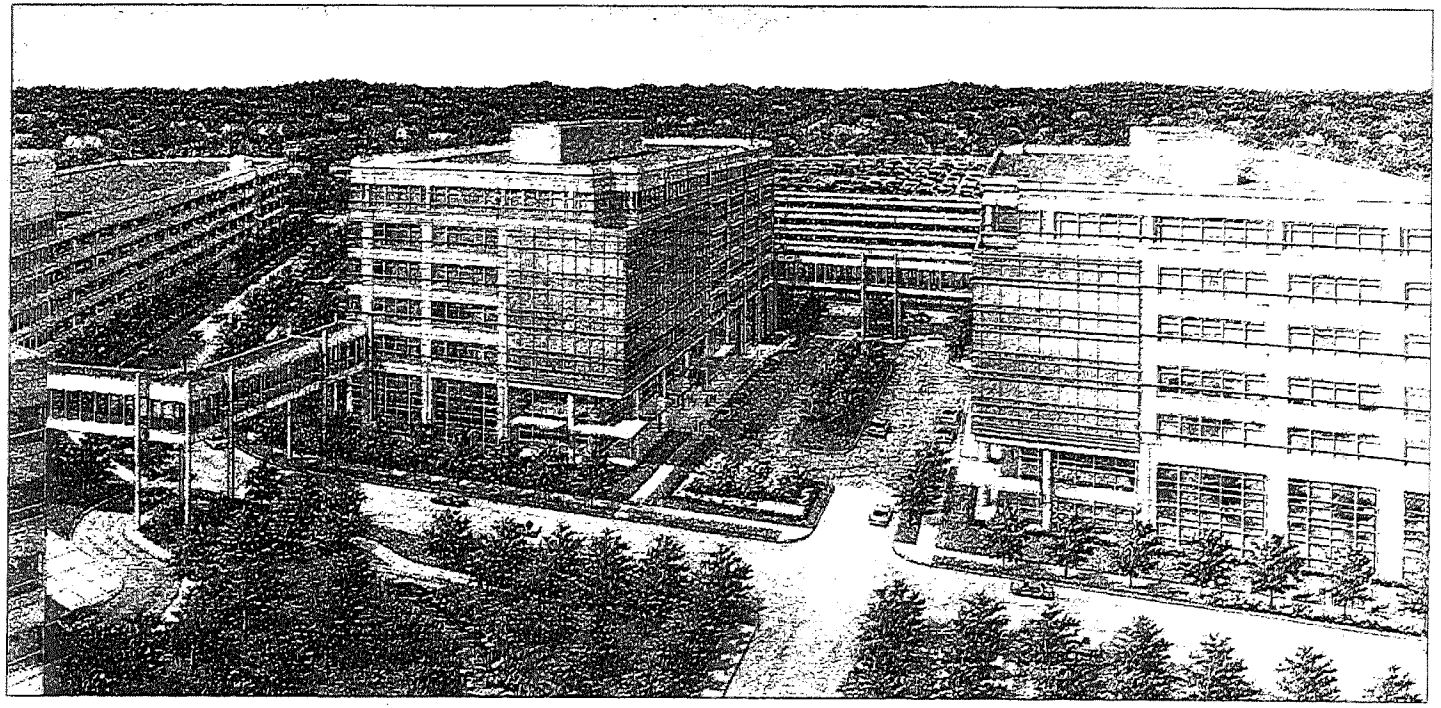
Medical Plaza

Rendering

Morehead Center
Charlotte, North Carolina

Facts & Features:

- *Two Six-Story Medical Office Buildings Totaling Up To 300,000 SF*
- *Convenient & Efficient All-Weather Connection to Carolinas Medical Center & Parking Facility*
- *Designed to House Complementary Medical Practices for Patient Convenience & Referral Under a Single Roof*
- *Promotes Efficient & Quality Health Care Services in a Patient-Centered Environment*
- *Technology Infrastructure Accommodates Electronic Transfer of Medical Information & Enhances Communication*
- *Striking Architectural Precast Concrete & Glass Building Exterior*
- *Complete Barrier-Free Access In Compliance with Americans With Disabilities Act (ADA)*



ALTER+CARE

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EXHIBIT
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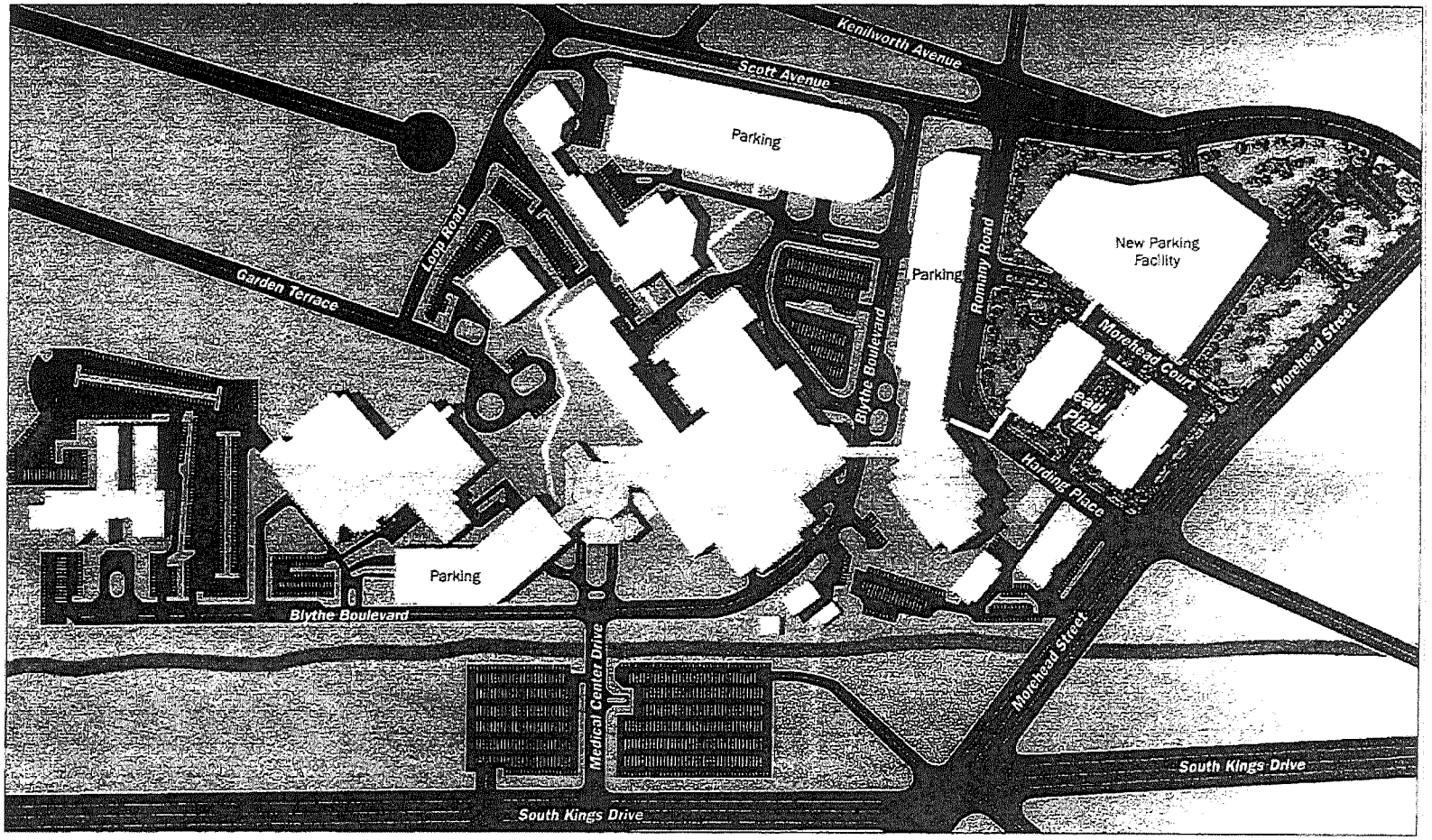
Campus Map



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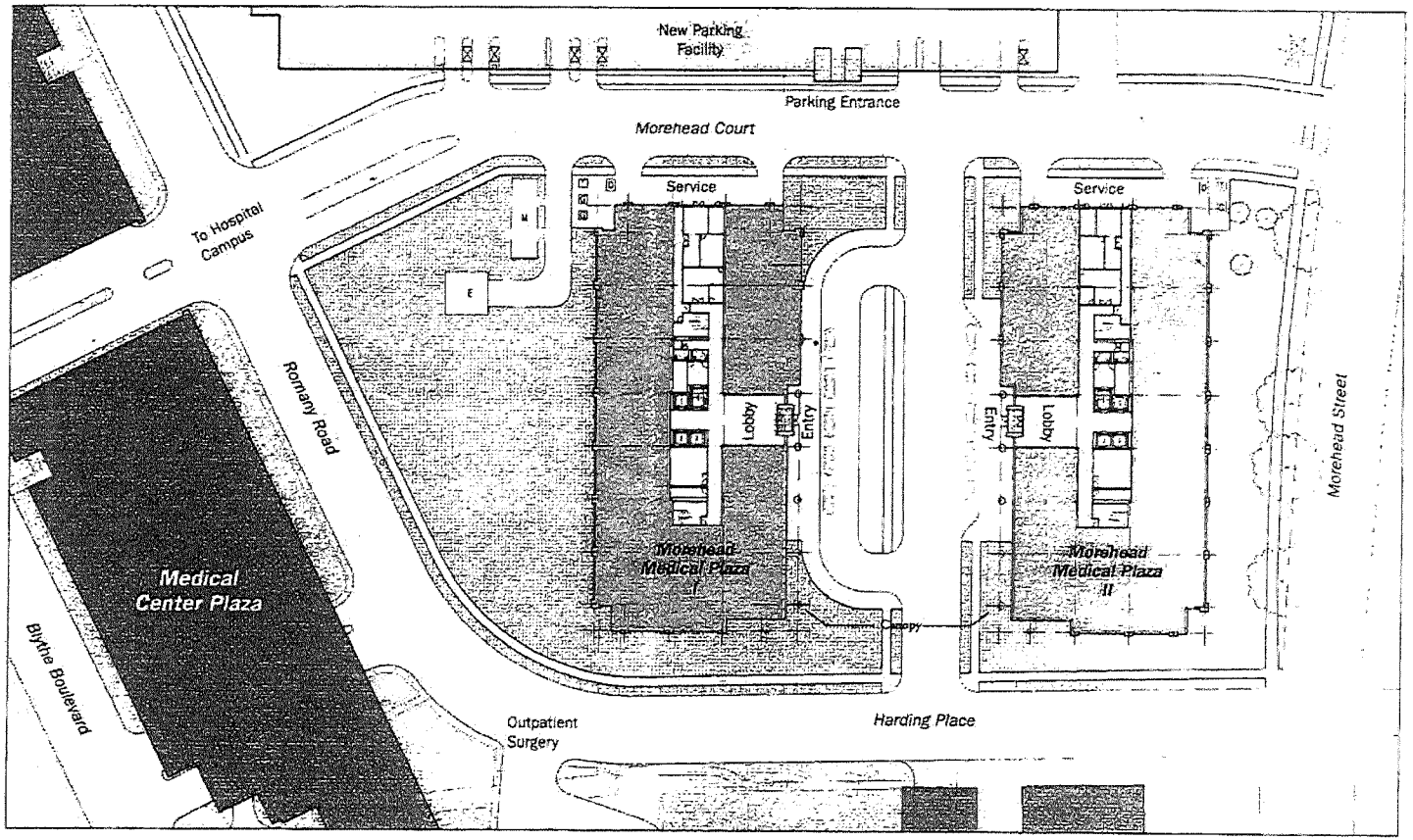
Plaza Plan

Morehead Street & Romany Road
Charlotte, North Carolina

Facts & Features:

- *Spacious and Identifiable Building Entrance & Lobby*
- *Landscaped Courtyard Provides Pedestrian Views & Campus Environment*
- *Covered Parking Facility Assures Ease of Access and Convenience*
- *Recognizable and Prestigious Morehead Street Address & Exposure*
- *Valet Parking & Patient Transport Accommodations*
- *Multiple Vehicular Access From Romany Road, Harding Street & New Morehead Court*



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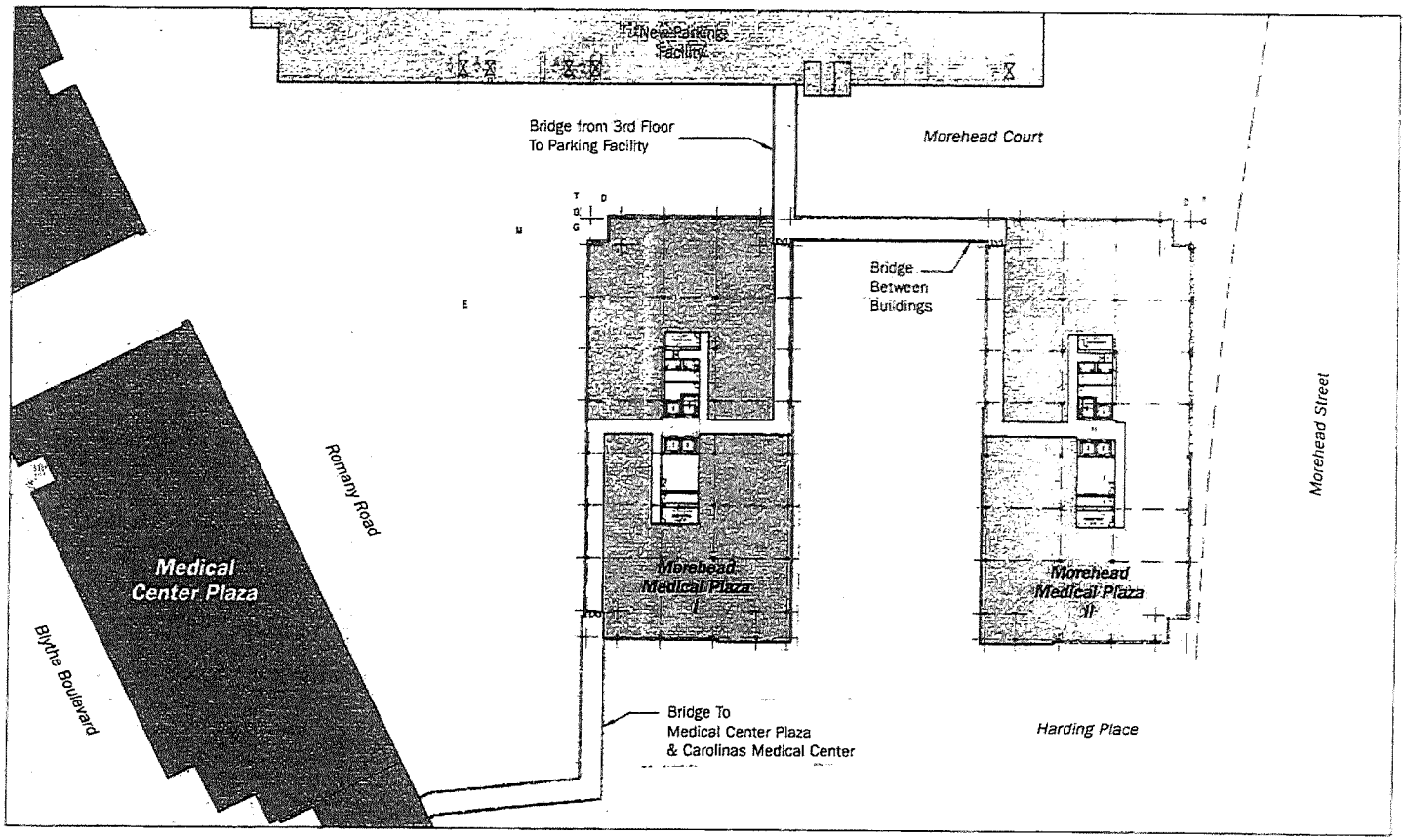
Concourse Plan

Facts & Features:

- *Convenient & Efficient All Weather Connection Between Buildings, Carolinas Medical Center and Parking Facility*
- *Ease of Physician & Patient Movement Saves Time & Promotes Efficiency*
- *Increased Pedestrian Traffic Offers Unique Practice Exposure*
- *Exterior Views Promote Pedestrian Awareness & Wayfinding*
- *Access to All Building Floors via High-Speed Passenger Elevators*
- *Security System With 24-Hour, 7-Day a Week Access*



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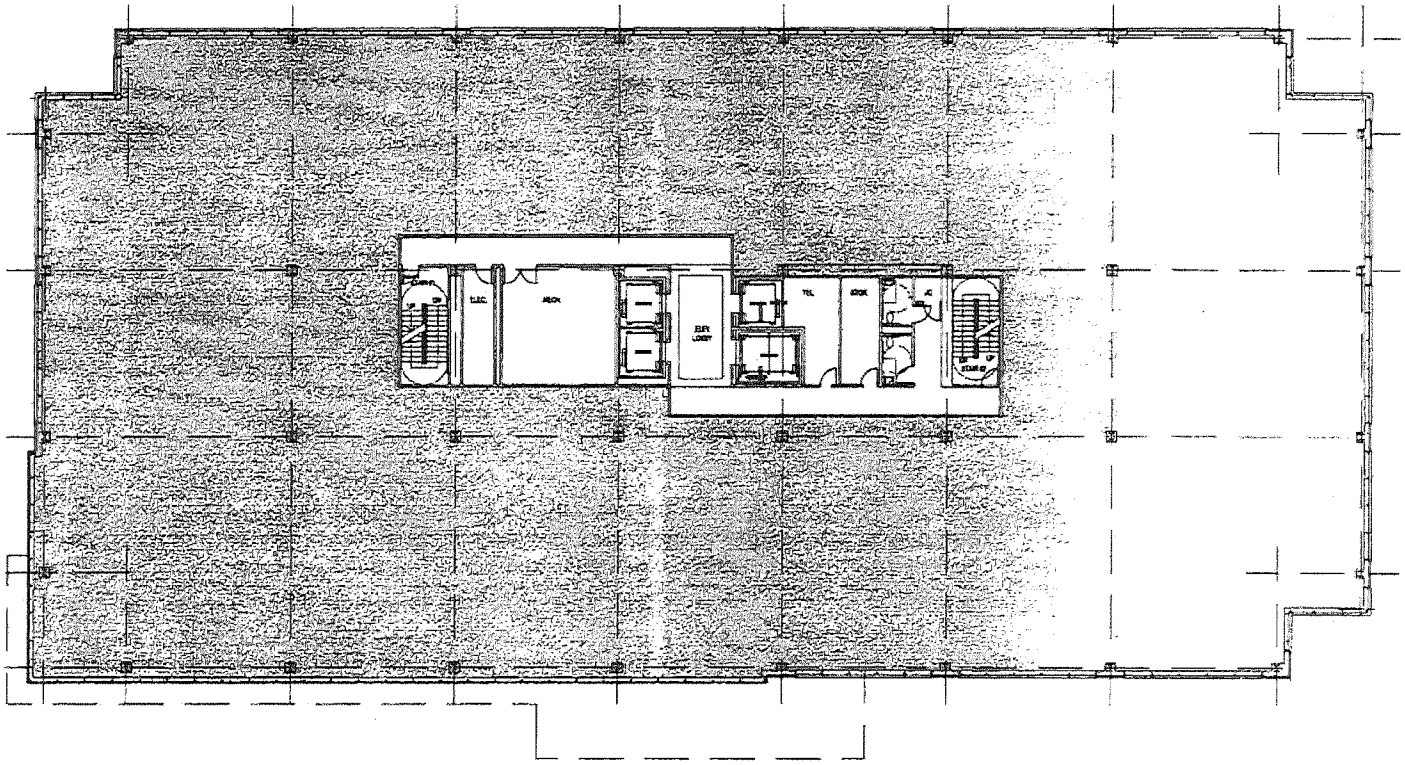
Typical Floor Plan

Facts & Features:

- *Spacious Floor Areas Accommodate Large Multi-Physician Practice & Single Practitioner*
- *Custom-Designed Suites Meet Individual Patient Requirements & Promotes Efficiency*
- *Full Exterior Views on All Six Floors*
- *Suite-Finish Specifications Are Consistent With Today's Practice Standards to Create Medical Ready Suites*
- *Partitions and Walls Between & Within Suites Are Well Insulated to Assure Privacy to Patients and Staff*
- *State-of-the-Art Mechanical System With Multiple, Thermostatically-Controlled Zones in Each Suite for Comfort*
- *Generous Floor-to-Floor Heights Accommodates Varied Medical Service Requirements*



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Attachment G

North Carolina Department of Health and Human Services
Division of Facility Services
Office of the Director
2701 Mail Service Center • Raleigh, North Carolina 27699-2701

Michael F. Easley, Governor
Carmen Hooker Odom, Secretary

Robert J. Fitzgerald, Director
Phone: 919-855-3750
Fax: 919-733-2757

January 9, 2006

FACSIMILE AND CERTIFIED MAIL

Mr. Gary S. Qualls
Kennedy Covington Lobdell & Hickman, L.L.P.
Post Office Box 14210
Research Triangle Park, North Carolina 27709

Re: Declaratory Ruling for Carolinas Medical Center
Project I.D. No. F-6493-01

Dear Mr. Qualls:

I am enclosing a Declaratory Ruling that you requested in your letter received on November 8, 2005. If questions arise, do not hesitate to let me know.

Sincerely,

Robert J. Fitzgerald

RJF:PTD:peb

Enclosure

cc: Phyllis T. Daw, Chief Operating Officer, DFS
Lee Hoffman, Chief, Certificate of Need Section
Jeff Horton, Chief, Licensure and Certification Section
William Warren, Chief, Construction Section
Melissa Trippe, Special Deputy Attorney General

NORTH CAROLINA DEPARTMENT OF HEALTH AND HUMAN SERVICES
DIVISION OF FACILITY SERVICES
RALEIGH, NORTH CAROLINA

IN RE: REQUEST FOR DECLARATORY RULING BY CAROLINAS MEDICAL CENTER Project I.D. No. F-6493-01	)))	**DECLARATORY RULING**

I, Robert J. Fitzgerald, Director of the Division of Facility Services (the "Agency" or "Department"), hereby issue this declaratory ruling pursuant to N.C.G.S. § 150B-4 and 10A N.C.A.C. 14A.0103, and the authority delegated to me by the Secretary of the Department of Health and Human Services. Carolinas Medical Center ("CMC") has asked the Agency to issue a ruling as to the applicability of Chapter 131E, Article 9 of the North Carolina General Statutes and of the Agency's rules to the facts described below.

By way of background, CMC filed a certificate of need ("CON") application (the "Application") for Project I.D. F-6493-01 to acquire a third fixed magnetic resonance imaging ("MRI") scanner to be located in the Radiology Department of CMC ("CMC's MRI Project"). On December 27, 2002, a CON was issued for the CMC MRI Project.

For the reasons given below, I conclude that CMC is permitted to relocate the MRI scanner to a site not identified in CMC's CON Application on the ground that such a site change would not be a material change in location for purposes of N.C. Gen. Stat. §131E-181(a).

This ruling is binding on the Agency and the person requesting it if the material facts stated in the request are accurate and no material facts have been omitted from the request. The ruling applies only to this request. Except as provided by N.C. Gen. Stat. §150B-4, the Agency reserves the right to change the conclusions which are contained in this ruling. Gary S. Qualls of Kennedy Covington Lobdell & Hickman, LLP, counsel for CMC, has requested this ruling on

behalf of CMC and has provided the statement of facts on which this ruling is based. The material facts are set out below.

STATEMENT OF FACTS

CMC's CON authorizes the location of the MRI scanner to be on the 4th floor of CMC's main bed tower building, in the Radiology Department. The approved site is located at 1000 Blythe Boulevard, Charlotte, North Carolina (the "Original Site"). Campus maps were attached as Exhibits 3 and 4 to the Request, which show the location of both the Original Site and the new proposed site. Since issuance of the CON, several facts have changed, which prompted this request:

1) Upon further investigation of the Original Site, CMC deemed the original site less desirable for the following reasons: This MRI scanner is projected to be heavily utilized in an outpatient setting. The original location is not convenient for outpatients because the outpatient parking lot is on one side of the hospital and the patients would have to walk to the opposite side of the hospital to get to the Radiology Department.

2) The Morehead Imaging Center ("MIC") at the corner of Morehead and Kenilworth on CMC's campus was first selected as an alternative location because it provided close parking and walk-in access. This proposed change in site was referenced in the Progress Report filed with the CON Section on November 2, 2004.

3) However, after further investigation CMC determined that MIC did not have space to accommodate the MRI scanner. As a result of the foregoing, CMC has located another site (the "Alternative Site"), the Morehead Medical Plaza ("MMP"), a new multi-story medical office building on the CMC campus at 1025 Morehead Medical Drive. See Exhibit 4 of the Request, Building #26. This will consolidate outpatient imaging services on the first floor of the

MMP. This relocation would dovetail with a separate project in which CMC is proposing to purchase new equipment and relocate existing equipment from the imaging center at Medical Center Plaza, an existing medical office building on the campus, and from the radiology department on the fourth floor of CMC that will allow provision of CMC's outpatient radiology services in an outpatient-friendly environment at the MMP. The MMP Alternative Site is approximately 500 feet from the Original Site. See Exhibit 5 of the Request.

Placing the relocated MRI Scanner at the Alternative Site rather than the Original Site will not increase the capital costs or the operating costs from the amounts proposed in the Application.

ANALYSIS

N.C.G.S. §131E-181(a) provides that a "certificate of need shall be valid only for the defined scope, physical location and person in the named application." This proposal to relocate CMC's MRI scanner from the Original Site to the Alternative Site does not constitute a material change in the physical location of the project for the following reasons:

The Original Site is in close proximity to the Alternative Site (approximately 500 feet away). In addition, the new site would not negatively affect the scope of services provided to the projected population.

Furthermore, CMC will be developing its project in a manner consistent with any conditions placed on the CON as well as consistent with the representations made in CMC's CON application, which was an application for the hospital to expand its radiology department and to acquire an additional MRI scanner. Thus, the change in site will not result in the development of a diagnostic center.

The change in site will not increase CMC's capital or operating costs associated with the approved project. Finally, access to the medically underserved and the remainder of the originally identified population will be equivalent because the same population as projected in the application will be served and because of the proximity of the two sites.

N.C. Gen. Stat. § 131E-189(b) allows the Agency to withdraw CMC's CON if CMC either fails to develop the service in a manner consistent with the representations made in the application or with any conditions that were placed on the CON. CMC will not be developing its project in a manner that is materially different from the representations made in its application, nor will it be developing its project in a manner that is inconsistent with any of the conditions that were placed on its CON.

CONCLUSION

For the reasons stated above, assuming the statements of fact in the request to be true, I conclude that CMC is permitted to develop CMC's MRI scanner at the Alternative Site identified in this request instead of the Original Site identified in the application on condition that (1) the space developed at the Alternative Site is licensed and operated as part of the existing licensed hospital; and (2) that the development of the project at the Alternative Site does not exceed the approved capital expenditure for Project I.D. F-6493-01.

In addition, this ruling is not intended to, and should not be interpreted to, authorize a change in the approved timetable, a change in the conditions placed on the CON, or any other change in the approved project.

This the 9th day of January, 2006.

Robert J. Fitzgerald, Director
Division of Facility Services

CERTIFICATE OF SERVICE

I certify that a copy of the foregoing Declaratory Ruling has been served upon the nonagency party by facsimile and certified mail, return receipt requested, by depositing the copy in an official depository of the United States Postal Service in first-class, postage prepaid envelope addressed as follows:

CERTIFIED MAIL

Mr. Gary S. Qualls
Kennedy Covington Lobdell & Hickman, L.L.P.
Post Office Box 14210
Research Triangle Park, North Carolina 27709

This the 9th day of January, 2006.

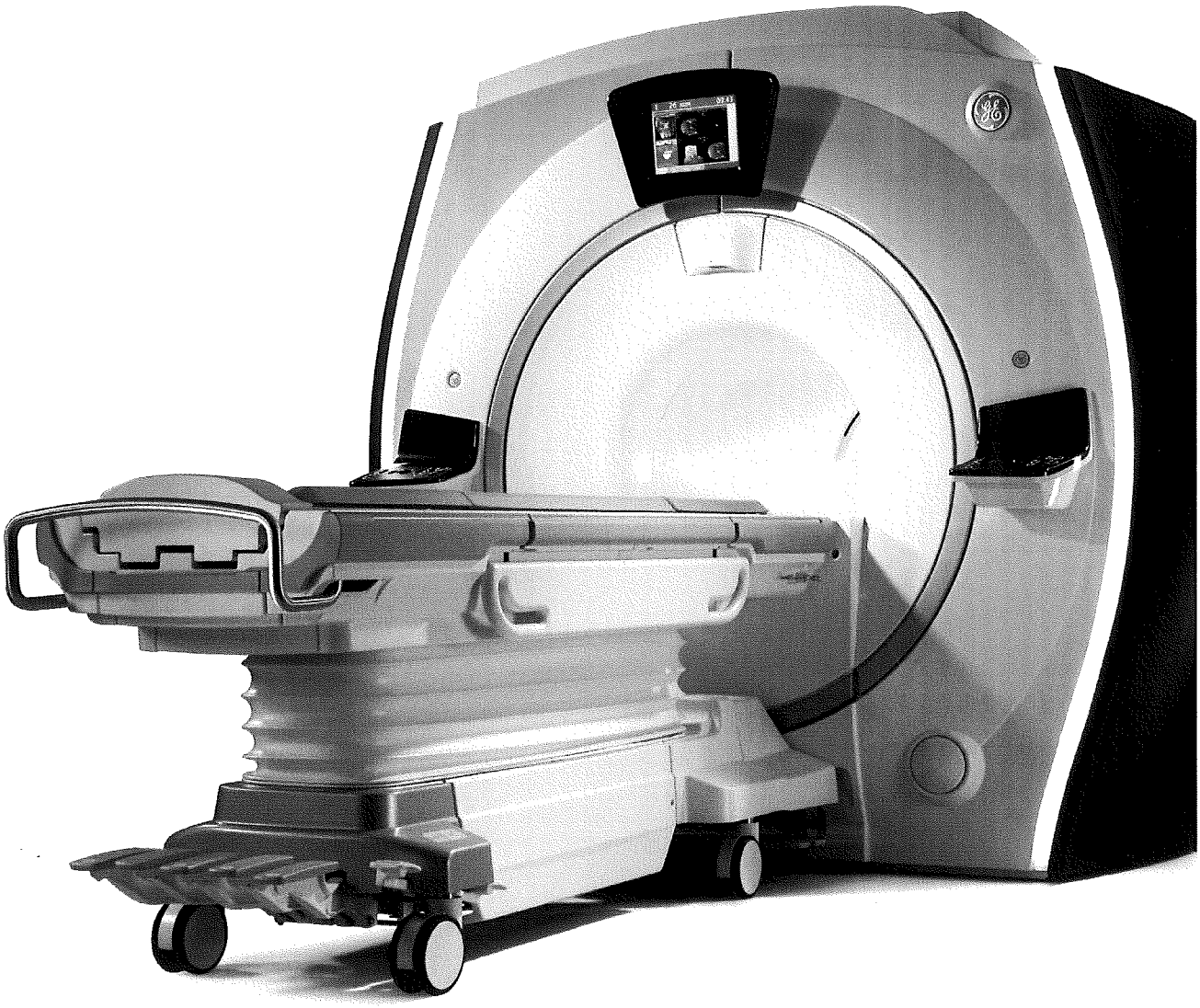
Phyllis T. Daw
Chief Operating Officer

Attachment H

GE Healthcare

Optima MR450w with GEM

Technical Data



This datasheet is intended for US Healthcare Professionals.

Contents

The world of MR is always changing.

Patient expectations of MR have shifted in recent years, as people have begun demanding a better, more comfortable scanning experience. Increasing the size of the bore is a good first step — but it's only the beginning. The right system should offer both excellent images and a user-friendly experience. Patients should be more comfortable during their scan, and clinicians more comfortable in making a definitive diagnosis. All the while, organizations should expect their MR system to help them deliver solid financial returns, maintain a high standard of patient safety, and increase the quality of their care.

The Optima MR450w with GEM Suite is wide-bore MR done right. Thanks to cutting-edge technologies, we've advanced the capabilities of wide-bore MR by delivering both uncompromised image quality and high productivity — all with an expansive 50cm field of view. The Optima MR450w offers a range of advanced functionality, making it a workhorse system for practices of all sizes and specialties. In addition, the new GEM Suite of coils takes the MR experience to new levels. The system is also extremely accessible. Its cost and capabilities make it ideal for first-time MR customers who can make it their only scanner, as well as established MR users seeking a versatile, hard-working system.

The right capabilities

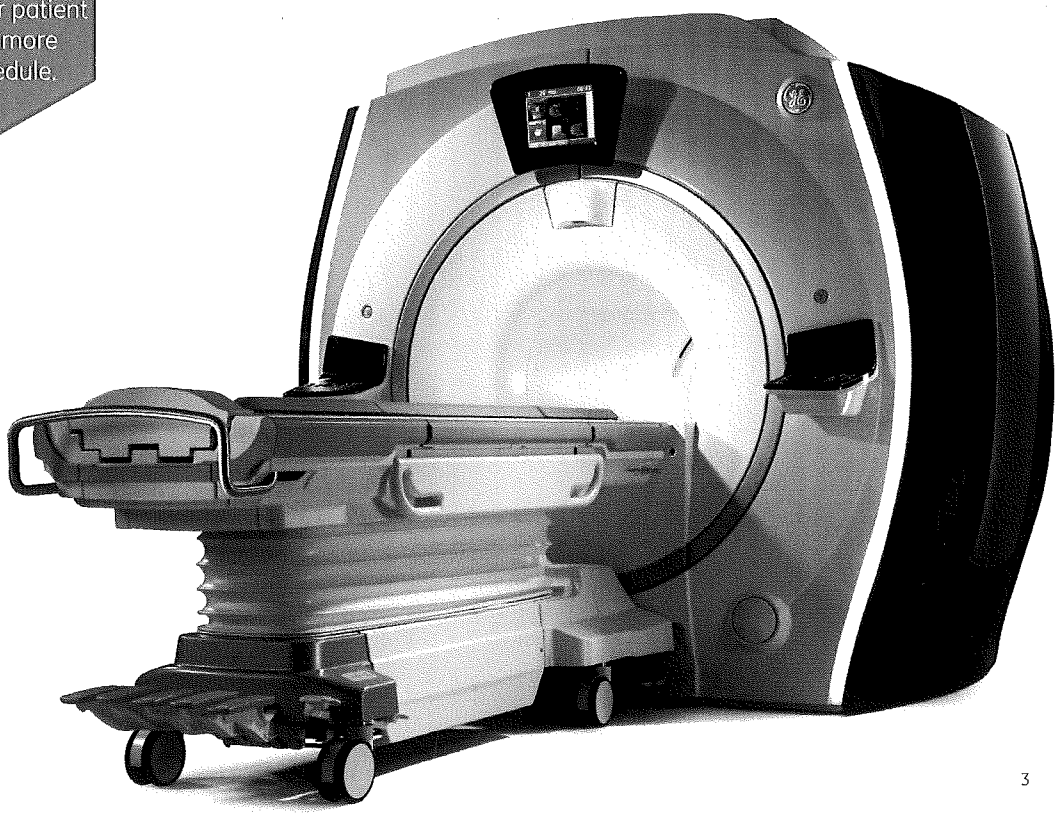
Advanced functionality gives clinicians the tools they need to make definitive diagnoses — and help grow practices.

The right experience

Exclusive ease-of-use features and the new GEM Suite of coils help make life easier for both patients and technologists.

The right investment

Administrators can drive new levels of productivity, scanning a broader patient population on a more predictable schedule.



Magnet

The foundation for quality and flexibility

When it comes to improving the patient experience and providing high image quality no other component of an MRI system has greater impact than the magnet. The Optima MR450w with GEM system features a short, wide bore magnet that delivers a large field of view. The magnet geometry has been optimized to reduce patient anxiety by providing more space in the bore and more exams with the patient's head out of the magnet. The 50cm field of view provides uniform image quality and may reduce exam times since fewer acquisitions may be necessary to cover large anatomy.

Easy siting and affordable operation:

Complemented by GE's active shielding technology, the Optima MR450w with GEM has very flexible installation specification for easy siting. And with zero-boil-off technology helium refills are effectively eliminated, thus reducing operating costs and maximizing uptime (versus previous generation products).

Magnet enclosures

This magnet enclosure system is designed to provide several benefits for the patient and technologist:

- Patient anxiety is eased, resulting in reduced exam time for uncooperative patients
- Technologists have easy access to the patient

Magnet shim

High homogeneity is assured – our Optima MR450w with GEM magnet provides excellent results for:

- Large FOV imaging up to 50 cm
- Off-center FOV imaging such as elbow, shoulder and wrist imaging
- Robust fat saturation required for abdominal, breast and musculoskeletal imaging
- High-performance applications, such as cardiac, fMRI, diffusion tensor and spectroscopy

Spatial accuracy

Optima MR450w provides a high degree of spatial accuracy, especially important for biopsy and for MR-enabled therapies. An MR systems' spatial accuracy is a result of magnet homogeneity, gradient accuracy, and software.

Optima MR450w also features 3D Gradwarp, a technique integrated into image reconstruction that helps reduce image distortion by compensating for gradient non-linearities in all three dimensions. This correction differs from the default 2D correction that is conventionally performed by incorporating the slice direction into the processing.

Magnet Specifications	
Magnet Length	145 cm
Operating field strength	1.5T (63.86 MHz)
Magnet shielding	Active
EMI shielding factor	96%
Size (W x L x H)	2.10 m x 1.45 m x 2.36 m
Magnet weight	3,692 kg
Magnet cooling	Cryogenic (liquid helium)
Long-term stability	< 0.1 ppm/hour
Cryogen refill period	Zero boil off*
Fringe field (axial x radial)	5 Gauss = 4.0 m x 2.5 m 1 Gauss = 5.7 m x 3.4 m
Manufacturer	GE Healthcare

*Under normal operating conditions

Patient focused design	
Patient Bore (L x W x H)	105 cm x 70 cm x 70 cm
Patient Aperture	76 cm
Patient comfort module	Head or feet first entry Dual-flared patient bore 2 way in-bore intercom system Adjustable in-bore lighting system Adjustable in-bore patient ventilation system

Diameter Volume (x, y, z)	Typical ppm	Guaranteed ppm
10cm DSV	0.007	0.02
20cm DSV	0.035	0.06
30cm DSV	0.11	0.18
40cm DSV	0.5	0.7
45cm DSV	1.2	1.6
50 x 50 x 45cm	2.3	3.6
50cm DSV	3.3	

Volume Root-Mean-Square (V-RMS) values are computed from 24 measurements on each of 32 planes with linear terms set to zero.

Spatial accuracy	
Mean absolute distortion error	0.63%

As measured using the Magphan phantom

Gradients

Premium clinical performance is enhanced with the Optima MR450w with GEM gradient system. Gradient speed, accuracy, and reproducibility are critical for all acquisitions, but the performance is especially important in challenging acquisitions, such as fMRI, diffusion, and PROPELLER.

Gradient performance	
Amplitude per axis	34 mT/m
Slew Rate per axis	150 T/m/s
Maximum FOV (x, y, z)	50 cm
Gradient Duty Cycle	100%

Gradient amplifier (water cooled)	
Gradient Amplifier Current and Voltage	660 Amps/1650 Volts Peak
Control	• Frequency dependent feed-forward model • Digital PI feedback control loop

The gradients are non-resonant and actively shielded to minimize eddy currents. The gradient coil and the RF body coil are integrated into a single module, which is both water and air cooled for excellent duty-cycle performance and patient comfort.

Fidelity, accuracy, and reproducibility

Gradient systems have historically been defined in terms of peak amplitude (mT/m) and slew rate of the generated field (T/m/s). While these parameters are important in achieving high temporal resolution parameters such as TR's and TE's, applications such as fMRI, Propeller, TRICKS, and spectroscopy rely more heavily on gradient fidelity, accuracy, and reproducibility.

Fidelity is defined as the degree to which an electronics system accurately and reproducibly amplifies an input signal. Applied to MR gradient systems, gradient fidelity refers to the system's ability to generate requested waveforms. The high fidelity of the Optima MR450w gradients is achieved through the use of innovative design of the digital control architecture within the gradient amplifier. This architecture has two digital control paths.

- Dedicated active feedback loop to regulate current errors
- Innovative feed-forward model to match amplifier output to gradient coil

Gradient subsystem gradient fidelity, accuracy, reproducibility parameters	
Maximum integrated error*	0.48 ppmFS-s
Shot-to-shot*	0.16 ppmFS-s
Symmetry error*	0.32 ppmFS-s

* Typical gradient fidelity expressed in a relative scale is derived from the following measurements of integrated errors in micro-Amperes-second (μAs). Maximum Error is the maximum integrated current error over a full-scale, echo-planar gradient waveform. Shot-to-Shot is the largest difference between integrated errors across waveforms,. Symmetry Error is the largest difference in integrated current error when comparing positive and negative gradient waveforms.

ART (Acoustic Reduction Technology)

State-of-the-art clinical imaging demands the routine use of ultra-fast imaging techniques. At 1.5T, the strong gradients interact with the magnetic field to create mechanical forces resulting in acoustic noise. GE has introduced ART to reduce acoustic noise and improve the patient environment.

Gradient Coil Isolation and Acoustic Dampening

The full performance of the Extreme Gradient Driver is used while helping to maintain a safe environment for the patient. Clear separation between the gradient coil, RF body coil, and patient support structures ensures minimal component interactions. In addition, mass-damped acoustic barriers are used under the system enclosures to further reduce acoustic noise for the patient.

RF Coil Isolation

During gradient pulses, the RF body coil acts as a secondary source of noise. To further reduce the noise heard by the patient, the RF body coil has been optimally designed with mass-damped copper traces.

Vibro-acoustic Isolation

To isolate the magnet from the building and reduce the transmission of acoustic noise in the structure, GE has designed a vibroacoustic-dampening pad that sits under the feet of the magnet. The dampening characteristics of the pad are optimized based on the magnet geometry and weight.

Gradient Waveform Optimization

User selectable mode to further reduce acoustic noise.

Optical RF

The new RF acquisition technology of the Optima MR450w with GEM enables greater clinical performance and higher image quality especially for data-intensive applications and provides an improvement in SNR versus previous generation systems.

OpTix (Optical RF receive technology)

The OpTix RF system enables high-bandwidth, high channel count reception with improved SNR over conventional MR receiver designs. Conventional MR scanner designs place the RF receivers in the electronics room where the MR signal is subject to significant electrical noise prior to being digitized. The OpTix optical RF receivers are located on the magnet system inside the shielded scan room, isolated from external noise sources.

The MR signal is digitized within the scan room and then optically transmitted to the reconstruction engine in the electronics room.

Since losses are inherent with conventional wire designs, the close proximity of the receivers to the patient reduces noise and improves image quality.

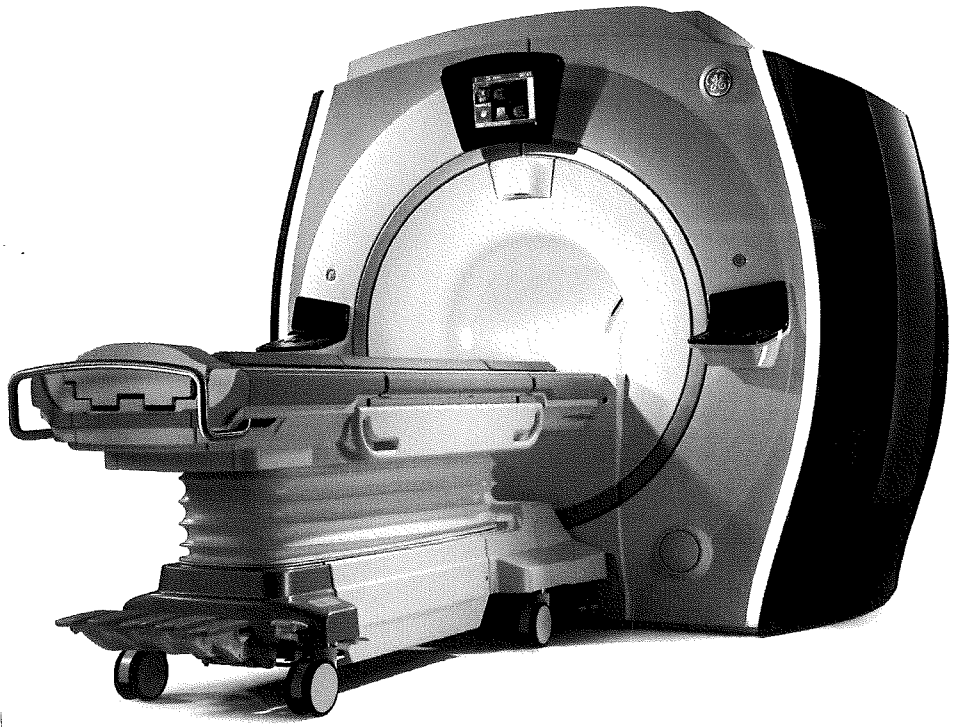
The OpTix acquisition technology enables higher image quality especially for data-intensive (3D) applications. When combined with GE's use of high-density surface coils, the optical receive chain is a critical path for ensuring clear signal reception and data analysis. To help ensure that the high-density approach will be maintained, the scalable Optima MR450w with GEM architecture is designed to expand in the future.

Optical RF technology increases SNR for all volume acquisitions, independent of which surface coil is being used.

OpTix optical RF architecture	
Coil input ports	138
Quadrature demodulation	Digital
Receiver sampling frequency per channel	80 MHz
Receiver dynamic range at 1Hz BW	>165 dB
Receiver resolution	Up to 32 bits

Transmit RF

Standard RF transmit architecture	
RF amplifier	Air cooled, small footprint
Maximum output power	16 kW Body 2 kW Head
Maximum RF field with integrated body coil	>20 uT
Transmit gain	>100 dB (40 dB coarse/ >84 dB instantaneous)
RF exciter frequency range	63.86 ± 0.650 MHz
Frequency resolution	<0.6 Hz/step
Frequency stability	14 part per billion (0 to 50C)
Phase resolution	0.005 degree/step
Amplitude control	16 bit with 12.5 ns resolution
Amplitude stability	<0.1 dB over one min. at rated power
Digital RF pulse control	2 amplitude modulators, 2 frequency/phase modulators



Volume reconstruction engine

Reconstruction performance today is challenged by explosive growth in data, and increased computational complexity. The amount of data to be stored and processed continues to increase with the advances in MR system technology. The Optima MR450w with GEM meets that challenge head-on with innovations in reconstruction to take full advantage of computing power by leveraging both software and hardware technology.

The Optima MR450w with GEM features a powerful volume reconstruction engine (VRE) that enables real-time image generation, even when massive parallel-imaging datasets are involved.

The reconstruction engine features onboard memory and local raw data storage to support and maintain simultaneous data acquisition and reconstruction under the most demanding applications.

VRE uses 64-bit computing, delivering high acquisition memory and fast performance. Parallel processing and high-speed interconnects provide scalable memory and throughput.

The acquisition-to-disk feature automatically expands the memory capacity per the demands of the application.

Reconstruction engine	
2D FFT/second (256 x 256 full FOV)	13,000 2D FFTs/second
CPU	Dual Intel Nehalem Processor Quad core
Memory	72 GB ECC DDR3 1333
Hard disk storage	4x146 GB

Specifications shown above are minimum performance levels

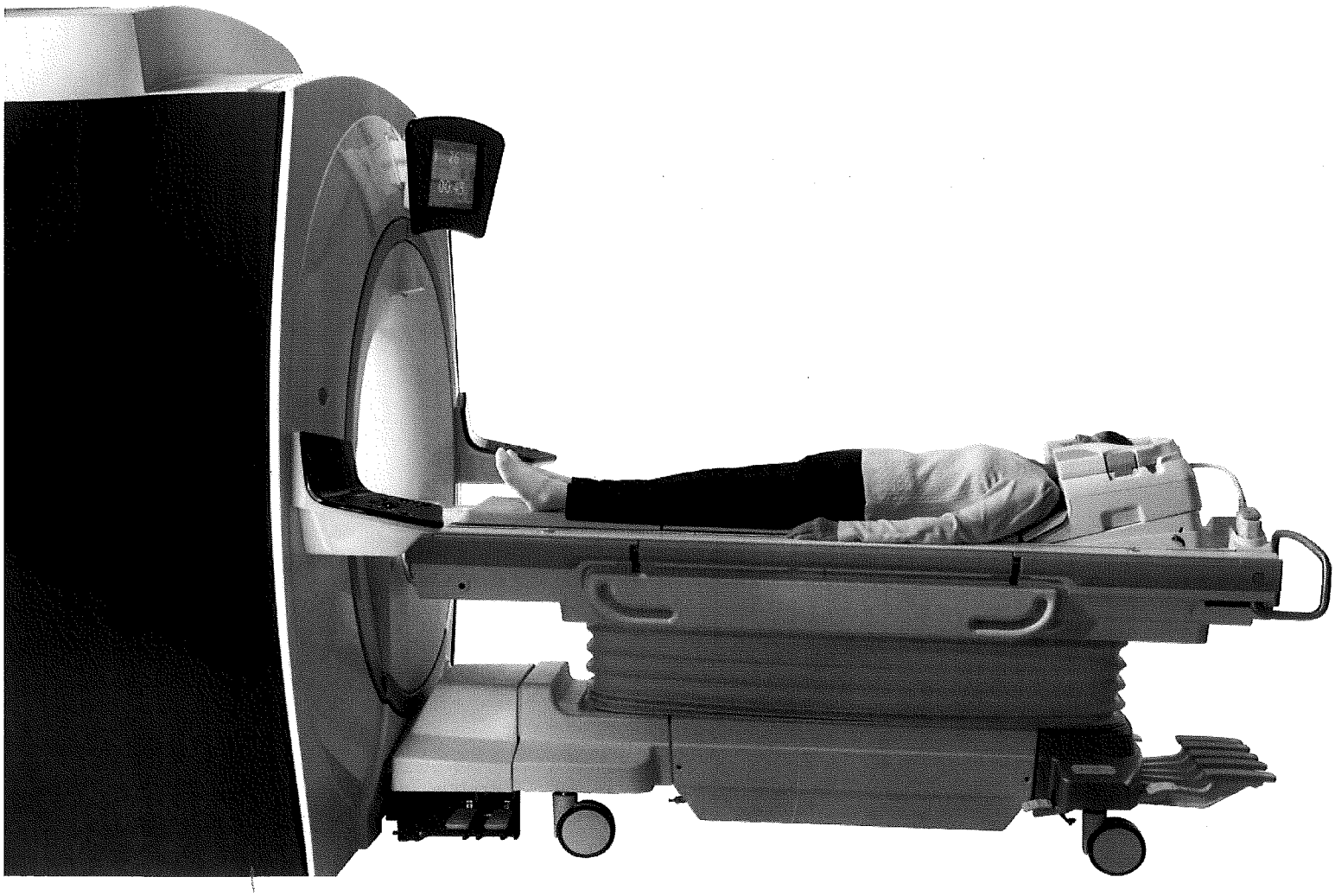
GEM Suite

Each patient who requires an MR examination is unique—with respect not only to age and gender, but dimensions of size, proportion, physical frailty, tendency towards claustrophobia, and of course, unique clinical circumstances that require the exam. With the uniqueness of the patient in mind, GE Healthcare engineered the new GEM Suite surface coil technology. GEM, or Geometry Embracing Method, incorporates an approach to MR imaging that reflects the importance of conforming the geometry of the equipment and technology to that of the patients.

The combined features of the entire Suite are designed to facilitate high-resolution, high signal-to-noise (SNR) imaging from the top of the head down to the feet, while maximizing the comfort of patients across many different shapes, sizes, and situations. In general, a significant source of patient motion during an MR exam is the result of discomfort or anxiety. By addressing the sources of discomfort and anxiety, the GEM Suite approach aims to help reduce patient motion and improve the quality of the overall exam.

Coil Mode Configuration

The 1.5T GEM Suite was designed to reduce multiple physical coil changes within a single exam and between different exams, and to improve patient comfort. The system will automatically select the coil mode configuration that best fits the selected region of interest.



GEM Express Table & Posterior Array (PA)

The GEM Express Patient Table is a mobile patient transport device that includes an embedded high-density, posterior RF array. Fully detachable, the GEM Express patient table offers numerous benefits, described below in the Workflow section.

Geometric Optimization

The GEM PA has optimal coil element geometry for each patient and targeted anatomy. The GEM PA uses optimized element layouts for the cervical-to-thoracic spine transition, thoracic and lumbar spine, and the body. This approach maximizes the signal-to-noise ratio by matching the geometry of the coil elements to the anatomical size and shape of the anatomy.

The PA is designed to support parallel imaging in all 3 scan planes, and the system will automatically select the appropriate subset of coil elements based upon the prescribed field-of-view.

The Express patient table also includes an innovative and adjustable comfort tilt feature to lift the patient's neck and conform to the patient's natural anatomy, to increase patient comfort.

Symmetric Scan

The Express patient table and embedded GEM coil is designed to accommodate head-first or feet-first imaging for all supported exams.

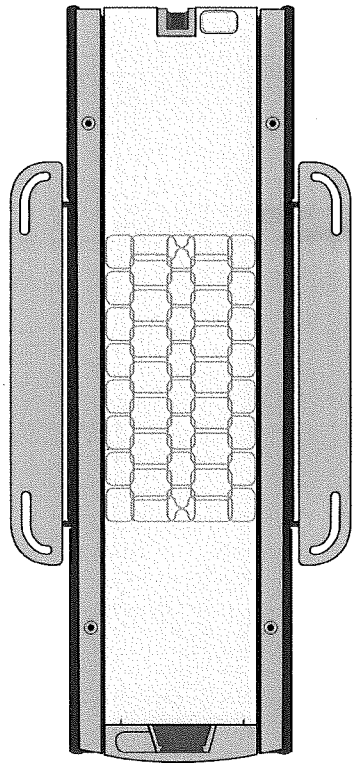
The integrated PA is symmetrically positioned within the patient supporting cradle, and coil connection ports are located at both ends of the detachable table. This design enables all components of the GEM Suite to support either patient orientation and help ensure the most comfortable patient position.

Whole body imaging may also be supported in the feet-first orientation.

GEM Posterior Array Specifications

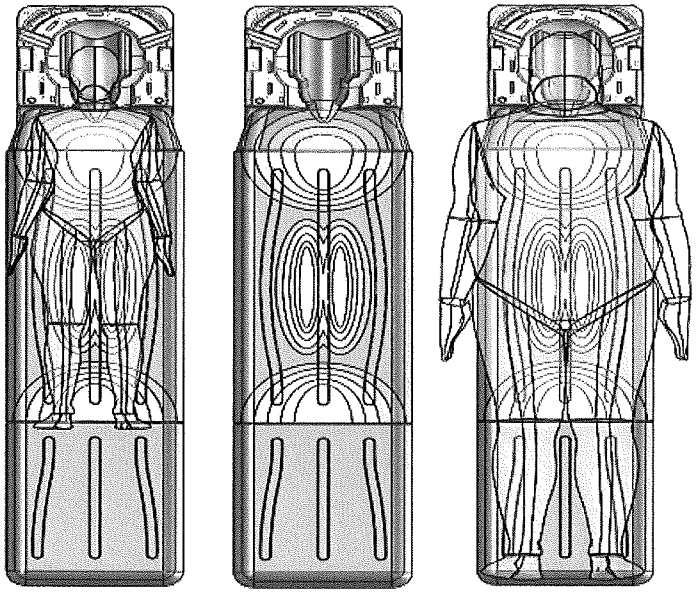
Length: 100 cm (39.4 in)
Width: 40 cm (15.7 in)
S/I Coverage: 100 cm (39.4 in)
Head-first or feet-first imaging
Elements: 40

Additional patient tables may be purchased for use with the same Optima MR450w with GEM Suite system. The integrated posterior array is an optional accessory with each additional table.



GEM Express Table illustrating layout of the PA elements

Patient Comfort Pads



Petite Female

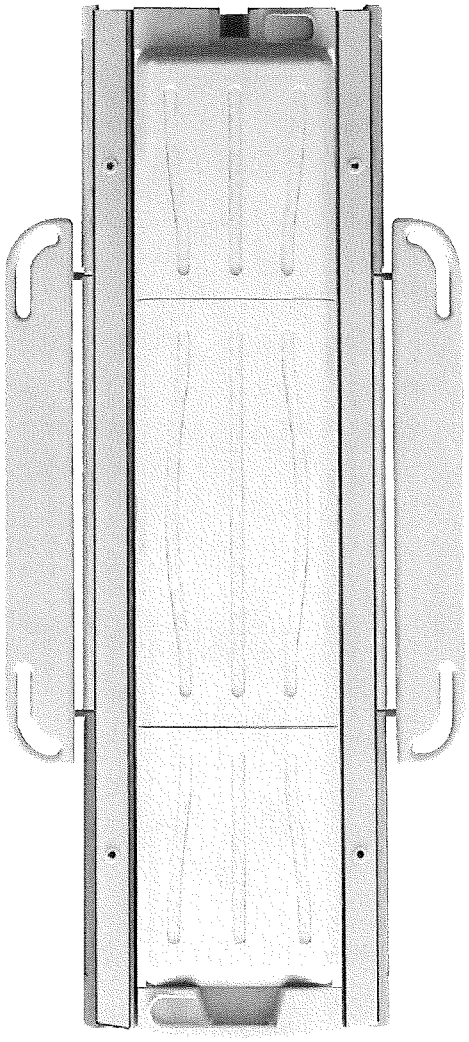
Comfort Pad Stiffness map

Very Large Male

To improve patient comfort and safety, the GEM Suite includes an innovative set of Patient Comfort pads.

The pads are designed with variable density foam that uniquely compresses based on patient geometry and weight. Certain sections of the GEM Suite pads are designed to compress more easily than others and this optimal design may minimize pressure points and improve patient comfort. The pads have been designed to support a wide range of patient sizes and weights.

The pads are made with UltraFresh protective coating, are strong, fluid-proof, air tight, and easily cleanable. An anti-skid undersurface reduces pad movement and thus may simplify patient setup and egress.



GEM Express Table with Patient Comfort Pads

GEM Head & Neck Unit (HNU)

The GEM HNU is a standard component of the GEM Suite. The HNU consists of four imaging components: a head base-plate, an anterior neuro-vascular face-array, the GEM cervical array, and the open face adapter. The coil maybe positioned at either end of the GEM table to support head-first or feet-first imaging.

The open-face design provides a patient-friendly feel. The base plate may be used with the dedicated GEM cervical array for C-spine imaging. Alternatively, the base plate may be used with the open face adapter to accommodate cervical spine exams in large or claustrophobic patients. Improved access and patient comfort may be achieved through elevation of the superior end of the coil. The HNU with anterior NV Face-Array consists of 21 elements arranged to provide parallel imaging support in all 3 planes.

Head Neck Unit NV Specifications

Length: 49.5 cm (19.5 in)
Width: 38.8 cm (15.3 in)
Height: 36.8 cm (14.5 in)
Weight of HNU base: 5.6 kg (12.3 lb)
Weight of Anterior Adapter: 3.2 kgs (7.1 lb)
S/I Coverage: 50 cm (19.7 in), when combined with the PA and AA
R/L Coverage in head mode: 24 cm (9.4 in)
R/L Coverage for NV: 50 cm (19.7 in), when combined with the PA and AA
Head-first or feet-first imaging
Up to 28 elements in the FOV, when combined with the PA and AA

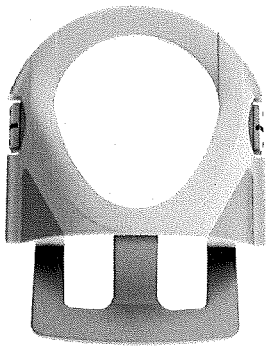
Head Neck Unit Cervical Specifications

Length: 49.5 cm (19.5 in)
Width: 38.8 cm (15.3 in)
Height: 33.6 cm (13.2 in)
Weight of Cervical Adapter: 1.9 kgs (4.2 lbs)
S/I Coverage: 28 cm (11 in)
R/L Coverage: 24 cm (9.4 in)
Head-first or feet-first imaging
Up to 20 elements in the FOV, when combined with the PA

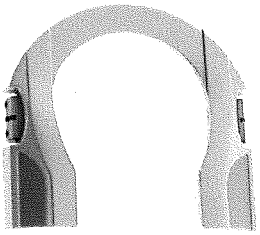
Head Neck Unit with Open Face Adapter Specifications

Length: 49.5 cm (19.5 in)
Width: 38.8 cm (15.3 in)
Height: 25.7 cm (10.1 in)
Weight of Open Face Adapter: 1.5 kgs (3.3 lbs)
S/I Coverage: 28 cm (11.0 in) with all 7 elements
R/L Coverage: 24 cm (9.4 in)
Head or Feet-first imaging
Up to 12 elements in the FOV, when combined with the PA

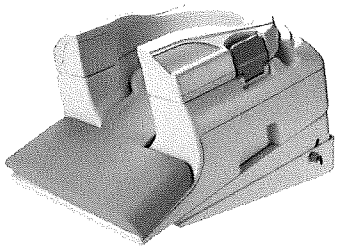
HNU with anterior NV Face-Array



HNU Cervical Array



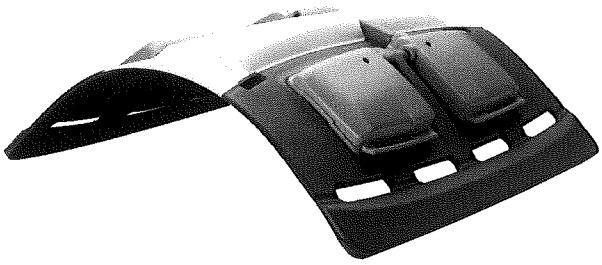
HNU Open Face Adapter



HNU with comfort tilt adapter

GEM Anterior Array (AA)

The GEM AA is a standard component of the GEM Suite that facilitates chest, abdomen, pelvis, and cardiac imaging. The GEM AA is lightweight, flexible, thin and pre-formed to conform to the patient's size and shape. With 54 cm of S/I coverage, the coil permits upper abdominal and pelvic imaging without repositioning the patient. The 16 element electrical design supports parallel imaging in all 3 planes.



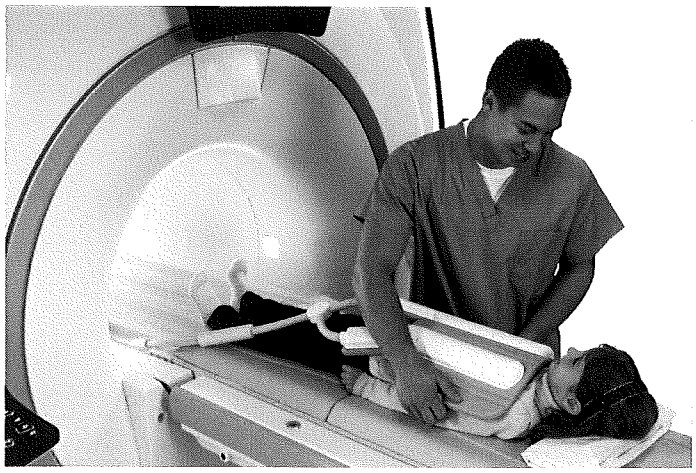
GEM Anterior Array

Anterior Array Specifications

Length: 55.6 cm (21.9 in)
Width: 67.3 cm (26.5 in)
Height: 3.6 cm (1.4 in)
Weight: 2.4 kg (5.3 lb) resting on patient
3.6 kg (7.9 lb) with cable
S/I Coverage: 54 cm (21.3 in)
R/L Coverage: to the full 50 cm (19.7 in) FOV of the system
Head or Feet-first imaging
Up to 36 elements in the FOV, when combined with the PA

GEM Small Anterior Array

The GEM Small Anterior Array is a receive-only, high-density RF coil designed to produce images with optimal signal to noise ratio and uniform coverage for cardiovascular, pulmonary, renal, and abdominal imaging. The light-weight coil design contains 16 channels, with parallel imaging capability in all three dimensions to speed up high-resolution, breath-held, and free breathing cardiovascular exams.



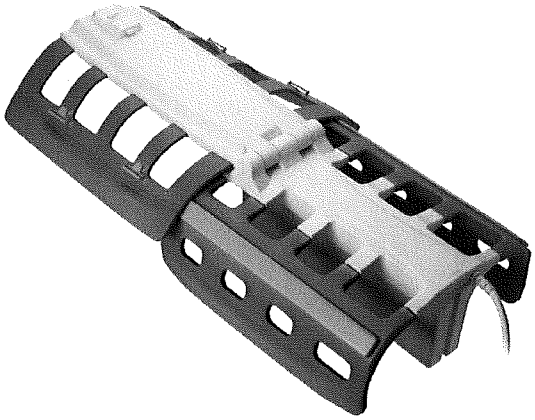
GEM Small Anterior Array

Small Anterior Array Specifications

Length: 45 cm (17.7 in)
Width: 40.5 cm (15.9 in)
Height: 4.5 cm (1.8 in)
Weight: 2.94 kg (6.5 lbs)
S/I Coverage: 27 cm (10.6 in)
R/L Coverage: 35 cm (13.8 in)
Head-first or feet-first imaging
Up to 33 elements in the FOV, when combined with the PA

GEM Peripheral Vascular/Lower Extremity Array (PVA)

The GEM PVA is an optional component of the GEM Suite that facilitates imaging of the thighs and lower legs. The high-density layout supports parallel imaging in all 3 planes. The coil incorporates an innovative hinge design between the upper & lower elements to simplify patient setup. In addition, to improve patient comfort, the lower leg section of the coil is fully supported by the GEM table and not the patient.



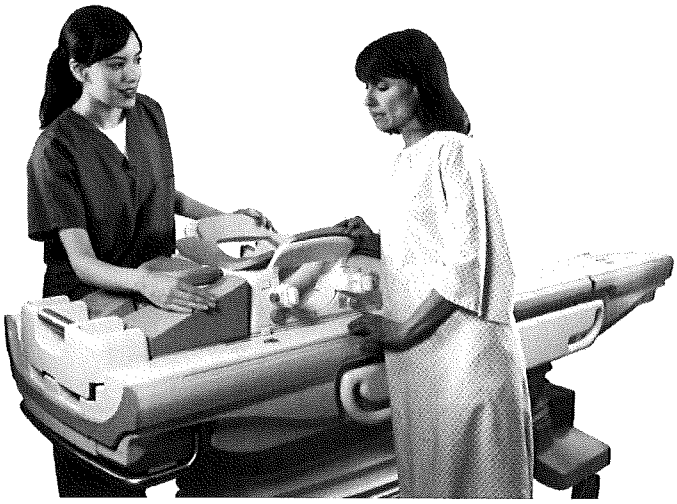
GEM PVA in un-folded position

Optional Peripheral Vascular/Lower Extremity Array Specifications

Length: 105 cm (41.3 in)
Width: 2nd station - 51.6 cm (20.3 in)
3rd station - 64.2 cm (25.3 in)
Height: 24.8 cm (9.8 in)
Weight: 9.1 kg (20.0 lb)
S/I Coverage: 104 cm (49.9 in) overall
2nd station - 52.0 cm (20.5 in)
3rd station - 52.0 cm (20.5 in)
R/L Coverage: to the full 50 cm (19.7 in) FOV of the system
Head-first or feet-first imaging
Up to 36 elements in the FOV, when combined with the PA

PA Invisibility and Compatible Features

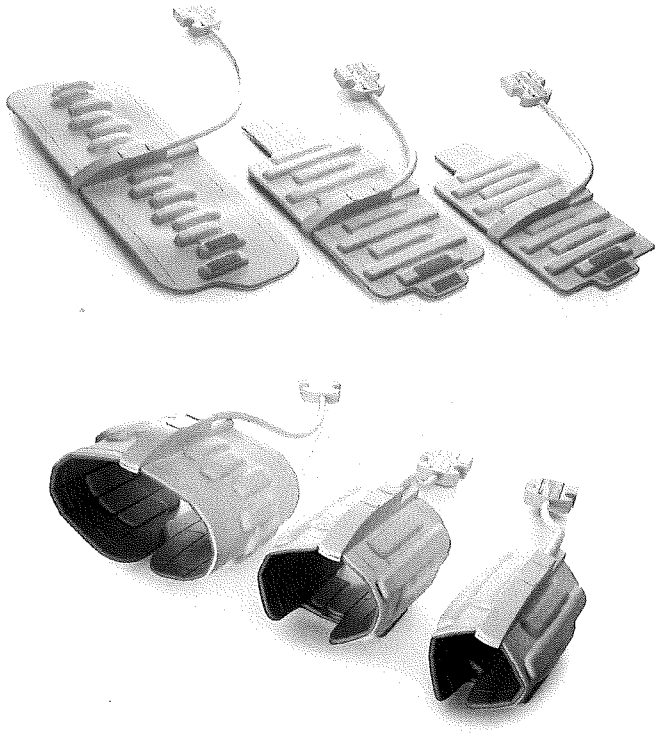
The GEM PA is designed to be used in conjunction with the GEM head-neck and cervical imaging unit, the GEM AA, and GE peripheral vascular array. When needed, the GEM PA has also been designed to become invisible when additional surface coils are placed directly on top of the table. With innovatively designed electronic decoupling circuits, the PA can support additional coils directly on top of its surface with no impact to image quality. This feature is critically important for technologist workflow, especially for breast and musculoskeletal exams.



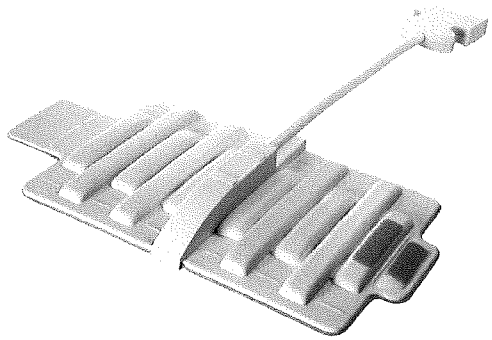
GEM Flex Suite

The GEM Flex Suite is a versatile set of high density 16ch coils designed to give high quality images in a wide range of applications. The high degree of flexibility is particularly advantageous when imaging patients that do not fit the constraints of rigid coils, improving the patient and technologist experience, and enabling most exams to be completed with the same level of image quality expected from dedicated coils.

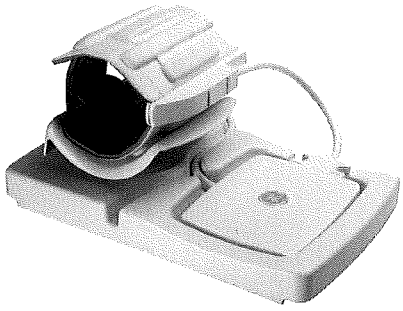
The coils are available in Small, Medium, and Large. The full Flex Suite is intended to cover a broad range of muscular skeletal applications, including upper and lower extremities of hand, wrist, elbow, shoulder, hip (unilateral and bilateral), knee, ankle, and foot. In addition, the coils' versatility has been shown in a range of head, neck, and spine exams.



GEM Flex Suite



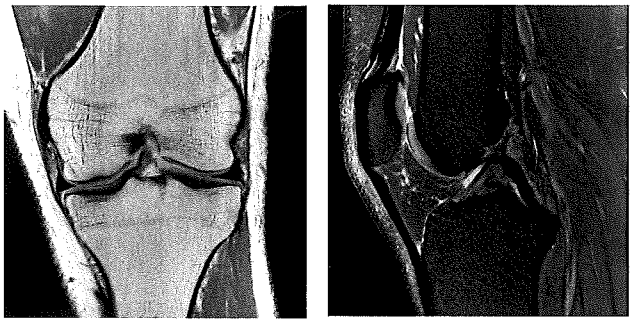
16ch GEM Flex Coil (M)



Interface and Knee Base

GEM Flex Suite specifications

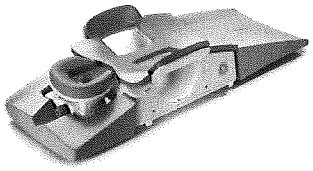
Component	Coverage (W x L)	Wrap Diameter	Elements	Weight
GEM Flex Coil, Large	23cm x 70cm	15.5cm - 21.5cm	16	1.0kg
GEM Flex Coil, Medium	23cm x 48cm	11.5cm - 15.5cm	16	0.8kg
GEM Flex Coil, Small	23cm x 38cm	9.0cm - 12.5cm	16	0.8kg



High resolution knee imaging with GEM Flex Suite

Additional high-density surface coils

The Optima MR450w with GEM Suite comes with a split-top, trasmit/receive head coil as standard. The system also provides compatibility with additional optional surface coils developed by GE, as well as coils developed by other vendors. The optional GE HD Breast array is shown here. A comprehensive list of additional compatible surface coils is available from your sales representative.



HD Breast Array

- 8-channel, 8-element phased-array design
- Optimized for uniformity, parallel imaging and VIBRANT
- Bilateral and unilateral breast imaging
- Biopsy plates available
- Coil dimensions: 53 x 53 x 24 cm (21 x 21 x 9 in)

MR Enabled Therapy Accessories

Radiation Oncology Options

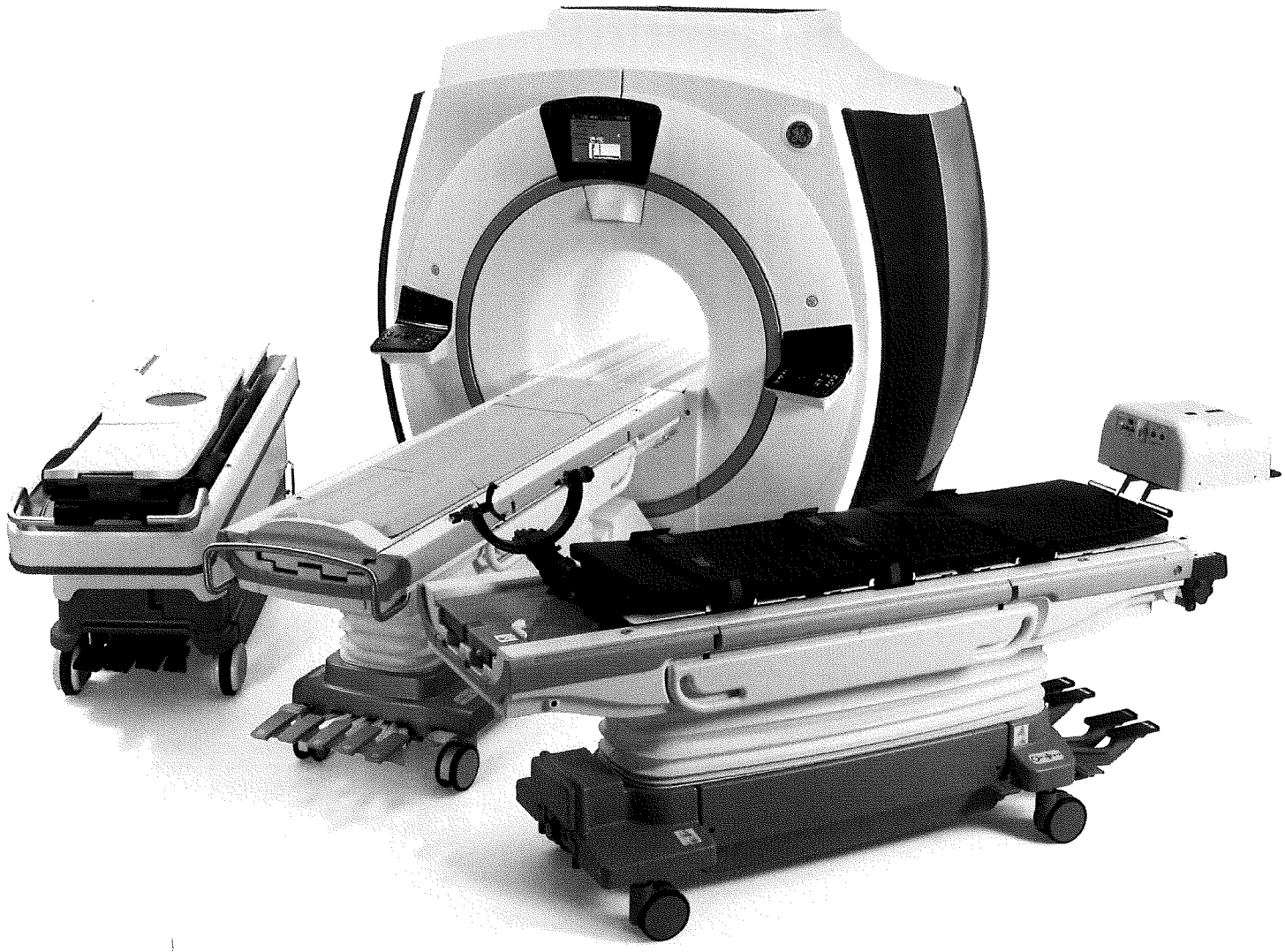
Combining the Optima MR450w with GEM advanced imaging capabilities with the Radiation Oncology Options offering helps minimize potential registration errors between MR and CT within radiation treatment plans, for improved confidence in tumor targeting and preservation of healthy tissue. Additionally, seamless integration with AdvantageSim MDtm simulation software and Integrated Registration on the GE AW workstation allows MR images to be to easily incorporated into the Radiation Oncology workflow.

MR Guided Focused Ultrasound

Your facility can offer a completely non-invasive treatment for uterine fibroids with the addition of an Exablate MR guided Focused Ultrasound therapy table to your MR system, which has been used in 6,500 procedures worldwide.

Surgical Suite

The Surgical Suite offering is an effective solution for incorporating MR imaging into your surgery center. Through seamless integration with surgical navigation systems, surgeons can retrieve archived images and fuse them with newly acquired intra-operative MR images. This advanced technology can assist in real-time surgical decision making and improved tumor resections.



Workflow

Express Exam streamlined workflow

The GEM Suite, Express Patient Table, IntelliTouch technology and in-room operator console (iROC) streamline the Optima MR450w workflow and help you improve patient care by letting you keep your focus where it's needed most – on your patient.

With Express Exam, entire exams are completed in just a few mouse-clicks due to the automated acquisition, processing, and networking capabilities of the patient setup and workflow features of the Optima MR450w.

GEM Suite

The GEM Suite of coils helps dramatically improve patient setup and workflow. Because the posterior array is embedded in the table and because the coils are significantly lighter than previous generations, MR technologists are required to lift and handle less weight. Also, the posterior array becomes invisible to the system when other surface coils are deployed, so that special handling and configuration steps are not required to scan with options such as the breast array. Finally, to help reduce anxiety and improve compliance, the symmetric scan feature of GEM Suite means that patients can be scanned feet-first for any exam.

Express patient table

The fully detachable Express patient table helps improve safety, exam efficiency, and patient comfort.

Safety

Easily docked and undocked by a single operator, the patient table is simple to move in and out of the exam room for patient transport and preparation. These become vital features in those instances where multiple patient transfers can negatively impact patient care or when emergency evacuation is required; the table can be undocked and removed in under 30 seconds with just one technologist. In time-sensitive situations there is no need to remove or disconnect surface coils as the system can automatically disconnect the coils for you. The mobility and safety features of Optima MR450w with GEM patient table can obviate the need for MR-compatible emergency equipment or a second technologist.

Exam efficiency

In addition to being fully detachable, the Optima MR450w with GEM Express patient table can offer multiple surface coil connectors. With high density connectors at each end of the table, the patient and coils can be fully prepared for an exam outside of the scan room, thus further reducing the necessary steps before starting acquisition.

With a second table, the next patient can be positioned outside the magnet room while the current patient is undergoing an examination.

Patient comfort

The Express detachable table can reduce patients' anxiety and provide patients personal discretion by preparing them for the exam outside the scan room. Reduced patient table transfers for inpatients or trauma patients can improve overall patient care.

The Express patient table offers optional head- or feet-first imaging. Additionally, feet-first positioning facilitates run-off studies and set-up for claustrophobic patients.

Ergonomics

With one hand and one simple motion, the integrated arm boards and IV pole can be optimally positioned to support the patient for safe transport and injections. This unique capability of the Optima MR450w with GEM table also makes it ideally suited for multi-station exams with no scan room intervention, such as time-resolved vascular imaging.

High-density coil interface

Optima MR450w with GEM technology takes the guesswork out of coil plug-in and identification by automatically identifying the coil that is connected. Prominent visual indicators near the coil connection port allow the technologist to ensure a secure coil connection, every time.

Patient table	
Patient table	Detachable and mobile
Min/max table height	70 to 93 cm, continuous
Patient table drive	Automated, power driven vertical and longitudinal
Longitudinal speed	30 cm/sec (fast) and 0.5 cm/sec (slow) 15 cm/sec for patient positioning
Total cradle length	210.8 cm
Total cradle travel	278.1 cm
Scannable range	205 cm
Maximum patient weight for scanning	227 kg (500 lbs)
Maximum patient weight (detached and mobile)	227 kg (500 lbs)
Maximum lift capacity	227 kg (500 lbs)
Patient transport accessories	Self-storing non-ferrous IV pole Positioning pads Immobilization straps
Landmarking	- Laser alignment with S/I and R/L alignment - IntelliTouch Landmarking Capability (optional)
Coil connection ports	Two high density auto-coil sensing connection ports

IntelliTouch patient positioning

IntelliTouch technology can enhance exam productivity by eliminating the need for laser alignment and reduces the number of steps for patient preparation.

For those patients where more precise alignment is desired, lasers may be used for either the selection or confirmation of landmark positioning.

The Optima MR450w with GEM system has automated many routine tasks to both simplify patient preparation and reduce errors. With IntelliTouch technology, the following tasks can be completed by simply touching the side of the table and pressing the advance to scan button.

- Landmark the patient
- Activate the surface coil
- Center the patient in the bore
- Start scanning
- Acquire, process and network images

Dual system control panels

For operation on either side of the scanner, two ergonomically designed control panels are integrated into the front of the system enclosures. These panels incorporate backlit buttons to guide the user to the next logical step in exam setup.

A trackball and select buttons guide the use of the in-room operator console.

From the system control panels you can:

- Position the table
- Home position
- Stop table
- Control multiple levels of in-bore ventilation and lighting
- Enter patient weight
- Enter patient orientation and patient position
- AutoStart – initiate the scanner to automatically acquire, process, and network images

In-room operator console (iROC)

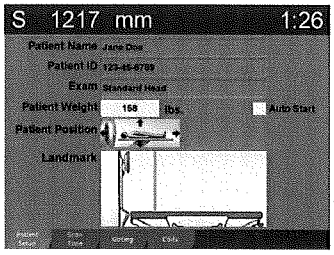
Simplify exam preparation and reduce the time between patients with the Optima MR450w with GEM high-resolution, color in-room operator console.

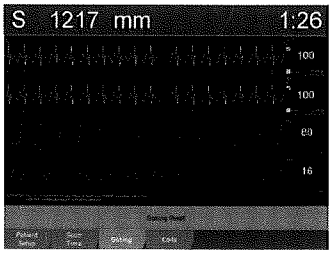
By consolidating all controls into one place, the iROC provides real-time feedback to the user to help ensure that any necessary changes in patient setup are quickly and clearly related back to the user. The iROC enables the user to visualize cardiac and respiratory waveforms directly in the exam room – eliminating the need for the technologist to leave the room and improving the patient experience. The iROC also allows for the integration of third-party interfaces and tools.

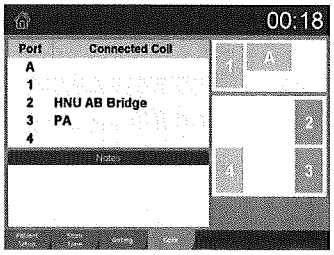
Mounted on the front of the magnet, the display provides realtime interaction with the scanner and the host computer. The user has direct control or selection of the following:

- Display of patient name, ID, study description
- Display and entry of patient weight
- Display and entry of patient orientation and patient position
- Cardiac waveform display and EKG lead confirmation with gating control: trigger select, invert and reset
- Respiratory waveform display
- IntelliTouch technology landmarking
- AutoStart – initiate the scanner to automatically acquire, process, and network images
- Display connected coils and coil status
- Display of table location and scan time remaining
- Screen saver

The iROC simplifies patient workflow by reducing the time burden of today's most challenging exams. Together, the significant advances of the Optima MR450w with GEM improve careby enabling technologists to help maintain their focus where it is needed the most – on the patient.







Optima MR450w with GEM Express Exam

The Optima MR450w with GEM scan interface incorporates many features designed to lighten the workload by automating many routine steps.

The Optima MR450w with GEM includes an automated protocol-driven user interface designed for consistency in generating high-quality imaging for all patients and from all technologists. Designed for efficiency, the Optima MR450w with GEM computer platform is built upon a parallel, multiprocessor design that delivers the simultaneity and speed needed for advanced clinical operation. Productivity, efficiency and streamlined data management are achieved through simultaneous scanning, reconstruction, filming, archiving, networking and post-processing.

Though the protocol-driven workflow can dramatically simplify and automate image acquisition and processing, the flexibility that is synonymous with GE systems is maintained. If desired, the user can have complete control of exact sequence parameters for site optimization and patient specific situations.

Modality worklist

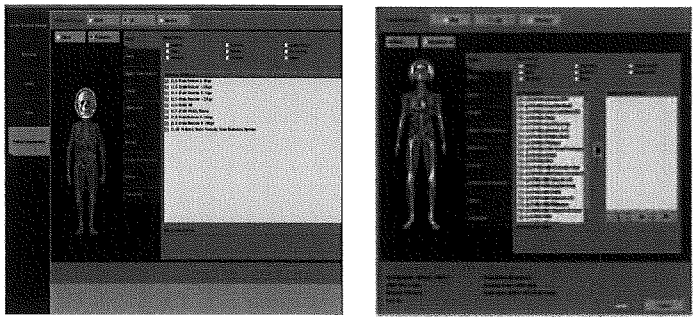
The modality worklist (MWL) provides an automated method of obtaining exam and protocol information for a patient directly from a DICOM Worklist server. For sites with full DICOM connectivity, once a patient has been selected from the MWL, a new session can be opened on the host interface and the iROC will highlight the relevant exam details. For sites that do not have full connectivity, minimal data entry (patient number and weight) is necessary prior to starting a new session. Additional data fields for patient-sensitive information such as allergies, pre-medication, pregnancy status, and history are provided

The Optima MR450w with GEM MWL provides complete control of the MRI protocol prescription. The protocol may be selected well in advance of the patient's arrival at the MR suite, thereby simplifying exam preparation and reducing necessary work by the technologist during the time-critical procedure.

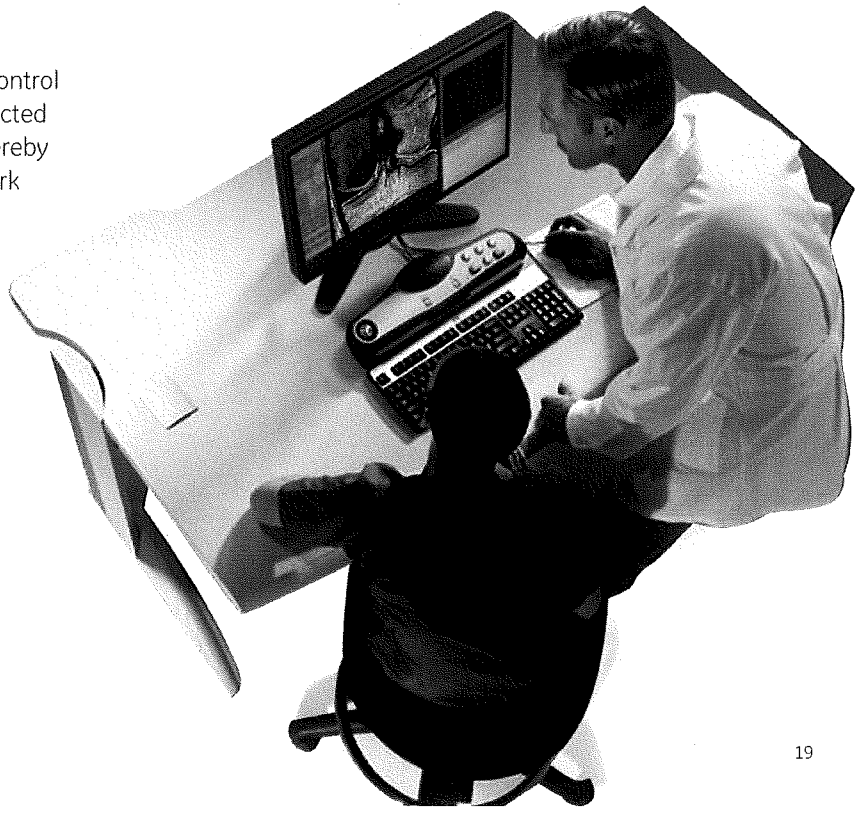
The ConnectPro software enables the DICOM worklist server class for the Optima MR450w with GEM Operator's Console. This software may require separate gateway hardware to connect non-DICOM-compatible HIS/RIS systems to the MR system.

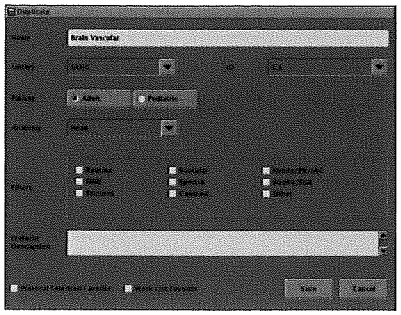
Protocol libraries and properties

The Optima MR450w with GEM system provides the user with complete control of protocols for simple prescription, archiving, searching, and sharing. The protocols are organized into two main libraries, GE Optimized and Site Authored. For quick search and selection, each protocol may be archived with independent properties based on patient demographics, anatomy, type of acquisition, or identification number. For commonly used protocols, a favorites flag may be used for quick selection from the Modality Worklist or for sharing across other libraries.



Adult and Pediatric Protocol libraries for simple management of exams.





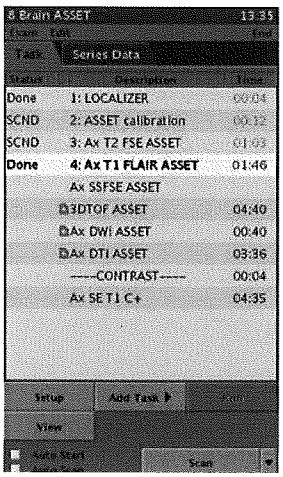
Each protocol or series can be saved with user-defined properties to simplify search and selection for future use. Favorite protocols can be highlighted for quick selection from the Modality Worklist or other libraries.

ProtoCopy

Standard on every Optima MR450w with GEM system, the ProtoCopy feature enables a complete exam protocol to be shared with the click of a mouse. The exam protocol can originate from either a library or previously acquired exam. This enables routine archive of protocols for emergency backup and simple management of libraries across multiple systems.

Workflow manager

Once a protocol has been selected for an exam, it is automatically loaded into the Workflow Manager. The Workflow Manager controls image prescription, acquisition, processing, visualization, and networking and may fully automate these steps if requested.



The Workflow Manager automatically loads the protocol and controls image prescription, acquisition, processing,and visualization

AutoStart™

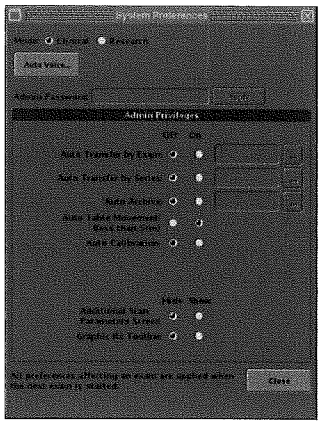
If AutoStart is selected, once the landmark position has been set and the technologist exits the scan room, the Workflow Manager will automatically start the acquisition.

AutoScan™

With AutoScan enabled, the Workflow Manager will sequentially go through the list of prescribed series without any user interaction. Once a series has been completed, the next series will be scanned automatically. For series requiring contrast, the system will await user interaction.

Auto calibration

A calibration scan is necessary for any acquisition that uses either ASSET parallel imaging or PURE surface coil intensity correction. A system preference can be selected to automatically acquire calibration data if desired. When needed, a calibration scan is automatically prescribed and acquired based on the clinical imaging volumes saved by the user. The reduced time lapse between the calibration and clinical scan minimizes possibility of patient movement and this improves image quality



Automatic Calibration screen

Auto coil prescription

Once the patient has been landmarked on the GEM Express Patient table with the appropriate components of the GEM Suite, the system will automatically determine the optimum subset of elements to enable for scanning. The optimization of the elements is based upon the prescribed FOV and will automatically adjust if the FOV changes in either size or position over the anatomy. The user has the option to view and edit the physical coil extents and the optimally selected element coverage.

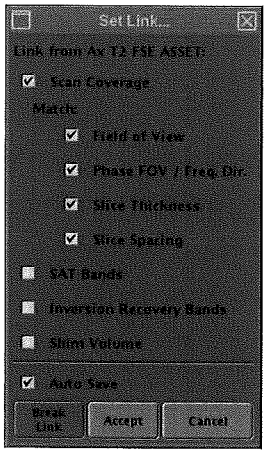
Ready Brain Application

An MRI examination of the brain consists of a number of connected steps. Ready Brain provides the flexibility to automate a number of these connected steps ranging from acquiring a localizer image, prescribing acquisition planes, scanning relevant series, performing post-processing up to transferring the final image data to a reading station. By standardizing the steps of an exam and the location of the scan planes, such automation could result in greater consistency, especially in longitudinal follow-up.

Ready Brain features an automatic localizer, automatic calculation of the mid-sagittal plane for 2D/3D prescription and determination of the AC-PC line, and correction for extreme (>45 degree) rotation.

Linking

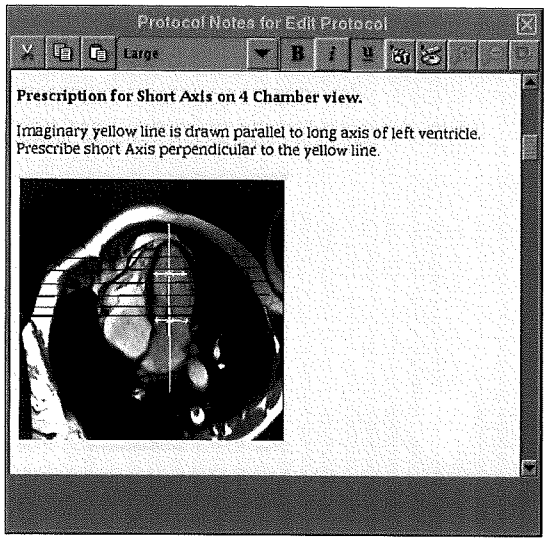
Linking automates the prescription of images for each series in an exam. Once the targeted anatomical region has been located the Linking feature combines information from a prescribed imaging series to all subsequent series in the Workflow Manager. All series that have been linked may automatically be prescribed (Rx) and no further interaction will be needed by the technologist to initiate the scan. The user has control over which specific parameters can be linked together. Series can have common fields of view, obliquity, slice thickness, anatomical coverage, saturation bands, or shim volumes. Multiple series can be linked together and saved in the Protocol Library or edited in real time. Linking may be used with any anatomy and with any acquisition. Once the first volume is prescribed, all other subsequent series with the same planes can be automatically prescribed and acquired.



Linking.

Protocol notes

Each protocol defined by the MR staff includes Protocol Notes. The content the MR staff adds to the Protocol Notes, on a series-by-series, basis can include text and images. Protocol Notes allow the MR staff to communicate protocol parameters, graphic prescription locations, etc. that are specific to your site. Protocol Notes appear below AutoView.



AutoVoice™

The AutoVoice feature will ensure that consistent and repeatable instructions are presented to the patient for each and every exam. User selectable, pre-recorded instructions are presented at defined points in the acquisition. This helps ensure that the patient is in the right position and is fully aware of the next step in the acquisition process. AutoVoice is particularly helpful during breath-hold exams. The AutoVoice feature includes instructions in over 14 languages and the user can create and include their own unique voice instructions for local needs.

Inline viewing

Inline viewing allows the user to conveniently view, compare, and analyze images without having to switch to the Browser.

Simply select the series to view from the Workflow Manager and the images are displayed along with standard image display tools. Image comparisons can be easily done by selecting multiple series at a time. The integrated viewer allows the user to seamlessly move between scanning and image viewing.

Inline processing

The Optima MR450w with GEM workflow automates many of the routine tasks that previously required user interaction. This dramatically reduces the workload for the user and helps ensure that consistent and repeatable images are presented for review. Processing steps are automatically completed immediately after the data has been reconstructed and the images saved into the database. These automated processing steps can be saved in the Protocol Library to ensure consistent exam workflow for each type of patient.

For certain tasks, such as vascular segmentation, the user must accept the results, or complete additional steps prior to saving the images to the database. In these cases the data is automatically loaded into the appropriate tool, then the system will await further instruction by the user. Examples of fully automated and partially automated inline processing include:

Inline processing capabilities	
Diffusion Weighted Images ADC/ eADC Maps	Automatic compute and save
Diffusion Tensor Images FA/ADC Maps	Automatic compute and save
Image Filtering: A-E, SCIC, PURE	Automatic compute and save
Maximum/MinimumIntensity Projection	Automatic compute and save
Reformat to orthogonal planes	Automatic compute and save
T2 Map for cartilage evaluation	Automatic compute and save
FiberTrak	Automatic load
Spectroscopy - Single voxel brain and breast metabolite	Automatic compute and save
3D Volume Viewer	Automatic load
Spectroscopy - 2D/3D Chemical Shift Imaging	Automatic load
BrainStat (Functool)	Automatic load
Image Fusion	Automatic load
IVI (Volume Viewer)	Automatic load
Pasting	Automatic load
SER (Functool)	Automatic load
eDWI	Automatic compute and save
3D ASL	Automatic compute and save

Image fusion

To better visualize tissue and contrast, multiple images from separate acquisitions can be overlaid on one another. With the new Optima MR450w with GEM workflow, high-resolution 2D and 3D anatomical images can be fused with functional data or parametric maps for improved visualization for the user. The data is registered using translation and rotation to ensure accurate fusion.

The automated workflow features of the system can be used for any anatomy and for any sequence. When combining the technology of AutoStart,™ Linking, Inline Processing, AutoVoice,™ and the AutoScan™ features, an entire exam can be completed with just a few actions. The flexibility of the Optima MR450w with GEM user interface and acquisition parameters helps ensure that each acquisition is tailored for every patient. However, the technologist steps are kept consistent.

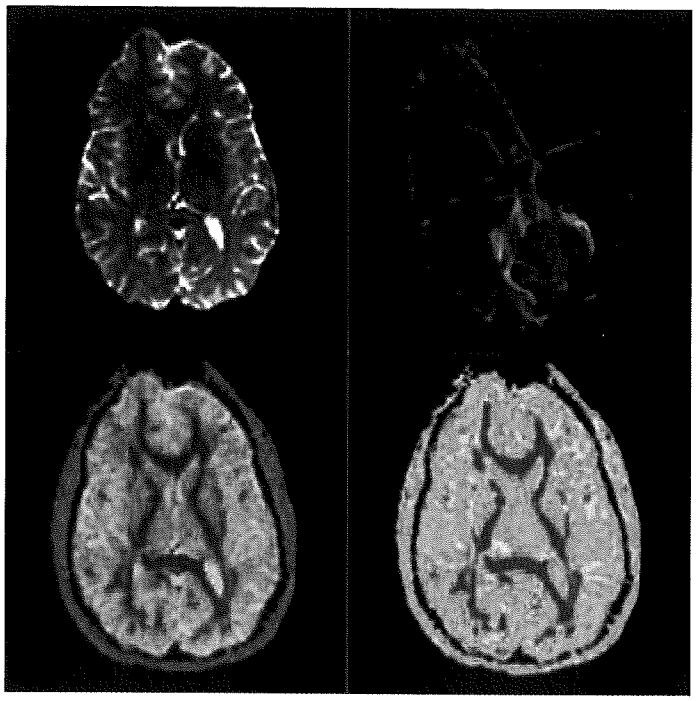


Image fusion	
MR Standard	3D Registration
ADC/eADC	3D Registration
Diffusion Tensor	3D Registration
Functional MRI	Reformat
BrainSTAT	3D Registration
SER (Signal Enhancement Ratio)	Reformat
T2 Mapping	Reformat
Spectroscopy (Brain, Prostate and Breast)	Reformat

Computing platform

Operator console

The Optima MR450w with GEM system comes equipped with a scan control keyboard assembly that contains intercom speaker, microphone and volume controls, and an emergency stopswitch. Start-scan, pause-scan, stop-scan, and table advance to isocenter hot keys are also included.

DICOM

The Optima MR450w with GEM system generates MR Image, Secondary Capture, Structured Report, and Gray Scale Softcopy Presentation State (GSPS) DICOM objects. The DICOM networking supports both send and query retrieve as well as send with storage commit to integrate with the site's PACS archive. DICOM filming support includes both Basic Grayscale and Basic Color Print Service Classes. Additionally, the Optima MR450w with GEM system supports the CT and PET image objects for display allowing the user to refer to previous studies.

Computing platform	
Main CPU	Dual Core Intel Xeon 3500 3.2 GHz Processor 1.333 GHz Dual Front Side Bus 8 MB L2 Cache
Host memory	16 GB DDR3-1333 FBD DIMMs
Graphics subsystem	Main Display: Nvidia Quadro FX580 - 512 MB GDDR3 Memory
Cabinets	Single, tower configuration
Disk subsystem	System Disk: 146 GB, 15,000 RPM, SAS Drive
Network	Gigabit (10/100/1000) Ethernet

Image interchange	
DVD Interchange	DVD-RW Average 35,000 images per 4.7 GB DVD

Filming	
Filming	Drag and drop filming One-button print series One-button print page Multi-image formats From 1 to 24 images displayed simultaneously in various layouts DICOM basic grayscale print service class DICOM basic color print service class

Specifications shown above are minimum performance levels

Wide-screen display monitor	
Display monitor	24" widescreen LCD flat panel 1920 x 1200 dot resolution Contrast ratio 500:1 Digital DVI interface

Display	
AutoView	Dedicated image review window
Window/Level (W/L)	6 programmable window/level preset keys in viewer, plus one key for returning to prior setting 6 user-programmable buttons in image viewer Arrow keys on scan control keyboard On-image through middle mouse button Save State stores user-selected image orientation, user annotation and window level.
Image display	Zoom/Roam/Flip/Rotate/Scroll Explicit Magnify and Magnifying Glass Image Measurement Tools Grid On/Off Cross Reference/User Annotation Exam/Series Page Hide Graphics/Erase Annotation/ Screen Save Accelerator Command Bar Compare Mode/Reference Image/ Image Enhance ClariView Image Filtering Smooth and Sharpen Edge Filters Minified Reference Scoutview Cine Paging (up to 4 windows and 128 images/window) Add/Subtract/Edit Patient Data
Image display	256 Image buffer (256 x 256) at 30 fps
Image annotation	Shadowed to permit ease in reading Two graphic/text planes overlay the entire screen. Grid placement with anatomical reference on an image. Drawing and annotation may be added to and removed from images

ScanTools

The Optima MR450w with GEM scanner comes standard with a package of pulse sequences and applications optimized for 1.5T performance.

Pulse sequences and imaging options	
Spin Echo	The gold standard for generating T1, proton density and T2 images.
Fast-Spin Echo (FSE) Fast-Spin Echo XL (FSE XL)	These techniques use echo-train technology to reduce the time for image acquisition. T2 image blurring is minimized by shorter echo spacing.
Fast-Recovery Fast-Spin Echo (FRFSE-XL)	The sequence of choice for high-quality, high-speed, and high-contrast T2-weighted imaging in neurological, body, orthopedic, and pediatric applications. Compared to FSE, FRFSE allows shorter acquisition times or increased slice coverage.
3D FRFSE	3D FRFSE is a sequence for creating high-resolution, three-dimensional T2-weighted images of all anatomies and is especially useful for MR cholangiopancreatography (MRCP) studies.
Single-Shot Fast-Spin Echo (SSFSE)	An ultra-fast technique that permits complete image acquisition following a single RF excitation. It can acquire slices in less than one second, making it an excellent complement to T2-weighted brain and abdominal imaging and MRCP studies.
GRE FGRE SPGR FSPGR	This suite of gradient-echo techniques uses short TR and TE to generate T1- or T2-weighted images in far less time than conventional SE. The ultra-short TR and TE possible with these sequences also ensure the performance needed for state-of-the-art vascular and contrast-enhanced MRA studies.
2D and 3D Dual Echo Gradient Echo	A vital tool for abdominal imaging. This variation on conventional gradient echo provides a pair of images for which the signals from water and fat either are in-phase or out-of-phase. By design, all of the images acquired within a single breath-hold are in perfect registration.
SPECIAL	Spectral Inversion at Lipids (SPECIAL) is a spectral spatial inversion technique for fat saturation in 3D FGRE pulse sequences.
T1 FLAIR T2 FLAIR	T1 and T2 Fluid Attenuated Inversion Recovery (FLAIR) pulse sequences have been designed expressly for neuro applications. FLAIR allows suppression of signal from cerebrospinal fluid (CSF). In addition to this capability, T1 and T2 FLAIR add extraordinary contrast between white and gray matter to T1- and T2-weighted brain and spine imaging.
Echo Planar Imaging (EPI) FLAIR Echo Planar Imaging	Essential tools for any high-throughput site employing advanced techniques. Echo planar imaging is what enables rapid imaging. And both echo planar and FLAIR echo planar techniques make it easier to generate neuro studies from uncooperative patients who simply refuse to stay still long enough for conventional techniques.
2D and 3D Time of Flight (TOF) Imaging 2D-Gated TOF Imaging	2D TOF Imaging, 2D Gated TOF Imaging, 3D TOF Imaging and Enhanced 3D TOF Imaging are all ideal for MR angiography. Based on conventional gradient echo scanning, TOF imaging techniques rely primarily on flow-related enhancements to distinguish moving from stationary spins.
2D Phase Contrast (2DPC) 3D Phase Contrast (3DPC)	These techniques demonstrate flow velocities and directional properties in vessels and other moving fluids such as cerebral spinal fluid and aortic flow.
SmartPrep™	SmartPrep uses a special tracking pulse sequence to monitor the MR signal through a user-prescribed volume to detect the arrival of an injected contrast bolus and to trigger the acquisition, for optimum contrast enhancement.
Double/Triple IR	These pulse sequences are included to allow black-blood imaging for studies of cardiac morphology. Triple IR adds fat suppression to black-blood imaging.

ScanTools

Pulse sequences and imaging options continued	
FastCINE	This pulse sequence is included specifically for studies of cardiac function. Through the use of retrospective gating, it allows full R-R coverage.
iDrive Pro	iDrive Pro brings real-time interactive imaging to the MR system, making it easier to generate detaile diagnostic information on just about any anatomy. This includes organs that are subject to motion artifacts, such as spine, heart, diaphragm and GI tract. The iDrive Pro technique allows the user to change scan parameters on the fly, during scanning, to evaluate the results immediately.
IVI	An interactive user interface that allows operators to remove background from MR angiography images. The result: angiographic and maximum intensity (MIP) projections in multiple scan planes. The processed images are saved automatically as a distinct series for quick recall.
Reformat	An online tool that allows the operator to convert image data sets from the acquired plane into orthogonal or oblique views. The reformat tool is easy to use and particularly useful for the interrogation of 3D datasets with complex anatomy. Reformatted images can be saved into the database for further review or filming.
FuncTool Performance	FuncTool Performance provides advanced capabilities by using a wide range of sophisticated algorithms, including: - ADC maps and eADC maps - Correlation Coefficients for mapping of motor strip and visual/auditory stimuli - Maximum Difference Function - Difference Function
Auto TR	Auto TR dropdown menu replaces the TR dropdown menu located on the Graphic Rx desktop. Displays lowest TR value of each series.
EPI and DW-EPI	Standard on all systems are gradient echo, spin echo, flair, and diffusion-weighted echo planar imaging. The standard EPI sequence supports single and multi-shot imaging, multi-phase imaging, as well as cardiac gating. Diffusion EPI produces images that can detect acute and hyper-acute stroke with b-value up to 10,000 s/mm2, multi-NEX compatibility and the ability to generate ADC and T2-weighted TRACE images. The FLAIR option suppresses the CSF signal component to ease interpretation.
LAVA	LAVA is a three-dimensional (3D) spoiled gradient echo technique designed specifically to image the liver with unprecedented definition, coverage, and speed. Excellent fat suppression, through a version of the SPECIAL technique customized for the liver, is one of the reasons for the high definition of anatomical structures. The coverage and speed of LAVA are the result of short TR, innovative use of partial k-space acquisition, and advanced parallel imaging. What is the clinical benefit of LAVA? It enables the high-quality 3D MR imaging of the liver during short breath-holding periods.
BRAVO	Brain Volume imaging is a high-resolution 3D imaging technique designed to produce heavily T1-weighted isotropic images of the brain. BRAVO uses 1D ARC to reduce scan time and minimize parallel imaging artifacts.
2D and 3D MERGE	Multiple Echo Recombined Gradient Echo (MERGE) uses multiple echoes to generate high-resolution images of the C-spine with excellent gray-white matter differentiation. By combining early echoes with high SNR and late echoes with improved contrast, the result is improved cord contrast within the spinal column.

Imaging options

Imaging options		
Pulse sequence imaging options	• ASSET • ARC™ • ART • Blood Suppression • Cardiac Gating/Triggering • Cardiac Compensation • Classic • DE Prepared • EDR • Flow Compensation • Fluoro Trigger • Full Echo Train • IDEAL • IR Preparation • Magnetization Transfer • MRCP	• Multi-Station • Multi-Phase/Dynaplan • Navigator • No Phase Wrap • Real Time • Respiratory Compensation • Respiratory Gating/Triggering • Sequential • SmartPrep™ • Spectral Spatial RF • Square Pixel • T2 Prep • Tailored RF • Zip 512/Zip 1024 • 3D Slice Zip x 2 (Z2)/Zip x 4 (Z4)
Parallel imaging Array Spatial Sensitivity Encoding Technique (ASSET) imaging option is a 1D image-based parallel imaging technique used to speed data acquisition. For temporally sensitive acquisitions, ASSET reduces image blurring and motion, and enables greater anatomical coverage. Parallel imaging acceleration factors ranging from 1-3.0 are supported depending on the coil selected. Auto-Calibrating Reconstruction (ARC) is a data-driven parallel imaging technique that synthesizes missing data from neighboring source data in all three imaging dimensions: slice, phase and frequency. Fewer calibration lines are required and reconstruction accuracy and speed is improved resulting in highly accelerated MR data acquisition with improved image quality and reduced artifacts. ARC is auto-calibrating, which means that it requires no coil sensitivity map and is therefore less sensitive to motion artifacts that would occur between the calibration and accelerated scan. It can be used with tight FOVs that are smaller than the anatomy being imaged and thus allow high resolution imaging. Since there is no calibration scan required and fewer artifacts, the ARC exam is typically shorter in comparison to other parallel imaging techniques. ARC is compatible with most PSDs and coils. It does not require a calibration scan. The following applications are parallel imaging enabled.	• 2D FSE • 2D FRFSE • 2D FSE-IR • 2D T1 FLAIR • 2D FSE Double IR • 2D FSE Triple IR • 2D T2 MAP • 2D FSE-XL IDEAL • 2D FRFSE-XL IDEAL • 2D SSFSE • 2D SSFSE-IR • 2D SSFSE MRCP • 2D SSFSE 3-plane • 3D FRFSE • 3D FRFSE HYDRO • 2D FGRE • 2D FSPGR • 2D FIESTA • 2D FIESTA Fat Sat • 2D FIESTA Fast CARD • 2D FIESTA Fast CINE • 2D MDE • 2D MFGRE • 3D Cube (PD, T1, T2, T2 FLAIR) • 3D TOF GRE • 3D TOF SPGR • 3D FGRE • 3D FSPGR • 3D FGRE IDEAL	• 3D FSPGR IDEAL • 3D BRAVO • 3D Quick STEP • 3D Fast TOF GRE • 3D Fast TOF SPGR • 3D FIESTA • 3D Heart • 3D MDE • 3D MERGE • 3D TRICKS • 3D LAVA • 3D LAVA Flex • 3D Dual Echo • 3D VIBRANT • 3D VIBRANT Flex • 2D GRE-EPI • 2D SE-EPI • 2D DW-EPI • 2D DT-EPI • 2D FMRI EPI • Cine IR • FGRE Time Course • Inhance Application Suite • MR Echo FGRE Time Course • MR Echo FIESTA Time Course • MR Echo MDE • MR Echo Realtime • MR Echo Function • eDWI

Applications

3D GradWarp

3D GradWarp is a technique integrated into image reconstruction that helps reduce image distortion by compensating for gradient non-linearities in all three dimensions. This correction differs from the default 2D correction that is conventionally performed by incorporating the slice direction into the processing.

Neuro Applications

3D ASL (Arterial Spin Labeling)

3D ASL utilizes water in arterial blood as an endogenous contrast media to help visualize tissue perfusion and provide quantitative assessment of cerebral blood flow (CBF) in ml/100 g/min. The quantitative CBF maps can be generated and stored in DICOM format.

3D ASL deploys stacked spiral FSE readout with modulated flip angle to acquire 3D volumetric data with increased SNR and minimal image distortion. The 3D data can be reformatted to axial, sagittal, coronal or oblique planes. A pulsed-continuous labeling is applied to label arterial blood close to the imaging volume thus improving conspicuity of flowing blood.

Selective, interwoven pulses are then used to saturate and invert the imaging volume, in order to achieve better back-ground suppression, and reduce sensitivity to motion.

3D ASL helps generate robust, reproducible images and perfusion maps with high SNR, reduced motion artifacts and less distortion in high magnetic susceptibility regions.

PROPELLER 3.0

PROPELLER 3.0 has been developed to reduce effect of patient voluntary and physiologic motion (breathing, flow, peristaltis), and reduce magnetic susceptibility artifacts. PROPELLER 3.0 helps generate consistently good, diagnostic quality images even for challenging patients and difficult to image anatomies. PROPELLER 3.0 uses innovative radial k space filling pattern that, compared to the Cartesian method, is inherently less sensitive to motions such as CSF and blood flow, breathing, patient tremor or voluntary movements. In addition, a sophisticated motion correction post-processing algorithm is deployed to further reduce effects of rigid motions. The oversampling of the k space center typical for radial k-space filling also yields increased SNR and an excellent tissue contrast.

PROPELLER 3.0 has been enabled for T1 FLAIR, T2, T2 FLAIR imaging in all planes, axial diffusion weighted imaging for brain, T2 weighted imaging for cervical spine, excellent T2 weighted imaging for Body, and T2/PD weighted imaging for MSK.

IDEAL

IDEAL provides consistent, robust fat and water separation every time, also in difficult to scan anatomies and presence of high magnetic susceptibility effect. Four different contrasts: water only, fat only, in-phase, out-of-phase are generated from a single acquisition, to help facilitate more confident diagnosesand reduce repeat exams. IDEAL acquires multiple echoes at different TE times to generate phase shifts between water and fat, allowing for more accurate pixel-by-pixel water and fat separation, while retaining maximum of SNR. IDEAL can be utilized with FSE-based contrasts such as T1, T2, PD.

3D Cube

Cube is a technique and replaces several slice-by-slice, plane-after-plane 2D FSE acquisitions with a single 3D volume scan - providing you with T1, T2, T2 FLAIR or PD contrast. You can easily reformat sub-millimeter isotropic volume data from a single acquisition into any plane - without gaps and with the same resolution as the original plane. ARC parallel imaging helps eliminate artifacts while accelerating image acquisition.

3D BRAVO

BRAVO incorporates ARC parallel imaging with 3D IR-pre-pared FSPGR acquisition to produce isotropic T1-weighted volumes. The center of k-space is over sampled and serves as the calibration data for the parallel imaging reconstruction.

eDWI

The enhanced Diffusion Weighted Imaging technique has been designed to provide high signal-to-noise-ratio diffusion images of the liver and brain with short-acquisition time. Its multi-B feature is designed to provide measurement of apparent diffusion coefficient (ADC) map with reduced effect of perfusion. In addition, "3 in 1" technique applies diffusion weighting to all three gradients simultaneously, helping improve sensitivity. Built in tetrahedral feature applies four different diffusion weighing combinations of x, y, and z gradients simultaneously to acquire isotropic diffusion weighted images with high signal to noise ratio and shorter TE. Its smart NEX feature significantly reduces the acquisition time. Inversion recovery has been deployed to provide robust fat suppression. Enhanced DWI package includes the acquisition sequence and post-processing tools.

SWAN

SWAN lets you visualize and clearly delineate small veins, as well as large vascular structures, and iron or calcium deposits in the brain. SWAN captures a broad spectrum of contrast characteristics specific to a wide range of tissue components using a multi-TE acquisition technique. The multi-TE approach is inherently less affected by chemical shift, leading to clear images. The end result is a sub-millimeter-resolution 3D dataset, which integrates a broad range of distinct tissue contrasts with excellent susceptibility information and high SNR.

Applications

3D COSMIC

This is a 3D sequence used to image axial c-spine. COSMIC uses modified fast GRE pulse sequence with steady-state free precession segmented multi-shot centric k-space acquisition. This improves the CNR and SNR of c-spine tissue including the spinal cord, vertebral disks, nerve root canal and contrast between CSF and nerve roots.

2D and 3D MERGE

Multiple Echo Recombined Gradient Echo (MERGE) uses multiple echoes to generate high-resolution images of the C-spine with excellent gray-white matter differentiation. By combining early echoes with high SNR and late echoes with improved contrast, the result is improved cord contrast within the spinal column.

3D FIESTA-C

This phase-cycled FIESTA reduces sensitivity to susceptibilities that may be encountered when imaging in the posterior fossa. It provides exquisite contrast that is ideally equated for visualization of the internal auditory canal. It is also ideally suited for T1 imaging through the cervical spine.

3D FIESTA

3D FIESTA (Fast Imaging Employing Steady-state Acquisition is a technique that uses an extremely short repetition time (TR) between RF pulses such that high-resolution 3D volume images can be acquired rapidly. The 3D FIESTA technique is especially useful for the rapid acquisition of high-spatial-resolution images of static structures such as cochlea, internal auditory canal, or joints.

Diffusion Tensor Imaging with Fiber Tracking

This package expands EPI capability to include diffusion tensor imaging, a technique that acquires diffusion information in up to 150 different diffusion directions. It generates image contrast based on the degree of diffusion anisotropy in cerebral tissues such as white matter. FuncTool capabilities on the console (included with ScanTools) create Fractional Anisotropy (FA), Apparent Diffusion Weighted (ADC) and T2-Weighted TRACE maps.

The optional FiberTrak post-processing utility generates eigen-vector information from the diffusion tensor acquisition and processing. Using a robust and efficient seeding process, three-dimensional renderings of the diffusion along white matter tracts are generated.

BrainSTAT

BrainSTAT is a standard post processing application that automatically generates parametric maps for Cerebral Blood Flow, Blood Volume, Mean Transit Time, and Time to Peak signal intensity. A Gamma Variate Fitting algorithm is used to automatically calculate the values for the four parametric maps. The maps may be saved in DICOM format and fused with high-resolution anatomic datasets to provide reference to tissue and anatomy.

An optional add-on to the Brain STAT package enables the user to automatically, or manually specify the arterial-input function (AIF) based on the temporal form of the signal, to calculate normalized values of the Blood Flow, Blood Volume, Mean Transit Time, and Time to Peak signal intensity based on the vascular flow dynamics of a specific patient.

BrainWave Real Time

ScanTools pulse sequences include the ability to detect the signal intensity changes (BOLD) during pre-determined tasks (paradigm) using single-shot EPI and then Map these changes as color maps with FuncTool on host and/or on AW.

BrainWave RT offers further enhancement to the above functionality with real time applications and image database. It allows a single technologist to acquire, process and display BOLD (Blood Oxygen Level Dependent) fMRI studies acquired with synchronized stimuli. It is very comprehensive, interfacing with the host's database and equipping you with all the real-time functionality you need – including paradigm control and development, and real-time display of color activation, overlaid on source EPI images.

The main features are:

- 50,000 image storage per series with data acquisition rates up to 20 image/s
- Display of 2D activation maps overlaid over echo planar source images in real time.
- Multiple 2x2 and 4x4 display.
- Optional saving of raw data in research mode for off-line analysis with 200,000 images.

Applications

BrainWave Post-Acquisition on console

This high-performance software allows you to produce, from raw fMRI data, phenomenally detailed brain images displaying functional activation. Display alternatives for these maps include cross-sectional displays, activation Z-maps and composite paradigm displays.

The features include:

- Integration in to the operator console.
- Special graphic user interface for image analysis.
- Data quality check, motion correction, temporal filtering and spatial smoothing to optimize statistical analysis and mapping.
- Multiple regression analysis.
- The structural MRI scan is segmented using completely automatic threshold and histogram methods and mathematical morphology techniques.
- Rapid retrospective motion correction.
- Sophisticated visualization techniques including true volume rendering, light box and orthogonal displays.

BrainWave Fusion

BrainWave Fusion is an optional package that provides the ability to fuse high-resolution anatomical images with fMRI activation maps and diffusion tensor fiber maps. This package is useful for evaluating the spatial relationship between activation patterns, fiber tracts, and underlying anatomy and pathology.

BrainWave Lite Hardware

The image processing algorithms in BrainWave packages such as BrainWave RT and BrainWave PA, depend heavily on proper synchronization of scanning with stimulus presentation to the subject (patient) being scanned.

BrainWave Lite Hardware provides this GE-designed hard-ware that provides trigger signal to support this synchronization – thereby paving the way for convenient compatibility and selection of vendor-supplied sensory equipment such as headphone, microphone and glasses. (Not included)

BrainWave Lite Hardware includes:

- A dedicated computer workstation.
- Equipment rack and penetration panel waveguide insert.
- Cedrus patient response pads, and related cabling and connectors.
- It is designed to deliver visual and auditory stimuli and receive a tactile response. The computer includes preset paradigms and software tools to generate custom protocols.
- The visual and auditory output can be coupled to fMRI delivery systems purchased separately from other vendors

Spectroscopy applications

PROBE PRESS single voxel spectroscopy

PROBE PRESS single-voxel spectroscopy allows you to non-invasively evaluate the relative concentrations of in-vivo metabolites and lets you acquire and display volume-localized, water-suppressed H1 spectra in single voxel mode. The package includes automated recon, acquisition set-up and graphic prescription of spectroscopic volumes.

The standard sequence consists of three slice-selective RF pulses with crusher gradients. The PRESS sequence makes use of reduced flip angles to decrease minimum TE time of the sequence. The key advantage of PRESS (over STEAM) is that it provides up to twice the SNR and hence decreased exam time or voxel size. It is the sequence of choice for all Hydrogen single voxel spectroscopy data acquisitions with TE values $\geq$ 35 ms.

PROBE – STEAM single voxel spectroscopy

Stimulated Echo Acquisition Mode acquires a stimulated echo from the localized volume. The basic sequence consists of three slice selective 90-deg RF pulses and a set of crusher gradients. Though STEAM provides more accurate voxel localization, it has inherently lower SNR compared to PRESS. Moreover, since echo times available with STEAM can be shorter, it is better suited than PRESS for chemical species that have shorter T2.

PROBE – 2D CSI

This extends the PROBE-PRESS capabilities with simultaneous multi-voxel in-plane acquisitions. Post- processing, including the generation of metabolite maps is automatically generated with FuncTool Performance package.

PROBE – 3D CSI

This extends the PROBE-2D CSI capabilities to add 3D multi-voxel acquisitions. (PROBE 2D CSI is mandatory).

BREASE

This is a TE averaged PRESS spectroscopy acquisition that provides the necessary biochemical information to help characterize breast tissue.

Applications

PROSE

PROSE (PROstate Spectroscopy and imaging Examination), is a noninvasive imaging technique to evaluate prostate lesions.

Cardio-vascular Applications

Inhance Application Suite

The Inhance application suite consists of several new sequences designed to provide high-resolution images of the vasculature with short-acquisition times and excellent vessel detail. These new sequences include:

Inhance Inflow IR

Inhance Inflow IR is a non-contrast-enhanced MR angiography technique that has been developed to image arteries with ability to suppress static background tissue and venous flow. This sequence is based on 3D FIESTA, which improves SNR and produces bright blood images. Selective inversion pulses are applied over the region of interest to invert arterial, venous, and static tissue. At the null point of the background tissue, an excitation pulse is applied to generate signal. The net result is an angiographic image with excellent background suppression.

Uniform fat suppression is achieved using a spectrally selective chemical saturation (SPECIAL) technique while respiratory gating compatibility reduces respiratory motion artifacts during free-breathing renal exams.

Inhance 3D Velocity

Inhance 3D Velocity is designed to acquire angiographic images in brain and renal arteries with excellent background suppression in a short scan time. By combining a volumetric 3D phase contrast acquisition with parallel imaging, efficient k-space sampling, and pulse sequence optimization, Inhance 3D Velocity is capable of obtaining the whole neurovascular anatomy in approximately 5~6 minutes. Furthermore, background suppression is improved by the optimized pulse sequence design, resulting in better visualization of small branches. Respiratory triggering is also compatible with Inhance 3D Velocity to enable abdominal angiography, specifically renal arteries. The results are excellent productivity and image quality.

Inhance 3D DeltaFlow

Inhance 3D DeltaFlow is a 3D non-contrast-enhanced MRA application for peripheral arterial imaging. It is based on cardiac gated 3D fast spin echo and acquires two echoes viz., one in diastole and the other in systole. Slow arterial flow during diastole results in bright arteries in the diastole images while faster arterial flow during systole results in dark arteries in the systole images. A subtraction of the systole images from diastole images provides arterial only images with excellent suppression of venous and background signal. Interleaved acquisition and parallel imaging (ASSET) with optimized k-space trajectory helps reduce motion misregistration and improve vessel visualization respectively. In addition the use of partial-Fourier and coronal plane acquisition allows for considerably reduced scan time.

Inhance 2D Inflow

The Inhance 2D Inflow pulse sequence is designed to acquire angiographic images of arteries that follow almost a straight path (i.e. femoral, popliteal, and carotid arteries). Arterial blood flow is faster during the systolic phase and slows down during the diastolic phase. Therefore, Inhance 2D Inflow is designed to acquire data during the systolic phase. It features an optimized spatial saturation gap to improve fat suppression and background suppression. Peripheral Gating is deployed to minimize the pulsatile artifacts. Inhance 2D Inflow is compatible with ASSET acceleration to reduce scan time.

3D Heart

3D Heart is a 3D FatSat FIESTA or 3D IR Prep FGRE sequence optimized to provide whole-heart coverage with excellent image quality. 3D FastSat FIESTA is aimed for coronary artery imaging or cardiac chamber imaging and 3D IR Prep FGRE is aimed for a high resolution myocardial viability assessment with delayed enhancement techniques. The whole heart volume is acquired in several slabs, using a multi-slab localizer that allows easy whole-heart prescription, compared to prescribing specific anatomical views in 2D acquisitions. A T2 preparation is deployed to improve the contrast to noise ratio between myocardium and the coronary for 3D FatSat Fiesta. A navigator echo pulse that detects motion of the diaphragm is utilized to enable free breathing acquisition. The navigator has been optimized to improve robustness, and includes a slab-tracking feature that automatically shifts slab positions based on the detected diaphragm location to improve motion suppression and increase scan efficiency. The multi-slab acquisition minimizes the effect of respiratory drift and heart rate variability on image quality. Furthermore, the SNR is improved with mulit-slab due to less blood saturation effect. An optimized phase ordering and steady state preparation has also been used to improve CNR and SNR.

Cine IR (Cine Inversion Recovery)

Cine IR can be very useful for approximating the myocardial null point for a subsequent myocardial viability assessment with delayed enhancement (MDE) techniques.

Cine IR is a conventional ECG-gated, gradient-recalled echo FASTCARD or FASTCINE acquisition sequence with a multi-phase readout and an inversion recovery (IR) preparation.

A single adiabatic inversion pulse is generated upon detection of the cardiac R-wave to trigger the multi-phase readout.

Multi-phase images are generated within the cardiac cycle, each at a progressively longer TI time.

FGRE Time Course (Fast Gradient Recalled Echo Time Course)

The FGRE Time Course PSD is a fast gradient-echo sequence optimized for time-course studies. FGRE TC utilizes single-echo acquisition to help reduce sensitivity to echo mis-alignment or system calibrations variations, which can result in robust image quality with less ghosting and artifact reduction. ASSET parallel imaging and shortened RF pulse design are incorporated to help improve temporal resolution and reduce motion related artifacts. In addition to selective notch pulse, it also supports non-selective saturation pulse for excellent background suppression and multi-plane imaging capability.

Applications

iDrive Pro Plus

iDRIVE Pro Plus expands the capabilities of standard iDrive Pro with:

- Geometric changes to image plane location, obliquity, rotation, center FOV and FOV size
- Contrast parameters such as spatial pre-saturation on/off, special sat pulses, flow comp and RF spoiling
- Application of a non-selective IR pulse
- Swapping phase and frequency

It starts with an intuitive point-and-click user interface and live, on-image navigation icons. It continues with click-of-the-mouse image book-marking and a suite of localization and drawing tools, and includes capabilities from 10-level undo/redo, built-in time, autoNEX and click-of-the-mouse display/review/save, all to streamline even the most complex exams and manipulations.

MR Echo

MR Echo expands on the capability provided by I-Drive Pro Plus. Presently, patients have to undergo multiple breath-holds to achieve the 'whole heart coverage' for wall motion and other studies. MR Echo employs a bright blood ultra-fast FIESTA sequence, which virtually eliminates the need for breathholding. An intuitive interface enables the operator to quickly scan the heart in any orientation and to save real time images to the browser through bookmarks. Additionally, a Scan and Save mode enables high resolution heart imaging with VCG and enables multiple functional images over many slices to be prescribed and scanned in a single breath-hold. The operator immediately visualizes scan time for the number of prescribed slices enabling each scan to be tailored to the patient's breath-hold capability. All images acquired in Scan and Save are stored in the browser while the operator immediately continues with real time scanning. MR Echo is able to significantly reduce typical cardiac exam times (compared to previous generation techniques).

TRICKS

Time Resolved Imaging of Contrast KineticS (TRICKS) technology uses intricate temporal sampling with complex data recombination to accelerate the temporal resolution of 3D dynamic imaging – with virtually no compromise in spatial resolution. This technology is integrated with Elliptical-Centric data sampling to create an excellent imaging technique for MRA in even the most challenging circumstances.

Easy to set up, TRICKS rapidly generates time-resolved 3D images of blood vessels to help meet the challenge of capturing peak arterial phases with minimal venous contamination. With TRICKS, the different vascular phases can be extracted after image acquisition.

Fluoro-Triggered MRA

Fluoro-triggered MRA (FTMRA) is designed to capture angiographic images at the precise moment of peak opacification. Rather than automating the image-acquisition upon detection of the bolus arrival, FTMRA allows the operator to trigger each acquisition almost instantly as soon as the operator is satisfied with the level of vessel enhancement. The result is an interactive, ASSET compatible, approach to contrast-enhanced MRA.

2D FIESTA CINE

Fast Imaging Employing STeady state Acquisitions is a fully balanced steady-state coherent imaging pulse sequence that has been designed to produce high SNR images at very short TR. The pulse sequence uses fully balanced gradients to re-phase the transverse magnetization at the end of each TR interval. This sequence accentuates the contrast of anatomy with high T2/T1 ratios (such as the cardiac blood pool), while suppressing the signal from tissues with low T2/T1 ratios (such as muscle and myocardium). This enhances the contrast between the myocardium and the blood pool.

StarMap

StarMap is a technique that acquires multiple echoes at different TE times at each location resulting in images that represent variations of T2* weighting. Post-processing of the images is employed to generate gray scale and color maps of the T2* signal decay across the echoes, which can be useful in the assessment of the presence of iron.

QuickSTEP

QuickSTEP is an automated multi-station acquisition. This application automatically prescribes, acquires, and combines images from multiple stations for fast acquisition and exam completion. To complete the entire exam in as little as 7 minutes, the system will automatically acquire mask datasets from multiple stations without any user intervention. Secondary images are then acquired at the same independent table positions. The system will automatically subtract the mask images from the secondary dataset and combine the resulting images from the multiple stations into one series. The user only needs to complete a quick review of the data prior to insertion of images into the database.

Applications

3D FatSat FIESTA

3D FatSat FIESTA is software designed for imaging of the coronary arteries. The software acquires 3D images using FIESTA (Fast Imaging Employing STeady-state Acquisition). Fat suppression is applied to accentuate the coronary arteries. The use of VAST (Variable Sampling in Time) technology greatly shortens breath-holding requirements or allows for higher spatial resolution.

2D IR Prepared Gated FGRE

Vital to MRI myocardial assessments, this technique can help distinguish living tissue from dead and therefore have a major impact on patient management – particularly on revascularization strategies. This pulse sequence uses an IR prepared, cardiac-gated fast gradient echo sequence to acquire images whose appearance depends on the tissue's T1 relaxation time. The IR-preparation step allows various tissues to be suppressed or enhanced. The IR prep pulse in this sequence is non-selective; i.e., it excites the entire volume inside the body coil, rather than a specific slice. That means that it can sup-press both the myocardium and the blood flowing into the slice.

3D IR Prepared Gated FGRE

3D IR Prepared Gated FGRE is an advanced tool for myocardial assessment. It acquires extensive volumes of data, rather than merely single slices, during breath holds, with acquisitions gated to the cardiac cycle. The software applies a non-selective inversion recovery magnetization preparation step to create T1-weighted tissue contrast and suppress the signal from certain tissues.

Navigators

This software package is designed for use in conjunction with 3D IR Prepared FGRE or 3D FatSat FIESTA for Cardiac Imaging. It consists of navigators that make it possible to track the diaphragm and use the information to acquire crisp 3D gradient-echo images of the heart even while the patient breathes.

Cardiac Tagging

Used to improve visualization of contractile function, this tagging application combines cardiac-gated FastCINE gradient-recalled echo to acquire data throughout the cardiac cycle, with spatial SAT pulses applied throughout the FOV. Using the operator's choice of diagonal stripes or a grid pattern, tagging is applied once per R-R interval immediately following the R-wave ECG trigger, just before the start of data acquisition.

Fast Gradient Echo using EPI Echo Train

This technique combines a short-TR FGRE (Fast GRadient Echo) pulse sequence with an EPI echo train to acquire multiple views, or phase encoding steps, per TR. It features uniform RF excitation, centric phase encoding, segmented k-space filling, retrospective gating in FastCARD-ET, EPI-caliber interleaving, and EPI-like acquisition of multiple views in one TR. Multi-phase FGRET is useful for applications such as multi-slice, multi-phase imaging of myocardial function.

Real Time FGRE-ET

Also known as Fluoro MRI, this pulse sequence (whose name is an acronym for Fast Gradient Echo using an EPI EchoTrain) uses a short TR FGRE pulse sequence with the ability to acquire multiple views, or phase-encoding steps, per TR via an EPI echo train. The result is a highly useful combination of gradient-echo and EPI features, such as:

- Uniform RF excitation
- Centric phase encoding
- Segmented K-space filling
- Retrospective gating in FastCARD-ET
- Interleaving, as in EPI
- Acquisition of multiple views in a single TR

Used in conjunction with iDrive Pro Plus, the real-time version of this pulse sequence is essentially a single-slice version of standard FGRET. That makes it especially useful for obtaining higher-resolution interactive cardiac images.

Spiral Imaging

Developed to acquire high-resolution images in far less than one second, Spiral Imaging is ideally suited for imaging moving structures such as the coronary arteries. Instead of collecting data in the conventional rectilinear grid pattern, it simultaneously applies the x and y gradients in conjunction with a 2D GRE or SPGR pulse sequence, and then interpolates the data onto a rectilinear grid for image generation. Non-gated sequences can be used with one or more slice locations; gated acquisitions can be conducted in sequential or non-sequential mode.

The advantages of Spiral Imaging include fast acquisition from the more efficient k-space data collection, high SNR from over-sampling of the center of k-space, and intrinsic flow- and motion-compensation from the short echo times.

Applications

Body Applications

LAVA Flex

LAVA Flex is a 3D FSPGR imaging technique that acquires fat/water in phase and out of phase echoes in a single acquisition. Up to 4 types of image may be reconstructed within one acquisition: in phase, out of phase, water only, fat only. The water only contrast differs from a conventional fat suppressed image in that an inversion prep pulse is not applied for fat suppression. In fact, the fat information is removed leaving a water only image that may potentially be used in place of a LAVA type image. LAVA Flex uses ARC. (Auto Calibrating Reconstruction for Cartesian Sampling), a 2D self-calibrated parallel imaging technique that allows for acceleration in both phase and slice directions for supported coils.

PROPELLER 3.0

PROPELLER 3.0 has been developed to reduce effect of patient voluntary and physiologic motion (breathing, flow, peristaltis), and reduce magnetic susceptibility artifacts. PROPELLER 3.0 helps generate consistently good, diagnostic quality images even for challenging patients and difficult to image anatomies. PROPELLER 3.0 uses innovative radial k space filling pattern that, compared to the Cartesian method, is inherently less sensitive to motions such as CSF and blood flow, breathing, patient tremor or voluntary movements. In addition, a sophisticated motion correction post-processing algorithm is deployed to further reduce effects of rigid motions. The oversampling of the k space center typical for radial k-space filling also yields increased SNR and an excellent tissue contrast.

PROPELLER 3.0 has been enabled for T1 FLAIR, T2, T2 FLAIR imaging in all planes, axial diffusion weighted imaging for brain, T2 weighted imaging for cervical spine, excellent T2 weighted imaging for Body, and T2/PD weighted imaging for MSK.

eDWI

The enhanced Diffusion Weighted Imaging technique has been designed to provide high signal-to-noise-ratio diffusion images of the liver and brain with short-acquisition time. Its multi-B feature is designed to provide measurement of apparent diffusion coefficient (ADC) map with reduced effect of perfusion. In addition, "3 in 1" technique applies diffusion weighting to all three gradients simultaneously, helping improve sensitivity. Built in tetrahedral feature applies four different diffusion weighing combinations of x, y, and z gradients simultaneously to acquire isotropic diffusion weighted images with high signal to noise ratio and shorter TE. Its smart NEX feature significantly reduces the acquisition time. Inversion recovery has been deployed to provide robust fat suppression. Enhanced DWI package includes the acquisition sequence and post-processing tools.

MR Touch

MR-Touch is a non-invasive method to measure relative tissue stiffness with MR.

MR Touch™ is a new acquisition and reconstruction technique that combines hardware, and acquisition and reconstruction algorithms to produce Elastograms, color-coded anatomical images showing varying degrees of elasticity or stiffness. The image contrast is related to relative stiffness of soft tissue and is generated from the real-time data acquisition during tissue palpation with low amplitude and low frequency sound waves. The hardware component is comprised of an active sound wave generator and a passive transducer that produces small vibrations in the area of the patient to be scanned. The MR-Touch acquisition software is an evolutionary improvement to the gradient echo sequence. The acquisition software also triggers the sound wave generator to produce synchronized vibrations on the surface of the patient during the data acquisition. The reconstruction algorithms generate images that show the propagation of waves through the tissue (phase images) and also the corresponding strain wave and relative stiffness images. Parallel imaging is used to accelerate image acquisition.

MR Touch is designed to enable physicians to evaluate relative liver and muscle tissue stiffness.

3D Dual Echo

With improvements in parallel imaging and RF coil arrays, volumetric imaging in the body is becoming a standard of care. The 3D Dual Echo sequence produces in-phase and out-of-phase images in a single breath-hold. As a result, the high-resolution images are in perfect alignment simplifying the diagnostic process. In addition, 3D Dual Echo ensures that the out-of-phase echo is acquired first. The result is improved SNR compared to 2D Dual Echo. 3D Dual Echo also permits thinner slice imaging.

2D FatSat FIESTA

Fast Imaging Employing STeady-state Acquisition (FIESTA) is designed to produce high SNR images extremely rapidly and with excellent contrast between tissues. The contrast relies on a steady state for the transverse magnetization, which builds as a series of radio frequency pulses and special gradient pulses are repeated after an extremely short repetition time, TR. FIESTA accentuates the signal from tissues that have a long T2 and short T1. FIESTA has the capability to suppress the signal from fat, especially to create more contrast between the vasculature and surrounding tissues.

Applications

Single-Shot Fast-Spin Echo

An ultra-fast technique that permits complete image acquisition following a single RF excitation. It can acquire slices in less than one second, making it an excellent complement to T2-weighted brain and abdominal imaging and MRCP studies.

3D Cube

Cube is a 3D isotropic imaging technique with sub-millimeter spatial resolution and excellent contrast to help visualize even diminutive lesions. Cube can replace several slice-by-slice, plane-after-plane 2D FSE acquisitions with one single 3D scan. You can easily reformat sub-millimeter isotropic volume data into any plane - without gaps, and with the same resolution as the original plane. Cube is enabled for T1, T2, T2 FLAIR or PD contrasts. Our new self-calibrating parallel imaging engine ARC helps eliminate artifacts while accelerating image acquisition.

Respiratory Triggering

For patients that cannot hold their breath, respiratory triggering provides the answer. By synchronizing the acquisition to the respiratory cycle, high-resolution images virtually free of breathing artifacts are obtained.

StarMap

StarMap is a technique that acquires multiple echoes at different TE times at each location resulting in images that represent variations of T2* weighting. Post-processing of the images is employed to generate gray scale and color maps of the T2* signal decay across the echoes, which can be useful in the assessment of the presence of iron.

Breast Applications

MRI has been shown to be beneficial in the evaluation of the breast providing high-resolution images of breast anatomy. The Optima MR450w with GEM system provides a full compliment of breast imaging applications and protocols that generate both temporal and spatial resolution for highly detailed diagnostic breast.

VIBRANT

VIBRANT (Volume Imaging for Breast AssessmeNT) permits high definition bilateral imaging of both breasts in the time that it normally takes to image a single breast. VIBRANT integrates ASSET technology with bilateral shimming and a patented fat-suppression technique developed specifically for breast imaging. This enhanced version of VIBRANT for Optima MR450w with GEM allows the slices to be acquired in either the sagittal or axial orientation.

VIBRANT Flex

VIBRANT Flex uses a time-efficient dual-echo acquisition with 2D ARC parallel imaging to produce water-only, fat-only, in-phase, and out-of-phase images of the breast in a single scan. The Flex processing eliminates fat saturation failures in inhomogeneous regions to provide a clear depiction of the underlying breast anatomy.

BREASE

BREASE is a TE averaged PRESS spectroscopy acquisition that provides the necessary biochemical information to help characterize breast tissue.

Musculoskeletal Applications

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PROPELLER 3.0 has been enabled for T1 FLAIR, T2, T2 FLAIR imaging in all planes, axial diffusion weighted imaging for brain, T2 weighted imaging for cervical spine, excellent T2 weighted imaging for Body, and T2/PD weighted imaging for MSK.

Applications

IDEAL

Areas such as the foot/ankle, shoulder, and off-isocenter wrist make fat saturation a challenge. With IDEAL, water, fat, in-phase, and out-of-phase images can be generated even in the presence of large static field variations. This sequence can produce consistent and reliable images in challenging anatomical areas.

3D FIESTA

3D FIESTA (Fast Imaging Employing Steady-state Acquisition) inherent sensitivity to fluids makes this an ideal sequence for orthopedic applications. In knee imaging, 3D FIESTA uses an extremely short repetition time (TR) between RF pulses such that high-resolution 3D volume images can be acquired rapidly. The 3D FIESTA technique is especially useful for the rapid acquisition of high-spatial-resolution images of static structures such as cochlea, internal auditory canal, or joints.

CartiGram

CartiGram is a non-invasive T2 mapping package that provides high-resolution maps of the T2 values in cartilage and other tissues. The imaging results are color coded to highlight those structures with increased water-content yielding elevated T2 values.

Pediatric Applications

3D ASL (Arterial Spin Labeling)

3D ASL utilizes water in arterial blood as an endogenous contrast media to help visualize tissue perfusion and provide quantitative assessment of cerebral blood flow (CBF) in ml/100 g/min. The quantitative CBF maps can be generated and stored in DICOM format.

3D ASL deploys stacked spiral FSE readout with modulated flip angle to acquire 3D volumetric data with increased SNR and minimal image distortion. The 3D data can be reformatted to axial, sagittal, coronal or oblique planes. A pulsed-continuous labeling is applied to label arterial blood close to the imaging volume thus improving conspicuity of flowing blood.

Selective, interwoven pulses are then used to saturate and invert the imaging volume, in order to achieve better background suppression, and reduce sensitivity to motion.

3D ASL helps generate robust, reproducible images and perfusion maps with high SNR, reduced motion artifacts and less distortion in high magnetic susceptibility regions.

PROPELLER 3.0

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PROPELLER 3.0 has been enabled for T1 FLAIR, T2, T2 FLAIR imaging in all planes, axial diffusion weighted imaging for brain, T2 weighted imaging for cervical spine, excellent T2 weighted imaging for Body, and T2/PD weighted imaging for MSK.

Diffusion Tensor Imaging with Fiber Tracking

This package expands EPI capability to include diffusion tensor imaging, a technique that acquires diffusion information in up to 150 different diffusion directions. It generates image contrast based on the degree of diffusion anisotropy in cerebral tissues such as white matter. Functool capabilities on the console (included with ScanTools) create Fractional Anisotropy (FA), Apparent Diffusion Weighted (ADC) and T2-Weighted TRACE maps.

The optional FiberTrak post-processing utility generates eigenvector information from the diffusion tensor acquisition and processing. Using a robust and efficient seeding process, three-dimensional renderings of the diffusion along white matter tracts are generated.

3D Cube

Cube is a 3D isotropic imaging technique with sub-millimeter spatial resolution and excellent contrast to help visualize even diminutive lesions. Cube can replace several slice-by-slice, plane-after-plane 2D FSE acquisitions with one single 3D scan. You can easily reformat sub-millimeter isotropic volume data into any plane - without gaps, and with the same resolution as the original plane. Cube is enabled for T1, T2, T2 FLAIR or PD contrasts. Our self-calibrating parallel imaging engine ARC helps eliminate artifacts while accelerating image acquisition.

BRAVO

BRAVO incorporates ARC parallel imaging with 3D IR-pre-pared FSPGR acquisition to product isotropic T1-weighted volumes. The center of k-space is over sampled and serves as the calibration data for the parallel imaging reconstruction.

eDWI

The enhanced Diffusion Weighted Imaging technique has been designed to provide high signal-to-noise-ratio diffusion images of the liver and brain with short-acquisition time. Its multi-B feature is designed to provide measurement of apparent diffusion coefficient (ADC) map with reduced effect of perfusion. In addition, "3 in 1" technique applies diffusion weighting to all three gradients simultaneously, helping improve sensitivity. Built in tetrahedral feature applies four different diffusion weighing combinations of x, y, and z gradients simultaneously to acquire isotropic diffusion weighted images with high signal to noise ratio and shorter TE. Its smart NEX feature significantly reduces the acquisition time. Inversion recovery has been deployed to provide robust fat suppression.
Enhanced DWI package includes the acquisition sequence and post-processing tools.

Inhance Application Suite

The Inhance application suite consists of several new sequences designed to provide high-resolution images of the vasculature with short-acquisition times and excellent vessel detail. These new sequences include:

Inhance Inflow IR

Inhance Inflow IR is a non-contrast-enhanced MR angiography technique that has been developed to image arteries with ability to suppress static background tissue and venous flow. This sequence is based on 3D FIESTA, which improves SNR and produces bright blood images. Selective inversion pulses are applied over the region of interest to invert arterial, venous, and static tissue. At the null point of the background tissue, an excitation pulse is applied to generate signal. The net result is an angiographic image with excellent background suppression.

Uniform fat suppression is achieved using a spectrally selective chemical saturation (SPECIAL) technique while respiratory gating compatibility reduces respiratory motion artifacts during free-breathing renal exams.

Inhance 3D Velocity

Inhance 3D Velocity is designed to acquire angiographic images in brain and renal arteries with excellent background suppression in a short scan time. By combining a volumetric 3D phase contrast acquisition with parallel imaging, efficient k-space sampling, and pulse sequence optimization, Inhance 3D Velocity is capable of obtaining the whole neurovascular anatomy in approximately 5~6 minutes. Furthermore, background suppression is improved by the optimized pulse sequence design, resulting in better visualization of small branches. Respiratory triggering is also compatible with Inhance 3D Velocity to enable abdominal angiography, specifically renal arteries. The results are excellent productivity and image quality.

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Scan parameters

Slice thickness, FOV, matrix	
Minimum slice thickness in 2D	0.3 mm
Minimum slice thickness in 3D	0.1 mm
Minimum FOV	10 mm
Maximum FOV	500 mm
Min/max matrix	32–1024

2D Spin Echo	
Minimum TR (128x128)	4.6 ms
Minimum TR (256x256)	5.2 ms
Minimum TE (128x128)	1.7 ms
Minimum TE (256x256)	2.0 ms

2D Fast-Gradient Echo	
Minimum TR (128x128)	0.9 ms
Minimum TR (256x256)	1.1 ms
Minimum TE (128x128)	0.3 ms
Minimum TE (256x256)	0.4 ms

3D Fast-Gradient Echo	
Minimum TR (128x128)	0.7 ms
Minimum TR (256x256)	0.9 ms
Minimum TE (128x128)	0.2 ms
Minimum TE (256x256)	0.2 ms
Minimum slice thickness	0.1 mm

Echo Planar Imaging	
Minimum TR (64x64)	4.0 ms
Minimum TR (128x128)	5.0 ms
Minimum TR (256x256)	6.0 ms
Minimum TE (64x64)	1.1 ms
Minimum TE (128x128)	1.4 ms
Minimum TE (256x256)	1.8 ms
Minimum slice thickness	0.6 mm
ESP at 25 cm FOV	64x64: 0.456 ms 128x128: 0.656 ms 256x256: 1.096 ms
ESP at 50 cm FOV	64x64: 0.320 ms 128x128: 0.452 ms 256x256: 0.712 ms
ESP at 99 cm FOV	64x64: 0.228 ms 128x128: 0.320 ms 256x256: 0.556 ms
Maximum b value s/mm2	10,000
Images/second (64x64)	101
Images/second (128x128)	41
Images/second (256x256)	19
Maximum diffusion tensor directions	150
Minimum shots	1

2D Fast-Spin Echo	
Minimum TR (128x128)	5.0 ms
Minimum TR (256x256)	6.0 ms
Minimum TE (128x128)	1.7 ms
Minimum TE (256x256)	2.0 ms
Minimum slice thickness	0.3 mm
Minimum ESP 128x128	1.7 ms
Maximum ETL for SSFSE	264

Note: Optional software packages may be required to achieve certain specifications above.

Siting and other specifications

This section provides an overview of the siting requirements for a Optima MR450w with GEM MR system. More detailed information is available upon on request.

Typical room layouts	
Magnet room	3.6 m x 6.2 m 2.5 m (8 ft 2.4 in) min ceiling height
Equipment Room	10.8 sq m
Control room	3.2 sq m

Fringe field		
	Axial	Radial
0.5 mT (5 Gauss)	4.0 m	2.5 m
0.1 mT (1 Gauss)	5.7 m	3.4 m

Electrical supply requirements

Supply system recommended configuration:

- 3-phase DELTA with ground (4-wire)

Alternate configuration:

- 3-phase grounded WYE with neutral and ground (5-wire system)
- Note: Neutral must be terminated inside main disconnect control.

Voltage:

- 480 / 415 / 400 / 380 Vrms

Frequency:

- 50 ± 3.0 Hz or 60 ± 3.0 Hz
  (Local voltage adaptation may be required)

Power consumption

Power consumption depends on actual usage. The following values are an approximation.

Power consumption	
Maximum continuous sustained power (> 5 seconds)	91 kVA
Heat shield compressor	9 kVA
Optima MR450w with GEM water requirements	
Maximum heat removal tocustomer-supplied water	49 kW
Water flow	114 liters/min (30 gpm) minimum at a maximum temperature of 10 degrees C
Workspace monitor position	
	Maximum field strength
LCD flat panel monitor	5 mT (50 Gauss)

Alternative environments

Modular buildings may also be available (including air-conditioning, heating, chiller, RF shielding, additional magnetic shielding in walls). Contact your local GE representative for GE certified designs and vendors. Please ask your local GE sales representative for a comprehensive installation and siting manual.

Filming considerations

DICOM Print will be used exclusively for software filming to DICOM Print peripheral devices.

Accessory package

- SPT phantom set with storage cart
- Customer diagnostic software
- Operator manuals
- Patient log books

Emergency stop

Disconnects electrical power from RF and gradient components in the magnet room (duplicate control at the magnet).

InSite™ remote diagnostics

GE remote service and applications support including magnet monitoring. Also allows downloading of applications software such as eFlex trials program. Connectivity to InSite allows for use of TiP Virtual Assist (TiP VA) in order to receive real-time applications help from a GE expert.

Other miscellaneous

Accessories package

A comprehensive suite of MR compatible accessories are available on the Optima MR450w with GEM. Please contact your GE representative for details.

Warranty

The published GE warranty in effect on the date of shipment shall apply. GE reserves the right to make changes.

GE regulatory compliance

The Optima MR450w with GEM system is designed to comply with all applicable safety standards, including but not limited to IEC 60601-1 and IEC60601-1-2 (Electromagnetic Compatibility). Laser alignment devices contained within this system are appropriately labeled according to the requirements of the FDA's Center for Devices and Radiological Health (CDRH).

About GE Healthcare:

GE Healthcare provides transformational medical technologies and services that are shaping a new age of patient care. Our broad expertise in medical imaging and information technologies, medical diagnostics, patient monitoring systems, drug discovery, biopharmaceutical manufacturing technologies, performance improvement and performance solutions services help our customers to deliver better care to more people around the world at a lower cost. In addition, we partner with healthcare leaders, striving to leverage the global policy change necessary to implement a successful shift to sustainable healthcare systems.

Our "healthymagination" vision for the future invites the world to join us on our journey as we continuously develop innovations focused on reducing costs, increasing access and improving quality around the world. Headquartered in the United Kingdom, GE Healthcare is a unit of General Electric Company (NYSE: GE). Worldwide, GE Healthcare employees are committed to serving healthcare professionals and their patients in more than 100 countries. For more information about GE Healthcare, visit our website at www.gehealthcare.com.

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imagination at work

MWS DOC0935035 April 2011

Attachment I

EQUIPMENT COMPARISON

	Existing Equipment	Replacement Equipment
Type of Equipment (List each component)	Open MRI	Wide-bore MRI
Manufacturer of Equipment	General Electric	General Electric
Tesla Rating for MRIs	.7 T	1.5T
Model Number	HFO5	Not available until install
Serial Number	T183	Not available until install
Provider's Method of Identifying Equipment	CHS Asset # / Serial #	CHS Asset # / Serial #
Specify if Mobile or Fixed	Fixed	Fixed
Mobile Trailer Serial Number/VIN #	N/A	N/A
Mobile Tractor Serial Number/VIN #	N/A	N/A
Date of Acquisition of Each Component	2005	2014
Does Provider Hold Title to Equipment or Have a Capital Lease?	Title	Title
Specify if Equipment Was/Is New or Used When Acquired	New	New
Total Capital Cost of Project (Including Construction, etc.)	$3,458,305	$2,635,100
Total Cost of Equipment	$1,717,170*	$1,711,250
Fair Market Value of Equipment	$10,000	$1,711,250
Net Purchase Price of Equipment	$1,717,170*	$1,711,250
Locations Where Operated	CMC-Morehead Imaging Center	CMC-Morehead Imaging Center
Number Days in Use/To Be Used in N.C. per Year	312 (6 days/wk)	312 (6 days/wk)
Percent of Change in Patient Charges (by procedure)	None	None
Percent of Change in Per Procedure Operating Expenses (by procedure)	None	None
Type of Procedures Currently Performed on Existing Equipment	MRI procedures for all body parts	N/A
Type of Procedures New Equipment is Capable of Performing	N/A	MRI procedures for all body parts

*This figure includes all fixed equipment costs.

Attachment J

2013 Procedures by Month - Morehead Imaging MRI #2

January	220
February	188
March	217
April	205
May	222
June	207
July	222
August	247
September	192
October	243
November	220
December	197
Total 2013	**2580**
January	197

Attachment K

March 17, 2014

Mr. Jeff Aho, Director of Radiology
Carolinas Medical Center
1000 Blythe Blvd
Charlotte, NC 28203

RE: North Carolina Certificate of Need ("CON") requirements for Trade-in Equipment on Quotation PR10-C14373v4

Dear Jeff,

General Electric Company, by and through its GE Healthcare Division ("GE Healthcare"), sincerely thanks you for your continued business and support. GE Healthcare values the relationship that we have with Carolinas Medical Center ("Customer").

GE Healthcare understands and acknowledges that end-user purchasers who acquire diagnostic imaging equipment for use in North Carolina are or may be subject to Certificate of Need ("CON") requirements for such equipment. GE Healthcare understands and confirms that this unit may not be returned to the State of North Carolina without proper authorization from the CON Section of the North Carolina Division of Health Services Regulation. GE Healthcare agrees to use commercially reasonable efforts to help facilitate compliance with applicable CON requirements prior to resale and/or re-installation of this equipment, as applicable, but the parties acknowledge that the end-user purchaser is solely responsible for obtaining any applicable CON approvals prior to use of such equipment in North Carolina.
Thank you again for the opportunity to earn your business. If you have any additional questions, feel free to call me at any time.

Sincerely,

Scott Ramsey
Product Sales Specialist
GE Healthcare
Floyd.ramsey@med.ge.com
(919) 621-1657