NC DEPARTMENT OF
HEALTH AND HUMAN SERVICES

JOSH STEIN • Governor
DEVDUTTA SANGVAI • Secretary
MARK PAYNE • Director, Division of Health Service Regulation

VIA EMAIL ONLY

June 24, 2025

Jeffrey Shovelin
jshoveli@ecuhealth.org

Exempt from Review – Replacement Equipment

Record #:	**4806**
Date of Request:	April 4, 2025
Facility Name:	ECU Health Medical Center
FID #:	933410
Business Name:	Pitt County Memorial Hospital, Inc.
Business #:	1443
Project Description:	Replace fixed MRI scanner
County:	Pitt

Dear Mr. Shovelin:

The Healthcare Planning and Certificate of Need Section, Division of Health Service Regulation (Agency), determined that the above referenced project is exempt from certificate of need review in accordance with G.S. 131E-184(f). Therefore, you may proceed to acquire without a certificate of need the GE Signa Artist 64CH Winner Brody fixed MRI scanner to replace the Siemens Aera IMV_MR_12270 fixed MRI scanner. This determination is based on your representations that the existing unit will be sold or otherwise disposed of and will not be used again in the State without first obtaining a certificate of need if one is required.

It should be noted that the 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 office and a separate determination. If you have any questions concerning this matter, please feel free to contact this office.

Sincerely,

Gregory F. Yakaboski
Project Analyst

Micheala Mitchell
Chief

cc: Acute and Home Care Licensure and Certification Section, DHSR
Construction Section, DHSR

GE Healthcare

Contract Number 0014256

ADDENDUM TO QUOTATION

This Addendum to Quotation(s) ("Addendum"), effective as of last signature date indicated in the signature area of this Addendum ("Effective Date") is entered into by and between the Customer and the GI Healthcare business ("GE Healthcare"), each as identified on the GE Healthcare quotation(s) which are liste in Exhibit A attached hereto and incorporated herein by reference (each, a "Quotation" and, collectively, the "Quotations").

WHEREAS, GE Healthcare has provided Customer with the Quotation(s) concerning GE Healthcare's desi to sell to Customer, and Customer's agreement to purchase from GE Healthcare, certain GE Healthcare products and/or services listed on each Quotation in accordance with the terms and conditions set forth on each Quotation (each, an "Agreement" and collectively, the "Agreements"); and

WHEREAS, the parties now desire to amend and/or supplement the Agreement(s) in accordance with the terms and conditions set forth herein.

NOW THEREFORE, in consideration of the premises and the representations and mutual undertakings hereinafter set forth, and for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties agree to the foregoing and as follows:

- Notwithstanding anything to the contrary in the Agreements, the parties agree that the Managed Equipment Services Agreement dated September 1, 2022 between Customer and GE Healthcare sha be the Governing Agreement.
- As a matter of administrative convenience, the parties agree to the Terms and Conditions of Quotation listed in Exhibit A by signature of this Addendum.
- Customer's form of payment is as follows:

Initial to indicate form of payment:
(If potential for a lease exists, GE HFS or otherwise, select lease)

_____ Cash* __✓__ Lease _____ HFS Loan
If leasing please provide name of finance company below:

_____

*Selecting cash declines option for GE HFS financing
*Cash is the default option if this addendum is signed and the form of payment is not indicated above.

Initial to indicate tax status for Service* (if applicable):

_____ Exempt from Sales and Use Tax (NOTE: GEHC must have a Current Tax Exemption Certificate)

__✓__ Subject to Sales and Use Tax**
*Equipment tax status as set forth on the Equipment Quotation
**Subject to Sales and Use Tax is the default option if this addendum is signed and the tax status is not indicated above.

Enter PO information (if applicable):

PO # for Equipment:_____

PO # for Service*:_____
*Denote "same" if only 1 PO is needed for both Equipment and Service

Entire Agreement. In the event of any conflict between the terms and conditions of this Addendum on the one hand, and each Agreement on the other hand, the terms and conditions of this Addendum shall govern and control. Except as otherwise expressly provided in the Addendum, the parties agree that all provisions of each Agreement are hereby ratified and agreed to be in full force and effect and are incorporated herein l reference. This Addendum and each Agreement contain the entire agreement among the parties related to the subject matter herein and all prior proposals, discussions and writings by and among the parties and relating to the subject matter herein are superseded hereby and thereby.

In WITNESS WHEREOF, Customer and GE Healthcare have caused this Addendum to be executed by the duly authorized representatives as of the Effective Date.

ECU Health	GE Healthcare
Signature:	Signature: Mary E Schroeder Mary E Schroeder
Print Name: Michael R Waldrum, M.D	Print Name: Mary E Schroeder
Title: CEO	Title: Executive, Strategic Clients
Date: 12-14-22	Date: 12/14/2022

ID# 230257914

IT

Quotation Number	Quotation Date
2007874014.13	Friday, November 4, 2022

EHMC MRI =>

Quotation Number	Quotation Date
2007960738.7	Friday, November 4, 2022

Quotation Number	Quotation Date
2007884424.6	Friday, November 4, 2022

Quotation Number	Quotation Date
2008070849.4	Friday, November 4, 2022

Quotation Number	Quotation Date
2007965851.11	Friday, November 4, 2022

Quotation Number	Quotation Date
2008070553.7	Friday, November 4, 2022

Quotation Number	Quotation Date
2008070557.6	Friday, November 4, 2022

Quotation Number	Quotation Date
2007913958.9	Wednesday, November 16, 2022

Quotation Number	Quotation Date
2009623413.1	Wednesday, November 16, 2022

Quotation Number	Quotation Date
2009623416.1	Wednesday, November 16, 2022

Quotation Number	Quotation Date
2009623426.1	Wednesday, November 16, 2022

Quotation Number	Quotation Date
2009623433.1	Wednesday, November 16, 2022

Quotation Number	Quotation Date
2009623444.1	Wednesday, November 16, 2022

Quotation Number	Quotation Date
2009623450.1	Wednesday, November 16, 2022

Quotation Number	Quotation Date
2007913937.5	Monday, November 28, 2022

Quotation Number	Quotation Date
2007914538.11	Wednesday, November 16, 2022

Quotation Number	Quotation Date
2009205222.2	Monday, November 28, 2022

Quotation Number	Quotation Date
2009205194.2	Monday, November 28, 2022

Quotation Number	Quotation Date
2007913955.5	Monday, November 28, 2022

Quotation Number	Quotation Date
2007913945.5	Monday, November 28, 2022

Quotation Number	Quotation Date
2007913921.5	Monday, November 28, 2022

Quotation Number	Quotation Date
2007696876.10	Wednesday, November 16, 2022

Quotation Number	Quotation Date
2006610601.4	Wednesday, November 16, 2022

Quotation Number	Quotation Date
2007914004.4	Monday, November 28, 2022

Quotation Number	Quotation Date
2007913976.9	Wednesday, November 16, 2022

Quotation Number	Quotation Date
2007911482.5	Monday, November 28, 2022

Quotation Number	Quotation Date
2007874082.8	Friday, November 4, 2022

2007874098.3	Friday, November 4, 2022

Quotation Number	Quotation Date
2009053014.4	Friday, November 4, 2022

Quotation Number	Quotation Date
2004612240.15	Friday, November 4, 2022

Quotation Number	Quotation Date
2007281874.2	Friday, November 4, 2022

Quotation Number	Quotation Date
2007874011.11	Friday, November 4, 2022

ECHO
CT

Quotation Number	Quotation Date
2007874027.10	Friday, November 4, 2022

Quotation Number	Quotation Date
2007874034.8	Friday, November 4, 2022

Quotation Number	Quotation Date
2008070538.5	Friday, November 4, 2022

ECHO
MRI

Quotation Number	Quotation Date
2008070542.5	Wednesday, November 16, 2022

Quotation Number	Quotation Date
2008070561.5	Friday, November 4, 2022

Quotation Number	Quotation Date
2008070724.3	Friday, November 4, 2022

Quotation Number	Quotation Date
2008070749.2	Friday, November 4, 2022

Quotation Number	Quotation Date
2007914871.11	Wednesday, November 16, 2022

Quotation Number	Quotation Date
2007914901.15	Wednesday, November 16, 2022

WF 02097414.0

Quotation Number	Quotation Date

Quotation Number	Quotation Date
2009622281.2	Wednesday, November 16, 2022

Quotation Number	Quotation Date
2008071820.10	Wednesday, November 16, 2022

EROA CT

Quotation Number	Quotation Date
200838581.6	Friday, November 4, 2022

Quotation Number	Quotation Date
2009184324.4	Wednesday, November 16, 2022

EBEA NUC MED

Quotation Number	Quotation Date
2009554455.1	Friday, November 4, 2022

ECHO Nuc Med

Quotation Number	Quotation Date
2009554464.1	Friday, November 4, 2022

Quotation Number	Quotation Date
2007911485.3	Monday, November 28, 2022

Quotation Number	Quotation Date
2009327606.3	Wednesday, November 16, 2022

Quotation Number	Quotation Date
200790982.14	Friday, November 4, 2022

Quotation Number	Quotation Date
2007914009.10	Wednesday, November 16, 2022

Quotation Number	Quotation Date
2007913862.9	Wednesday, November 16, 2022

Quotation Number	Quotation Date
2008575106.6	Wednesday, November 16, 2022

Quotation Number	Quotation Date
2007914722.13	Wednesday, November 16, 2022

Quotation Number	Quotation Date

Quotation Number	Quotation Date

Quotation Number	Quotation Date
2007911470.4	Monday, November 28, 2022

Quotation Number	Quotation Date
2007913940.8	Wednesday, November 16, 2022

Quotation Number	Quotation Date
2007913946.10	Wednesday, November 16, 2022

Quotation Number	Quotation Date
2009623351.1	Wednesday, November 16, 2022

Quotation Number	Quotation Date
2007913953.9	Wednesday, November 16, 2022

Quotation Number	Quotation Date
2007913970.9	Wednesday, November 16, 2022

Quotation Number	Quotation Date
2007913993.9	Wednesday, November 16, 2022

Quotation Number	Quotation Date
2009623369.1	Wednesday, November 16, 2022

Quotation Number	Quotation Date
2009623388.1	Wednesday, November 16, 2022

Quotation Number	Quotation Date
2007913930.9	Wednesday, November 16, 2022

Quotation Number	Quotation Date
2009623334.1	Friday, December 16, 2022

Quotation Number	Quotation Date
2007911478.4	Monday, November 28, 2022

Quotation Number	Quotation Date
2009622315.2	Monday, November 28, 2022

2009622339.2	Wednesday, November 16, 2022

Quotation Number	Quotation Date
2007696894.8	Wednesday, November 16, 2022

ECU HEALTH

February 15, 2025

Ms. Micheala Mitchell
Chief, Healthcare Planning and Certificate of Need
Division of Health Service Regulation
NC Department of Health and Human Services
2704 Mail Service Center
Raleigh, NC 27699-2704

FILED ELECTRONICALLY

RE: Request for Exemption Pursuant to G.S. 131E-184(a7) / Pitt County Memorial Hospital, Inc., d/b/a ECU Health Medical Center / Replace an Existing Diagnostic MRI Scanner / Pitt / FID #: 933410

Dear Ms. Mitchell,

ECU Health Medical Center (EHMC) plans to replace an existing MRI Scanner with new equipment on its main hospital campus located in Greenville, NC (Pitt County). ECHO believes that the proposed equipment replacement is not subject to review under North Carolina's Certificate of Need (CON) laws.

The proposed project includes the replacement of a Siemens Aera MRI Scanner with a GE Signa Artist MRI Scanner. The total capital costs for the proposed replacement are estimated to be $4,877,625 (see Appendix B for the capital cost sheet). These costs include all expenses associated with the equipment and renovations.

EHMC believes the proposed project is exempt from CON review under G.S. 131E-184(f) and G.S. 131E-184(g). EHMC believes the proposed project meets the definition of replacement equipment as defined by G.S.131E-176(22a) in that:

1. The equipment is being purchased for the sole purpose of replacing comparable medical equipment currently in use (see Appendix A for equipment comparison table, Appendix C for vendor quotes, and Appendix D for a brochure for the new equipment),
2. The existing equipment will be sold or otherwise disposed of when replaced,
3. The replacement equipment will be located in the same location as the existing equipment (see Appendix E for site and floor plans), and
4. The reason for the replacement is due to the existing equipment is past the age of its useful life.

Having met the definition for replacement equipment in G.S. 131E-176(22a), the project also is exempt from review via G.S. 131E-184(f) in that:

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,
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.

In addition, the project meets the exemption requirements set out in G.S. 131E-184(g), in that:

1. The sole purpose of the capital expenditure is to renovate, replace on the same site, or expand the entirety or a portion of an existing health service facility that is located on the main campus,

ECU HEALTH

2. The capital expenditure does not result in (i) a change in bed capacity as defined in G.S. 131E-176(5) or (ii) the addition of a health service facility or any other new institutional health service other than that allowed in G.S. 131E-176(16)b.
3. The licensed health service facility proposing to incur the capital expenditure shall provide prior written notice to the Department, along with supporting documentation to demonstrate that it meets the exemption criteria of this subsection.

Since EHMC's proposal meets the definition of "replacement equipment," and meets the requirements established in G.S. 131E-184(f) and G.S. 131E-184(g), EHMC believes the project is exempt from CON review. Therefore, EHMC requests approval of an exemption status for the proposed project.

If you require additional information or clarification, please contact me at (252) 847-3631 or jshoveli@ecuhealth.org.

Thank you.

Jeffrey Shovelin
VP of Business Planning and Strategy, ECU Health
PO Box 6028, Greenville NC 27835-6028
252-847-3631
jshoveli@ecuhealth.org

Appendix A

Equipment Comparison Table

EQUIPMENT COMPARISON

	EXISTING EQUIPMENT	REPLACEMENT EQUIPMENT
Type (e.g., Cardiac Catheterization, Gamma Knife®, Heart-lung bypass machine, Linear Accelerator, Lithotriptor, MRI, PET, Simulator, CT Scanner, Other Major Medical Equipment)	MR Scanner	MR Scanner
Manufacturer	Siemens	GE
Model number	Siemens Aera	Signa Artist 64CH Winner Brody
Other method of identifying the equipment (e.g., Room #, Serial Number, VIN #)	IMV_MR_12270	Serial Number TBD
Is the equipment mobile or fixed?	Fixed	Fixed
Date of acquisition	N/A	Order placed: 12/22/2022
Was the existing equipment new or used when acquired? / Is the replacement equipment new or used?	New	New
Total projected capital cost of the project <Attach a signed Projected Capital Cost form>	N/A	$ (see Appendix B for details)
Total cost of the equipment	N/A	$1,530,965.64
Location of the equipment <Attach a separate sheet for mobile equipment if necessary>	ECU Health ECU Medical Center 2100 Stantonsburg Rd, Greenville, NC 27834	ECU Health ECU Medical Center 2100 Stantonsburg Rd, Greenville, NC 27834
Document that the existing equipment is currently in use		N/A
Will the replacement equipment result in any increase in the **average charge per procedure**?	N/A	No
If so, provide the increase as a percent of the current average charge per procedure	N/A	N/A – See Above
Will the replacement equipment result in any increase in the **average operating expense per procedure**?	N/A	No
If so, provide the increase as a percent of the current average operating expense per procedure	N/A	NA – See Above
Type of procedures performed on the existing equipment <Attach a separate sheet if necessary>	General MR Procedures	N/A

Type of procedures the replacement equipment will perform <Attach a separate sheet if necessary>	N/A	General MR Procedures (see brochure in Appendix D for additional information)

Date of last revision: 5/17/19

Appendix B

Capital Cost Sheet

CAPITAL COST SUMMARY - ECUH-MC BSOM MRI Equip. Replacement #5235

Site Costs		
(1) Full purchase price of land	$ 0	
Acres 0 Price per Acre $_____		
(2) Closing costs	$ 0	
(3) Site Inspection and Survey	$ 0	
(4) Legal fees and subsoil investigation	$ 0	
(5) Site Preparation Costs [Include]		
Soil Borings		
Clearing and Grading		
Roads and Parking		
Sidewalks		
Water and Sewer		
Excavation and Backfill		
Termite Treatment		
Sub-Total Site Preparation Costs	$ 0	
(6) Other (Specify)	$ 0	
(7) Sub-Total Site Costs		$ 0
Construction Contract		
(8) Cost of Materials [Include]		
General Requirements		
Concrete/Masonry		
Woods/Doors & Windows/Finishes		
Thermal & Moisture Protection		
Equipment/Specialty Items		
Mechanical/Electrical		
Sub-Total Cost of Materials	$ 1,865,920	
(9) Cost of Labor	$ 1,243,947	
(10) Other (DHSR Review Fee)	$ 2,000	
(11) Sub-Total Construction Contract		$ 3,111,867
Miscellaneous Project Costs		
(12) Building Purchase	$ 0	
(13) Fixed Equipment Purchase/Lease	$ 1,530,966	
(14) Movable Equipment Purchase/Lease	$ 0	
(15) Furniture	$ 0	
(16) Landscaping	$ 0	
(17) Consultant Fees		
Architect and Engineering Fees	$ 234,792	
Legal Fees	$ 0	
Market Analysis	$ 0	
CON Preparation	$ 0	
Sub-Total Consultant Fees	$ 234,792	
(18) Financing Costs (e.g. Bond, Loan, etc.)	$ 0	
(19) Interest During Construction	$ 0	
(20) Other (Specify)	$ 0	
(21) Sub-Total Miscellaneous		$ 1,765,758
(22) Total Project Capital Cost (Sum A-C above)		$ 4,877,625

I assure that, to the best of my knowledge, the above capital costs for the proposed project are complete and correct and it is my intent to carry out the proposed project as described.

_____

Appendix C

Equipment Quote

GE HealthCare

February 12, 2024
Quote Number: **2007960738.7**
Customer ID: **1-23I1HJ**
Quotation Expiration Date: **01/02/2023**

ENSURE REQUISITION/PURCHASE ORDER IS ISSUED TO:
GE PRECISION HEALTHCARE
TAX ID (83-0849145)

ECU Health Medical Center
2100 Stantonsburg Rd
Greenville, NC 27834-2818

This Agreement (as defined below) is by and between the Customer and the GE HealthCare business ("GE HealthCare"), each as identified below for the sale and purchase of the Products and/or Services identified in this Quotation, together with any applicable schedules referred to herein ("Quotation"). "Agreement" is this Quotation (including line/catalog details included herein) and either: (i) the Governing Agreement identified below; or (ii) if no Governing Agreement is identified, the GE HealthCare Terms and Conditions and Warranties that apply to the Products and/or Services identified in this Quotation.

GE HealthCare can withdraw this Quotation at any time before Customer: (i) signs and returns this Quotation or (ii) provides evidence of Quotation acceptance satisfactory to GE HealthCare ("Quotation Acceptance"). On Quotation Acceptance, this Agreement is the complete and final agreement of the parties relating to the Products and/or Services identified in this Quotation. There is no reliance on any terms other than those expressly stated or incorporated by reference in this Agreement and, except as permitted in this Agreement, no attempt to modify will be binding unless agreed to in writing by the parties. Modifications may result in additional fees and cannot be made without GE HealthCare's prior written consent.

Handwritten or electronic modifications on this Agreement (except an indication of the form of payment, Customer purchase order number and signatures on the signature blocks below) are void.

Governing Agreement:	Premier
Terms of Delivery	FOB Destination
Billing Terms	80% on Delivery / 20% on Acceptance
Payment Terms	45 Net
Sales and Use Tax Exemption	No Certificate on File
Total Quote Net Selling Price	$ 1,530,965.64

IMPORTANT CUSTOMER ACTIONS:
Please select your planned source of funds. Source of funds is assumed to be cash unless you choose another option. Once equipment has been shipped, source of funds changes cannot be allowed.

___ Cash

___ GE HFS Loan ___ GE HFS Lease

___ Other Financing Loan ___ Other Financing Lease Provide Finance Company Name _____

The parties have caused this Agreement to be executed by their authorized representative as of the last signature date below.

ECU Health Medical Center

Signature: _____

Print Name: _____

Title: _____

Date: _____

_____
Purchase Order Number, if applicable

GE Precision Healthcare LLC, a GE Healthcare business

Signature: John Cruz

Title: Lead Sales Specialist Imaging

Date: February 12, 2024

GE HealthCare

February 12, 2024
Quote Number: **2007960738.7**
Customer ID: **1-23I1HJ**
Quotation Expiration Date: **01/02/2023**

Document Instructions

Please sign and return this quotation together with any Purchase Order(s) to:

Email: john.cruz@gehealthcare.com

Phone: (919) 621-3653

Fax:

Payment Instructions

Please **remit** payment for invoices associated with this quotation to:

P.O. Box 96483
Chicago, IL 60693

FEIN: 83-0849145

ECU Health Medical Center

		Addresses:
Bill To:	ECU Health Medical Center	2100 Stantonsburg Rd, Greenville, NC, US, 27834-2818
Ship To:	ECU Health Medical Center	2100 Stantonsburg Rd, Greenville, NC, US, 27834-2818

To Accept This Quotation

- Please sign the quote and any included attachments (where requested).
- Source of Funds (choice of Cash/Third Party Loan or GE HFS Lease Loan or Third Party Lease through _____), must be indicated, which may be done on the Quote Signature Page (for signed quotes), or the Purchase Order (where quotes are not signed) or via a separate written source of funds statement (if provided by GE HealthCare).
- If your purchasing process requires a purchase order, please make sure it includes:
  - The correct Quote number and Version number above
  - The correct Remit To information as indicated in "Payment Instructions" above
  - Your correct SHIP TO and BILL TO site name and address
  - The correct Total Price as indicated above

Evidence of the agreement to contract terms. Either: (a) the quotation signature filled out with signature and P.O. number; or (b) Verbiage on the purchase order stating one of the following:
(i) "Per the terms of Quotation # _____";
(ii) "Per the terms of GPO # _____";
(iii) "Per the terms of MPA# _____"; or
(iv) "Per the terms of SAA # _____.

Catalog Item Details

Line	Qty	Catalog	
1	1.00	Y0000LC	**Pricing Non-Disclosure Language**

This CONFIDENTIAL offer may not be shared with any third parties, buying evaluation groups or anyone not directly employed by customer. This offer is being extended in relation to a national show-site agreement, research partnership, or other non-standard transaction. If required for publishing, GE will happily provide a list price quote.

Line	Qty	Catalog	
2	1.00	S7529RU	**SIGNA™ ARTIST 1.5T 64CH MR SYSTEM**

The SIGNA™ Artist 1.5T 70cm wide-bore magnetic resonance system with SIGNA™Works AIR™ Edition (MR29.1) is designed to enable you to deliver both clinical excellence and operational efficiency while changing the MR experience for your patients and staff. With SIGNA™ Artist, put your patients at ease from start to finish with feet-first or head-first entry, Comfort Tilt head and neck positioning as well as free-breathing, motion-forgiving and noise reduced exams. For your staff, simplify and accelerate the scanning process from set-up to acquisition to post-processing with access to an extensive range of clinical imaging and advanced visualization capability.

The SIGNA™ Artist system catalog comprises the system and site collector kits, and calibration phantoms. This enhanced edition of SIGNA™ Artist also provides AIR™ IQ Edition packages that extend and enhance clinical capability:

In addition, the SIGNA™ Artist system comprises several essential elements described and quoted separately. These elements include:

- SIGNA™ Artist Magnet, RF, and Gradient Assembly
- Patient Table and Core Coil Suite
- SIGNA™Works AIR™ IQ Edition Software and Clinical Applications Toolkits
- Host PC and Operator Console (GOC)
- Image Reconstruction Computer (ICN)

AIR™ IQ EDITION APPLICATIONS

In addition to the NeuroWorks, OrthoWorks, BodyWorks, OncoWorks, CVWorks and PaedWorks toolkits (described separately), this configuration of SIGNA™ Artist further expands and enhances clinical imaging capability with special AIR™ Edition applications:

- AIRx™ Auto Graphic Prescription
- AIR™ Recon DL
- HyperWorks Acceleration
- DiffusionWorks Advanced Diffusion
- DISCO and DISCO Star Body Imaging
- Silent Suite and oZTEo MR Bone Imaging
- CardioMaps and Time Course Cardiac Imaging
- 3D PROMO Prospective Motion Correction
- Cube MDSE vessel wall imaging
- IDEAL IQ liver triglyceride assessment

AIRx™ AUTO GRAPHIC PRESCRIPTION

Change the way you prescribe brain and knee exams. AIR x™ Auto Graphic Prescription uses deep learning algorithms, instead of an atlas-based method, to automatically identify anatomical structures and prescribe slices locations for brain and knee exams. As a result of the deep learning algorithms, AIRx™ automatically adapts slice prescriptions to various patient anatomies and structures to enable consistency and productivity for slice positioning from technologist to technologist, patient to patient and the same patient overtime.

AIR™ RECON DL

Level up your imaging. AIR™ Recon DL is a deep learning-based reconstruction algorithm that utilizes a trained neuro network to remove noise and ringing artifacts from the raw scan data. As a result, AIR™ Recon DL delivers images with enhanced SNR and

sharpness while also enabling the reduction in scan time and resulting exam time. AIR™ Recon DL is directly embedded in the reconstruction pipeline to address image quality at the foundation level to produce TrueFidelity images (and therefore is not a traditional filter or a post-processing technique).

- Intelligent pipeline reconstruction produces TrueFidelity images
- Reduces image noise at the foundation level
- Reduced Gibbs and truncation artifacts at the foundation level with intelligent ringing suppression
- Reduces scan time and resulting exam times
- Tailor level based on preference

ADVANCED DIFFUSION PACKAGE

Extend diffusion capability. The Diffusion Package delivers techniques that reduce distortion, correct for motion and increase spatial resolution and performance for diffusion and diffusion tensor imaging.

- PROGRES distortion and motion correction for diffusion
- MUSE multi-shot high-resolution diffusion
- FOCUS DWI 2D slice-selective high-resolution diffusion
- MAGiC DWI diffusion-based synthetic multiple b-value imaging

HYPERWORKS ACCELERATION

Advance your acceleration capability. The HyperWorks toolkit comprises a new generation of acceleration tools that employ a variety of optimized approaches to accelerate imaging for a broad range of exams.

- HyperSense 2.0 compressed sensing
- HyperCube tailored RF
- HyperBand simultaneous slice excitation
- HyperMAVRIC SL accelerated spectral imaging

DISCO STAR and DISCO

Go breath-hold optional. DISCO Star enables the of option of free-breathing dynamic abdominal imaging for patients with limited breath-hold capability or patients who are unable to follow breathing instructions. DISCO Star uses an in-plane radial acquisition trajectory to provide active motion compensation, without navigators or bellows, to address both set-up time and rescans due to motion artifacts. The offering also includes LAVA Star, which provides the same motion robust, free-breathing scan for single phase (pre-contrast or delayed) imaging.

SILENT SUITE and oZTEo MR BONE IMAGING

Address noise and motion. Silent Suite comprises the 3D SILENZ Zero-TE sequence and Silent PROPELLER. SILENZ 3D uses high bandwidth excitation and reduced gradient switching to deliver sound levels near ambient while Silent PROPELLER uses a modified gradient waveform approach to reduce acoustic levels to less than 11dB above the ambient room noise while retaining the motion insensitivity of PROPELLER. (Refer to the data sheet for contrast-weighting details.)

Extend contrast capability. oZTEo MR Bone imaging utilizes the 3D SILENZ ZTE sequence to complement the conventional soft tissue exam with cortical bone surface information. Automated grayscale inversion provides positive bone contrast. The ZTE sequence can be used for 3D isotropic resolution with inherent motion insensitivity due to the radial acquisition technique. oZTEo can be used with any surface coil that is compatible with SCENIC and includes protocols for common joints such as hip, shoulder, wrist, ankle and knee.

CARDIOMAPS and TIME COURSE CARDIAC IMAGING

Extend assessment capability. CardioMaps support detection of cardiac pathologies by quantitative measurement of T1 and T2 relaxation times. The T1 Mapping acquisition includes automatic motion correction that compensates for cardiac and/or respiratory motion, providing reliable results. T1 Mapping offers two methods of acquisition: Inversion-recovery Look-Locker with FIESTA readout (MOLLI) for apparent T1 (T1*) measurements or saturation-recovery SMART1Map for true T1 measurements.

FGRE Time Course adds an additional tool to the CVWorks toolkit for myocardial tissue evaluation. FGRE Time Course is designed for first pass studies and integrates automatic motion correction (MoCo) that compensates for cardiac and/or respiratory motion providing

reliable results.

3D PROMO MOTION CORRECTION

Correct for motion prospectively on 3D imaging. 3D PROMO prospective motion correction uses a real-time 3D navigator-based technique to correct for motion, and is compatible with 3D Cube T2W, DIR and T2 FLAIR contrasts.
For a period of 3 years from Equipment Acceptance, GE Healthcare will provide Customer (as part of the Equipment warranty) with the following software changes to the extent they maintain existing software features of the Equipment and are made generally available to GE Healthcare's installed customer base as part of warranty: (i) updates, which consist of error corrections or modifications; (ii) interface modifications; and (iii) security patches that have been validated by GE Healthcare to be compatible with the Equipment. Software upgrades (including revisions or enhancements to (i) the Equipment's software or (ii) separately licensed Software), which improve or expand existing software features and are made generally available for purchase under a separate GE Healthcare license, are excluded. Additional hardware required to implement the software changes are excluded. GE Healthcare remote connectivity to the Equipment is required per GE Healthcare terms and conditions.

Line	Qty	Catalog	
3	**1.00**	**M7110HD**	**SIGNA™ ARTIST 1.5T MAGNET, RF and GRADIENT ASSEMBLY**

The magnet, RF-architecture and gradient technology on SIGNA™ Artist are designed to deliver the signal-to-noise, dynamic range, spatial resolution, and temporal resolution needed to enable demanding clinical applications with exceptional image quality, operational excellence, and patient comfort.

TECHNOLOGY FOUNDATION

- Magnet and Enclosures
- TDI RF-Receive Technology
- XRMw Gradient Technology
- Quiet Acoustic Reduction Technology

MAGNET and ENCLOSURES

The SIGNA Artist 1.5T system features a 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 55cm field of view (50cm in Z direction) 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 Artist 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.

- Manufactured by GE Healthcare.
- Operating field strength 1.5T (63.86 MHz).
- Active magnet shielding
- Zero boil-off Cryogens.
- Magnet length 179cm.
- Patient Aperture 76 cm.
- Patient Bore Diameter 70cm.
- Patient Bore Length 105cm.

Magnet homogeneity with typical ppm and Guaranteed ppm shown. (DSV = Diameter Spherical Volume.

- 10cm DSV 0.007 and 0.02.
- 20cm DSV 0.035 and 0.06.
- 30cm DSV 0.10 and 0.15.
- 40cm DSV 0.33 and 0.43.
- 45cm DSV 0.88 and 1.0.
- 48cm DSV 1.75 and 2.0.
- 50cm DSV 2.8 and 3.3.

Fringe field (axial x radial):

• 5 Gauss = 4.0 m x 2.5 m.
• 1 Gauss = 5.8 m x 3.2 m.

TOTAL DIGITAL IMAGING

SIGNA™ Artist features the Total Digital Imaging RF-architecture with a 64-channel configuration. The TDI RF-architecture uses a Direct Digital Interface (DDI) to convert the signal from each coil element to a digitized signal (there is no mixing of signal from multiple elements to the same digitizer) to deliver high signal, low noise with extended dynamic range or gray-scale capability.

• 64ch Total Digital Imaging (TDI)
• Direct Digital Interface (DDI)

XRMw GRADIENT TECHNOLOGY

SIGNA™ Artist incorporates the latest MR gradient technology with the wide eXtreme Resonance Module (XRMw). The XRMw gradients deliver 44 mT/m peak amplitude, up to 200 T/m/s instantaneous peak slew-rate on each axis with unmatched fidelity, accuracy, and reproducibility (please refer to system datasheet for additional information). The XRMw gradients are water-cooled and equipped with integrated thermo-electric cooling panels to provide excellent stability and duty-cycle for gradient intensive applications.

• Peak amplitude per axis: 44 mT/m
• Up to 200 T/m/s instantaneous peak slew rate per axis
• Maximum FOV: 55 cm x 55 cm x 50 cm
• Duty Cycle: 100%

ACOUSTIC REDUCTION TECHNOLOGY

GE has implemented Quiet Technology on critical components of the SIGNA™ MR system to reduce acoustic noise and improve the patient environment. This technology enables full use of the UHE 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. Quiet acoustic reduction uses 5 levels of isolation, dampening and gradient optimization technology to mitigate vibration and mute sound.

• Gradient & RF coil isolation – isolates the resonance module from the magnet
• Vibro-acoustic isolation –isolates the magnet from the building
• Mass-damped acoustic barriers – further mutes sound
• Gradient waveform optimization – user selectable

Line	Qty	Catalog	
4	**1.00**	**M7120GB**	**SIGNA™Works AIR™ IQ EDITION and COMPUTING**

The SIGNA™Works AIR™ IQ Edition was designed to simplify and accelerate the scanning process from set-up to acquisition to post-processing for your technical staff, while providing foundational toolkits that enable a broad range of clinical imaging and advanced visualization capability for your clinicians.

The SIGNA™Works AIR™ Edition catalog delivers the foundational MR29.1 operating and imaging software and enabling computing platform:

- Computing Platform and DICOM Conformance
- SIGNA™Works AIR™ IQ Edition Express Exam Workflow
- SIGNA™Works AIR™ IQ Edition Acceleration, Motion Correct and Tissue Suppression Technology
- SIGNA™ Works AIR™ IQ Edition Clinical Applications Toolkits
- SIGNA™ Works AIR™ IQ Edition READYView Advanced Visualization

COMPUTING PLATFORM and DICOM CONFORMANCE

SIGNA™ Artist utilizes a parallel, multi-processor design operating on Scientific Linux to enable simultaneous scanning, reconstruction, filming, post-processing, archiving, and networking. The host computer PC utilizes a single tower configuration and includes an LDC monitor and keyboard assembly with an integrated intercom speaker, microphone, volume controls, and emergency stop switch. Start

scan, pause scan, stop scan and table advanced to center "hot" keys are also included:

- Host PC Platform: Intel Xeon W-2123 CPU
- Memory: 64 GB
- Hard Disk Storage: 1024 GB SSD
- Media Drives: CD/DVD

SIGNA™ Artist 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. Please refer to the DICOM Compliance Statement for details.

SIGNA™WORKS AIR™ IQ EDITION WORKFLOW

The SIGNA™Works AIR IQ Edition is designed to change the way you work by simplifying and accelerating the scanning process from set-up to post-processing while delivering access to a broad range of clinical imaging capability. The SIGNA™Works AIR™ IQ Edition (MR29.1 software) delivers the foundational operating software, pulse sequence families, clinical applications toolkits, and visualization toolkits as well as acceleration and motion correction tools. The AIR™ IQ Edition of SIGNA™Works software features several new enhancements that improve Exam, Patient Setup and Scanning workflows:

The latest enhancements include several key improvements to Exam, Patient Setup and Scanning workflows:

- Split Exam create/assign separate exam number for a sub-set of series
- AIR™ Recon smart algorithm for brain, MSK, body, cardiac, PROPELLER MB and FOCUS DWI imaging
- Whole-Body automated multi-station localizer and auto pasting
- Whole-Body automated multi-station FSE-IR, 3D SPGR and DWI imaging
- SnapShot SSFSE multi-slice per breath-hold imaging
- Cube flexibility for modifying/reducing scan time
- Dynamic phase correction for FSE imaging
- Uniformity optimization for large FOV body diffusion
- Flexible ZIP allows for flexible resolution by percentage to enhance the sharpness while decreasing scan time

EXPRESS EXAM WORKFLOW

The SIGNA™Works AIR™ IQ Edition workflow tools comprise the modality worklist, protocol libraries, workflow manager, auto-functions, inline viewing and inline processing. Together these tools are designed to help change the way you work by simplifying and accelerating the scanning process from set-up to acquisition to post-processing. With SIGNA™Works, workflow can begin before the patient enters the magnet room and exams can be completed with a few mouse clicks delivering quality and consistency for all patients and from all technologists. At the same time, SIGNA™Works AIR™ workflow maintains the flexibility needed to rapidly adapt and optimize exams for specific patient situations.

AIR™ IQ Workflow delivers new capabilities that speed set-ups for all exams and streamline scanning for multi-station and combination exams. With AIR™ Workflow, scan set-up starts with Modality Worklist, an automated method to obtain patient, exam and protocol information from a DICOM work-list server. For sites with full DICOM connectivity, once a patient has been selected from the Modality Worklist, the In-Room Operator Console will automatically highlight the relevant exam details. The Modality Worklist enables complete control of the MR protocol prescription, but also reduces work by allowing the MR protocol to be selected and linked to the patient record in advance of the patient's arrival.

Protocol Tools enable exam automation while also giving the user complete control of protocols for prescription, saving, searching, and sharing. Protocols are organized in two libraries: GE Optimized (preloaded protocols) and Site Authored (customized and saved). Protocols can be saved based on patient demographics, anatomy, scan type, or identification number for rapid search and selection. Commonly used protocols can be flagged as favorites for quick selection from the Modality Worklist.

ProtoCopy enables a complete exam protocol to be shared with the click of a mouse. GE protocols provided with the system include Protocol Notes designed to guide the user through the procedure. For special applications, Protocol Notes also include video guides with step-by-step video-based demonstration and instruction. Protocol Notes can be edited by the user to reflect protocol modifications to aid communication among users.

With the patient positioned, IntelliTouch and AIR Touch™ together simplify coil selection to one touch and one click. AIR Touch™ automatically determines coil element locations based on the IntelliTouch landmark and intelligently generates the coil configuration

with elements activated to optimize image quality for coverage, uniformity, and parallel imaging acceleration factor.

At the console, the AIR™ WorkFlow Manager implements the selected protocol. The Workflow Manager controls location prescription, acquisition, processing, visualization, and networking, and can fully automate these steps, if requested by the user. Once the target anatomy has been prescribed, the Linking feature can be used to translate appropriate parameters to all subsequent series that have been linked, eliminating the need for further action by the user.

- When selected, AutoStart will automatically initiate the localizer, coil selection, series-to-series scanning, multi-station scanning, prescription of scan plans for brain exams, as well as delivered instructions to the patient.
- Pause and Resume allows the user to pause a scan in progress (even in automated mode), to respond to a patient need, and then resume mid-scan without starting the scan over.
- For breath-hold scanning, Auto Protocol Optimization provides automated alternative choices for spatial resolution and breath-hold time based on the original protocol. Technologists are liberated from troublesome scan time and image quality adjustments by selecting from pre-calculated options determined by the system.
- Whole Body Localizer automates the acquisition and pasting of multi-station scans for planning, and Whole-Body Imaging enables automated multi-station scanning with FSE-IR, 3D SPGR and DWI diffusion contrasts.
- Once scanning and processing are complete, Split Exam provides the capability to extract a subset of series from multi-station and combination exams to create/assign a separate exam number for accession numbers in billing and PACS systems.

Inline Processing automatically completes post-processing steps for the user after the images have been reconstructed and saved into the database. 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. These automated processing steps can be saved to the (scan) protocol to ensure consistent output and workflow:

- Diffusion weighted series: automatic compute and save
- Diffusion tensor series: automatic compute and save
- eDWI: automatic compute and save
- Image filtering: automatic compute and save
- Maximum/Minimum Intensity Projection: automatic compute and save
- Pasting: automatic compute and save
- Reformat to orthogonal plane: automatic compute and save
- T2 map for cartilage: automatic compute and save
- 3D Volume Viewer: automatic load
- Image Fusion: automatic load
- Interactive Vascular Imaging: automatic load
- FiberTrak: automatic load
- Spectroscopy: automatic load

SIGNA™WORKS AIR™ IQ EDITION TECHNOLOGIES

The acceleration, motion correction and tissue suppression technologies in the SIGNA™Works AIR™ IQ Edition are designed to address overall workflow, rescans and scan time as well as the impact of challenging patients, challenging anatomy and challenging physiology.

Acceleration Technology

Address acquisition and exam times with a suite of acceleration techniques.

- Smart Algorithm AIR™ Recon uses a smart reconstruction algorithm to address background noise and artifacts enabling enhanced image quality without the need for longer scan times and is compatible with critical imaging sequences including PROPELLER MB, 3D Cube, and FSE.
- ARC parallel imaging reduces scan time by using an adaptive auto-calibrating (data-driven) technique to selectively acquire data. As a result, ARC enables smaller FOV prescription with less sensitivity to motion and coil calibration artifacts.
- ASSET parallel imaging reduces scan time using an array spatial sensitivity (image driven) technique. ASSET takes advantage of the data produced by the multiple coil elements to reduce the total data needed to create an image.
- Flexible No Phase Wrap reduces scan time by reducing the number of increments acquired to address wrap-around based on a flexible user-selectable factor.
- Fraction NEX reduces scan time by reducing the number of data averages.

Motion Correction Technology

Enable free-breathing body exams and address the effects of motion with patient-adaptive technologies that proactively detect and correct for motion without hardware dependencies or the need for user intervention.

• Auto Body Navigators deliver real-time, respiratory motion compensated imaging for a broad range of sequences, including T1w dynamic contrast-enhanced imaging. Auto Body Navigators use a software-based tracking pulse that is automatically placed for the user and allows on-the-fly adjustment to adapt to challenging patient circumstances, again without the need for hardware.
• PROPELLER MB combines radial acquisition and motion correction post-processing to mitigate the effects of motion without the need to position the patient over a sensor. PROPELLER MB can be used to generate T1, T2, PD, T1 FLAIR, and T2 FLAIR contrasts and is compatible with Auto Body Navigators to enable usage for a broad range of exams. With the AIR™ IQ Edition, PROPELLER MB motion correction benefits from AIR™ Recon smart algorithm image quality.

Tissue Suppression Technology

Modify the contribution of fat or water signal with multiple tissue suppression techniques.

- FatSat uses a frequency selective pulse to target and suppress the signal from fat
- WaterSat frequency selective water suppression
- STIR inversion pulse fat or water suppression
- SPECIAL frequency selective fat suppression
- ASPIR spectrally selective fat suppression
- Flex 2-point Dixon techniques to separate fat and water signals

SIGNA™WORKS AIR™ IQ EDITION CLINICAL APPLICATIONS

The SIGNA™Works AIR™ IQ Edition clinical imaging tools are organized and optimized to address six clinical work areas: NeuroWorks, OrthoWorks, BodyWorks, OncoWorks, CVWorks and PaedWorks. Each clinical toolkit comprises pre-programmed protocols, clinical applications and visualization tools designed for the challenges of each imaging area. The resulting capability starts with simplified prescription and protocol set-up. Imaging capability extends to patient management and clinical workflow enhancements. Post-processing capability augments the portfolio with specialized tools designed to speed the review and processing tasks typically performed.

NeuroWorks Toolkit

- READYBrain auto-align for automated brain exam prescription
- PROPELLER MB motion robust radial-FSE with T1, PD, T2, T2 FLAIR, T1 FLAIR with STIR and ASPIR
- PROPELLER DW Duo FSE-based diffusion with susceptibility reduction
- Flex 2-point Dixon fat-water separation for 2D FSE, and 3D Cube, and GRE sequences
- 3D Cube 2.0 FSE-based imaging with T1, T2, T1 FLAIR, T2 FLAIR and STIR
- 3D Cube Dual Inversion Recovery for gray or white matter nulling
- 3D COSMIC modified steady state imaging
- 2D/3D MERGE T2* multi-echo fast gradient echo imaging
- 3D BRAVO IR prepared fast SPGR imaging with concentric k-space filling
- 3D MP-RAGE IR prepared fast SPGR imaging with sequential k-space filling
- 3D FIESTA and 3D FIESTA-C fast steady state imaging
- eDWI enhanced diffusion with Multi-B value and SmartNEX
- DTI diffusion tensor imaging
- FiberTrak post-processing for diffusion tensor to display white matter tracking
- 3D SWAN 2.0 GRE-based multi-echo susceptibility imaging including phase image
- Inhance 2.0 non-contrast MRA suite (3D velocity, 2D inflow, inflow IR, and Deltaflow)
- PROBE PRESS single voxel spectroscopy
- BrainStat GVF and AIF parametric maps
• READYView and BrainView post-processing which include time series, DWI/ADC maps, DTI, variable echo, BOLD, and spectroscopy (SV, 2D, 3D)

OrthoWorks Toolkit

- FSE and frFSE fast spin echo imaging suites with dynamic phase correction
- High Bandwidth distortion reduction for FSE
- MAVRIC SL 3D FSE-based spectral imaging for MR-Conditional implants with T1, PD, T2 and STIR
- FatSat, STIR, SPECIAL, ASPIR, Spectral Spatial fat-suppression tools
- MARS High Bandwidth distortion reduction for FSE
- PROPELLER MB motion robust radial FSE with T1, PD, T2 and Fat Suppression (STIR and ASPIR)
- 3D Cube 2.0 FSE-based imaging with T1, T2, and STIR
- 3D COSMIC modified steady state imaging
- 2D/3D MERGE T2* multi-echo fast gradient echo imaging
- CartiGram T2 cartilage mapping
- READYView post-processing

BodyWorks Toolkit

- Auto Navigators diaphragm tracker for free-breathing scanning
- PROPELLER MB motion robust radial FSE with T1 and Fat Suppression (STIR and ASPIR)
- 3D Cube FSE-based imaging with T1, T2, and STIR
- 3D Dual Echo gradient echo in/out phase imaging
- 3D LAVA and Turbo LAVA with Turbo ARC and SPECIAL for dynamic or single-phase imaging (breath-hold or free-breathing)
- 3D LAVA GRE 2-point Dixon fat-water separation for dynamic or single-phase imaging (breath-hold or free-breathing)
- IDEAL FSE 3-point Dixon fat-water separation
- Flex 2-point Dixon fat-water separation for 2D FSE, 3D Cube and GRE
- 3D MRCP frFSE imaging
- Inhance 2.0 non-contrast MRA suite with 3D velocity, 2D inflow, inflow IR and Deltaflow
- 2D Fat Sat FIESTA fast steady state imaging
- Enhanced SSFSE Snapshot multi-slice imaging
- Whole-Body multi-station localizer and pasting
- Whole-Body multi-station FSE-IR, 3D SPGR and DWI imaging
- StarMap iron assessment for liver and heart (acquisition)
- Multiphase DynaPlan
- SmartPrep automated bolus detection
- Fluoro Trigger real-time bolus monitoring

OncoWorks Toolkit

- Auto Navigators diaphragm tracker for free-breathing scanning
- PROPELLER MB motion robust radial-FSE with T1, PD, T2, T2 FLAIR, T1 FLAIR with STIR and ASPIR
- PROPELLER DW Duo FSE-based diffusion imaging with susceptibility reduction
- 3D Cube 2.0 FSE-based imaging with T1, T2, T1 FLAIR, T2 FLAIR and STIR
- 3D Cube Dual Inversion Recovery for gray or while matter nulling
- 3D BRAVO IR prepared fast SPGR imaging with concentric k-space filling
- 3D MP-RAGE IR prepared fast SPGR imaging with sequential k-space filling
- Enhanced SSFSE Snapshot multi-slice imaging
- Whole-Body multi-station localizer and pasting
- Whole-Body multi-station FSE-IR, 3D SPGR and DWI imaging
- eDWI enhanced diffusion with Multi-B value and SmartNEX
- 3D LAVA and Turbo LAVA with Turbo ARC and SPECIAL for dynamic or single-phase imaging (breath-hold or free-breathing)
- 3D LAVA GRE 2-point Dixon fat-water separation for dynamic or single-phase imaging (breath-hold or free-breathing)
- Multiphase DynaPlan
- SmartPrep automated bolus detection
- Fluoro Trigger real-time bolus monitoring
- READYView, BrainView and BodyView post-processing

CVWorks Toolkit

- Auto Navigators diaphragm tracker for free-breathing scanning
- iDrive for free breathing cardiac planning
- 2D FIESTA Cine gated steady-state, multi-phase imaging

- 3D FS FIESTA steady-state imaging with Fat Sat
- Cine IR fast gradient echo with IR-prep pulse
- 2D MDE IR-prep and gated, fast gradient echo imaging with wide bandwidth suppression and single-shot
- 2D PS MDE phase sensitive tissue characterization with wide bandwidth suppression and single-shot
- Black Blood SSFSE single-shot FSE-based imaging with double IR and triple IR
- StarMap iron assessment for liver and heart (acquisition)
- 2D/3D Time-Of-Flight & 2D Gated Time-of-Flight
- 2D/3D Phase Contrast & Phase Contrast Cine
- TRICKS dynamic contrast enhanced, multiphase 3D MRA
- Inhance 2.0 non-contrast MRA suite with 3D velocity, 2D inflow, inflow IR and Deltaflow
- SmartPrep automated bolus detection
- Fluoro Trigger real-time bolus monitoring
- 3D QuickStep automated multi-station imaging
- READYView post-processing

PaedWorks Toolkit

- PROPELLER MB motion robust radial-FSE with T1, PD, T2, T2 FLAIR, T1 FLAIR with STIR and ASPIR
- 3D Cube 2.0 FSE-based imaging with T1, T2, T1 FLAIR, T2 FLAIR and STIR
- 3D Cube Dual Inversion Recovery for gray or while matter nulling
- 3D COSMIC modified steady state imaging
- 2D/3D MERGE T2* multi-echo fast gradient echo imaging
- 3D BRAVO IR prepared fast SPGR imaging with concentric k-space filling
- 3D MP-RAGE IR prepared fast SPGR imaging with sequential k-space filling
- 3D FIESTA and 3D FIESTA-C fast steady state imaging
- eDWI enhanced diffusion with Multi-B value and SmartNEX
- DTI diffusion tensor imaging
- FiberTrak post-processing for diffusion tensor to display white matter tracking
- 3D SWAN 2.0 GRE-based multi-echo susceptibility imaging including phase image
- PROBE PRESS single voxel spectroscopy
- MAVRIC SL 3D FSE-based spectral imaging for MR-Conditional implants with T1, PD, T2 and STIR
- Auto Navigators diaphragm tracker free-breathing scanning
- 3D LAVA and Turbo LAVA with Turbo ARC and SPECIAL for dynamic or single-phase imaging (breath-hold or free-breathing)
- 3D LAVA GRE 2-point Dixon fat-water separation for dynamic or single-phase imaging (breath-hold or free-breathing)
- Enhanced SSFSE Snapshot multi-slice imaging
- Inhance 2.0 non-contrast MRA suite with 3D velocity, 2D inflow, inflow IR and Deltaflow
- Cine IR fast gradient echo with IR-prep pulse
- 2D MDE IR-prep and gated, fast gradient echo imaging with wide bandwidth suppression and single-shot
- 2D PS MDE phase sensitive tissue characterization with wide bandwidth suppression and single-shot
- Black Blood SSFSE single-shot FSE-based imaging with double IR and triple IR
- StarMap iron assessment for liver and heart (acquisition)
- BrainStat GVF and AIF parametric maps
- READYView and BrainView post-processing

READYView Advanced Visualization

READYView is a SIGNA™ Works AIR™ IQ Edition advanced visualization tool designed to simplify the quantitative analyses of multiple data sets. READYView automatically selects the most relevant post-processing protocol for the user and provides guided workflow and general assistance for the processing algorithms. In addition, the user can customize workflows with adjustable layouts, personalized parameter settings and custom review steps. Key capabilities of READYView include the ability to analyze, export and save:

- Time series
- Diffusion weighted series
- Diffusion tensor series
- Variable echo series
- Blood oxygen level dependent (BOLD) series fMRI processing
- Spectroscopy data (single voxel and 2D or 3D CSI)
- MR Touch (MR elastography) series

Line	Qty	Catalog	
5	1.00	M7079EB	**Gen 7 DL Performance ICN**

Computing Platform and DICOM Conformance

SIGNA™Works MR systems enhance data reconstruction with the Orchestra platform and Smart AIR™ Recon. The Orchestra computing toolbox enables the integration of advanced reconstruction elements to support demanding, data-intense, applications as well as access to the reconstruction algorithms. AIR™ Recon uses a smart reconstruction algorithm that reduces background noise and artifacts enhancing image quality without the need for longer scan times.

- Reconstruction Engine: Gen7 Dual Intel Xeon Gold 5118 processor
- Memory: ≥128 GB
- Hard Disk Storage: 960 GB SSD
- 2D FFT/second (256 x 256 Full FOV): 63,000 2D FFT/second
- Orchestra reconstruction toolbox
- AIR™ Recon reconstruction

SIGNA™Works MR systems generate 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. Refer to the DICOM Compliance Statement for details.

Line	Qty	Catalog	
6	1.00	M7006CF	**SIGNA Artist 1.5T Cable Collector - A**

SIGNA Artist 1.5T Cable Collector - A

Line	Qty	Catalog	
7	1.00	M8686EQ	**Gradient Cable Kit Placeholder – Equipment Room**

Gradient Cable Kit Placeholder – Equipment Room

Line	Qty	Catalog	
8	1.00	M8686SR	**Gradient Cable Kit Placeholder – Scan Room**

Gradient Cable Kit Placeholder – Scan Room

Line	Qty	Catalog	
9	1.00	S7505EK	**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.

Line	Qty	Catalog	
10	1.00	M6001AA	**Vent Adapter, Standard 8" Straight Up**

Vent Adapter, Standard 8" Straight Up

Line	Qty	Catalog	
11	1.00	M7000ZA	**Main Disconnect Panel**

The Main Disconnect Panel safeguards the MR system's critical electrical components, by providing complete power distribution and emergency-off control.

Line	Qty	Catalog	
12	1.00	M1000MW	**Operator Console Table**

The Operator Console Table is designed specifically for the color LCD monitor and keyboard.

Line	Qty	Catalog	
13	1.00	M3335JZ	**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.

Line	Qty	Catalog	
14	1.00	R32052AC	**MR Service Key Class A2 Warranty 1 year**

The Standard Service License provides access to service tools used to perform basic level service on the Equipment and is included at no charge for the warranty period.

Line	Qty	Catalog	
15	1.00	M7000JF	**3D Heart with Cine IR, 3D MDE and Navigator**

3D Heart is a 3D Fat Sat FIESTA sequence (Optimized for 1.5T) or 3D IRPrep FGRE sequence (Optimized for 3T) that provides whole-heart coverage for coronary artery imaging or cardiac chamber imaging. It employs a T2 preparation pulse at 1.5T to provide myocardial suppression for better coronary visualization. A multi-slab localizer allows easy whole-heart prescription, and increase inflow effect for high vessel conspicuity. 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 employs prospective real-time motion correction 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. An optimized phase ordering and steady state preparation has also been used to improve CNR and SNR.

As this sequence supports 3D IRPrep FGRE acquisition mode on both 1.5T and 3T, it can also be used for 3D MDE acquisition. With the purchase of 3D Heart, 3 additional options (3D MDE, Cine IR and Cardiac Navigator) would be included.

Cine IR is used for approximating the myocardial nulling point for myocardial viability assessment with MDE / delayed enhancement sequences. In one breath hold, Cine IR will provide multiple calculated inversion times (TI) for the myocardium to be used for the MDE scan. This acquisition sequence is an ECG-gated, FastCard or FastCine with an adiabatic inversion pulse providing multi-phase images generated within the cardiac cycle.

Line	Qty	Catalog	
16	1.00	M7000CH	**Cardiac Tagging**

With Cardiac Tagging, an even distribution of spatial saturation lines are applied across the myocardium in the FastCINE Gradient Echo pulse sequence to enable cardiac wall motion assessment. Cardiac Tagging allows the application of 1D diagonal stripes or 2D grid saturation pulses once per R-R interval immediately following the R-wave trigger. Resulting images demonstrate motion (or lack of motion) effects.

Line	Qty	Catalog	
17	1.00	M7110NA	**SIGNA™ ARTIST 1.5T 30-channel AIR™ COILS SUITE AND PATIENT TABLE (HNU, PA, AA, T/R Head)**

The SIGNA™ Artist coil suite is designed to enhance patient comfort and image quality while simplifying workflow. The suite includes:

- Integrated T/R Body Coil
- T/R Head Coil
- TDI Posterior Array
- TDI Head-Neck Unit with Comfort Tilt
- AIR™ Anterior Array

The TDI 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. The PA coil is designed to be used in conjunction with the HNU, Anterior Array and the PV Array (sold separately). The PA coil is embedded in the Express detachable table and is invisible to additional surface coils when they are placed directly on top of the surface.

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

The TDI Head and Neck Unit comprises the baseplate and three anatomically optimized anterior arrays: the anterior Neuro-vascular array, the anterior cervical spine array, the anterior open-face array. The HNU may be positioned at either end of the Express table to support head-first or feet-first imaging and may remain in place for all body, vascular, spine, and most MSK exams. The HNU baseplate supports the patient's head, and the Comfort Tilt variable-degree ramp can be positioned under the HNU base plate to elevate 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 AIR™ Anterior Array is a next generation array that allows flexibility in any direction to conform to the patient's anatomy. Based on INCA conductor and the E-mode module innovative technologies, the 30ch AIR™ AA provides superb SNR and acceleration performance, while improving the overall patient and user experience. The coil has been designed to adapt to various patient shapes and sizes, with an ultra-lightweight distribution of less than 0.35 grams/cm2.

- Elements: 30
- Channels: 45 with PA; 121 with PA, HNU and second AA
- Length: 79 cm; Width: 66 cm
- Height: 1.2 cm
- S/I coverage: up to 63 cm
- R/L coverage: up to 60 cm
- Parallel imaging in all three scan planes
- Head-first or feet-first positioning

EXPRESS DETACHABLE TABLE

SIGNA™ Artist eXpress Patient Table is a crucial part of AIR™ Workflow. The eXpress table is a mobile patient transport device that houses the TDI Posterior RF Array and touch sensitive IntelliTouch land-marking. The fully detachable table is easily docked and undocked by a single operator and moved in and out of the exam room for patient transport and preparation. The eXpress table and embedded PA coil are designed to accommodate head-first or feet-first imaging for all supported exams.

- 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
- Automated vertical and longitudinal power drive

- Fast longitudinal speed: 30 cm/second
- Slow longitudinal speed: 0.5 cm/second
- Integrated arm boards & non-ferrous IV pole
- IntelliTouch & laser land-marking
- Laser alignment land-marking

Line	Qty	Catalog	
18	1.00	S7529CZ	**1.5T AIR™ MP and NeoCoil Shoulder Package**

The 21-channel 1.5T AIR Multi-purpose (MP) Large and The 20-channel 1.5T AIR MP Medium are the next generation multipurpose coils that allow flexibility in any direction to conform to the patient's anatomy.

Based on the innovative AIR™ Coil technologies, those 1.5T AIR™ MP Coils provide good image quality and acceleration performance, while improving the overall patient and user experience. Those coil have been designed to adapt various patient shapes and sizes, expanding positioning versatility. AIR™ MP Coil Large is recommended to be used for Shoulder, Forearm, Prostate, Hip/bony pelvis, Knee (large patients), Long bone, Foot/ankle. AIR™ MP Coil Medium is recommended to be used for Cardiac, Elbow, Hand/wrist, Knee (small patients), Forefoot.

The AIR™ MP Coil positioner kit includes a knee positioner, a foot-ankle positioner, a wedge pad, a u-shaped pad and a strap kit. Those are compatible with both AIR™ MP Coils Large and Medium for positioning.

The 1.5T Shoulder Coil by NeoCoil consists of a soft and light anterior array paired with a formed posterior array that together are designed to aid flexible patient positioning and heightened comfort. The coil is a phased array design with 16-channel receive and parallel imaging compatibility to also deliver enhanced SNR and speed for shoulder imaging at 1.5T.

Line	Qty	Catalog	
19	1.00	E8823NA	**MRI Audio 1505 Complete system (for SIGNA Premier, Discovery™ MR750/750w, Optima™ MR450/450w, SIGNA™ PET/MR, SIGNA Architect/Artist/Voyager/Pioneer, SIGNA HDxt, and SIGNA Creator/Explorer hardware v25.3 and Pioneer hardware v26.1)**

MRI Audio 1505 Complete music system for MRI systems is designed for comfort and allows the patient to listen to music while being scanned in an MRI. The technologist is in full control of the system headphones, microphone, sound source and volume controls. Standard 3.5 mm plug for music source allows any compatible music player, tablet or phone. In-ear headphones work with any head coil.
Package includes:
- Digital amplifier
- iPad Mini
- iPad Mini mount with lock
- 3G transducer
- In-ear headphones, 29dB noise reduction
- Over-ear headphones, 29dB noise reduction
- Disposable ear tips (300 pairs)
- Technologist's speakers
- 6 ft RCA 3.5 mm cable
- Auto-voice/MIC adapter

Line	Qty	Catalog	
20	1.00	E8912CA	**Dimplex MR Heat Exchanger 49kW - Standard Ambient Temp**

GE Heat Exchangers - 49kW (20Tons)

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 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 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
- 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 MR450w or MR System

NOTE: Item is NON-RETURNABLE and NON-REFUNDABLE

Line	Qty	Catalog	
21	**1.00**	**E8911CG**	**Manual Cryogen Compressor Water Bypass**

GE MR Heat Exchanger Manual Cryogen Compressor Water Bypass Option

Add a level of magnet protection with a Manual Cryogen Compressor Bypass. In case of a power failure, you can cycle municipal or facility water through the cryogen compressor 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

NOTE: Item is NON-RETURNABLE and NON-REFUNDABLE

Line	Qty	Catalog	
22	**1.00**	**E8802MC**	**MR Signa Wide Security Straps**

Wide security strap set - includes one strap with Velcro and one strap with plastic buckle; 14 in. wide. For use with GE Signa MR systems.

Line	Qty	Catalog	
23	**1.00**	**E8802MD**	**MR Signa Narrow Security Straps**

Narrow security strap set - includes one strap with Velcro and one plastic buckle; 6 in. wide. For use with GE Signa MR systems.

Line	Qty	Catalog	
24	**1.00**	**E8802MH**	**MR Signa Replacement Table Pad (Gray)**

This replacement table pad is the same as the pad shipped with new systems. It has a gray, nylon cover and measures 15.5 in W x 60 in. L x 2 in. H. For use with GE Signa MR systems

Line	Qty	Catalog	
25	**1.00**	**E9200AB**	**MR Fast Start Package**

MR Fast Start Package includes:
- 4 E8801BA Disposable Earplugs
- 1 E8807AB Signa Log Books
- 1 E8819RG Conmed Electrodes
- 1 E8802MC Wide Security Straps
- 1 E8802MD Narrow Security Straps
- 1 E8801MR Head Coil Set
- 2 E8819A MR Warning Sign - Large
- 10 E8819B MR Warning Sign - Small
- 1 E8804EG MR Safety DVD

Line	Qty	Catalog	
26	**1.00**	**E4504FP**	**Eaton Single Phase 700 VA Partial UPS (MR package)**

Using an uninterruptible power supply (UPS) can help improve user productivity and system reliability, as well as reduce service costs and increase system uptime.
Combining reliable double-conversion topology, internal static bypass and an easy-to-ready LCD menu display, the Eaton 9SX UPS provides the highly efficient and reliable power you expect from a 9-series UPS in a convenient tower form factor.

Applications
The Eaton® Single Phase 9SX 700 VA Partial UPS package is designed to support a variety of GE MR imaging systems. When Catalog# E4504FP is used with MR SIGNA™ Voyager, SIGNA™ Pioneer, SIGNA™ Premier, SIGNA™ Architect or SIGNA™ Hero systems, the configuration requires ordering a specific power cable (catalog# E4504FN).

Maintain productivity, improve reliability

Reliable power for critical systems
The 9SX offers the robust double-conversion, online power protection needed for medical, light industrial, automation and mission critical IT applications. With zero transfer time to battery, continuous filtering of power, and an internal, automatic static bypass, the 9SX ensures performance and compatibility.

* Maintains system's host computer and operator's workstation power for ~8 minutes after loss of power
* Minimizes loss of data
* Provides clean constant voltage power
* Host computer and operator's workstation electronics unaffected by under voltage, brownouts, line sags, over voltage, transients, periodic emergency generator testing or automatic transfer switch operation
* Host computer and operator's workstation electronics protected from utility power factor capacitor switching spikes and ring waves
* Host computer and operator's workstation electronics protected from utility re-closer operations common during thunderstorms
* Regulates output voltage to meet and exceed system electronics requirements
* Allows time for an orderly system shutdown in the event of an extended power outage
* Reduces maintenance costs
* Helps increase system uptime
* Suitable for engine generator applications
* Suitable for mobile applications (other optional equipment may be needed)
* Installation of the UPS by GE
* 1-year warranty on parts and labor

Increased battery life
* Advanced battery management to extend battery life and provide advanced notice before batteries fail
* Batteries are hot-swappable

More control
* Automate power delivery by utilizing switchable, programmable outlets
* Programmable signal input through the RPO port also enables the UPS to change operating modes in reaction to external events

Advanced LCD interface
* Simplify UPS monitoring with Eaton's advanced LCD display
* Easy access to UPS alarm history, energy logs, unit serial numbers and firmware versions enable first time issue resolution right at the source
* Eight user-selectable languages ensure success for global deployments

Specifications
* Power: 700 VA / 630 W
* Input connection: 5-15P, eight feet long
* Output receptacles: (5) 5-15R
* Dimensions (H x W x D, in. / mm): 9.9 x 6.3 x 13.9 / 252 x 160 x 357
* Weight (lb. / kg): 26.5 / 11.5

General
* Topology: Double-conversion, online
* Configuration: Tower
* Color: Black and silver
* Diagnostics: Full system self-test at power up, ABM battery test every 30 days
* Warranty: 1 year on electronics and battery
* Remote power off: Remote On/Off (ROO) and Remote Power Off (RPO) rear terminal blocks
* Contents: UPS, Safety guide, Quick Start Guide, Reference Guide, RS-232 serial cable, USB cable

Electrical input
* Nominal voltage: 120V default (100/110/120/125V)
* Input voltage range:Full load: 100-138V, ?25% load: 60-144V
* Frequency: 50/60 Hz
* Frequency range: 60 Hz: 50-70 Hz, 50 Hz: 40-60 Hz
* Input power factor ?.99
* Input current distortion ?8%

Electrical output
* Power rating: 700VA / 630W
* Circuit breaker: None
* Nominal voltage: 120V default (100/110/120/125V)
* Output voltage regulation, steady state: ±2% nominal mode
* Output voltage THD (online): Linear: <3%
* Power factor: 0.9
* Efficiency (online mode with resistive load): 87%
* Transfer time: 0 ms
Communications
* User interface: Graphical display. UPS status in a single view.
* LEDs: 4 status-indicating LEDs
* Communication ports: RS-232 (RJ45) ports; USB port as standard (HID). 6-foot RS-232 and USB cables included
Environment & standards
* Operating temperature: 0 to 40 °C (32 to 104 °F) in Online mode, with linear derating for altitude
* Storage temperature: 0 to 35 °C (32 to 95 °F); without batteries: -25 to 55 °C (-13 to 131 °F)
* Relative humidity: 0 to 96% non-condensing
* Altitude operating temperature range: UP to 3,000 meters (9,843 ft) above sea level, no derating for 35 °C (95 °F) room temperature
* Audible noise: < 50 dBA at 1 meter typical
* RoHS compliance: Yes
* Safety conformance: UL 1778; IEC 62040-1
* EMC: FCC Part 15 Class B; IEC 62040-2 C1 & C2
* Markings: CE; cULus; NOM
* Battery backup time: 5.8 min@ 630 W, 14 min@ 300W
Notes:
- Customer is responsible for rigging UPS unit
- Item is non-returnable and non-refundable
- Removal/disposal of the old unit is the customer's responsibility

Line	Qty	Catalog	
27	**1.00**	**W0301MR**	**TIP MR 1.5T Training Program**

This training program is designed for customers purchasing a GEHC 1.5T MR system. GEHC will work with the designated Customer contact to agree upon a reasonable training schedule for a pre-defined group of core technologists that will leverage blended content delivery and may include a combination of onsite days and virtual offerings, to include TiP Virtual Assist, the GEHC Answerline and available on-demand courses ("Virtual Inclusions"). This blended curriculum with multiple delivery platforms promotes learner retention and allows for an efficient and effective skill development.

This program may contain:
- Onsite training (generally 12 days)
- Virtual Inclusions may include:
- Remote instructor-led training: Instructor leads a remote training session one-on-one or in a group, typically for 1 hour
- Answerline Support-Access to GEHC experts for clinical, non-emergency applications assistance via phone or by using the iLinq button on the imaging console
- Tip Virtual Assist-Direct interactive access to a GEHC expert for enhanced support.
- On Demand courses-On healthcare learning system. Self-paced courses and webinars (CE and non-CE).

Training will be delivered at a mutually agreed upon time between the customer and GE Healthcare (excluding GE Healthcare holidays and weekends), are subject to availability and generally will not exceed 15 days. This training program has a term of twelve (12) months commencing on Acceptance, where all onsite training must be scheduled and completed within twelve (12) months of Acceptance and all Virtual Inclusions also expire at the end of such twelve (12) month period. Additional onsite days may be available for purchase separately.
All GEHC "Training" terms and conditions apply. Given the unique nature of this program, if this program is purchased as part of a purchase under a Governing Agreement, including any Master Purchase Agreement, Group Purchasing Organization Agreement, or Strategic Alliance Agreement, this program shall take precedence over any conflicting training deliverables set forth therein.

Line	Qty	Catalog

28	**1.00**	**S7530EL**	**Early Adopter SIGNA™ Artist MR30 Software Upgrade**

Early Adopter MR 30 Application Software Upgrade for SIGNA™ Artist family of MR scanners.

Early access to latest MR Applications software to enable AIR™ Recon DL extensions to 3D and PROPELLER imaging.

NOTE: This package only available to pre-selected sites with approval from Global Product Management.

Line	Qty	Catalog	
29	**1.00**	**M70024HR**	**SIGNA_LX1.MR30.0 SW eDelivery**

Software eDelivery is used to associate the MRI scanner with GE HealthCare's remote software delivery infrastructure. No items are being delivered physically or electronically. (For tracking purpose only – non purchasable catalog)

Line	Qty	Catalog	
30	**1.00**	**S7530EA**	**AIR™ Recon DL Early Adopter Bundle**

AIR™ Recon DL 3D and PROPELLER - Early Adopter Package.

Early access to the latest AIR™ Recon DL extensions to 3D and PROPELLER Imaging.
AIR™ Recon DL is a pioneering, deep-learning based reconstruction algorithm applied to the raw scan data to improve SNR and image sharpness. This propriety technique improves image quality at the foundational level by removing image noise and ringing artifacts while enabling shorter scan times. With AIR™ Recon DL, customers will be able to:

- Remove noise in the images through trained deep learning algorithms
- Increase productivity by enabling shorter scan times
- Eliminate Gibbs and truncation artifacts with intelligent ringing suppression
- Deliver sharper, clearer and accurate MR images
- Apply a tailored level of AIR™ Recon DL based on preference
- Enable applied PROPELLER and 3D sequences without anatomical limitations
- Visualize AIR™ Recon DL images directly at the MR console without reconstruction delays

AIR™ Recon DL PROPELLER is compatible with 2D radial motion-insensitive PROPELLER sequence which includes PROPELLER DWI.
AIR™ Recon DL 3D is compatible with most 3D sequences including Fast Spin Echo, Gradient Echo and Fast Gradient Echo family of sequences

NOTE:
AIR™ Recon DL requires GEN 7 DL ICN, and AIR™ Recon DL 3D also requires AIR™ Recon DL 2D license.
This package only available to pre-selected sites with approval from Global Product Management. Requires MR30 Application Software upgrade.

Line	Qty	Catalog	
31	**1.00**	**NI_MR_INSTALLATION**	**$20,000 is applied to 3rd-Party Rigging Services, as directed by Customer. Rigging (including excess/additional rigging costs) remains the Customer's responsibility. Unapplied rigging funds will be forfeited without refund or credit.**

Total Quote Net Selling Price: ***$1,530,965.64***

ENSURE REQUISITION/PURCHASE ORDER IS ISSUED TO:

GE PRECISION HEALTHCARE
TAX ID (83-0849145)

If applicable, for more information on this devices' operating system, please visit GE HealthCare's product security portal at https://securityupdate.gehealthcare.com/en/products

Optional Items

Please initial the Catalogs you wish to purchase

Catalog Number	Qty	Description	Net Price	Initial
M7006CE	**1.00**	**1.5T 16-Channel T/R Hand-Wrist Coil**	**$32,900.00**	

The 1.5T 16-Ch T/R Hand Wrist Coil is a transmit and receive MRI RF coil intended for obtaining diagnostic images of patient hand and wrist anatomies. The coil consists of two saddle coils driven in quadrature capable of both transmitting and receiving, along with an array of sixteen surface receive elements. The transmit coil consists of two orthogonal saddles, which is a volume transmit coil for transmitting RF magnetic field into human tissue during transmit phase, and can function as a receive coil for receiving MRI signal from human tissue during receive phase. The device includes two rigid, plastic bases which the coil can be attached to and removed as desired. One positions the coil for horizontal wrist imaging, and one positions the coil for vertical wrist imaging. In the horizontal position, position of the coil can be adjusted along the base to accommodate imaging of either the left or right hand. Foam pads are also provided as accessories to aid in patient immobilization, anatomy positioning, and to enhance patient comfort.

Compatible only with MR systems that have 32-channels or more. Not compatible with 16-channel systems. Requires software 26.0 R02 or higher for DV products and 26.2 or higher for Voyager.

Catalog Number	Qty	Description	Net Price	Initial
M7001NL	**1.00**	**1.5T 16-Channel T/R Knee Array**	**$37,600.00**	

The 1.5T 16-channel Knee Array is a transmit/receive coil that produces high resolution images of the knee and is optimized for parallel imaging in all three directions to reduce acquisition times.

Catalog Number	Qty	Description	Net Price	Initial
E8819TB	**1.00**	**Expression MR400 Patient Monitor Basic + O2 and Anesthetic agents and blood pressure**	**$89,900.00**	

Expression Patient Monitor (MR400): 15 inch Widescreen Touchscreen interface, MRI Rating 5,000 gauss 4W/kg SAR 3.0T, 8-Hour Smart Battery Technology, 3rd-Gen Wireless ECG with Advanced Filters, 3rd-Gen Wireless Pulse Oximetry (SpO2) with Perfusion Index, Single-Lumen Non-Invasive Blood Pressure (NIBP), CO2 monitoring with Respiration Rate, Wired and wireless gating with MRI systems, and Multi-priority alarm system with CDS.

All parameters support Adult, Pediatric, Infant and Neonatal applications. One (1) day on-site Expression system training, One (1) year limited warranty and factory service for hardware.

Feature set includes non-invasive blood pressure, wireless ECG, wireless SpO2, low-flow CO2, respiration monitoring, dual

anesthetic agent detection, O2 monitoring, invasive blood pressure (2 channel). Includes all standard accessories: hardware accessories, and reusable and disposable accessories for 20 Adult and Pediatric patients.

Catalog Number	Qty	Description	Net Price	Initial
E8819TE	**1.00**	**Wireless IP5 control room display with antenna**	**$12,900.00**	

Expression Information Portal is a non-MRI remote display and controller for wireless Philips and Invivo MRI Patient Monitoring systems. It can be used from the control room, induction, or recovery areas, for providing clinicians an enhanced monitoring, case management and connectivity experience.

Key Features and Benefits:

Wireless communication with MRI Patient Monitoring Systems, Advance software design, with Adobe® AIR® for a rich, robust, touch user interface experience, Case Management for clinical ease of use and efficiency, Ultimate MRI Patient Monitor connectivity experience for electronic patient-record keeping, including HL7 data output.

The Expression IP5 consists of the following components: Touch-screen display, Radio module, control room flex antenna, and line cord.

Catalog Number	Qty	Description	Net Price	Initial
E8011M	**1.00**	**MR Coil Cart**	**$1,800.00**	

FEATURES/BENEFITS
- Holds CTL, NV, brain, extremity, body and shoulder coils
- Designed to match the scanner, holds 6 coils
- Four swiveling, locking casters for easy movement

SPECIFICATIONS
- Measures 44" L x 32" W x 48.75" H
- Weighs 130 lbs.

Catalog Number	Qty	Description	Net Price	Initial
E88221XA	**1.00**	**Medrad MRXperion injector on pedestal mount**	**$51,316.80**	

The Medrad® MRXperion™ MR Injection System is a smart performer in the MR suite, delivering contrast fluid and data management.

Streamlined Injection Workflow
- Less time preparing for the injection and more
- time to focus on the patient and optimize
- procedure management.

Convenience at Point of Care
- On-board eGFR and Weight Based Dosing
- Calculators, an Injection Pressure Graph,

• Independent Test Inject and KVO functions.

Real-time Support
• Connect to VirtualCare® Remote Support* for
• advanced injector system diagnostics, seamless

Improved Efficiencies
• Snap-on/Twist-off Syringe Design
• Auto plunger advance and retract when attaching and detaching syringes
• Automatic filling and priming
• Injection/post-injection reminders
• Injection pressure graph

Reproducible Quality
• Proven track record of design and performance
• On-site field service and VirtualCare® Remote Support* for advanced injection system diagnostics and real-time support

Personalized Care
• Patient-Centric workflow design
• Protocol storage/retrieval
• On-board eGFR and Weight Based Dosing Calculators
• Injection enabled when head is tilted down

The MRXperion™ Injector package includes:
• Dual injector head on pedestal with integral double hook IV pole
• Scan room unit power supply with 40 ft. (12 m) DC cable
• Scan room fiber optic cable – 40 ft. (12 m)
• Control room fiber optic cable - 150 ft. (45 m)
• Fiber optic quick disconnect panel
• Fiber optic penetration panel kit
• Control room unit (display and pod) with hand-switch
• Display and pod power supplies
• CAT5 cable (display to pod) - 1 ft. (0.3m)
• CAT5 cable (pod to hospital network) - 25 ft. (7.6m)
• Power cords - North America and Japan (3 each), 10 ft. (3 m)
• Power cords – International (3 each), 10 ft. (3 m)
• Operators manual (English)
• Multi-lingual Operators manual CD
• Quick guides (English) for injector and hanger
• Installation manual (English)
• Service manual and schematics manual CDs (English)
• Warranty packet
• Installation, customer's operational training at time of installation, and one year full on-site warranty in Bayer service countries
• LAN port for VirtualCare Remote Service

An optional penetration panel filter kit E88221XC is intended to be used for an alternate installation of the power supply of the MEDRAD® MRXperion™ Injection System outside of a MR scan room.

System Specifications
System Capabilities
• Syringe Capacities:
• Syringe A: 65ml
• Syringe B: 115ml
• Programmable volume range (ml):
• Syringe A: 0.5 ml to max syringe volume in 0.1 ml increments from 0.5 ml to 31 ml, 1ml increments above 31 ml

• Syringe B: 1 ml to max syringe volume in 1 ml increments
• Programmable flow rate range (ml/sec)
• 0.01 to 10 ml/s in 0.01 ml/s increments between 0.01 and 3.1 ml/s
• 0.1 ml/s increments between 3.1 and 10 ml/s
• KVO (Keep Vein Open): 6 factory presets of 0.25 ml every 15, 20, 30, 45, 60 or 75 sec
• Test Inject: configurable from 0.5 ml to 20 ml in 0.1 ml increments
• Pressure range (psi): 6 factory presets from 100 to 325 PSI (690 to 2240 kPa)
• Injection / Post Injection Reminders: up to 5 settings of 1 sec to 20 minutes in 1 sec increments
• Injection protocol storage: 60 protocols up to 6 phases each
• Injection Hold / Pause: up to 20 minutes in 1 sec increments
• eGFR Calculator
• For adults: MDRD, Cockroft-Gault, Modified Cockroft-Gault and CKD-EPI methods
• For children: Bedside Schwartz method
• Weight Based Dosing Calculator: user Configurable
• Remote Service Capability: with optional VirtualCare Remote Support

Dimensions and Weight
Control Room Unit
• 15.58" (39.58 cm) W
• 12.71" (32.28 cm) H
• 10.23" (25.98 cm) D
• 17.6 lbs (8.0 kg)

Scan Room Unit
• 23.30" (59.0 cm) W
• 71.40" (181.0 cm) H
• 23.30" (59.0 cm) D
• 95.7 lbs (43.4 kg)

Power Supply
• 7.60" (19.0 cm) W
• 3.40" (9.0 cm) H
• 15.40" (39.0 cm) D
• 5 lbs (2.3 kg)

Electrical
• Voltage Requirements
• 100-240 VAC
• 50/60 Hz
• 120VA - 210VA

Catalog Number	Qty	Description	Net Price	Initial
E88221XC	**1.00**	**Penetration Panel for MEDRAD MRXperion injector**	**$2,160.00**	

The penetration panel filter kit is intended to be used for an alternate installation of the power supply of the MEDRAD® MRXperion™ Injection System outside of a MR scan room.
Penetration panel filter kit option includes:
• Filter assembly
• Mounting/centering ring
• Mounting screws
• Conductive O-ring (pre-installed on the filter)

- Power supply cable - 10 ft. (3 m)
- Installation instructions

GPO Agreement Reference Information

Customer:	ECU Health Medical Center
Contract Number:	Premier
Billing Terms:	80% on Delivery / 20% on Acceptance
Payment Terms:	45 Net
Shipping Terms	FOB Destination

Offer subject to the Terms and Conditions of the applicable Group Purchasing Agreements currently in effect between GE HealthCare and Premier

If applicable, for more information on this devices' operating system, please visit GE HealthCare's product security portal at: https://securityupdate.gehealthcare.com/en/products

Please consult the following to access the applicable Agreements and Contract Summaries for the following Group Purchasing Organizations:

This product offering is made per the terms and conditions of Premier /GE Healthcare GPO Agreements as follows:

Imaging: Bone Densitometry:PP-IM-263, Cardiovascular Imaging:PP-IM-264, CT:PP-IM-265, General Radiography:PP-IM-266, Mammography:PP-IM-267, Molecular Imaging (Nuc/Pet):PP-IM-269, MRI:PP-IM-270, (Invasive Cardiology):PP-CA-477.

Ultrasound: PP-IM-271

Premier: Access the login page at https://premierconnect.premierinc.com. If a copy of the contract is not available, please consult your GPO Client Manager

1. Definitions. As identified in this Agreement, "Equipment" is hardware and embedded software that is licensed with the purchase of the hardware delivered to Customer in GE HealthCare's packaging and with its labeling; "Software" is software developed by GE HealthCare and/or delivered to Customer in GE HealthCare's packaging and with its labeling, and Documentation associated with the software; "Third Party Software" and "Third Party Equipment" are respectively software developed by a third party, and hardware and embedded software that is licensed with the purchase of the hardware, that is delivered to Customer in the third party's packaging and with its labeling (collectively, "Third Party Product"); "Product" is Equipment, Software and Third Party Product; "Services" are Product support or professional services; "Subscription" is a limited-term, non-transferable license to access and use a Product (except Healthcare Digital Products), including any associated support Services; "Healthcare Digital Products" are: (i) Software identified in the Quotation as "Centricity"; (ii) Third Party Software licensed for use in connection with Centricity Software; (iii) hardware used to operate Centricity or Third Party Software; (iv) Services provided for implementation, installation or support and maintenance of Centricity or Third Party Software licensed for use in connection with Centricity Software; and/or (v) any Product or Service that is identified in a Healthcare Digital Quotation. "Specifications" are GE HealthCare's written specifications and manuals as of the date the Equipment shipped; and "Documentation" is the online help functions, user instructions and manuals regarding the installation and operation of the Product as made available by GE HealthCare to Customer.

2. Term and Termination. Software licenses, Services and/or Subscriptions will have individual term lengths identified in the Quotation. If there is a material breach of this Agreement and/or the Quotation that is not cured by the breaching party within 60 days from receipt of written notice, the non-breaching party can terminate the respective Agreement or Quotation. Other than as set forth in this Agreement, neither party can unilaterally terminate this Agreement or a Quotation. Any remaining undisputed, unpaid fees become immediately due and payable on expiration or termination. Expiration or termination of this Agreement will have no effect on Quotations executed prior to the date of expiration or termination.

3. Software License. Other than as identified in a Quotation, GE HealthCare grants Customer a non-exclusive, non-transferable, non-sublicensable, perpetual license to use the Software for Customer's internal business purposes only in the United States consistent with the terms of this Agreement. Customer's independent contractors (except GE HealthCare competitors) may use the Software, but Customer is responsible for their compliance with this license, and additional license fees may apply. Customer cannot modify, reverse engineer, copy or create derivative works of the Software, except for making 1 backup copy, and cannot remove or modify labels or notices of proprietary rights of the Software or Documentation. If GE HealthCare provides Third Party Software, Customer will comply with third party license terms, and licensors are third-party beneficiaries of this Agreement.

4. Commercial Logistics

4.1 Order Cancellation and Modifications.

4.1.1 Cancellation. If Customer cancels an order prior to shipment without GE HealthCare's written consent, Customer will be responsible for all third-party expenses incurred by GE HealthCare prior to Customer's order cancellation and GE HealthCare may charge: (i) a fee of up to 10% of the Product price; and (ii) a fee for site evaluations performed prior to cancellation. GE HealthCare will retain, as a credit, payments received up to the amount of the cancellation charge. Customer must pay applicable progress payments (other than final payment) prior to final calibration, and GE HealthCare may delay calibration until those payments are received. If Customer does not schedule a delivery date within 6 months after order entry, GE HealthCare may cancel on written notice. This Section does not apply to Software or Subscriptions, Third Party Products and/or related professional or installation services; those orders are non-cancellable.

4.1.2 Used Equipment. Equipment identified as pre-owned, refurbished, remanufactured or demonstration Equipment is not new and may have received reconditioning to meet Specifications ("Used Equipment"). Sale of Used Equipment is subject to availability. If it is no longer available, GE HealthCare will attempt to identify other Used Equipment in its inventory that meets Customer's needs, and if substitute Used Equipment is not acceptable, GE HealthCare will cancel the order and refund any deposit Customer paid for the Used Equipment.

4.2 Site Preparation. Customer is responsible for network and site preparation, including costs, in compliance with GE HealthCare's written requirements and applicable laws. GE HealthCare may refuse to deliver or install if the site has not been properly prepared or there are other impediments.

4.3 Transportation, Title and Risk of Loss. Unless otherwise identified in the Quotation, shipping terms are FOB Destination. Title and risk of loss to Equipment and Third-Party Equipment passes to Customer on delivery to Customer's designated delivery location.

4.4 Delivery, Returns and Installation. Delivery dates are approximate. Products may be delivered in installments. GE HealthCare may invoice multiple installment deliveries on a consolidated basis, but this does not release Customer's obligation to pay for each installment delivery. Delivery occurs: (i) for Product, on electronic or physical delivery to Customer; and (ii) for Services, on performance.

Products cannot be returned for refund or credit if they match the Quotation.

Delivery and installations will be performed from 8am to 5pm local time, Monday-Friday, excluding GE HealthCare holidays, and outside those hours for an additional fee. Customer will: (i) install cable and assemble products not provided by GE HealthCare; (ii) enable connectivity and interoperability with products not provided by GE HealthCare; (iii) pay for construction and rigging costs; and (iv) obtain all licenses, permits and approvals for installation, use and disposal of Products. For upgrades and revisions to non-Healthcare Digital Products, Customer must return replaced components to GE HealthCare at no charge.

4.5 Information Technology Professional Services ("ITPS"). ITPS must be completed within 12 months of the later of the ITPS order date or Product delivery. If not done within this time period, other than because of GE HealthCare's failure to perform, ITPS performance obligations expire without refund. ITPS includes project management, HL7/HIS system integration, database conversion, network design and integration and separately cataloged software installations. This Section does not apply to Healthcare Digital Products.

4.6 Acceptance.

4.6.1 Equipment Acceptance. Beginning on completion of installation (not to exceed 30 days from shipment) or delivery (if installation is not required), Customer will have 5 days to determine if the Equipment operates substantially in accordance with Specifications ("Equipment Test Period"). If the Equipment fails to perform accordingly, Customer will provide to GE HealthCare: (i) written notice; (ii) access to the Equipment; and (iii) a reasonable time to bring the Equipment into compliance. After correction by GE HealthCare, Customer will have the remainder of the Equipment Test Period or 3 days, whichever is greater, to continue testing. Equipment is accepted on the earlier of expiration of the Equipment Test Period or the date the Equipment is first used for non-acceptance testing purposes.

4.6.2 Software Acceptance. Beginning on completion of Software implementation, Customer will have 30 days to determine if the Software operates substantially in accordance with the Documentation ("Software Test Period"). If the Software fails to perform accordingly, Customer will provide to GE HealthCare: (i) written notice; (ii) access to the Software; and (iii) a reasonable time to bring the Software into compliance. After correction by GE HealthCare, Customer will have the remainder of the Software Test Period or 5 days, whichever is greater, to continue testing. Software is accepted on the first to occur of: (a) expiration of the Software Test Period; (b) the date Software is first used to process actual data; or (c) the "Go-Live Date" as defined in the Quotation.

4.6.3 Third Party Product Acceptance. Third Party Products are accepted 5 days after delivery.

4.6.4 Subscription Acceptance. Products provided pursuant to a Subscription are accepted 5 days after GE HealthCare provides Customer access to the Products.

4.7 Third Party Products and Services. If GE HealthCare provides Third Party Products and/or Services, then (i) GE HealthCare is acquiring them on Customer's behalf as its agent and not as a supplier; (ii) GE HealthCare provides no warranties or indemnification, express or implied; and (iii) Customer is responsible for all claims resulting from or related to their acquisition or use.

4.8 Mobile Equipment. GE HealthCare will assemble Equipment it has approved for mobile use at the vehicle location identified by Customer. Customer will comply with the vehicle manufacturer's planning requirements and arrange for delivery of the vehicle. Equipment placed in a mobile environment must be used for medical, billing, or other non-entertainment use by bona fide medical professionals authorized to use and prescribe such use. Customer will ensure Equipment that GE HealthCare has approved for mobile use is adequately installed in accordance with GE HealthCare's applicable installation instructions.

4.9 Audit. GE HealthCare may audit Customer's use of Software, Subscription and Healthcare Digital Products to verify Customer's compliance with this Agreement up to 12 months following termination or expiration of the applicable Quotation. Customer will provide reasonable assistance and unrestricted access to the information. Customer must pay underpaid or unpaid fees discovered during the audit, and GE HealthCare's reasonable audit costs, within 30 days of written notification of the amounts owed. If Customer does not pay, or the audit reveals that Customer is not in compliance, GE HealthCare may terminate Customer's Software license, Subscription or use of the Healthcare Digital Product.

4.10 Product Inflation. For GE HealthCare imaging Products only (to exclude ultrasound and life care solutions Products), due to the potential long cycle time from Product order to Product delivery, GE HealthCare may increase Product Total Quote Net Selling Price by an amount equal to the increase in the U.S. Bureau of Labor Statistics Consumer Price Index ("CPI") from the date of Product order to the date of notice prior to Product delivery, by providing at least 4 weeks prior notice from the requested delivery date.

5. Security Interest and Payment.

5.1 Security Interest. Customer grants GE HealthCare a purchase money security interest in all Products in the Quotation until full payment is received, and Customer will perform all acts and execute all documents necessary to perfect GE HealthCare's security interest.

5.2 Failure to Pay. If, after Product delivery, Customer is more than 45 days past due on undisputed payments, GE HealthCare may, on 10 days' prior written notice, disable and/or remove the Products.

5.3 Lease. If Customer leases a Product, Customer continues to be responsible for payment obligations under this Agreement.

6. Trade-In Equipment. Trade-in equipment identified in a Quotation will be subject to separate trade-in terms and conditions.

7. Subscriptions. The following terms apply to all Subscriptions (excluding Healthcare Digital Products).

7.1 Commencement. Unless otherwise indicated in this Agreement or the Quotation, the Subscription commences on the date GE HealthCare provides Customer access to the Products.

7.2 Renewal / Non-Renewal. The Subscription term renews automatically for the same duration as the initial term of the Subscription unless otherwise identified in the Quotation. Except as otherwise identified in this Agreement or a Quotation, GE HealthCare may increase prices annually by no more than the Consumer Price Index for All Urban Consumers (U.S. City Average, December to December) plus 2%, upon 90 days' prior written notice. Subscriptions are not cancellable; however, either party may opt to not renew the Subscription after the initial Subscription term or any subsequent renewal term by providing at least 60 days' prior written notice to the other party prior to renewal.

7.3 Subscription Equipment. Title to Equipment and Third-Party Equipment provided via Subscription ("Subscription Equipment") remains with GE HealthCare. Customer will not place, or permit the placement of, liens, security interests, or other encumbrances on Subscription Equipment. Customer shall not repair or service Subscription Equipment, or allow others to do so, without the prior written consent of GE HealthCare.

7.4 Support Services. Unless otherwise noted in the Quotation, GE HealthCare will provide support Services as described in the Subscription Products and ViewPoint Software Maintenance Terms and Conditions.

7.5 Upgrades. Included in the Subscription fees if Customer does not owe any undisputed payments, GE HealthCare will provide upgrades if and when they become available and to the extent they are provided to all GE HealthCare customers with a Subscription for the Products, at mutually agreed upon delivery and installation dates. Upgrades do not include: (i) any optional or separately licensable features; (ii) any Products not covered by the Subscription; or (iii) any virtual environment required to host an upgraded Product. GE HealthCare shall have no obligation to provide upgrades if Products are not maintained within the current major release version or the immediately prior major release version.

7.6 Access Controls. Customer must: (i) ensure users maintain individually-assigned confidential user credentials and control mechanisms to access the Subscription; and (ii) take reasonable steps to prevent unauthorized access to Products.

7.7 Post-Termination. Upon termination or expiration of the Subscription: (i) Customer must immediately discontinue use of the Products and return Subscription Equipment to GE HealthCare in proper operating condition; (ii) Customer must destroy its copies of Software and Documentation; (iii) Customer must remove its data from Subscription Equipment; (iv) GE HealthCare is not responsible for and may destroy Customer-provided information, images or data; and (v) GE HealthCare will remove Customer's access.

7.8 Professional Services. For Services not covered under this Agreement or required due to Customer not meeting its responsibilities under the Agreement, applicable additional professional Services and fees will be required: (i) identified in the Quotation; and (ii) subject to GE HealthCare's then-current pricing.

8. General Terms.

8.1. Confidentiality. Each party will treat this Agreement and the other party's proprietary information as confidential, meaning it will not use or disclose the information to third parties unless permitted in this Agreement or required by law. Customers are not prohibited from discussing patient safety issues in appropriate venues.

8.2. Governing Law. The law of the state where the Product is installed, Service is provided, or Subscription is accessed will govern this Agreement.

8.3. Force Majeure. Performance time for non-monetary obligations will be reasonably extended for delays beyond a party's control.

8.4. Assignment; Use of Subcontractors. Rights and obligations under this Agreement cannot be assigned without the other party's prior written consent, unless: (i) it is to an entity (except to a GE HealthCare competitor) that (a) is an affiliate or parent of the party or (b) acquires substantially all of the stock or assets of such party's applicable business, Product line, or Service thereof; and (ii) the assignee agrees in writing to be bound by this Agreement, including payment of outstanding fees. GE HealthCare may hire subcontractors to perform work under this Agreement but will remain responsible for its obligations.

8.5. Waiver; Survival. If any provision of this Agreement is not enforced, it is not a waiver of that provision or of a party's right to later enforce it. Terms in this Agreement related to intellectual property, compliance, data rights and terms that by their nature are intended to survive will survive the Agreement's expiration or termination.

8.6. Intellectual Property. GE HealthCare owns all rights to the intellectual property in GE HealthCare's Products, Services, Documentation, Specifications, and statements of work related to a Quotation or otherwise. Customer may provide GE HealthCare with feedback related to Products, Services, and related Documentation, and GE HealthCare may use it in an unrestricted manner.

9. Compliance.

9.1. Generally. Each party will comply with applicable laws and regulations. Customer is only purchasing or licensing Products for its own medical, billing and/or non-entertainment use in the United States, or for the purposes of renting or leasing the Products for medical, billing and/or non-entertainment purposes through a mobile system or modular building where Customer maintains title to the Products. GE HealthCare will not deliver, install, service or train if it discovers Products have been or are intended to be used contrary to this Agreement. This Agreement is subject to GE HealthCare's ongoing credit review and approval. Customer is aware of its legal obligations for cost reporting, including 42 C.F.R. § 1001.952(g) and (h), and will request from GE HealthCare any information beyond the invoice needed to fulfill Customer's cost reporting obligations. GE HealthCare will provide safety-related updates for Equipment and Software required by applicable laws and regulations at no additional charge.

9.2. Security. GE HealthCare is not responsible for: (i) Customer's passwords or password management (ii) securing Customer's network; (iii) preventing unauthorized access to Customer's network or the Product; (iv) backup management; iv) data integrity; (vi) recovery of lost, corrupted or damaged data, images, software or equipment; (vii) third party operating systems, unless specifically provided in the Quotation; or (viii) providing or validating antivirus or related IT safeguards unless sold to Customer by GE HealthCare. NEITHER PARTY WILL BE LIABLE TO THE OTHER PARTY FOR DAMAGES CAUSED BY UNAUTHORIZED ACCESS TO THE NETWORK OR PRODUCTS REGARDLESS OF A PARTY'S COMPLIANT SECURITY MEASURES.

9.3. Environmental Health and Safety ("EHS"). GE HealthCare personnel may stop work without penalty due to safety concerns. Customer must: (i) comply with GE HealthCare's EHS requirements; (ii) provide a safe environment for GE HealthCare personnel; (iii) tell GE HealthCare about chemicals or hazardous materials that might come in contact with Products or GE HealthCare personnel; (iv) perform decommissioning or disposal at Customer facilities; (v) obtain and maintain necessary permits; (vi) thoroughly clean Products before Service; (vii) provide radioactive materials required for testing Products; and (viii) dispose of waste related to Products and installations.

9.4. Parts and Tubes. GE HealthCare: (i) recommends the use of parts it has validated for use with the Product; (ii) is not responsible for the quality of parts supplied by third parties to Customer; and (iii) cannot assure Product functionality or performance when non-validated parts are used. Certain Products are designed to recognize GE HealthCare-supplied tubes and report the presence of a non-GE HealthCare tube; GE HealthCare is not responsible for the use of, or effects from, non-GE HealthCare supplied tubes.

9.5. Training. GE HealthCare's training does not guarantee that: (i) Customer trainees are fully trained on Product use, maintenance or operation; or (ii) training will satisfy any licensure or accreditation. Customer must ensure its trainees are fully qualified in the use and operation of the Product. Unless otherwise identified in the training catalog, Customer will complete training within 12 months of: (a) the date of Product delivery for a Product purchase; (b) the respective start date for Services or Subscription for purchase of Service or Subscription; or (c) the date training is ordered for training-only purchases. If not completed within this time period, other than because of GE HealthCare's fault, training expires without refund. Training will be invoiced and payment due pursuant to the billing terms listed in the equipment Quotation. Recording of GE HealthCare training sessions is prohibited.

9.6. Medical Diagnosis and Treatment. All clinical and medical treatment, diagnostic and/or billing decisions are Customer's responsibility.

9.7. Connectivity. If a Product has remote access capability: (i) Customer will provide GE HealthCare with, and maintain, a GE HealthCare-validated remote access connection to service the Product; or (ii) GE HealthCare reserves the right to charge Customer for onsite support at GE HealthCare's then-current billing rate. This remote access and collection of machine data (e.g., temperature, helium level) will continue after the end of this Agreement unless Customer requests in writing that GE HealthCare disable it.

9.8. Use of Data.

9.8.1. Protected Health Information. If GE HealthCare creates, receives, maintains, transmits or otherwise has access to Protected Health Information (as defined in 45 C.F.R. § 160.103) ("PHI"), GE HealthCare may use and disclose the PHI only as permitted by law and by the Business Associate Agreement. Before returning any Product to GE HealthCare, Customer must ensure that all PHI stored in it is deleted.

9.8.2. Data Rights. GE HealthCare may collect, prepare derivatives from and otherwise use non-PHI data related to Products and/or Services for such things as training, demonstration, research, development, benchmarking, continuous improvement and facilitating the provision of its products, software and services. GE HealthCare will own all intellectual property and other rights that could result from this collection, preparation and use. The non-PHI data will not be used to identify Customer or sold by GE HealthCare without Customer's consent.

9.9. Customer Policies. GE HealthCare will use reasonable efforts to respect Customer-provided policies that apply to GE HealthCare and do not materially contradict GE HealthCare policies. Failure to respect Customer policies is not a material breach unless it is willful and adversely affects GE HealthCare's ability to perform its obligations.

9.10. Insurance. GE HealthCare will maintain coverage in accordance with its standard certificate of insurance.

9.11. Excluded Provider. To its knowledge, neither GE HealthCare nor its employees performing Services under this Agreement have been excluded from participation in a Federal Healthcare Program. If an employee performing Services under this Agreement is excluded, GE HealthCare will replace that employee within a reasonable time; if GE HealthCare is excluded, Customer may terminate this Agreement upon written notice to GE HealthCare.

10. Disputes and Arbitration

10.1. Binding Arbitration. Other than collection matters and actions seeking injunctive relief to prevent or cease a violation of intellectual property rights related to Products or Services, the parties agree to submit all disputes arising under or relating to this Agreement to the American Arbitration Association ("AAA") office closest to the largest metropolitan area of the location where the Product is installed or the Service is provided for binding arbitration conducted in accordance with AAA's then-current Commercial Arbitration Rules. Costs, including arbitrator fees and expenses, will be shared equally, and each party will bear its own attorneys' fees. The arbitrator will have authority to award damages only to the extent available under this Agreement. Nothing in this Section shall allow either party to arbitrate claims of any third-party not a party to this Agreement. The parties further agree to keep confidential: (i) the fact that any arbitration occurred, (ii) the results of any arbitration, (iii) all materials used, or created for use, in the arbitration, and (iv) all other documents produced by another party in the arbitration and not otherwise in the public domain.

11. Liability and Indemnity.

11.1. Limitation of Liability. GE HEALTHCARE'S LIABILITY FOR DIRECT DAMAGES TO CUSTOMER UNDER THIS AGREEMENT WILL NOT EXCEED: (I) FOR PRODUCTS, THE PRICE FOR THE PRODUCT THAT IS THE BASIS FOR THE CLAIM; OR (II) FOR SERVICE OR SUBSCRIPTIONS, THE AMOUNT OF SERVICE OR SUBSCRIPTION FEES FOR THE 12 MONTHS PRECEDING THE ACTION THAT IS THE BASIS FOR THE CLAIM. THIS LIMITATION WILL NOT APPLY TO GE HEALTHCARE'S DUTIES TO INDEMNIFY CUSTOMER UNDER THIS AGREEMENT.

11.2. Exclusion of Damages. NEITHER PARTY WILL HAVE ANY OBLIGATION FOR: (I) CONSEQUENTIAL, PUNITIVE, INCIDENTAL, INDIRECT OR REPUTATIONAL DAMAGES; (II) PROFIT, DATA OR REVENUE LOSS; OR (III) CAPITAL, REPLACEMENT OR INCREASED OPERATING COSTS.

11.3. IP Indemnification. GE HealthCare will indemnify, defend and hold Customer harmless from third-party claims for infringement of United States intellectual property rights arising from Customer's use of the Equipment or Software in accordance with the Specifications, Documentation and license.

11.4. General Indemnification.

11.4.1. GE HealthCare will indemnify, defend and hold Customer harmless for losses which Customer becomes legally obligated to pay arising from third party claims brought against Customer for bodily injury or damage to real or tangible personal property to the extent the damage was caused by GE HealthCare's: (i) design or manufacturing defect; (ii) negligent failure to warn, negligent installation or negligent Services; or (iii) material breach of this Agreement.

11.4.2. Customer will indemnify, defend and hold GE HealthCare harmless for losses which GE HealthCare becomes legally obligated to pay arising from third party claims brought against GE HealthCare for bodily injury or damage to real or tangible personal property to the extent the damage was caused by Customer's: (i) medical diagnosis or treatment decisions; (ii) misuse or negligent use of the Product; (iii) improper storage of the Product; (iv) modification of the Product; or (v) material breach of this Agreement.

11.5. Indemnification Procedure. For all indemnities under this Agreement: (i) the indemnified party must give the other party written notice before claiming indemnification; (ii) the indemnifying party will control the defense; (iii) the indemnified party may retain counsel at its own expense; and (iv) the indemnifying party is not responsible for any settlement without its written consent.

12. Payment and Finance.

12.1. Late Payment. Customer must raise payment disputes before the payment due date. For any undisputed late payment, GE HealthCare may: (i) suspend performance under this Agreement until all past due amounts are paid; (ii) charge interest at a rate no more than the maximum rate permitted by applicable law; and (iii) use unapplied funds due to Customer to offset any of Customer's outstanding balance. If GE HealthCare suspends performance, any downtime will not be included in the calculation of any uptime commitment. If Customer fails to pay when due: (a) GE HealthCare may revoke its credit and designate Customer to be on credit hold; and (b) all subsequent shipments and Services must be paid in full on receipt.

12.2. Taxes. Prices do not include applicable taxes, which are Customer's responsibility.

12.3 Customer Payment Obligation. If installation or acceptance is delayed more than 90 days because of any reason for which Customer or its subcontractor is responsible, GE HealthCare will provide written notice and bill the remaining balance due on the order, and Customer must pay according to the payment terms listed on the Quotation.

13. Notices. Notices will be in writing and considered delivered when received if sent by certified mail, postage prepaid, return receipt requested, by overnight mail, or by fax. Notice to Customer will be directed to the address on this Agreement, and notice to GE HealthCare to General Counsel, 9900 W Innovation Dr., Wauwatosa, WI 53226.

14. Imaging Equipment Uptime Commitment. GE HealthCare will provide an uptime commitment during warranty for CT, MR, nuclear imaging, and x-ray Equipment, excluding peripherals ("Eligible Equipment") if Customer provides GE HealthCare with: (i) access to Eligible Equipment through a secure connection meeting Specifications and industry best practices; (ii) notice of changes that impact Customer's connection; and (iii) prompt and unencumbered access to Eligible Equipment. The "Uptime Commitment" for nuclear imaging and x-ray Eligible Equipment is 95%, except digital mammography, digital radiographic and vascular x-ray systems and all other Eligible Equipment is 97%. Other Products may be eligible for an uptime commitment if identified in the Quotation.

If GE HealthCare fails to meet the Uptime Commitment over a 26-week period, it will extend the warranty as follows:

% Less than Uptime Commitment	Warranty Extension
0.1 - 3.0	1 week
3.1 - 8.0	2 weeks
8.1 - 13.0	4 weeks
> 13.0	6 weeks

Uptime is calculated as follows:

$$\left(\frac{UptimeBase - Downtime}{UptimeBase}\right)$$

"Uptime Base" = ("a" hours per day X "b" days per week X 26 weeks) – (Planned Maintenance ("PM") hours during prior 26 weeks), where "a" hours per day and "b" days per week are determined by the standard warranty for Eligible Equipment. "Downtime" is the number of hours during which Eligible Equipment is subject to a Critical Malfunction. Downtime starts when Customer notifies GE HealthCare that Eligible Equipment is inoperable and unavailable for use due to GE HealthCare's design, manufacturing, material or performance failure ("Critical

Malfunction"). Downtime ends when Eligible Equipment is available for clinical use. To be eligible for the Uptime Commitment, Customer must maintain a performance log that includes data required to calculate Downtime.

15. DoseWatch Device License. Each connection of a Device (defined below) to the DoseWatch Software requires Customer to purchase a unique Device license referencing a Device ID that allows concurrent use of the DoseWatch Software with that Device at a specified Customer facility on Customer's secured network. All other terms, duration and warranties applicable to the Software license apply to the Device license. "Device" is specific Customer equipment approved by GE HealthCare to be connected to DoseWatch Software under this Agreement. Additional Device connections may be added to this Agreement, subject to individual Device licenses, and related installation, implementation, configuration and optimization services at GE HealthCare's then-current rates.

16. Subscription Products and ViewPoint Software Maintenance Terms and Conditions.

16.1 Overview. GE HealthCare will, in accordance with the terms and conditions of this section, maintain, support and update: (i) Products provided via Subscription (excluding Healthcare Digital Products); and (ii) ViewPoint Software licensed by Customer ("ViewPoint Software") and HIS interface software installed in the United States covered by a Software Maintenance Agreement ("SMA").

16.2 Scope.

16.2.1 Software Support and Maintenance. GE HealthCare will use reasonable efforts to provide Error Correction (defined below) for verifiable and reproducible Errors (defined below) within a reasonable time after: (a) Customer reports the Error to GE HealthCare; or (b) detection by GE HealthCare. Updates (defined below), if released, will be provided at no additional cost as a part of this maintenance commitment. New functionality must be purchased separately, unless otherwise agreed.

16.2.2 Equipment Maintenance. Preventative maintenance service may be required periodically during normal business hours of 8:00 a.m. to 5:00 p.m. (local time) on mutually agreed dates. Customer will make the Equipment available for preventative maintenance upon GE HealthCare request. Additional services to be performed, including specific additional terms thereof, shall be specified in the Quotation or alternate schedules.

16.2.3 Definitions. "Error" means any Software-related problem that: (i) materially interferes with Customer's use of the Software; and (ii) results from a failure of the Software to materially conform to the Documentation. "Error Correction" means: (a) modification of the Software that corrects an Error by bringing the Software into material conformity with the Documentation; or (b) a procedure that avoids the material adverse effect of the nonconformity. "Update" means a change that provides Error Corrections and/or enhances functionality of the Software version licensed by Customer. An Update does not involve major changes or provide significant, new functionality or applications, or changes to the software architecture or file structure. Updates retain the same license as the original Software.

16.2.4 Hotline Support. GE HealthCare will provide phone and email support during standard business hours, excluding GE HealthCare holidays, for problem solving, Error resolution and general help.

16.2.5 Remote Access Support. GE HealthCare may access Software remotely via Customer's network and GE HealthCare-supplied secure tunnelling software to monitor Software parameters to help prevent and detect Errors. Customer will reasonably cooperate with GE HealthCare to establish remote connections. Certain modules require remote access in order to obtain support.

16.2.6 Warranty. GE HealthCare warrants that its Services will be performed by trained individuals in a professional, workman-like manner. GE HealthCare will re-perform non-conforming Services as long as Customer provides prompt written notice to GE HealthCare. NO OTHER EXPRESS OR IMPLIED WARRANTIES, INCLUDING IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WILL APPLY. SERVICE MANUALS AND DOCUMENTATION ARE PROVIDED "AS IS". GE HEALTHCARE DOES NOT GUARANTEE PRODUCTS WILL OPERATE WITHOUT ERROR OR INTERRUPTION.

16.2.7 Exclusions. GE HealthCare has no obligation to Customer for: (i) use of Products in combination with software, hardware, or services not recommended in writing by GE HealthCare; (ii) use in a manner or environment for which GE HealthCare did not design or license the Products, or in violation of GE HealthCare's recommendations or instructions; (iii) interface configuration (often referred to as HIS, PACS or EMR interfaces necessary due to changing vendors or versions); (iv) reorganization of Customer data; (v) consulting or software engineering and programming; (vi) support of Products outside the scope of the foregoing maintenance commitments; (vii) failure to use or install, or permit GE HealthCare to use or install, Error Corrections or Updates; (viii) failure to maintain Products within the current major release version or the immediately prior major release version; (ix) defects in products or services not made and provided by GE HealthCare; (x) any cause external to the Products or beyond GE HealthCare's control; (xi) failure of Customer's network; (xii) replacement of disposable or consumable items; (xiii) additional equipment or upgrades in connection with Products; and (xiv) migration of Software to different hardware or operating systems.

16.2.8 Software Maintenance Agreement Term. The following applies to ViewPoint software and HIS interface software only: The SMA term and start date is identified in the Quotation and its related Schedule A. Either party may terminate the SMA without cause after the first anniversary by providing at least 90 days' prior written notice to the other party. SMA payments are due within 30 days after date of GE HealthCare's invoice.

17. Magnetic Resonance ("MR") – Magnetic Maintenance and Cryogens. Customer is responsible for: (i) cryogen loss due to power loss or water chiller failure for the MR's shield cooler or condenser system during installation; (ii) costs for cryogen replacement plus transfill labor at GE HealthCare's then-applicable rates; (iii) post-assembly supply and installation of cryogens, unless cryogen loss is caused by a defect in material or workmanship within the scope of GE HealthCare's warranty. MR magnetic fields attract ferro-magnetic articles and are capable of rapidly accelerating them toward the magnet, creating danger to persons in the vicinity and possible system damage. Access to the magnet room shall be limited to MR Safety Trained personnel. Third party contractors or other untrained personnel must always be supervised by a MR Safety trained representative. Magnetic and radio frequency fields may adversely affect the operation of pacemakers, equipment containing magnetic reed switches and aneurysm or surgical clips.

1. Warranty.

1.1. Equipment. For non-customized Equipment purchased from GE HealthCare or its authorized distributors, unless otherwise identified in the Quotation, GE HealthCare warrants that Equipment will be free from defects in title, and, for 1 year from Equipment Acceptance, it will: (i) be free from defects in material and workmanship under normal use and service; and (ii) perform substantially in accordance with the Specifications. The warranty covers parts and labor and only applies to end-users that purchase Equipment from GE HealthCare or its authorized distributors.

1.2. Software. For Software licensed from GE HealthCare, GE HealthCare warrants that: (i) it has the right to license or sublicense Software to Customer; (ii) it has not inserted Disabling Code into Software; (iii) it will use efforts consistent with industry standards to remove viruses from Software before delivery; and (iv) unless otherwise identified in the Quotation, for 90 days from Software Acceptance, Software will perform substantially in accordance with the Documentation. "Disabling Code" is code designed to interfere with the normal operation of Software, but code that prohibits use outside of the license scope is not Disabling Code.

1.3. Services. GE HealthCare warrants that its Service will be performed by trained individuals in a professional, workman-like manner.

1.4. Used Equipment. Certain Used Equipment is provided with GE HealthCare's standard warranty for the duration identified in the Quotation, but in no event more than 1 year. If no warranty is identified, the Used Equipment is provided "AS IS" and is not warranted by GE HealthCare.

1.5. Accessories and Supplies. Warranties for accessories and supplies are at www.gehealthcare.com/accessories.

1.6. Third Party Product. Third Party Product is covered by the third party's warranty and not GE HealthCare's warranties.

1.7. Subscription Products. Unless otherwise specified, Products provided via Subscription do not include a warranty.

1.8. SaaS Offerings. Unless otherwise specified, SaaS Offerings do not include a warranty.

2. Remedies. If Customer promptly notifies GE HealthCare of its claim during the warranty and makes the Product available, GE HealthCare will: (i) at its option, repair, adjust or replace the non-conforming Equipment or components; (ii) at its option, correct the non-conformity or replace the Software; and/or (iii) re-perform non-conforming Service. Warranty service will be performed from 8am to 5pm local time, Monday-Friday, excluding GE HealthCare holidays, and outside those hours at GE HealthCare's then-current service rates and subject to personnel availability. GE HealthCare may require warranty repairs to be performed via a secure, remote connection or at an authorized service center. If GE HealthCare replaces Equipment or a component, the original becomes GE HealthCare property and Customer will return the original to GE HealthCare within 5 days after the replacement is provided to Customer. Customer cannot stockpile replacement parts. Prior to returning Equipment to GE HealthCare, Customer will: (a) obtain a return to manufacturer authorization; and (b) back up and remove all information stored on the Equipment (stored data may be removed during repair). Customer is responsible for damage during shipment to GE HealthCare. The warranty for a Product or component provided to correct a warranty failure is the unexpired term of the warranty for the repaired or replaced Product.

GE HealthCare may provide a loaner unit during extended periods of Product service or for GE HealthCare Product training purposes. If a loaner unit is provided: (i) it is for Customer's temporary use at the location identified in the Quotation; (ii) it will be returned to GE HealthCare within 5 days after the Product is returned to Customer, and if it is not, GE HealthCare may repossess it or invoice Customer for its full list price; (iii) it, and all programs and information pertaining to it, remain GE HealthCare property; (iv) risk of loss is with Customer during its possession; (v) Customer will maintain and return it in proper condition, normal wear and tear excepted, in accordance with GE HealthCare's instructions; (vi) it will not be repaired except by GE HealthCare; (vii) GE HealthCare will be given reasonable access to it; (viii) Customer is not paying for its use, and Customer will ensure charges or claims submitted to a government healthcare program or patient are submitted accordingly; and (ix) prior to returning it to GE HealthCare, Customer will delete all information, including PHI, from it and its accessories, in compliance with industry standards and instructions provided by GE HealthCare.

NO OTHER EXPRESS OR IMPLIED WARRANTIES, INCLUDING IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WILL APPLY. SERVICE MANUALS AND DOCUMENTATION ARE PROVIDED "AS IS". GE HEALTHCARE DOES NOT GUARANTEE PRODUCTS WILL OPERATE WITHOUT ERROR OR INTERRUPTION.

3. Limitations. GE HealthCare has no obligation to Customer for warranty claims if Customer uses the Product: (a) for non-medical or entertainment use or outside the United States; (b) in combination with software, hardware, or services not recommended in writing by GE HealthCare; and(c) in a manner or environment for which GE HealthCare did not design or license it, or in violation of GE HealthCare's recommendations or instructions. GE HealthCare has no obligation to Customer for warranty claims for damages or deficiencies outside GE HealthCare's reasonable control.

In addition, these warranties do not cover: (i) defects or deficiencies from improper storage or handling, maintenance or use that does not conform to Specifications and/or Documentation, inadequate backup or virus protection, cyber-attacks, failure to maintain power quality, grounding, temperature, and humidity within Specifications and/or Documentation, or other misuse or abuse; (ii) repairs due to power anomalies or any cause external to the Products or beyond GE HealthCare's control; (iii) payment or reimbursement of facility costs arising from repair or replacement of the Products or parts; (iv) planned maintenance (unless applicable to Equipment), adjustment, alignment, or

calibration; (v) network and antenna installations not performed by GE HealthCare or its subcontractors; (vi) lost or stolen Products; (vii) Products with serial numbers altered, defaced or removed; (viii) modification of Product not approved in writing by GE HealthCare (ix) Products immersed in liquid; (x) for Mobile Equipment, defects or deficiencies from mobile use outside of normal transportation wear and tear (excluding OEC regarding transportation wear and tear) and (xi) replacement of disposable or consumable items.

4. Exceptions to Standard Warranty.

Partial System Equipment Upgrades for CT, MR, X-Ray, IGS, PET (Scanners, Cyclotrons and Chemistry Labs) and Nuclear systems: 6 months (only applies to the upgraded components unless the parties otherwise agree to modify the coverage of the upgraded and existing components in an existing service agreement. Optima XR240amx partial upgrades are warranted for 1 year on the wireless detector. This exception does not apply to the Artist Evo 1.5T and Premier Evo 3T upgrades which will have a full system one year warranty.

Cyclotron and Radiopharmacy: Warranty starts on the earlier of (i) 3 months after the date GE HealthCare completes mechanical installation, or (ii) the date Product testing is successfully completed

MR Systems: Warranty does not cover: (i) a defect or deficiency from failure of water chillers supplied or serviced by Customer, and (ii) 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 shim coils unless the need for supply or service is caused by a defect in material or workmanship covered by this warranty.

Proteus XR/a, Definium and Precision 500D X-Ray Systems: Warranty does not cover collimator bulbs

Performix 160A (MX160) Tubes: 3 years

X-Ray High Voltage Rectifiers and TV Camera Pick-Up Tubes: 6 months

X-Ray Wireless Digital Detectors: In addition to the standard warranty, GE HealthCare will provide coverage for detector damage due to accidental dropping or mishandling. If accidental damage occurs, GE HealthCare will provide Customer with 1 replacement detector during warranty at no additional charge. If subsequent accidental damage occurs during warranty, each additional replacement will be provided for $30,000 per replacement. This additional coverage excludes damage caused by any use that does not conform to original equipment manufacturer ("OEM") guidelines, use that causes fluid invasion, holes, deep scratches or the detector case to crack, and damage caused by abuse, theft, loss, fire, power failures or surges. If the warranty is voided by these conditions, repair or replacement is Customer's responsibility.

Bone Mineral Densitometry: Alpha Source, Inc. will perform installation, application support and warranty services. Direct warranty claims to Alpha Source, Inc. at 1-800-654-9845. Upgraded computer, printer and monitor components include a 1 month warranty. Customer will not be credited the value of this warranty against pre-existing warranties or service agreements.

OEC New or Exchange Service Parts: 120 days

OEC Tubes and Image Intensifiers: 1 year

HealthNet Lan, Advantage Review — Remote Products: 3 months

LOGIQ e, Venue 50, Venue Go, Versana Active and related transducers purchased with them: 5 years

LOGIQ V1, LOGIQ V2, Vivid iq, Vscan and Vscan Extend and related transducers purchased with them: 3 years

Except the following have a 1 year warranty:

Transducers: TEE Probes,

Carts: Venue 50 Docking Cart, Venue Go Cart, Venue Go mounting cradle, LOGIQ e Isolation Cart, LOGIQ e Docking Cart, LOGIQ V1/V2 Cart and Vivid IQ cart

Other Accessories: Batteries (internal & external), and printers and peripherals, TEE cleaning & storage system, ICECord Connector and printers

Warranty covers defective parts and components and includes: (i) repair at GE HealthCare facilities, (ii) a loaner unit or probe replacement shipped for next business day delivery for requests received by 3pm Central Time, (iii) phone support from 7am to 7pm Central Time, Monday-Friday, excluding GE HealthCare holidays. For an additional charge, GE HealthCare may provide field support/service, planned maintenance, and/or coverage for damage due to accidental dropping or mishandling.

LOGIQ P9 R2.5 and newer and, Versana Premier, Versana Balance, Venue and related transducers purchased with them: 5 years

Voluson P8 BT18 and newer, Voluson SWIFT, Voluson S8 Touch and Voluson S10 Expert, LOGIQ F8 2016 and newer, LOGIQ V5, Vivid T8 and Vivid T9 and related transducers purchased with them: 3 years

Except the following have a 1 year warranty:

Other Accessories: Batteries (internal & external) and printers and peripherals, TEE cleaning & storage system

Transducers: TEE Probes

Warranty Includes: (i) repair at Product location by a qualified service technician Monday-Friday 8am to 5pm local time, excluding GE HealthCare holidays, and (ii) phone support from 7am to 7pm Central Time, Monday-Friday, excluding GE HealthCare holidays. For an additional charge, GE HealthCare may provide planned maintenance and/or coverage for damage due to accidental dropping or mishandling.

Ultrasound Partial System Equipment Upgrades: 3 months (only applies to the upgraded components). Customer will not be credited the value of the warranty against pre-existing warranties or service agreements.

Veterinary Use: Notwithstanding anything herein, any Product validated and sold by GE HealthCare for specific use in the veterinary market shall have a one (1) year warranty.

Batteries: 3 months, except for x-ray nickel cadmium or lead acid batteries and ultrasound batteries, which are warranted for 1 year

CARESCAPE Monitors B450, B650 and B850 3 years parts, 1 year labor (excluding displays, which are standard 1 year parts and labor)

CARESCAPE ONE : 3 year parts, 1 year labor (excluding displays, which are standard 1 year parts and labor)

Micromodules: 3 year parts, 1 year labor (i) repair services performed at GE HealthCare Repair Operations Center

B40 Monitors: 2 years parts, 1 year labor (excluding displays, which are standard)

B105 B125, and B155 Patient Monitors: 3 years with: (i) repair services performed at GE HealthCare Repair Operations Center, (ii) phone support from 7am to 5pm Central Time, Monday-Friday, excluding GE HealthCare holidays; and (iii) a loaner Product (subject to availability; shipping charges included).

Novii Wireless Patch System- Interface and Pods: 1 year starting 40 days after shipment with: (i) exchange services performed at GE HealthCare Repair Operations Center; and (ii) phone support from 7am to 5pm Central Time, Monday-Friday, excluding GE HealthCare holidays . Customer may elect to purchase coverage for Pod damage due to accidental dropping or mishandling. This coverage excludes patches and cables, which are considered Product accessories, and are warranted pursuant to Section 1.5 above.

MAC 5, MAC 7, MAC 2000 and MAC 3500: 3 years (i) repair services performed at GE HealthCare Repair Operations Center, (ii) phone support from 7am to 5pm Central Time, Monday-Friday, excluding GE HealthCare holidays

CARESCAPE V100 and VC150 Vital Signs Monitors: 2 years

SEER 1000: 2 years (i) repair services performed at GE HealthCare Repair Operations Center, (ii) phone support from 7am to 5pm Central Time, Monday-Friday, excluding GE HealthCare holidays

Exergen: 4 years

Microenvironment and Phototherapy consumable components: 1 month

Corometrics® Fetal Monitoring: Warranty includes: (i) warranty starting on the earlier of (a) if GE HealthCare or Customer installs, 5 days after installation or (b) 40 days after shipment; and (ii) 2 years parts, 1 year labor

Corometrics® Nautilus Transducers: 2 years

Lullaby Phototherapy System: 3 years on lamp assembly

Blood pressure cuffs and related adaptors and air hoses: 1 month

Anesthesia Monitor Mounting Solutions: If purchased directly from GE HealthCare, it will be warranted as a GE HealthCare Product

Tec 850 Vaporizers: 3 years

Tec 6 Plus Vaporizers: 2 years

CARESCAPE Gateway: 1 year

CARESCAPE Bridge: 1 year

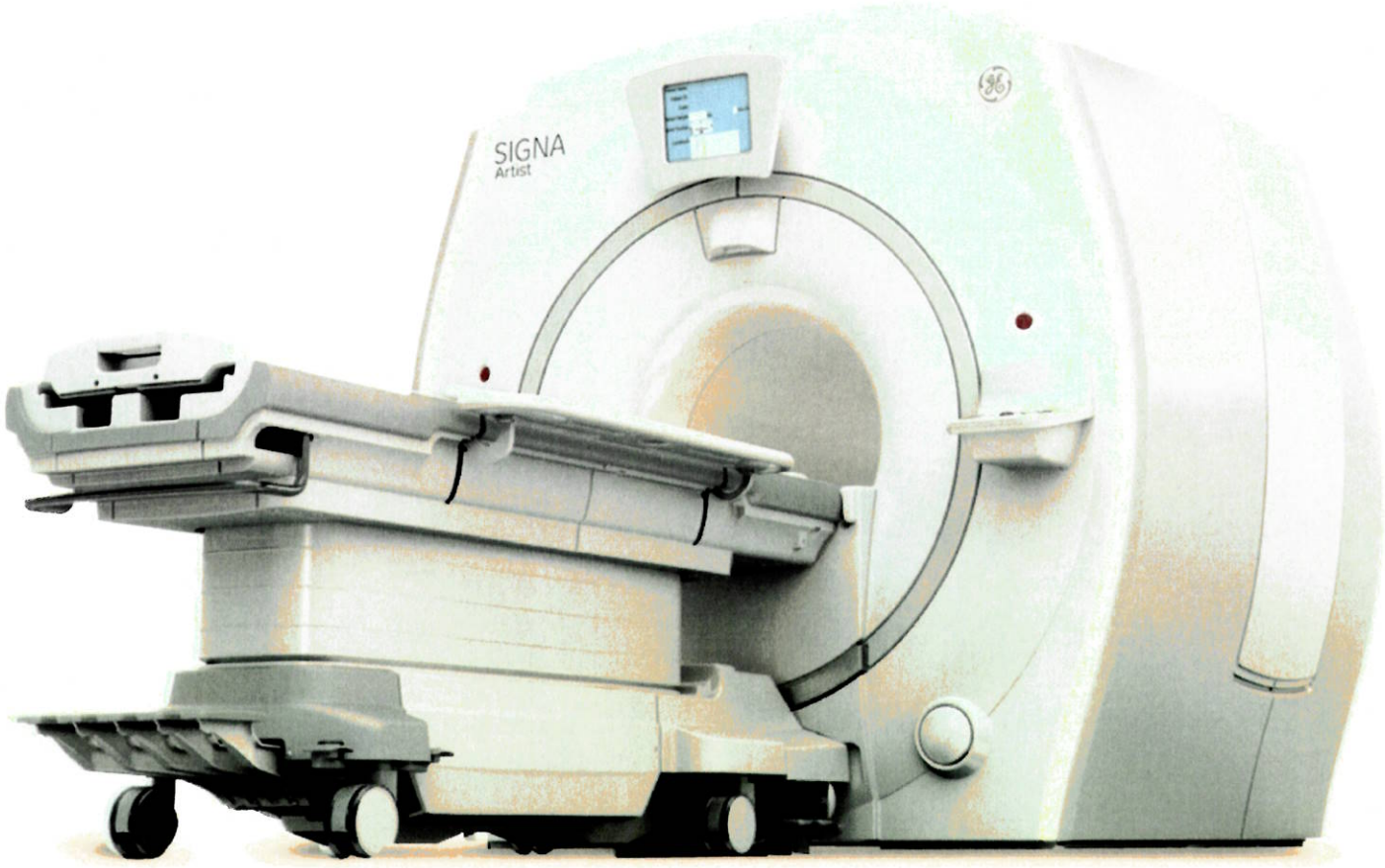
Vscan Air and Vscan Air Vet Warranty: 3 years with the exception of the battery and peripherals which are covered for 1 year. Warranty covers defective parts and components and includes: (i) a replacement unit, and (ii) phone support from 7am to 7pm Central Time, Monday-Friday, excluding GE HealthCare holidays. For an additional charge, GE HealthCare may provide additional battery and/or coverage for damage due to accidental dropping or mishandling

Appendix D

Equipment Brochure

SIGNA™ Artist

MR 30 data sheet



gehealthcare.com/mr

Magnet

The foundation for quality and flexibility

When it comes to image quality and applications flexibility, no other component of an MRI system has greater impact than the magnet architecture.

The SIGNA™ Artist system features a platform 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 55 cm* field of view provides uniform image quality and may reduce exam times since fewer acquisitions may be necessary to cover large anatomy.

Magnet Specifications	
Magnet Length	174 cm
Operating field strength	1.5T (63.86 MHz)
Magnet shielding	Active
Magnet Shimming	Active and Passive
EMI Shielding Factor	99%
Magnet weight with cryogens	7,275 lbs (3,300 kg)
Magnet cooling	Cryogenic (liquid helium)

Diameter Volume (x, y, z)	Typical ppm	Guaranteed ppm
10 cm DSV	0.007	0.02
20 cm DSV	0.035	0.06
30 cm DSV	0.10	0.15
40 cm DSV	0.33	0.43
45 cm DSV	0.88	1.0
48 cm DSV	1.75	2.0
50 cm DSV	2.8	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

Patient bore	
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

*FOV 50cm in Z direction

Gradient

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

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 implemented Quiet Technology on many components of the system to reduce acoustic noise and improve the patient environment.

Gradient Coil Isolation and Acoustic Damping

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 mounting has been optimally designed with features to reduce acoustic noise.

Vibro-Acoustic Isolation

To isolate the magnet from the building and reduce the transmission of acoustic noise in the structure, GE has designed a vibro-acoustic 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.

Gradient Performance	
Peak amplitude	44 mT/m
Slew-rate	200 T/m/s
Maximum FOV*	55 cm X 55 cm X 50 cm
Duty Cycle	100%

Gradient amplifier (water-cooled)	
Gradient amplifier	830 Amps/1650 VoltsPeak
Current and Voltage	Frequency dependent feed-forward model
Control	Digital PI feedback control loop

Peak gradient specifications determined through maximum measured gradient amplifier output and gradient coil efficiency.

Typical gradient fit expressed in terms of the absolute integrated errors in micro-Amperes-second (μAs). Gradient integral precision is the maximum integrated current error over a full-scale, echo-planar gradient waveform. Shot-to-shot repeatability is the largest difference between integrated errors across waveforms. Symmetry is the largest difference in integrated current error when comparing positive and negative gradient waveforms.

RF Architecture Total Digital Imaging

The RF acquisition technology of the SIGNA™ Artist 1.5T enables greater clinical performance and higher image quality especially for data-intensive applications and provides an improvement in SNR versus previous generation based on GE's Total Digital Imaging (TDI) RF architecture.

Direct Digital Interface (DDI) employs an independent analog-to-digital converter to digitize inputs from each of up to 128 RF channels, eleminating unnecessary noise enhancement. In other words, every element translates to a digitized signal. The result? Not only does DDI technology improve SNR of our images but it also works with legacy GE coils for unmatched flexibility.

RF Architecture	
Receiver sampling per channel	80 Mhz
Quadrature demodulation	Digital
Receiver dynamic range at 1 Hz BW	> 165 dB
Receiver resolution	Up to 32 bits

TDI Receive RF Architecture for 128 channels system	
Maximum number of channels per Field of View without table movement each generating an independent partial image	128

TDI Receive RF Architecture for 96 channels system	
Maximum number of channels per Field of View without table movement each generating an independent partial image	96

TDI Receive RF Architecture for 64 channels system	
Maximum nuber of channels per Field of View without table movement each generating an independent partial image	64

Standard RF transmit architecture	
RF Amplifier	Water 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 parts per billion (0 to 50 C)
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 & Host Computer

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 SIGNA™ Artist meets that challenge head-on with innovations in reconstruction to take full advantage of computing power and by leveraging both hardware and software technology.

Reconstruction System Gen7			
	PERFORMANCE	ADVANCED*	PERFORMANCE-DL
Operating system	SuSe Linux Enterprise Server (SLES)	SuSe Linux Enterprise Server (SLES)	SuSe Linux Enterprise Server (SLES)
Processor	Dual Intel Xeon Gold 5118	Dual Intel Xeon Gold 6130	Dual Intel Xeon Silver 4214 processor
Clock rate	2.3 GHz	2.1 GHz	2.2 GHz
Memory	>= 128GB	>= 192GB	>=128GB
Network	1 GbE	10 GbE	1 GbE
Hard disk storage	960 GB SSD	1440 GB SSD	>=960 GB
2D FFT/second (256 x 256 full FOV)	63,000 2D FFTs/second	81,000 2D FFTs/second	63000 2D FFTs/second
GPU	NA	NA	Nvidia T4

Host Computer	
Operating system	SuSe Linux Enterprise Server (SLES)
Processor	Intel Xeon W-2123 CPU
Clock rate	3.6 GHz
Memory	64 GB
Network	Gigabit (10/100/1000) Ethernet
Hard disk storage	1024 GB SSD
Graphics subsytem	NVIDIA Quadro with minimum of 1 TFLOPS performance
Media drives	CD/DVD drive
Cabinets	Single, tower configuration

Orchestra Reconstruction Platform

Orchestra is a high performance computing software library toolbox that enables new possibilities for integration of advanced reconstruction elements. Delivering enhanced productivity gains by increased image reconstruction speed and minimizing workflow disruptions. A powerful platform not only built to support the most demanding application such as HyperSense, but also to provide our collaborators with easy access to the product reconstruction algorithms.

AIR™ Recon™

Reconstruction is at the heart of every scan, and reducing noise during reconstruction is critical to achieving clear images.

With AIR™ Recon™, GE's smart reconstruction algorithm available on several key applications like PROPELLER, Cube, FSE and Flex, you can reduce background noise and out-of-FOV artifacts while improving SNR. The result is cleaner, crisper images without having to overcompensate in your scanning protocol.

AIR™ Recon DL**

Deep Learning based reconstruction to reduce noise, blurring and ringing artifacts for MR images. AIR™ Recon DL, a GE-first deep-learning application for MR image reconstruction, is designed to improve signal-to-noise and image sharpness, enabling shorter scan times. It uses trained neural networks to remove noise and ringing from the reconstructed image.

*Optional

Computing Platform

Operator Console

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

Display and DICOM Data

The SIGNA™ Artist 1.5T system generates MR Image, Secondary Capture and Grayscale 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 SIGNA™ Artist system supports the CT and PET image objects for display allowing the user to refer to cross-modality studies.

Display	
AutoView	Dedicated image review window
Window/Level (W/L)	6 user-programmable keys on scan control keyboard 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
	Minified Reference Scoutview
	Cine Paging (up to 4 windows and 128 images/window)
	Add/Subtract/Edit Patient Data
Split Exam	Provides the capability to extract a subset of series from an exam and create a separate exam
	Performed on the locally-accessible image database
Image display performance	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

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

Wide-screen display monitor	
Display monitor	24" Widescreen LCD Flat Panel
	1920 x 1200 dot resolution
	Ability to display DICOM images in 2048x2048 matrix

Scan Parameters

Sequences	Parameters	Matrix 64	Matrix 128	Matrix 256	Matrix 512
2D Spin Echo	Min. TR (ms)	N/A	3.0 ms	4.0 ms	3.04 ms
	Min. TE (ms)	N/A	1.576 ms	1.928 ms	2.784 ms
2D Fast Spin Echo	Min. TR (ms)	N/A	3.0 ms	4.0 ms	6.0 ms
	Min. TE (ms)	N/A	1.608 ms	1.896 ms	2.784 ms
	Min. slice thickness		0.2 mm		
	Min. ESP (ms)	N/A	1.608 ms	1.896 ms	2.784 ms
	Max. ETL	N/A	480		
3D Fast Spin Echo	Min. TR (ms)	N/A	45 ms	53 ms	74 ms
	Min. TE (ms)	N/A	4.0 ms	5.0 ms	7.0 ms
	Min. slice thickness		0.3 mm		
	Min. ESP (ms)	N/A	1.656 ms	2.272 ms	3.712 ms
	Max. ETL	N/A	400	400	400
2D Fast Gradient Echo	Min. TR (ms)	0.554 ms	0.682 ms	0.906 ms	1.308 ms
	Min. TE (ms)	0.184 ms	0.184 ms	0.188 ms	0.192 ms
3D Fast Gradient Echo	Min. TR (ms)	0.54 ms	0.668 ms	0.89 ms	1.25 ms
	Min. TE (ms)	0.184 ms	0.184 ms	0.18 ms	0.18 ms
	Min. slice thickness		0.1 mm		
Inversion Recovery	Min. TR (ms)	N/A	56.8 ms	57.0 ms	59.0 ms
	Min. TE (ms)	N/A	1.608 ms	1.928 ms	2.784 ms
	Min. TI (ms)	N/A	50.0 ms	50.0 ms	50.0 ms
3D FIESTA	Min. TR (ms)	0.91 ms	1.23 ms	1.89 ms	3.04 ms
	Min. TE (ms)	0.24 ms	0.316 ms	0.432 ms	0.628 ms
Echo Planar Imaging	Min. TR (ms)	4.0 ms	5.0 ms	5.0 ms	N/A
	Min. TE (ms)	1.1 ms	1.2 ms	1.6 ms	N/A
	Min. slice thickness		0.6 mm		
	Min. FOV cm		4 cm		
	ESP at 25 cm	0.452 ms	0.656 ms	1.052 ms	N/A
	ESP at 48 cm	0.324 ms	0.452 ms	0.656 ms	N/A
	ESP at 99 cm	0.220 ms	0.308 ms	0.564 ms	N/A
	Images per second	163	163	163	N/A
	b value	Maximum (s/mm^2): 10.000 Max # for ADC: 40			
	Diffusion Tensor directions	Max: 300			

SLICE THICKNESS and FOV	
Minimum slice thickness in 2D	0.1 mm
Minimum slice thickness in 3D	0.1 mm
Min/Max FOV	10 mm/550 mm*
Min/Max Matrix	32-1024

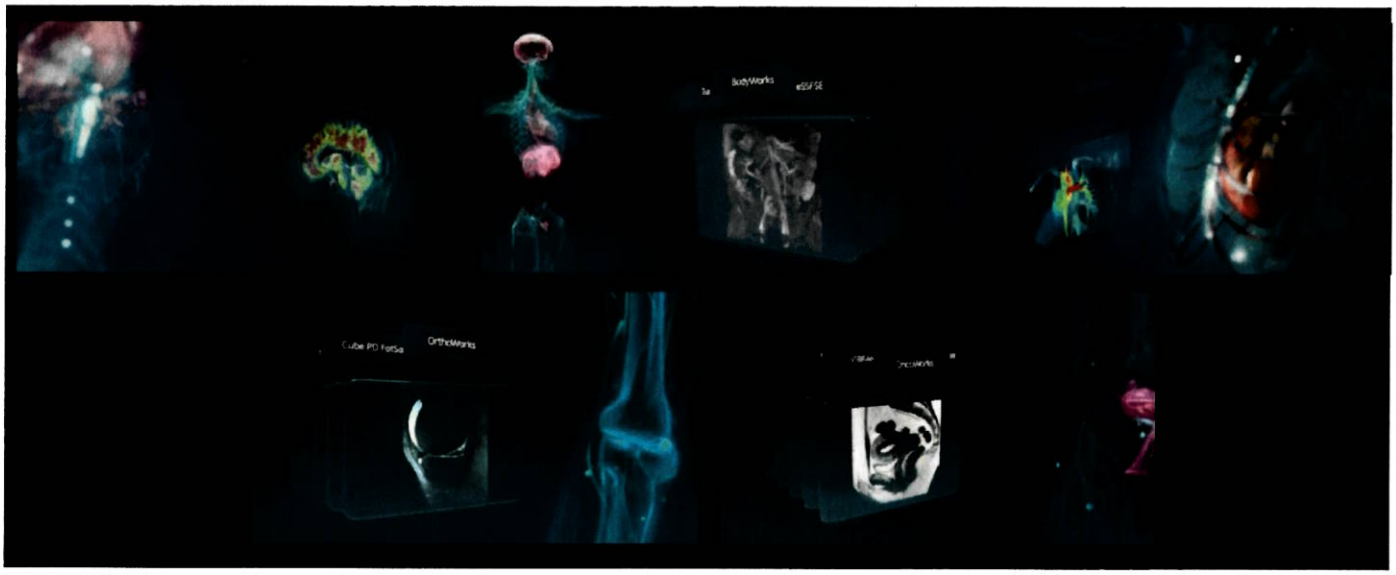
*FOV 50cm in Z direction

MR 30 for SIGNA™

The latest software platform provided by GE, it includes the base pulse sequences, workflow enhancements and visualization tools to enable high productivity with exceptional quality and outcomes. MR 30 for SIGNA™ starting with the acquisition, provides the tools needed to enable superb results in the various clinical fields. With 6 optimized Works categories, GE delivers preset protocols for the most demanding Neuro, Muskuloskeletal, CardioVascular, Body, Oncology and Paediatric areas. In addition to enabling the routine imaging, MR 30 for SIGNA™ provides the user with a streamlined and efficient operating environment with in-line processing through single-click outcomes for even the most demanding processes.

MR 30 for SIGNA™ provides:

- Software platform with a wider range of assets for image acquisition, display and post processing.
- Strategically packaged to deliver speed, high quality diagnostic images and reliable post processing to each clinical area.
- An intelligent combination of MR pulse sequences and advanced techniques, designed to bring solutions for enhanced care and productivity.
- From SE, FSE, frFSE, Inversion Recovery, SSFSE, SSFSE-IR, GRE, FGRE, SPGR, FSPGR to Volumetric imaging, Motion Correction, Diffusion Weighted, Vascular imaging and beyond.



NeuroWorks

NeuroWorks includes the basic imaging acquisitions and processing to the latest in motion correction, functional and volumetrics. Supporting both simple reconstruction to real-time perfusion results with BrainSTAT Arterial Input Function (AIF).

Volumetric Imaging	
3D Cube	PD, T1, T2, T1 FLAIR, T2 FLAIR, STIR, MSDE
	Three-dimensional FSE (3D FSE), with flip angle modulation
	Isotropic high resolution volumetric
	One sequence, reformat in all planes
3D Cube DIR	DIR, typically but not limited to CSF and white matter suppression
BRAVO T1	< 1 mm isotropic, MP-RAGE optional sequence of choice for functional data overlay
Visualization	3D reformat MPR
	Volume segmentation
	Volume rendering
	Auto-contour

Motion Correction	
PROPELLER MB	Multiple contrasts – T1, PD, T2, T1 FLAIR, T2 FLAIR and DWI
	Motion reduction
	Magnetic susceptibility effects reduction
Visualization	Registration
	Motion correction

Enhanced Diffusion Weighted	
eDWI	Multi b-value
	3:1, Tetrahedral
	Smart NEX
	Inversion recovery for robust FatSat
	RTFA: Increases SNR by 50% and distortion reduction for accurate post processing when compared to dual spin echo
Visualization	ADC and eADC

One Touch Protocol	
READYBrain	Automated multi-series, multi-plane prescription
	Combine with Auto Scan for one touch protocol
	In-line for Auto Post processing

Dynamic Brain Function	
BrainSTAT Perfusion and Analysis	EPI-GE/SE T2* pulse sequence for DSC (Dynamic Susceptibility Contrast) Brain Perfusion
	Blood flow
	Blood volume
	Mean transit time
	Time to peak parametric
	Fusion
BrainSTAT Arterial Input Function (AIF)	Manage tracer arrival differences due to patient flow dynamics
	Automatically or manually specify the AIF to normalize maps
Visualization	Brain STAT

Spectroscopy	
PROBE PRESS	Concentrations of in-vivo metabolites evaluation
	Acquisition and display
	Reduced flip angles for lower min TE values
	Up to twice the SNR when compared to PROBE STEAM
Visualization	Brain Spectroscopy

Spine Imaging	
2D/3D MERGE	High SNR T2* contrast
	Gray/white matter differentiation
	Foraminal detail
3D COSMIC	SSFP to emphasize T2 signal for improved contrast
	Nerve root and disc detail
Visualization	3D reformat MPR
	Volume segmentation
	Volume rendering

BodyWorks

The latest in torso imaging is delivered with volumetric imaging supporting advanced parallel imaging standard. Including, Snapshot imaging with optimized Single Shot FSE, 3D isotropic imaging for MRCP, Dynamic Imaging and Routine Volumetric imaging enabled with Motion Free navigation for post-contrast uses with high temporal resolution results. Motion correction is further enhanced with both the PB navigators as well as PROPELLER including T1-weighted results. Turbo class of acquisitions, streamlines the speed and enables higher quality results. Advanced processing is made one-touch with the new READYView on Console capabilities.

Volumetric Imaging	
3D Cube	Isotropic high resolution volumetric
	Three-dimensional FSE (3D FSE), with flip angle modulation
	One sequence, reformat in all planes
3D Dual Echo	In- and out-of-phase
	Used to help identifying fatty infiltration, focal fatty sparing, liver lesions, and other conditions
	High spatial resolution
Visualization	3D reformat MPR
	Volume segmentation
	Volume rendering
	Auto-contour

Motion Correction	
PROPELLER MB	Motion reduction
Auto Navigator	Free-breathing tracker
Respiratory Trigger	Free breathing bellows
Visualization	Registration
	Motion correction

Enhanced Diffusion Imaging	
eDWI	Multi b-value,
	3:1, Tetrahedral
	Smart NEX
	Inversion recovery for robust FatSat
	RTFA: Increases SNR by 50% and distortion reduction for accurate post processing when compared to dual spin echo

Enhanced Diffusion Imaging	
Visualization	ADC and eADC
	Fusion

Dynamic Body Imaging	
LAVA	SPGR Fast Liver Acquisition
	SPECIAL for robust fat suppression
LAVA Turbo	ARC acceleration for full organ coverage
	Shorter breath-holds
Multi Phase Dynaplan	Customizable phase delay for dynamic studies
	Series per phase
	Auto subtraction
	Pause after mask
Visualization	MR standard
	SER

Non-Invasive Non Contrast Biliary System - MRCP	
3D frFSE MRCP	T2 Prep for background suppression
	Breath-hold and PB navigator
2D SSFSE	T2-weighted, with sub second single slice acquisition
	High signal from fluids
	Good suppression of other tissues
	Snapshot acquisition, motion artifacts virtually eliminated
	Thin slices and thick slab protocols
	Single breath-hold acquisition
	MIP post processing
2D FatSat FIESTA	Excellent contrast between ducts and gallbladder with surrounding anatomy
	FatSat for increased conspicuity
2D frFSE	T2-weighted
	High resolution
	Supplementary information for assessment of extra ductal masses
Visualization	3D Reformat MPR
	MIP & HD MIP

CVWorks

CVWorks provides GE's extensive coverage for the latest techniques enabling high performance CardioVascular imaging outcomes. Single breath-hold imaging for whole heart coverage are available from Morphology to Delayed enhancement. Enabling simplified generation of superb results including head-to-toe MRA support to single acquisition TOF and additional non-contrast imaging for flow.

Myocardium Delayed Enhancement	
MDE PLUS	
Single-Shot Myocardial Delayed Enhancement (SSH MDE)	Shorten breath-holds or free breathing for better patient tolerance Potential for reduced scan time Imaging arrhythmic patients Snapshot imaging for motion reduction
Adiabatic IR Pulse	Robust Myocardial Suppression Fat Suppression Adiabatic fat suppression pulse Improved characterization of enhancing tissue
MDE Plus: Phase Sensitive MDE (PSMDE)	Inversion Recovery FGRE sequence Phase-sensitive image reconstruction Consistent myocardial suppression, even with sub-optimal TI Improved contrast for myocardial Potential to shorten overall exam time

Single Breath Hold Whole Heart	
Black Blood SSFSE	Difficult patients with irregular heartbeats or limited breath-hold capacity Potential to shorten exam times Shorten breath-holds for better patient tolerance Whole chest survey

Viability Imaging	
CINE IR	Multiphase FGRE Cine acquisition...quick assessment of optimal TI time for MDE Captures image contrast evolution at different TI times Adiabatic Inversion Recovery for uniform myocardial suppression Support both 1 RR and 2 RR mode

Function	
FIESTA	Fast Cine with retrospective gating Fast Card with prospective gating

T2* Mapping	
StarMap	T2* mapping compatible with gating for cardiac evaluation Non-invasive evaluation of the entire organ
READYView	R2 Star

Navigator Free-breathingAcquisition	
Auto Navigator	Used with 3D IR Prepared FGRE or 3D FatSat FIESTA Free-breathing navigator diaphragm tracking

Flow Imaging	
Flow Analysis*	Flow velocity and volume flow quantification Peak and average flow charts and graphics Automated contour detection Brain, chest and abdominal clinical applications

Contrast Enhancement Tracking	
SmartPrep	Automated bolus tracking
Fluoro triggered	Real Time bolus tracking
Visualization	MIP & HD MIP

Peripheral Vascular Runoff	
QuickStep	Multi-station, multi phase acquisition Automatically prescribes, acquires, and combines images from multiple stations Entire exam complete with no user intervention in as little as 7 minutes Auto subtraction

Non-contrast Vascular Imaging	
2D Time of Flight (TOF)	Carotid bifurcation, venous anatomy, aortic arch, peripheral vessels
3D TOF	Circle of willis, intracranial vasculature, abdominal vasculature
3D TOF Multi Slab	Intracranial vasculature, carotid bifurcation, aortic arch, peripheral vessels, venous anatomy
2D Phase Contrast	Localizer, flow direction and velocity for intracranial and extracranial vasculature, portal or hepatic vein, quantitative measurement of flow velocity
3D Phase Contrast	Intracranial vasculature, renal arteries
Visualization	MIP & HD MIP
Inline Self Calibrating Phase Contrast	The feature provides an inline post-processing task that automatically corrects phase-contrast images from background phase error for MR flow imaging by using areas in the image that are known to have zero velocity.

*Optional

OrthoWorks

OrthoWorks delivers routine imaging that is not always a given. From motion correction to advanced volumetric imaging, GE's latest MSK techniques provide you with the contrasts you need for the basic imaging to enhanced cartilage imaging. And with multiple tissue suppression methods available, OrthoWorks enables the best of what can be achieved in a standard configuration.

High Resolution Imaging	
FSE & frFSE	Intermediate PD, T1, T2-weighted imaging
	Compatible with FatSat, ASPIR, STIR and SPECIAL
	Gold standard for articular cartilage, cartilage ligaments, menisci and subcondral bone

Volumetric Imaging	
3D Cube	PD, T1, T2, STIR
	Isotropic high resolution volumetric
	Three-dimensional FSE (3D FSE), with flip angle modulation
	One sequence, reformat in all planes
Visualization	3D reformat MPR
	Volume segmentation
	Volume rendering

Motion Correction	
PROPELLER MB	Multiple contrasts – T1, PD, T2, STIR
	Motion reduction
Visualization	Registration
	Motion correction

T2*-weighted Imaging	
3D MERGE	High SNR T2* contrast
	Visualization of ligaments while adding soft tissue contrast
	Reduced chemical shift
3D COSMIC	Fast, high resolution volumetric imaging
	SSFP to emphasize T2 signal for improved contrast
Visualization	3D reformat MPR
	Volume segmentation
	Volume rendering

Artifact Reduction Standard Sequence	
MARS	FSE High bandwidth protocols
	High resolution, small FOV imaging

Fat Supression	
Chemical FatSat	Frequency selective fat saturation
STIR	Inversion recovery fat null point method
ASPIR	Solution for poor fat suppression due to B_1 inhomogeneity
SPECIAL	Hybrid method between chemical FatSat and STIR
Spectral Spatial	Water excitation only

OncoWorks

OncoWorks delivers a complete platform for your needs in prostate, breast and radiation therapy planning. From the basic routine acquisitions to whole body imaging including volumetric and enhanced diffusion capabilities, GE enables superb linearity from the gradient platform and hardware performance. GE provides the necessary preset protocols to supply you with optimal imaging for your oncology needs that is further enhanced visualization capabilities so that your results can be a single click away.

Volumetric Imaging	
3D Cube	PD, T1, T2, T1 FLAIR, T2 FLAIR and STIR
	Isotropic high resolution volumetric
	Three-dimensional FSE (3D FSE), with flip angle modulation
	One sequence, reformat in all planes
3D Cube DIR	DIR, typically but not limited to CSF and white matter suppression
BRAVO T1	< 1 mm isotropic, MP-RAGE optional sequence of choice for functional data overlay
Visualization	3D reformat MPR
	Volume segmentation
	Volume rendering
	Auto-contour

Enhanced Diffusion Weighted	
eDWI	Multi b-value
	3:1, Tetrahedral
	Smart NEX
	Inversion recovery for robust FatSat
	RTFA: Increases SNR by 50% and distortion reduction for accurate post processing when compared to dual spin echo
Visualization	ADC and eADC

Dynamic Imaging	
Multi-phase SPGR	SPGR dynamic fast acquisition
	SPECIAL for robust fat suppression
Visualization	MR standard
	SER

Whole Body Scanning	
FSE-IR/3D SPGR/ DWI	Whole body imaging
	Multiple stations with large FOV
	Metastasis screening
Multi-station localizer	Consistent set-up
	Auto-table movement
	Auto-pasting
	Efficient work-flow

PaedWorks

PaedWorks is the GE solution to address your specific needs in paediatric imaging, from standard sequences supported with the latest in motion control for brain to toes. GE delivers standard acoustic reduction technologies and further addresses clinical needs for volumetric imaging, whole body imaging and enhanced diffusion results. The streamlined processing enables simplified one-click processing and visualization of complex results. PaedWorks covers your needs for all anatomies and provides optimized protocols and preset procedures.

Volumetric Imaging	
3D Cube	PD, T1, T2, T1 FLAIR, T2 FLAIR and STIR
	Three-dimensional FSE (3D FSE), with flip angle modulation
	Isotropic high resolution volumetric
	One sequence, reformat in all planes
3D Cube DIR	DIR, typically but not limited to CSF and white matter suppression
BRAVO T1	< 1 mm isotropic, MP-RAGE optional sequence of choice for functional data overlay
3D Dual Echo	In- and out-of-phase used to help identifying fatty infiltration, focal fatty sparing, liver lesions, and other conditions
	High spatial resolution
Visualization	3D reformat MPR
	Volume segmentation
	Volume rendering

Motion Correction	
PROPELLER MB	Motion reduction
Auto Navigator	Free-breathing tracker
Respiratory Trigger	Free breathing bellows
Visualization	Registration
	Motion correction

One Touch Protocol	
READYBrain (Not recommended for under 1 year of age)	Automated multi series, multi plane prescription
	Combine with auto scan for one touch protocol
	In-line for auto post processing

Dynamic Brain Function	
BrainSTAT Perfusion and Analysis	Blood flow
	Blood volume
	Mean transit time
	Time to peak parametric
	Fusion
BrainSTAT Arterial Input Function (AIF)	Manage tracer arrival differences due to patient flow dynamics
	Automatically or manually specify the AIF to normalize maps
Visualization	BrainSTAT

Spectroscopy	
PROBE PRESS	Concentrations of in-vivo metabolites evaluation
	Acquisition and display
	Reduced flip angles for lower min TE values
	Up to Twice the SNR when compared to PROBE STEAM
Visualization	Brain spectroscopy

Spine Imaging	
2D/3D MERGE	High SNR T2* contrast
	Gray/white matter differentiation
	Foraminal detail
3D COSMIC	SSFP to emphasize T2 signal for improved contrast
	Nerve root and disc detail
Visualization	3D reformat MPR
	Volume segmentation
	Volume rendering

MR 30 for SIGNA™ Features

HyperSense*

Going further than common sense

HyperSense is is a Compressed Sensing acceleration technique based on sparse data sampling enabling faster imaging without the penalties commonly found with conventional parallel imaging.

HyperSense is intended to be used with volumetric acquisitions, it is combined with (ARC) parallel imaging delivering optimal signal to noise ratio with shorter acquisition times, extending the capabilities to additional sequences.

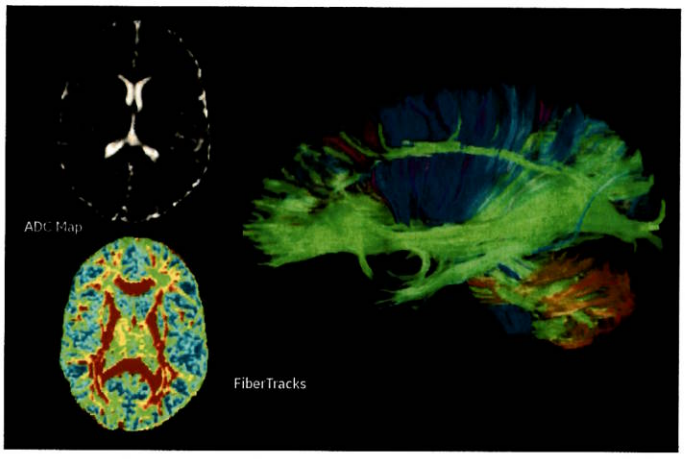
Benefits

- Increase productivity by reduced scan times
- Combined with ARC for higher acceleration factors
- Reduce breath hold time for dynamic imaging
- Drives higher spatial resolution for 3D imaging

HyperBand for EPI*

Quality and Speed Synchronized

HyperBand provides a reduction in scan time by simultaneously exciting multiple slices at multiple locations. It can lead to higher acceleration reduction factors when combined to other methods of parallel imaging. The benefits of HyperBand acceleration include enhancements on productivity and patient experience, increased anatomy coverage and higher resolution image acquisition.



Benefits

- Simultaneous excitation: multiple slices at multiple locations
- Acquisition time reduction without compromising post processing metrics
- More diffusion directions, number of slices or higher temporal resolution without extra scan time
- Shorter breath-holds
- Combine with ARC for higher acceleration factor
- Used for DWI, DTI, Gradient Echo EPI & fMRI imaging

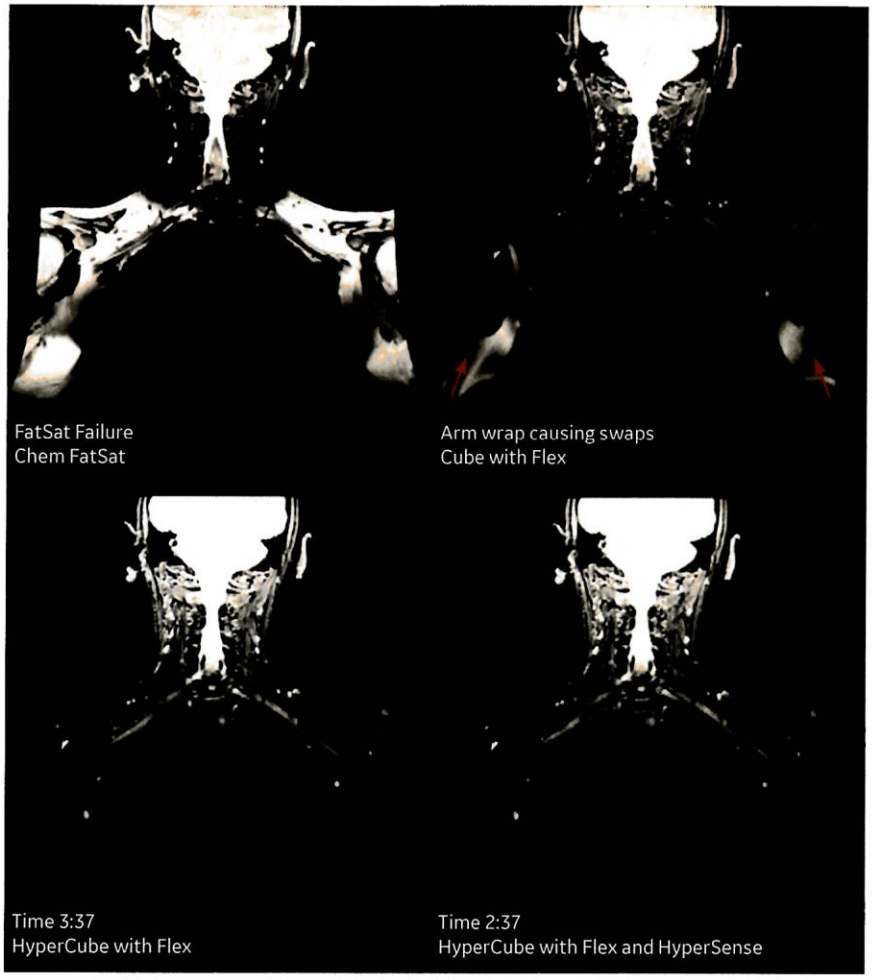
*Optional

MR 30 for SIGNA™ Features (continued)

HyperCube*

Tailored 3D imaging that fits to perfection

Delivers small field of view organ specific volumetric imaging acquisition that can reduce artifacts originating from outside of the prescribed FOV. HyperCube can be applied with or without fat suppression using Flex or chemical saturation methods. Provides significant savings of imaging time without sacrificing contrast quality and it can be used across the entire body.



Benefits

- Significant scan time reduction while maintaining SNR efficiency
- High resolution small FOV isotropic volumetric imaging
- FLEX for large FOV robust fat suppression

*Optional

MR 30 for SIGNA™ Features (continued)

Flex for Cube and FSE*

Unlimited solutions, consistent results

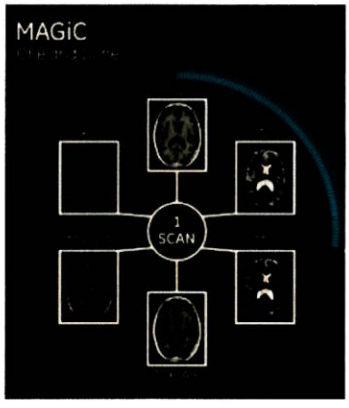
Flex uses a dual echo fat-water separation technology to provide robust and homogeneous fat suppressed images. Flex is compatible with ARC acceleration and can be used with a fast triple echo selection for significant scan time reduction. Enhanced uniformity and control of fat water swaps allow large field of view and off-center imaging where uniformity is a challenge. Delivering fast 2D and 3D acquisitions with reconstructed in-phase, out-of-phase, water and fat images, Flex represents productivity gains in all clinical areas.

Benefits

- 2D and 3D dual echo fat-water separation technique
- Uniform fat suppression for large FOV challenging offcenter anatomies
- Dixon-based, less sensitive to B_0 inhomogeneity
- Choice of single pass acquisition for significant scan time reduction
- Water, Fat, in-phase and out-of-phase images

MAGiC*

MAGiC (MAGnetic resonance image Compilation), enables one and done imaging capability by delivering multiple contrasts in a single scan. MAGiC utilizes a multi-delay, multi-echo acquisition. The data acquired is processed using a technique to generate T1, T2, PD and Inversion Recovery (IR) weighted images (including: T1 FLAIR, T2 FLAIR, STIR, Dual IR and PSIR weighted images), all at once, reducing scan time by up to 50% compared to acquiring all contrasts separately.** MAGiC generates all the different contrasts from the same acquisition, leading to enhanced image slice registration, owing to the absence of inter-acquisition patient movement. Because of the efficiency of MAGiC, the user has the flexibility to explore more advanced imaging, such as Spectroscopy***, Susceptibility Weighted Imaging*** etc., in the same time required to perform the routine exam without MAGiC. MAGiC provides the user the ability to change the contrast of the images after acquisition. This is performed by adjusting the TR, TE, and/or TI parameters post-acquisition, to generate the specific contrast desired. MAGiC also enables users to generate parametric T1, T2, R1, R2, PD maps for further analysis of MRI acquisition data.



One MAGiC scan defivers six contrasts

Benefits

- Multiple contrasts a single scan
- Up to 50% faster than acquiring all contrasts separately*
- Ability to change the contrast after acquisition by modifying TR, TE and/or TI
- Enhanced image slice registration owing to the absence of inter-acquisition patient motion
- Parametric Maps: T1, T2, R1, R2, PD
- User Mask: manually mark regions of interest
- Auto ROI: after user selects a pixel, an ROI will be created from neighboring pixels with similar R1, R2 and PD
- Multiple layouts can be saved

*Optional
**Based on MAGiC clinical study of 109 patients from 6 separate institutions.
***Optional package (MAGiC in itself does not deliver advanced imaging)
It is recommended to acquire conventional T2 FLAIR images in addition to MAGiC

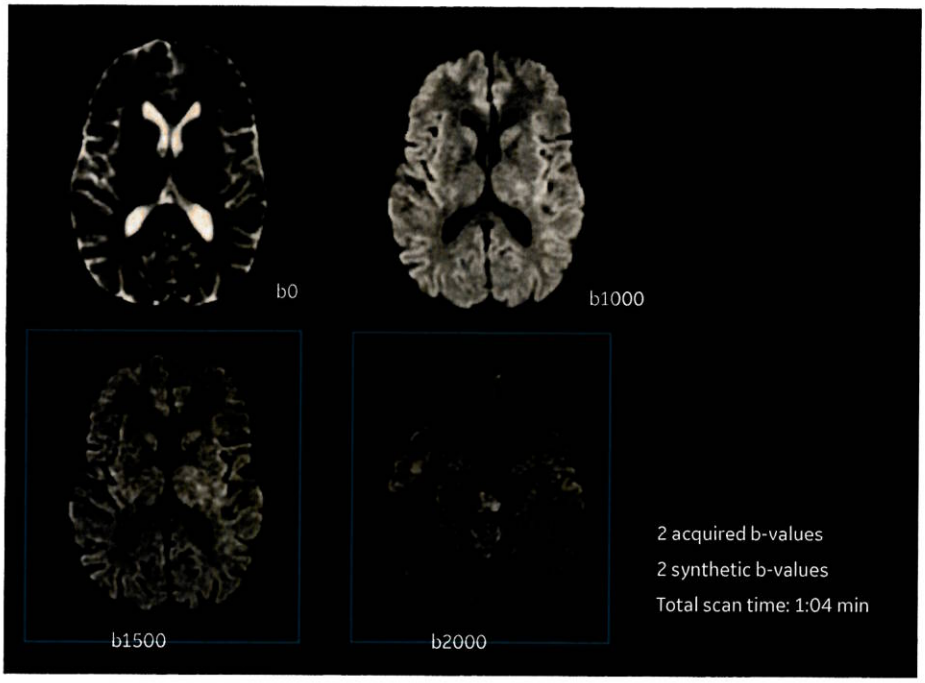
MR 30 for SIGNA™ Features (continued)

MAGiC DWI*

MAGiC DWI generates multiple synthetic b-values from a single DWI scanned series allowing the user to view diffusion contrasts changes in real time after the acquisition. It delivers high b-values without stressing protocol parameters and resulting in shorter scan times without sacrificing contrast or anatomy coverage. Synthetic Diffusion is not limited to diffusion directionality or coil type.

Benefits

- Multiple synthetic b-values from a single DWI scan
- High b-values in shorter scan times
- Compatible with FOCUS Diffusion



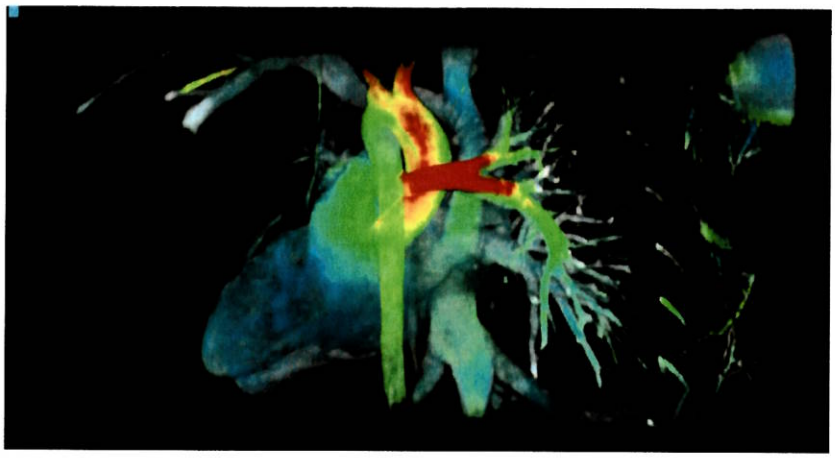
ViosWorks*

Benefits

- 3D cine acquisition in any dimension
- Free breathing whole chest coverage
- Allows velocity encoding in all directions
- Single and view sharing frames for higher temporal resolution
- Effortless workflow

Confident Functional Accuracy

ViosWorks is a 3D cine-based acquisition that can be planned in any dimension and allows for velocity encoding in all directions to assess vascular flow. The acquisition delivers fast imaging with the use of Hyperkat acceleration including both, single and view sharing frames for higher temporal results. Provides high spatial resolution to enable visualization of flow through complex structures.



*Optional

MR 30 for SIGNA™ Features (continued)

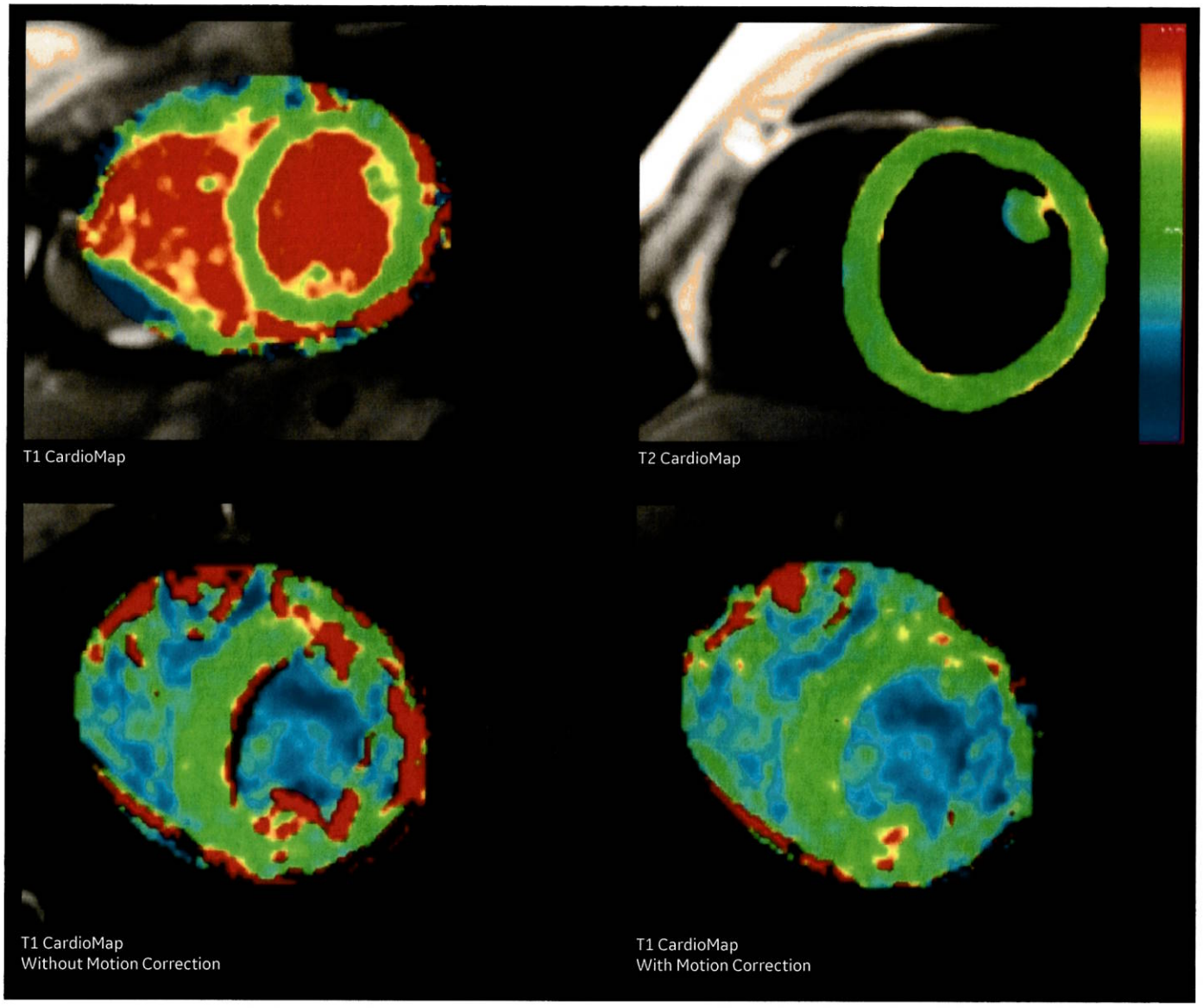
CardioMaps*

Achieving measurable benefits

CardioMaps is a powerful diagnostic technique that supports detection of cardiac pathologies by quantitative measurement of T1 and T2 relaxation times. The T1 Mapping acquisition includes automatic motion correction that compensates for cardiac and/or respiratory motion, providing reliable results. T1 Mapping offers two methods of acquisition: Inversion-recovery Look-Locker with FIESTA readout (MOLLI) for apparent T1 (T1*) measurements or saturation-recovery SMART1Map for true T1 measurements.

Benefits

- Quantitative measurement of T1 and T2 relaxation times
- Automatic motion correction for T1 Mapping
- Two methods of acquisition for T1* or true T1 measurements
- R^2 T1 mapping: R-squared to visualize a good fitting of the T1 mapping curve



T1 CardioMap

T2 CardioMap

T1 CardioMap
Without Motion Correction

T1 CardioMap
With Motion Correction

*Optional

MR 30 for SIGNA™ Features (continued)

PROGRES*

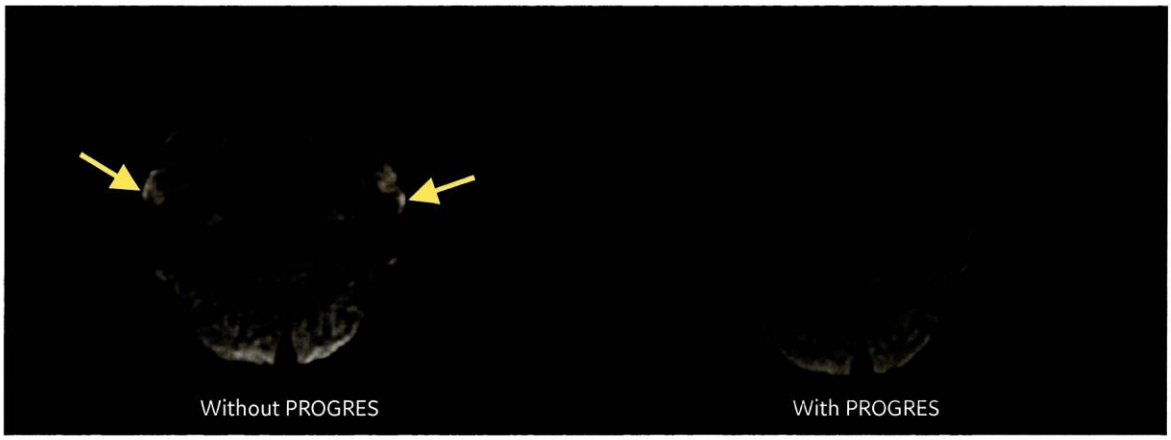
Resolving the limits of diffusion distortion

PROGRES is a series of optimizations that enhance the performance of diffusion imaging. It delivers:

- An automated distortion, motion and eddy current correction technique, based on an integrated reversed polarity gradient acquisition. Using a rigid affine registration, the technique outputs images with reduced susceptibility artifacts at no significant impact in overall scan time.
- Extended DTI capabilities allowing the selection and customization of up to 300 diffusion-encoding directions, resulting in more accurate diffusion tensor estimations.

Benefits

- Distortion and motion correction
- Up to 300 diffusion directions
- Improved image fusion



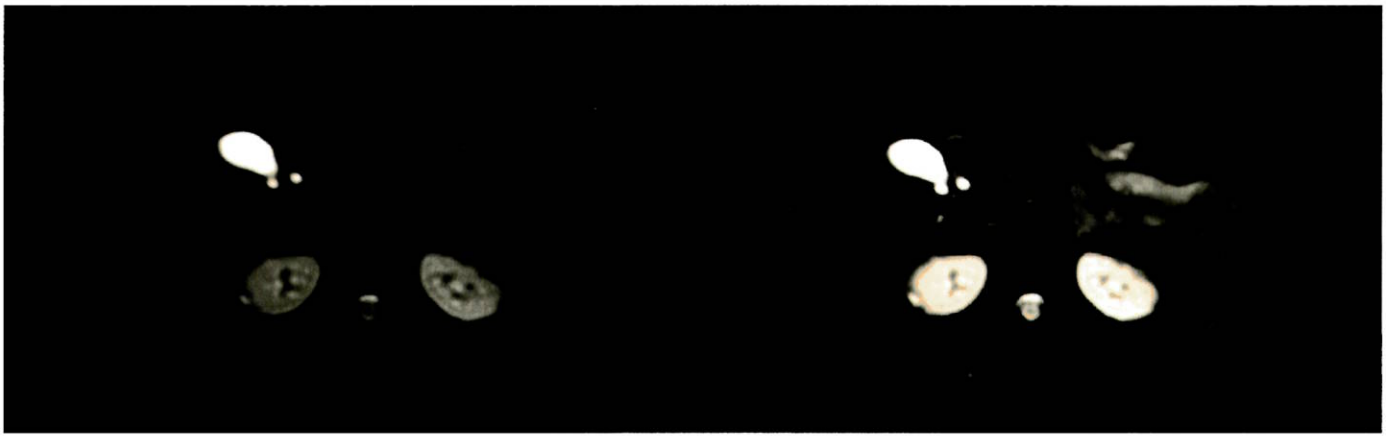
MUSE*

Resolving the limits of diffusion resolution

MUSE is a diffusion weighted and diffusion tensor technique that allows higher spatial resolution with reduced EPI-based distortions. MUSE implements a segmented readout approach along the phase encoding direction and utilizes a dedicated image reconstruction algorithm to mitigate shot-to-shot motion-induced phase errors inherent to multi-shot diffusion. The technique is compatible with Auto Navigators, cardiac and respiratory gating, as well as well as acceleration such as ARC and ASSET. MUSE is also compatible with fat sat and STIR.

Benefits

- High resolution diffusion imaging
- Reduced blurring and susceptibility artifacts
- Compatible with parallel imaging acceleration



*Optional

Image Acquisition

Pulse Sequences

SPIN Echo	
SE FSE frFSE	Standard pulse sequences that are used to generate T1, Proton Density and T2 contrasts. The FSE technique enables long TR and long TE choices in reduced scan times. frFSE produces images with more T2 contribution allowing shorter TR values and resulting in shorter scan times when compared to FSE.
IR FSE-IR	IR techniques provide uniform suppression of tissues by applying an inversion pulse to null signal. FSE-IR reduces scan time while still achieving efficient tissue suppression FSE-IR with Water SAT pulse and manual adjustment of Center Frequency location to suppress silicon signal in breast imaging.
3D FSE 3D frFSE	Three-dimensional imaging acquisitions mostly used for T2-weighted contrast.
T1 FLAIR T2 FLAIR	T1 and T2 Fluid Attenuated Inversion Recovery (FLAIR) pulse sequences allow the suppression of signal from cerebrospinal fluid (CSF). This sequence provides contrast to differentiate white and gray matter to T1- and T2-weighted brain and spine imaging.
Double IR/Triple IR (Black Blood)	These pulse sequences are included to allow Black Blood imaging for studies of cardiac morphology (T1, T2, and PD). Triple IR adds fat suppression to Black Blood imaging. It also can be combined with Single Shot.
Double IR/Triple IR Single Shot	Single Shot Black Blood acquisitions allow larger volume acquisitions in fewer breath-holds.
SSFSE SSFSE-IR	Single Shot Fast Spin Echo is a technique that permits single slice data acquisition in less than one second. It is frequently used for MRCP studies in a single breath-hold and myelograms.
SSFSE Snapshot	The imaging efficiency of navigated/respiratory triggered SSFSE can be improved by imaging multiple slice locations per trigger event with SSFSE Snapshot.
3D MRCP	3D frFSE sequence that combined with the T2 Prep option provides improved background tissue suppression for MRCP exams.
T2 MAP*	T2 MAP is a multiple acquisition; multiple echoes FSE based method to obtain images that represent different T2 weighting values. The acquired data is processed to produce T2 color maps that are used for cartilage evaluation.
Cube FLAIR	Three-dimensional FSE (3D FSE), with flip angle modulation. You can easily reformat sub-millimeter isotropic volume data from a single Cube acquisition into any plane – without gaps, and with the same resolution as the native plane. T1 CUBE for blood saturation. 3D FSE technique that applies modified refocusing pulses for increased SNR. It is used to acquire isotropic data that can be reformatted in any plane.
Cube DIR	Cube DIR, double inversion recovery, is designed to achieve signal suppression from either gray or white matter and CSF.
Cube PROMO*	Prospective Motion correction is a real time 3D navigator based motion correction technique compatible with Cube T2, Cube DIR and Cube T2 FLAIR.
2D IDEAL*	2D FSE 3-point Dixon Water Fat Separation method that acquires 4 contrasts in one acquisition: Water, Fat, in-phase and out-of phase.
MAVRIC SL* HyperMAVRIC SL*	Multi-Spectral imaging technique is designed to reduce metal artifact near MR conditional implants. Improvements have been made with HyperMAVRIC SL feature to reduce scan time through a patient-specific metal analysis scan and allow functionalities, such as Variable flip angles, flow compensation, and No Phase Wrap. In addition to the T1, PD, and STIR contrasts, the sequence now also provides T2 weighting, and a B1-optimized STIR pulse.
3D ASL*	3D FSE based technique that uses a "labeling" pulse to quantify cerebral blood flow.

*Optional

Image Acquisition (continued)

Gradient Echo	
2D and 3D GRE/SPGR 3D GRE Dual Echo 2D and 3D FGRE/FSPGR 2D MFGRE (Multi Echo) 2D CINE GRE/SPGR	Gradient echo basic techniques offer a variety of possibilities to support imaging of all anatomies and can be acquired in 2D, 3D and Cine modes. The sequences generate T1 or T2 contrasts and support single, dual and multi echo acquisitions. 3D T1 weighted Fast Spoiled GRE for DCE (Dynamic Contrast Enhanced) perfusion.
2D and 3D MDE	Myocardial delayed enhancement is a technique used for tissue characterization to provide the assessment of myocardial perfusion.
PSMDE	Phase sensitive MDE increases the contrast between enhanced and normal tissue even with non-optimal inversion delay times.
SSMDE and SSPSMDE	MDE and PSMDE single shot based sequence that provides multi slice coverage with reduced breath-hold times.
2D and 3D FIESTA 2D FIESTA CINE 2D FatSat FIESTA 3D FIESTA-C	Fast imaging employing steady-state acquisition generates great contrast differentiation between tissues of low T2/T1 ratios and high T2/T1 ratios. Provides high SNR images in short acquisition times. FIESTA sequences offer benefits for Neuro, Cardiac and Abdominal imaging.
2D and 3D MERGE FGRE	T2* contrast technique that acquires multiple echoes at several different TE values.
2D Fastcard GRE/SPGR	Prospective gating sequence designed for breath-hold, aortic arch gated imaging.
2D FastCINE GRE/SPGR	Retrospective gating sequence, beneficial to cardiac wall motion studies, assessment of valve function and visualization of regurgitation and stenosis.
2D FGRE-ET* 2D FGRE-ET Real-time*	Fast gradient echo sequence combined with an EPI echo train for acquiring multiple phase encoding steps per TR. Used for first pass myocardial perfusion studies. Compatible with real time for cardiac planning and imaging uncooperative patients.
2D FGRE TC*	Fast Gradient Echo Time Course used for myocardium tissue evaluation on first pass studies which integrates automatic motion correction (MoCo) that compensates for cardiac and/or respiratory motion, providing reliable results.
2D Fast Spoiled Gradient Echo TC*	Fast Spoiled Gradient Echo Time Course used for myocardium tissue evaluation on first pass studies which integrates automatic motion correction (MoCo) that compensates for cardiac and/or respiratory motion, providing reliable results.
2D CINE-IR	FAST-CINE GRE IR Prep sequence is designed for myocardial viability studies. Supports TI time selection for consistent results.
2D Real-time FGRE/FIESTA	Free-breathing, Real-time planning sequence for whole heart coverage.
2D FIESTA TC*	2D FIESTA TC is used for myocardium tissue evaluation on first pass studies.
2D Tagging*	Fast Cine GRE based sequence for visualization of cardiac contractile function.
3D Heart*	3D FGRE/FIESTA navigated sequence for free breathing coronary artery imaging.
3D COSMIC	Coherent oscillatory state acquisition for the manipulation of imaging contrast is a modified FGRE sequence with steady-state free precession segmented acquisition for high SNR, high contrast spine imaging.
3D LAVA	Liver Acquisition with Volume Acceleration is a 3D SPGR technique designed to image the liver. SPECIAL is the fat suppression method applied and parallel imaging provides shorter scan times.

*Optional

Image Acquisition (continued)

Gradient Echo	
3D LAVA Star*	LAVA Star is free breathing, single-phase, motion robust, 3D radial scan (stack of stars) technique. It is used for single phase (pre-contrast or delayed) imaging to produce worry-free, consistent image quality regardless of the patient's condition. LAVA Star employs radial in-plane trajectory to provide active motion compensation without navigators or bellows.
3D LAVA Flex*	3D FSPGR technique that acquires in-phase, out-of-phase, water only and fat only images in one acquisition. LAVA Flex uses ARC; a self calibrated 2D parallel imaging technique that allows acceleration in phase and slice direction.
3D Turbo LAVA 3D Turbo LAVA Flex*	LAVA Turbo provides a reduction of breath-hold timing for both LAVA and LAVA Flex acquisitions by as much as 20% reduction compared to conventional LAVA and LAVAFlex acquisitions. Available with respiratory triggering.
3D VIBRANT*	Simultaneous bilateral breast imaging technique in the Axial and Sagittal plane. SPECIAL and dual-shim volume capabilities provide homogeneous fat suppression.
3D VIBRANT Flex*	Acquires in-phase, out-of-phase, water only and fat only images in a single scan. It provides robust fat saturation and applies ARC, 2D self calibrated acceleration method for high spatial and temporal resolution images.
3D QuickStep	QuickStep is an automated multi-station run-off acquisition. This application automatically prescribes, acquires, and combines images from multiple stations for fast acquisition and simplified workflow.
3D TRICKS*	The time resolved imaging of Contrast KineticS (TRICKS) is a fast 3D dynamic acquisition for high temporal and spatial resolution MR angiography imaging (4D angio). Combined with elliptical-centric data sampling for consistent results.
3D SWAN*	High-resolution susceptibility weighting 3D multi echo gradient acquisition designed for small vessels visualization, as well as large vascular structures and iron or calcium deposits in the brain.
3D IDEAL*	IDEAL is a 3-point dixon water fat separation method that generates in-phase, out-of-phase, water images and fat images in one single scan. Provides homogeneous fat saturation for imaging for challenging anatomies as such as neck and spine.
3D IDEAL-IQ*	Whole liver 3D coverage in a single breath-hold, IDEAL IQ provides a non-invasive, quantitative assessment of triglyceride fat content in the liver that can aid in diagnosing steatosis.
StarMap*	StarMap is an acquisition and post processing technique that helps evaluate iron content in the heart and liver. Multiple echoes are acquired at different TE times for each pixel resulting in images that represent variations of T2* weighting. After the acquisition the images are post processed to generate color and grayscale T2* and R2* Maps.
DISCO* DISCO with FatSat	Differential sub-sampling with cartesian ordering, combine TRICKS and LAVA Flex technologies to acquire high temporal resolution 4D dynamic images with robust fat suppression and without compromising spatial resolution.
DISCO Star*	DISCO Star is a free-breathing, multi-phase, motion robust, 3D radial scan (stack of stars) technique. It is acquired in one continuous dynamic arterial phase to produce worry-free, consistent image quality regardless of the patient's condition. DISCO Star employs radial in-plane trajectory to provide active motion compensation without navigators or bellows.
MR Touch*	MR Touch is software and hardware application designed to measure relative tissue stiffness with MR. The acquisition uses a GRE based sequence that synchronizes induced vibrations to acquire a series of phase-contrast images over time.
MP-RAGE	MP-RAGE is a (3D) magnetization-prepared, rapid gradient-echo (MP-RAGE) sequence for structural brain imaging. The sequence captures high tissue contrast and provides high spatial resolution with whole brain coverage in short scan times.

*Optional

Image Acquisition (continued)

Vascular	
Inhance Inflow IR*	3D FIESTA based non-contrast-enhanced MR angiography technique that provides static background tissue and venous flow suppression for imaging arteries. It uses SPECIAL for uniform fat suppression and respiratory gating compatibility reduces respiratory motion artifacts during free-breathing renal exams.
Inhance 3D Velocity*	3D Phase Contrast based technique designed to acquire angiographic images in brain and renal arteries with robust background suppression in a short scan time. Respiratory triggering compatibility enabling abdominal angiography.
Inhance 2D Inflow*	Designed for imaging arteries that follow almost a straight path (i.e. femoral, popliteal, and carotid arteries) Inhance 2D Inflow acquires data during the systolic phase only. Compatible with Peripheral or Cardiac Gating and ASSET.
Inhance 3D Delta Flow*	3D FSE cardiac gated based non-contrast-enhanced MRA application designed for peripheral arterial imaging. This technique uses the differences between systolic and diastolic flow to help generate arterial signal contrast with robust background and venous suppression. ASSET compatibility provides shorter scan times.
2D TOF / 2D Gated TOF 2D Fast TOF FGRE/ SPGR 3D TOF 3D Fast TOF FGRE/ SPGR	2D TOF Imaging, 2D Gated TOF Imaging, 3D TOF Imaging and Enhanced 3D TOF Imaging are used for MR angiography imaging. Based on conventional gradient echo scanning, TOF imaging techniques rely primarily on flow-related enhancements to distinguish moving from stationary spins.
2D CINE Phase Contrast 2D FastCINE Phase Contrast	This pulse sequence is included specifically for studies of cardiac function. Through the use of retrospective gating, it allows full R-R coverage.
2D Phase Contrast 3D Phase Contrast	These techniques demonstrate flow velocities and directional properties in vessels and other moving fluids such as CSF and aortic flow.

EPI	
fMRI – BrainWave*	Real time acquisition, processing and display of functional imaging.
GRE-EPI SE-EPI FLAIR-EPI DW-EPI	Standard on all systems are gradient echo, spin echo, FLAIR, and diffusion weighted echo planar imaging. The EPI sequence supports single and multishot 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.
DTI*	DTI (Diffusion Tensor Imaging) is an EPI technique that acquires diffusion information in up to 300 different directions. The image contrast is based on the degree of diffusion anisotropy in the tissues. Post processing include Fractional Anisotropy (FA), Apparent Diffusion Coefficient (ADC), 2D directional maps and 3D fiber track models. Multi-shell DTI is available in clinical mode.
eDWI	Enhanced DWI (eDWI) provides high SNR diffusion images with short acquisition times. Supports Multi b-values with SMART NEX for variable NEX selection per B-value, "3 in 1" diffusion weighting to all three gradients simultaneously, tetrahedral selection with four different diffusion weighting combinations for shorter TE values and Inversion recovery for fat signal reduction.
RTFA	The RTFA algorithm leads to a reduction in distortion of the diffusion image per diffusion axis. RTFA is designed to reduce image blurring and distortions typically associated with diffusion imaging throughout the body. RTFA also allows for increased utilization of single spin echo DWI which results in an increase in SNR by up to 50% compared to dual spin echo and, when combined with the improved resolution leads to an increase in image quality that can be utilized for image presentation, fusion and ADC map outputs.

*Optional

Image Acquisition (continued)

EPI	
RTCF	Real-Time Center Frequency (RTCF) option can be applied to DWI & DTI to enable using the optimal center frequency for each slice. This is intended to help improve fat suppression and signal drop off at areas of high B_0 inhomogeneity (off-isocenter, or area with high tissue susceptibility). It is also intended to reduce station-to-station misalignment in whole body diffusion imaging.
FOCUS DWI*	FOV Optimized & Constrained Undistorted Single-shot (FOCUS) DWI utilizes 2D selective excitation pulses to limit the prescribed phase encode FOV eliminating artifacts from motion, imaging back folding or unsuppressed tissue.

Spectroscopy	
PROBE-PRESS PROBE-STEAM*	PROBE Single-Voxel spectroscopy allows non-invasive evaluation of the relative concentrations of in-vivo metabolites. The sequence provides acquisition and display of volume localized, water-suppressed H1 spectra in single-voxel mode. The sequence consists of three slice selective RF pulses with crusher gradients. PRESS provides up to twice the SNR over STEAM.
PROBE-PRESS CSI (2D & 3D*)	PROBE 2D and 3D CSI enable simultaneous multi-voxel spectroscopic acquisitions in the brain. It is available with PRESS excitation to maximize SNR. Post processing includes automatically generated metabolic maps.
BREASE*	A TE-averaged PRESS (Point RESolved Spectroscopy) acquisition that provides the necessary biochemical information to help characterize breast tissue by assessing the presence of choline.
TEA-PRESS*	TEA PRESS is a TE-Averaged variant of the PRESS CSI pulse sequence. It collects spectra across a range of TE values and averages the results together to reduce the appearance of signals whose intensity varies as a function of TE. This allows signals whose intensity does not vary with TE to be accentuated in comparison. This is the underlying pulse sequence behind the BREASE application.

PROPELLER MB	
Silent T1, PD, T2, DWI, T1 FLAIR and T2 FLAIR PROPELLER MB*	PROPELLER MB is a multi-shot per blade sequence that uses a radial k-space filling pattern acquisition and a post processing correction algorithm to significantly reduce the effects of motion artifacts. PROPELLER MB is compatible with spatial and chemical Sat, ASPIR, STIR T1, PD and T2 Auto TI/TR and Navigator.
T1, PD and T2 PROPELLER MB	
T2 FLAIR PROPELLER MB	
T1 FLAIR PROPELLER MB	
DWI PROPELLER MB	
PROPELLER DUO	PROPELLER DUO is a FSE based technique that is less prone to distortions caused by field inhomogeneities. PROPELLER DUO has a comparable scan time when compared to conventional PROPELLER DWI, and has spatial sat and shim volume capability to further reduce distortions and reduce artifacts and improve image quality.

Silenz*	
Silenz T1 Silenz PD	Silenz is a 3D Zero-TE sequence comprising high bandwidth excitation and reduced gradient-switching radial acquisition that results in sound levels near ambient. Silenz has added flexibility in sequence prescription for anisotropic resolution enabling faster scan times and includes axial as well as oblique geometries.

*Optional

Image Acquisition (continued)

Fat Suppression Technology	
FatSat	Applies a frequency selective saturation pulse at the frequency of fat before the imaging excitation pulse with the result being a signal measurement primarily from water.
STIR	STIR is an inversion recovery method that takes advantage of the T1 difference between water and fat to allow selection of the signal to suppress. In order to eliminate the signal from tissues, the TI time must match exactly the null point of the tissue that needs to be suppressed.
SPECIAL	Hybrid fat suppression technique that incorporates features from both the frequency selective FatSat and the STIR techniques by using a spectrally selective inversion pulse that inverts only the fat magnetization and leaves the only the water peak available for excitation.
Spectral Spatial	Method that applies selective pulses for water excitation only, while fat is left untouched, thereby producing no signal.
ASPIR	ASPIR method is a solution for poor fat suppression due to B_1 inhomogeneity. It is based on the frequency and the relaxation fat behaviors. Applies a spectrally selective adiabatic inversion pulse to excite the fat spins, imaging pulses are then applied after TI null time when longitudinal magnetization of fat crosses zero. The disadvantages include sensitivity to B_0 and longer scan times.
IDEAL*	IDEAL is a 3-point Dixon technique that acquires three images at slightly different echo times to generate phase shifts between water and fat. The water/fat separation method is very efficient at providing homogeneous image quality. One acquisition provides four contrasts: water, fat, in-phase and out-of-phase images.
Flex*	Flex is a 2-point dixon technique delivering faster scan times compared to IDEAL 3-point dixon. It is based on the difference between fat and water resonance frequencies using two flexible echo times for further scan time reduction. One acquisition provides four contrasts: Water, Fat, in-phase and out-of-phase images.
Motion Correction Technology	
PROPELLER MB	PROPELLER MB is a multi-shot per blade sequence that uses a radial *k*-space filling pattern acquisition and a post processing correction algorithm to significantly reduce the effects of motion artifacts. It is compatible with spatial and chemical Sat, ASPIR, STIR Auto TI/TR and navigator.
PROMO*	Prospective motion correction is a real time 3D navigator based motion correction technique compatible with Cube T2, Cube DIR, Cube T2 FLAIR, BRAVO and MPRAGE.
PB Navigators	Pencil beam navigators allow free breathing body and cardiac imaging by tracking the motion of the diaphragm. There are two navigator modes: navigator gating, uses a predefined signal acceptable range during the expiration and navigator triggering, uses signal to trigger data collection during the expiration.
Respiratory Trigger	Reduces breathing motion artifacts by synchronizing the acquisition with the respiratory cycle.
VCG	Vector cardiac gating reduces motion artifacts by synchronizing the acquisition with the cardiac cycle.
PG	Peripheral gating reduces motion artifacts caused by pulsating blood.
Acceleration Technology	
Fractional Nex	Technique in which only partial *k*-space data is collected and the remaining data is estimated. It uses the phase conjugate symmetry reconstruction method, which only half of the phase encode steps are acquired for scan time reduction.
Fractional No Phase Wrap	Selectable on the user interface, Fractional No Phase Wrap allows you to adjust the phase FOV based upon the patient size and shape. Benefits include a physical view of NPW placement on the user interface, flexibility to manage SNR and Scan Time, and the power to scan only the area of interest within the determined FOV.

*Optional

Image Acquisition (continued)

Acceleration Technology	
ASSET	Array spatial sensitivity encoding technique acquires under sampled multicoil data generating aliased images. These are post processed with coil sensitivity maps from the calibration scan to unfold the images.
ARC	Auto-calibrating reconstruction for cartesian imaging is a highly accelerated parallel imaging auto-calibrating method that doesn't require coil sensitivity maps. It enables smaller FOV prescriptions, less sensitivity to motion and prevents artifacts caused by coil calibration inaccuracies.
HyperBand*	HyperBand enables scan time reduction by simultaneously exciting multiple slices at multiple locations. Reconstruction algorithms are then applied in order to separate the images acquired.
HyperSense*	HyperSense has been expanded to include T1 acquisitions including MP-RAGE & BRAVO for neuro imaging and LAVA, LAVA-Flex, DISCO and DISCO-Flex for body applications, and Vibrant for breast applications. In addition, HyperSense is now compatible with other 3D gradient echo sequences, such as MERGE, FIESTA, COSMIC, fast 3D TOF and SWAN.
Hyperkat*	HyperKat s an advanced k-t acceleration method that employs time-shifted sampling in data acquisition and exploits both spatial and temporal correlation with motion-adaptive time window selection in image reconstruction.
HyperCube*	Small FOV organ specific volumetric imaging acquisition method that enables outside phase FOV HyperCube signal suppression. The technique can help to reduce artifacts originated outside of the prescribed field of view.

Uniformity Correction Technology	
SCENIC	SCENIC (Surface Coil ENhancement for Imaging Clarity) is an advanced image uniformity correction that further improves upon the previous reFINE algorithm. By using the biased field, SCENIC utilizes B-Splines to iteratively determine the best sharpening algorithm. This results in improved contrast, reduced shading, and consistent sharpening when compared to conventional imaging filtering techniques
PURE	PURE corrects the field inhomogeneity by collecting a calibration scan from the (uniform) body coil and the (non-uniform) surface coil and calculating maps that relate the intensity correction values to the images.
deFINE	deFINE is an integrated in-line imaging processing method that provides edge enhancement and smoothing algorithms allowing the user to customize the image appearance.
reFINE	reFINE is an advanced image uniformity correction algorithm that addresses non-uniformity due to coil sensitivity profiles and dielectric shading effects. It reduces organ-motion induced misregistration artifacts, effects of low signal in dark regions and edge effects at tissue interfaces and borders. reFINE optimizes parameter settings for each application, coil, and body anatomy maximizing image uniformity results.

Noise Reduction Technology	
ART	Acoustic Noise Reduction Technology optimizes the gradient waveform to reduce the gradient noise without compromising performance.
Silenz*	Silenz is a 3D Zero-TE sequence comprising high bandwidth excitation and reduced gradientswitching radial acquisition that results in sound levels near ambient. Silenz has added flexibility in sequence prescription for anisotropic resolution enabling faster scan times and includes axial as well as oblique geometries.
Silent PROPELLER*	Silent PROPELLER gradient waveform approach reduces the acoustic noise level to less than 11dB above the ambient room noise.

*Optional

Image Acquisition (continued)

Uniformity Correction Technology	
SCENIC	SCENIC (Surface Coil ENhancement for Imaging Clarity) is an advanced image uniformity correction that further improves upon the previous reFINE algorithm. By using the biased field, SCENIC utilizes B-Splines to iteratively determine the best sharpening algorithm. This results in improved contrast, reduced shading, and consistent sharpening when compared to conventional imaging filtering techniques.
PURE	PURE corrects the field inhomogeneity by collecting a calibration scan from the (uniform) body coil and the (non-uniform) surface coil and calculating maps that relate the intensity correction values to the images.
deFINE	deFINE is an integrated in-line imaging processing method that provides edge enhancement and smoothing algorithms allowing the user to customize the image appearance.
reFINE	reFINE is an advanced image uniformity correction that consists of SCENIC and PURE that adresses non-uniformity due to coil sensitivity profiles and dielectric shading effects. It reduces organ-motion induced misregistration artifacts, effects of low signal in dark regions and edge effects at tissue interfaces and borders. Refine optimizes parameter settings for each application, coil, and body anatomy maximizing image uniformity results.

Noise Reduction Technology	
ART	Acoustic Noise Reduction Technology optimizes the gradient waveform to reduce the gradient noise without compromising performance.
Silenz*	Silenz is a 3D Zero-TE sequence comprising high bandwidth excitation and reduced gradientswitching radial acquisition that results in sound levels near ambient. Silenz has added flexibility in sequence prescription for anisotropic resolution enabling faster scan times and includes axial as well as oblique geometries.
Silent PROPELLER*	Silent PROPELLER gradient waveform approach reduces the acoustic noise level to less than 11dB above the ambient room noise.

Magnetization Transfer Contrast
Used to improve the Magnetization Transfer Imaging Option to improve contrast between blood flow and surrounding tissue in 3D TOF images, to augment post-contrast T1-weighted brain images, and to increase myelographic effect for improved disc and cord lesion visualization

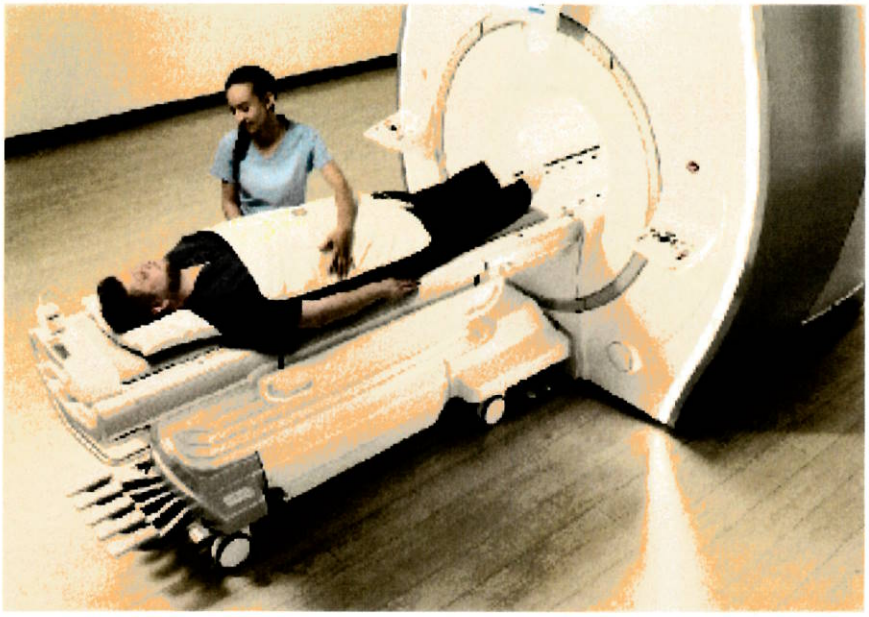
Blood Saturation
Use Blood Suppression to obtain "black blood" cardiac images and reduce flow-related ghosting.

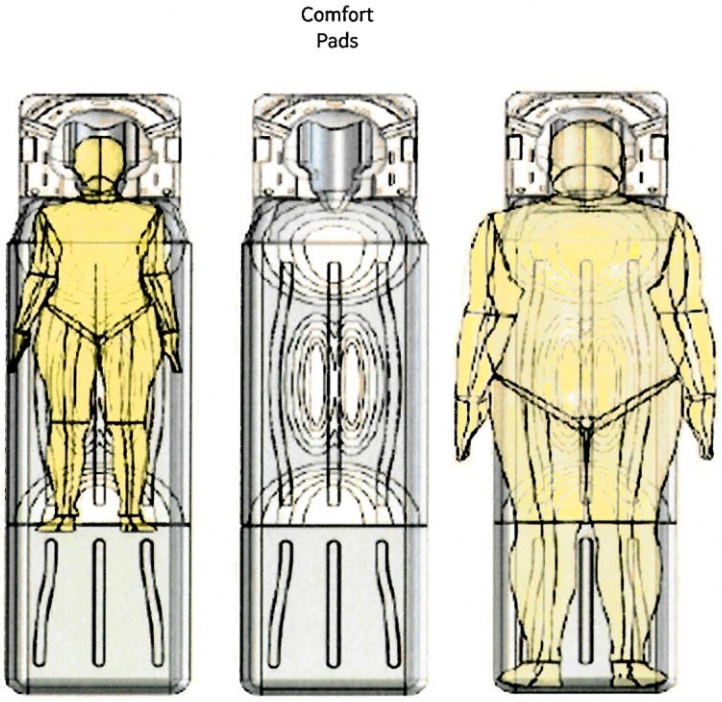
*Optional

RF Coils Suite

eXpress Table & Posterior Array

- Detachable table with embedded posterior array
- 100 cm S/I Coverage
- 40 Elements with dedicated spine configurations
- Head-first or feet-first
- Automatic coil mode selection
- Acceleration in all directions
- Patient-centric comfort pads

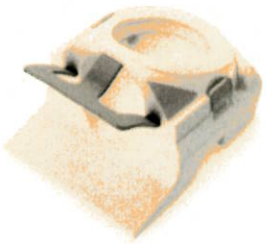




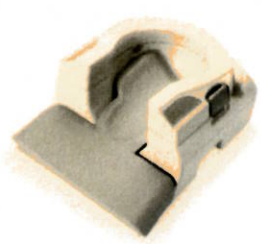
RF Coils Suite (continued)

Head & Neck Unit

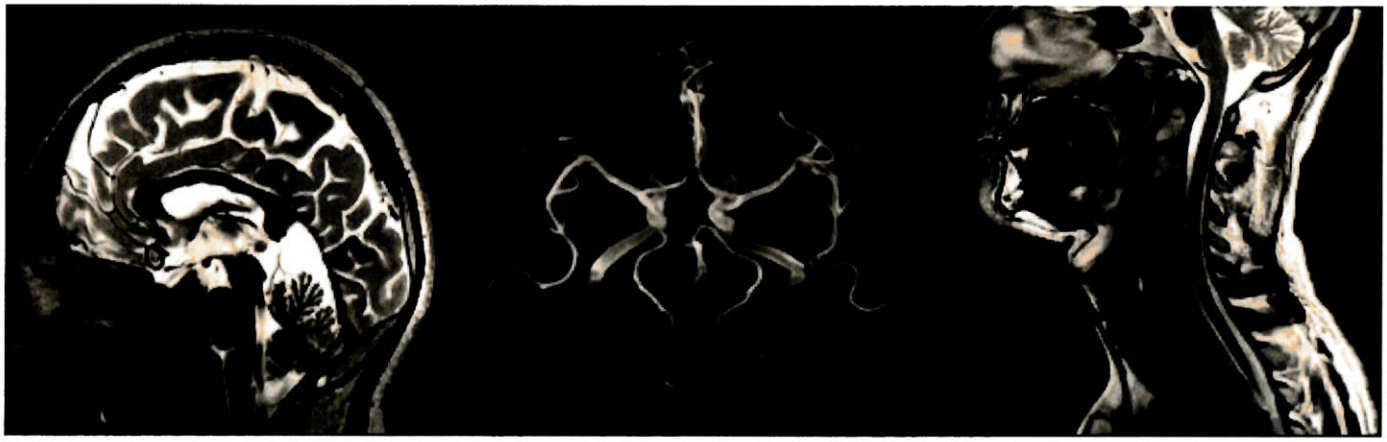
Head and Neck NV with Comfort Tilt



Head and Neck



Cervical Open Face



Head Neck Unit NV Specifications	
Length	49.5 cm (19.5 in)
Width	38.8 cm (15.3 in)
Height	36.8 cm (23.9 in)
Weight of HNU base	5.0 kg (11 lbs)
Weight of Anterior Adapter	2.6 kg (5.8 lbs)
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	

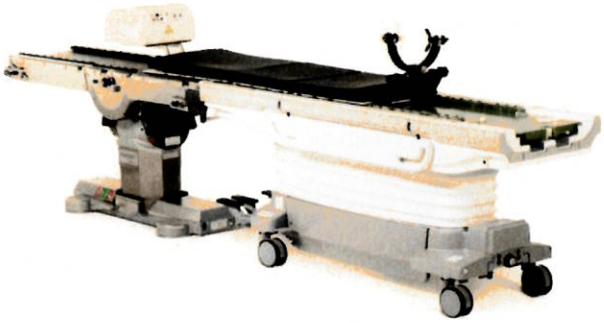
Head Neck Unit Cervical Specifications	
Length	49.5 cm (19.5 in)
Width	38.8 cm (15.3 in)
Height	33.6 cm (13.2 in)
Weight of Cervical Adapter	1.7 kg (3.7 lbs)
S/I Coverage	28 cm (11 in)
R/L Coverage	24 cm (9.4 in)
Head-first or feet-first imaging	
Up to 15 elements in the FOV, when combined with the PA and AA	

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	1.3 kg (2.8 lbs)
S/I Coverage	28 cm (11 in)
R/L Coverage	24 cm (9.4 in)
Head-first or feet-first imaging	
Up to 19 elements in the FOV, when combined with the PA	

MR Enabled Therapy and Accessories

Radiation Oncology Options *

Combining the SIGNA™ Artist 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.



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 procedures.

MR-Guided Focused Ultrasound*

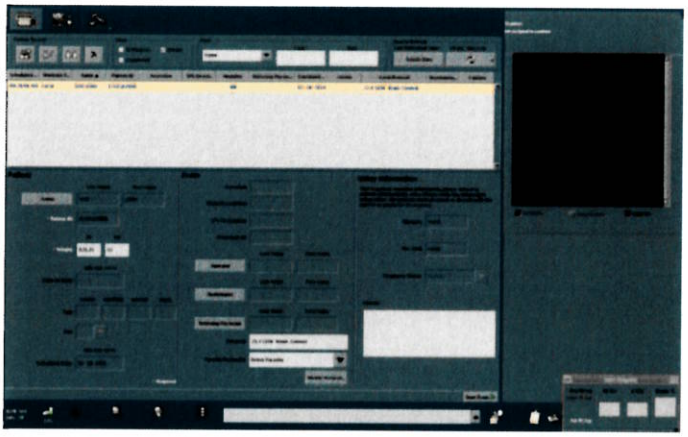
Your facility can offer a completely non-invasive treatment for uterine fibroids with the addition of an Exablate MR-guided Focused Ultrasound therapy table to your MR system, which has been used in 6,500 procedures worldwide.

*Optional

SIGNA™ Flow

SIGNA™ Flow is designed to standardize and accelerate workflow for patient setup, exam prescription, scanning and post processing. eXpress Workflow can begin before the patient enters the magnet room and exams can be completed within a few mouse clicks - delivering quality and consistency for all patients and from all technologists. At the same time, eXpress Workflow maintains the flexibility needed to rapidly adapt and optimize exams for patient specific situations.

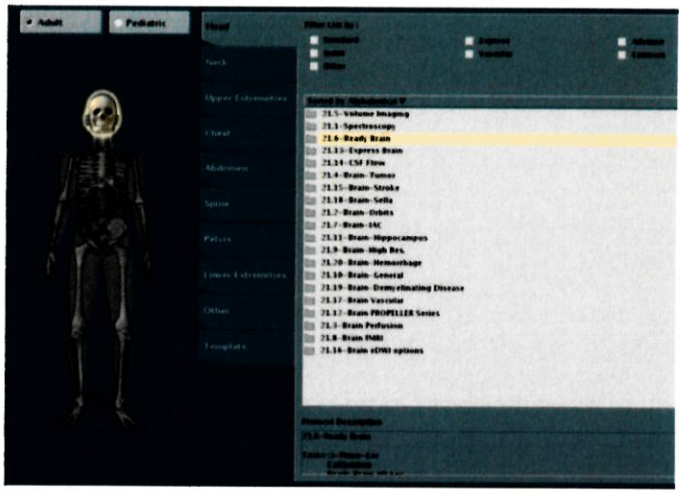
Exam Setup



Modality Worklist

Automated and standardized rapid set up

- Allows the MR protocol to be selected and linked to the patient record in advance of the patient's arrival
- For sites with full DICOM connectivity, select the patient from the Modality Worklist, start a new session and view the relevant exam details on the in-room operator console
- Add critical patient information such as allergies, pre-medication, pregnancy status and history



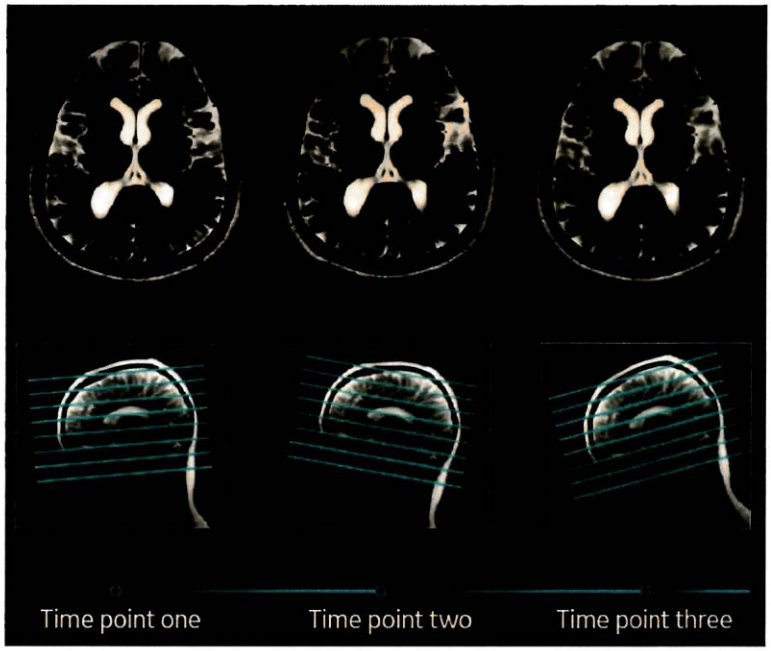
Protocol Tools

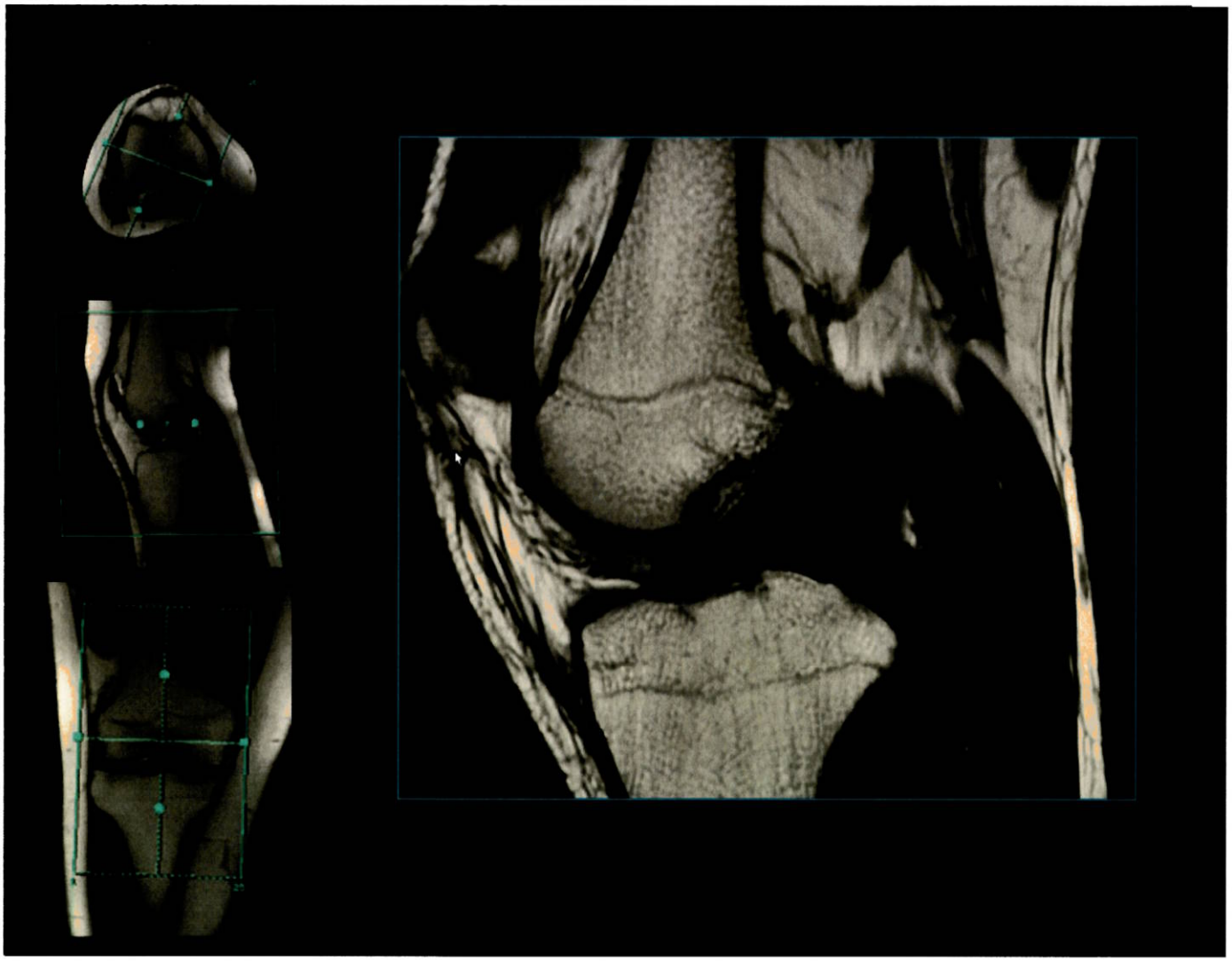
Search, select and one click to share

- Protocol Libraries: GE Optimized (preloaded protocols) and Site Authored (customized and saved)
- Protocols can be saved based on patient demographics, anatomy, scan type, or identification number for rapid search
- Commonly used protocols can be flagged for quick selection from the modality worklist
- One-click to share protoCopy – enables a complete exam protocol to be shared with the click of a mouse and provides a process for managing protocols across multiple systems as well as saving protocols for back up

AIR x™*

- AIR x™ (auto graphic Rx) – contains deep learning algorithms that automatically identify anatomical structures to prescribe slices for challenging setup planes for brain and knee. This workflow tool enables consistency and productivity improvements for routine and follow-up examinations and extends research/clinical capabilities for longitudinal quantification studies.
- Increases productivity by simplifying workflow steps, thus reducing prescription times
- Improves consistency and reduces slice positioning variation amongst different technologists
- Automatically adapts slice prescriptions to various patient anatomies and structures.





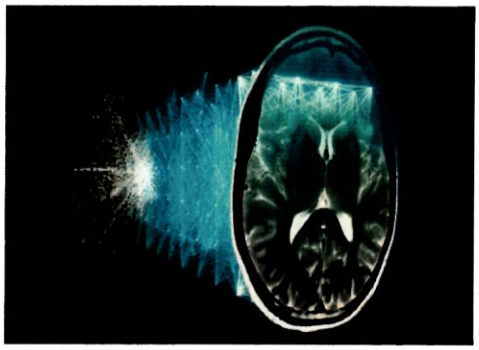
*Optional

AIR™ Recon DL†

Simply better image quality‡

AIR™ Recon DL is a pioneering, deep-learning based reconstruction, which challenges the inherent trade-off between SNR, scan time and image resolution.

AIR™ Recon DL is not a filter or a post-processing technique. It improves image quality at the foundational level, and with trained neural networks embedded directly in the reconstruction pipeline, noise and ringing artifacts are removed in the raw data to deliver final reconstructed images with higher SNR and sharpness.



Benefits

- Removes image noise and ringing by leveraging raw image data
- Enables shorter scan times while preserving signal to noise ratio and image sharpness
- Increases productivity by enabling shorter scan times
- Delivers sharper, clearer and accurate MR images
- Enables you to set your preferred SNR improvement level

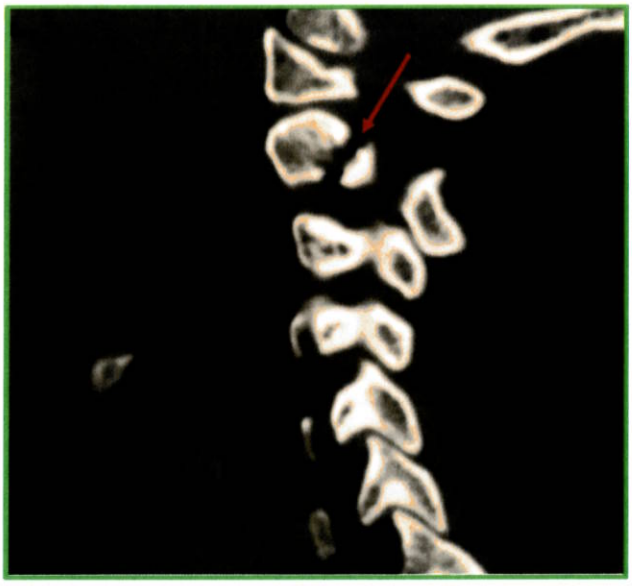
AIR™ Recon DL general specifications	
Base technology	• Deep-Learning with convolutional neural network powered by Edison™ • Simultaneous noise reduction and resolution improvement • Applied directly in reconstruction to fully leverage acquired raw data
Anatomical coverage	Body, breast, pelvis, chest, cardiac, orthopedic, neuro, spine, vascular - no anatomical limitations
Coil compatibility	No coil limitations
Range of imaging contrast weighting and pulse sequences	• 2D Spin Echo (SE), Fast Spin Echo (FSE/FSE Flex), Single Shot Fast Spin Echo (SSFSE) family of sequences • Gradient Echo (GRE/SPGR), Fast Gradient Echo (FGRE/FIESTA/FSPGR) family of sequences • Phase sensitive reconstruction • Echo Planar Imaging Diffusion weighted (EPI DWI/DTI) family of sequences • Motion-insensitive PROPELLER (FSE/DWI) family of sequences* • 3D Fast Spin Echo (FSE; including IFIR), 3D Gradient Echo (GRE/SPGR; including BRAVO, Cube, LAVA, VIBRANT), and Fast Gradient Echo (FGRE/FIESTA/FSPGR) family of sequences* • Includes PD, T1, T2, T2*, Diffusion, FLAIR and STIR weightings • CE (contrast enhanced) and non-CE
Imaging option compatibility	Compatible with standard imaging options including acceleration techniques (ASSET, ARC, HyperSense and HyperBand)

‡ compared with conventional technology

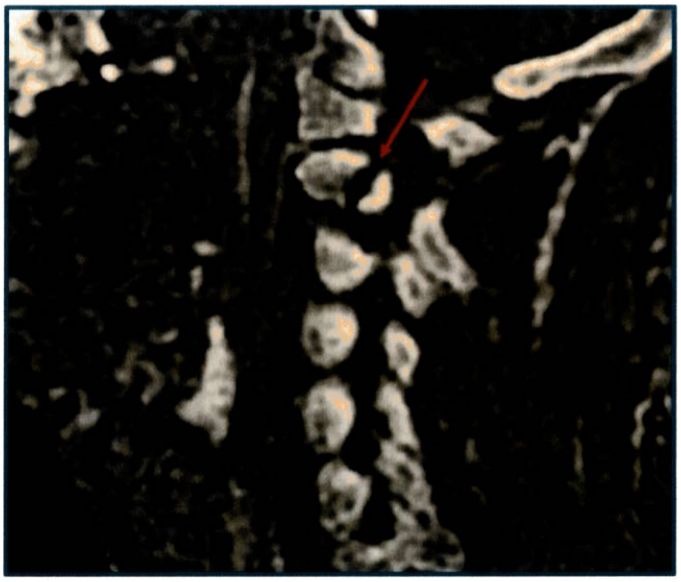
* AIR™ Recon DL 3D and AIR™ Recon DL PROPELLER are not yet CE marked. Cannot be placed on the market or put into service until it has been made to comply with CE marking. Not commercially available in all markets.

oZTEo* MR bone imaging

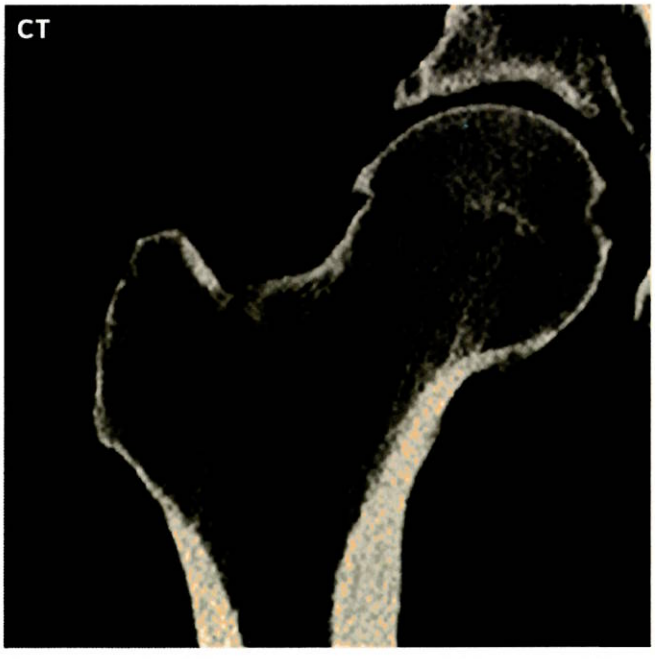
GE's unique MR bone imaging application, oZTEo, is based on the zero echo time (ZTE) acquisition that is also used in the Silent Suite (Silenz) application. oZTEo complements the conventional soft tissue exam by providing cortical bone surface information. Automated grayscale inversion provides positive bone contrast that is more familiar to visualize for surgeons and clinicians. The ZTE sequence can be used for 3D isotropic resolution and adapts to the patient by providing a inherent motion insensitivity from a radial acquisition. oZTEo can be used with any surface coil that is compatible with SCENIC and includes protocols for common joints such as hip, shoulder, wrist, ankle and knee.

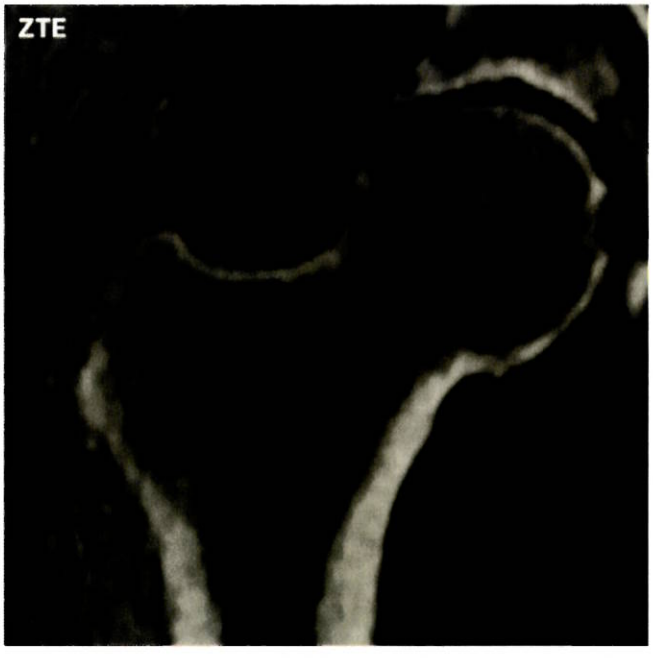


CT SCAN



ZTE MRI

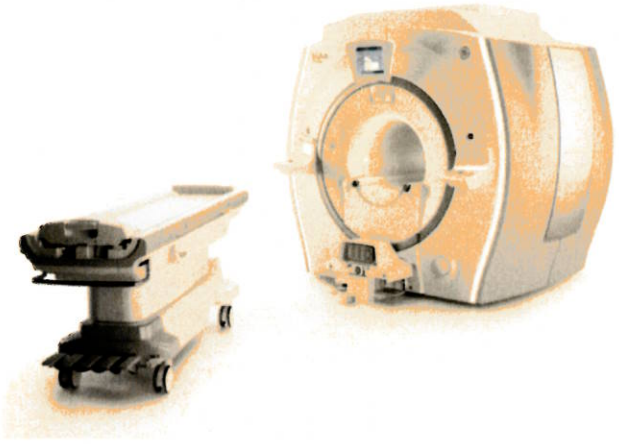




*optional

Patient Setup

eXpress Patient Table



Safety, Comfort and Efficiency

- Reduce patient transfers – transfer outside the magnet room directly to the eXpress table
- Accelerate emergency egress – can be undocked and removed by one user in under 30 seconds typically
- Automatic coil disconnect – in time sensitive situations the system coils are automatically disconnected
- Patient choice – feet-first or head-first positioning for all supported exams
- Reduce in-room patient setup and address privacy by fully preparing the patient and coils for an exam outside of the magnet room
- Integrate arm-boards and IV pole to support patient for transport
- Embedded posterior array and multiple high density surface coil connectors
- IntelliTouch landmarking sensors
- Compatible second table, prepare the next patient outside the magnet room while scanning the current patient

Express Patient Table	
Configuration	Detachable and mobile
Minimum & Maximum Height	70 cm to 93 cm continuous*
Table Drive	Automated power-driven vertical Automated power-driven longitudinal
Longitudinal Speed	30 cm/sec (fast) and 0.5 cm/sec (slow)
Total Cradle Length	210.8 cm
Total Scanable Range	205 cm
Maximum Patient Weight for Scanning	227 kgs (500 lbs)
Maximum Patient Weight Detached and Mobile	227 kgs (500 lbs)
Maximum Lift Capacity	227 kgs (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 touch sensors
Coil Connection Ports	2 high density, auto-sensing ports

*Minimum height (from floor) to install Head Coils at both ends of the table: 64.4cm

Patient Setup (continued)

AIR Touch™*

Intelligent coil localization and selection

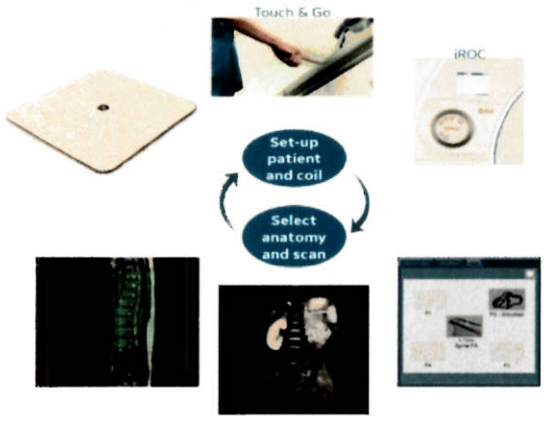
Accelerate your scanning process the minute the patient gets on the table with AIR Touch™, a new workflow application that automates coil selection and landmarking. With AIR Touch™, you simply use IntelliTouch, GE's 1-touch landmarking tool, to activate an optimized set of coils that is selected based on the patient's anatomy. This advanced technology selects from numerous coil combinations such as the posterior array (PA) and flexible coils, to efficiently set up patients. With the anatomical-based protocol optimization, AIR Touch™ optimizes for the anatomy and the protocol parameters with a single touch, delivering a significant productivity gain from plan to scan. AIR Touch™ automatically integrates all calibration scans, providing uninterrupted workflow for the technologist. Further scan times savings are realized with Flexible No Phase Wrap (NPW) to scan only what you need while allowing you to focus on your patient, not the scanner.

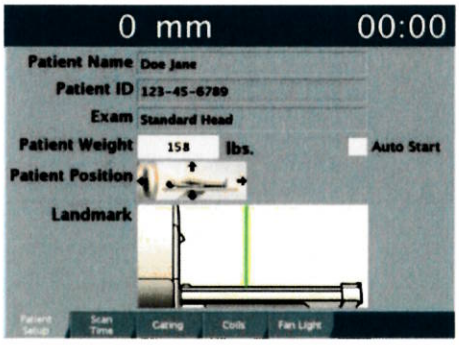
- Dynamically generated coil configurations with elements activated to optimize image quality (coverage, uniformity and parallel imaging acceleration) for every scan
- Coil locations determined automatically
- Calibration scans seamlessly acquired without interrupting workflow
- Dramatically simplified coil selection UI;no need to touch it for most exams

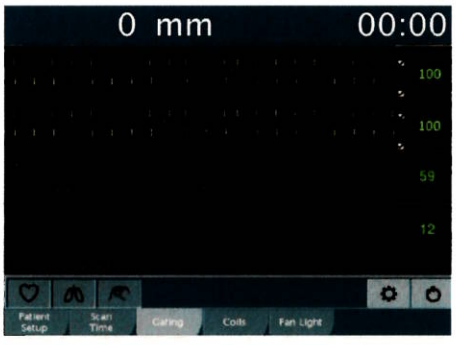
IntelliTouch

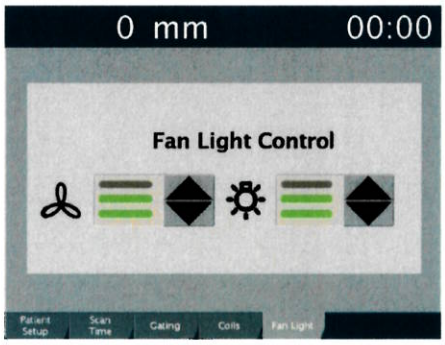
Touch to Landmark

- IntelliTouch sensors for simplified non-laser patient landmarking
- With IntelliTouch technology, the user can touch to complete
  - Patient landmarking
  - Localizing to the surface coil for auto-coil selection
  - Move patient to scan
  - Start scanning (with AutoStart activated)
  - Acquire, process and network images









In-Room Operator Console and Control

Full Control from table side

From the in-room operator console and controls, the user can:

- Position the table
- Return the table to home
- Stop the table movement
- Control multiple levels of in-bore ventilation and lighting
- Display of patient name, ID, study description
- Display patient weight
- Display and entry of patient orientation and patient position
- Cardiac waveform display and ECG/EKG lead confirmation
- Gating control for trigger select, invert and reset
- Respiratory waveform display
- IntelliTouch technology landmarking
- AutoStart to initiate scanning of the selected protocol
- Display connected coils and coil status
- Display of table location and scan time remaining
- Activate Screen Saver

The in-room display also allows for the integration of third-party visualization tools.

In-line Processing & In-line Viewing

In-line Processing

Automated post processing

- Automated post processing of specific applications
- Automatic opening and loading to advanced visualization tools when appropriate
- Automated in-line processing can be stored within the protocol

Automatic Pasting and Saving

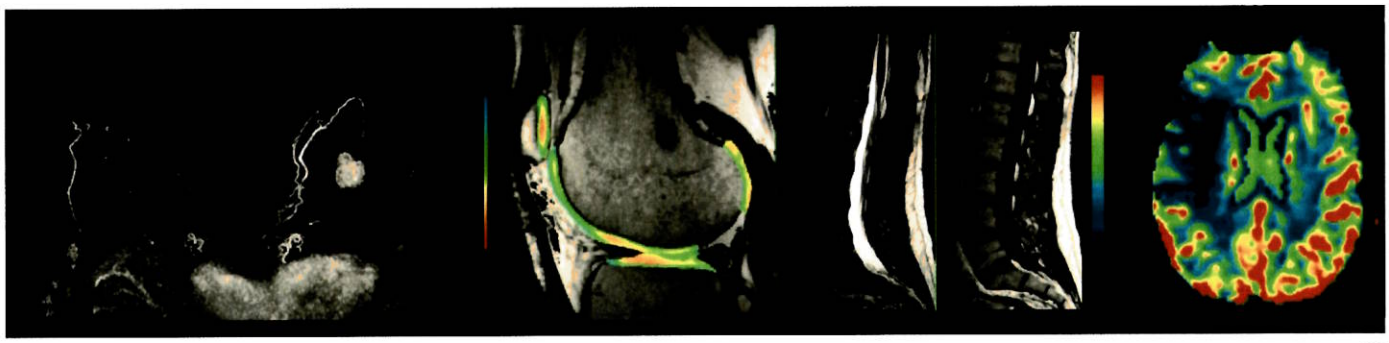
- MR Pasting: Combine images from separate acquisitions into a single series with MR Pasting. MR Pasting is an image analysis software package that facilitates the display and filming of multiple station MR data sets in the body applications (total spine, total body) as well as peripheral MR angiography data. MR Pasting will automatically register and combine multiple acquisition stations into a single image of covered anatomy
- AutPasting: automatic compute and save

3D ASL series*	Automatic compute and save
Diffusion Weighted series	Automatic compute and save
Diffusion tensor series*	Automatic compute and save
eDWI series	Automatic compute and save
Image filtering: A-E, deFINE	Automatic compute and save
Maximum/Minimum Intensity Projection	Automatic compute and save
Reformat to orthogonal plane	Automatic compute and save
T2 map for cartilage evaluation*	Automatic compute and save
3D Volume Viewer	Automatic load
BrainStat	Automatic load
FiberTrak*	Automatic load
Image Fusion	Automatic load
Interactive Vascular Imaging	Automatic load
Pasting	Automatic load

In-line Viewing

Enhanced Visualization

In-line viewing allows the user to seamlessly and conveniently view, compare, and analyze images (during scan progress). The user simply selects the series, or multiple series, to view from the workflow manager, and the images are displayed along with the image display tools.



*Optional

Scanning

Workflow Manager

Linking and Auto Functions

AutoStart	Automatically initiates scanning of the selected protocol upon closure of the scan room door.
AutoCoil	Automatically determines the optimum coil elements to activate for scanning. If the prescribed field-of-view changes, AutoCoil automatically adjust the selection. The user has the option to review and edit the selection.
AutoScan	Automatically scans the prescribed series without user interaction. For series requiring a contrast injection, the Workflow Manager will pause and await user interaction.
Auto-calibration	For acquisitions that utilize ASSET parallel imaging or PURE surface coil intensity correction, Auto-Cal will prescribe and acquire a calibration scan based on the prescribed imaging volume.
AutoVoice	Delivers user selected, pre-recorded instructions to the patient at defined points in the acquisition to help ensure exam consistency. AutoVoice includes instructions in 14 languages and also allows the user to create and save unique instructions for specific local needs.
PB Navigators	Enable free-breathing body imaging for patients unable to breath-hold. The diaphragm tracker pulse automatically places and updates to streamline workflow and eliminate the setup time associated with respiratory triggering. Auto Navigators can be used with a broad range of imaging techniques including dynamic contrast enhanced T1-weighted imaging.
READYBrain	Automates localizer acquisition, scan plane prescription, scanning, and post processing for brain exams. READYBrain automatically calculates the mid-sagittal plane and determines the AC-PC line/OM line for 2D/3D prescription as well as corrects for extreme (>45 degree) rotation.
QuickSTEP	Automatically prescribes, acquires, and combines images from multiple stations. QuickSTEP acquires mask datasets and then secondary datasets from multiple stations (same locations), and automatically subtracts the mask datasets from the secondary datasets to create one subtracted series.
eXpress Prescan 2.0	Reduces pre-scan time for FSE-based techniques by up to 40% with a new calibration algorithm that reduces pre-scan time and consequently overall exam time.
Pause and Resume	Allows the user to pause a scan in progress, to respond to a patient need, and then resume mid-scan (without repeating scan).

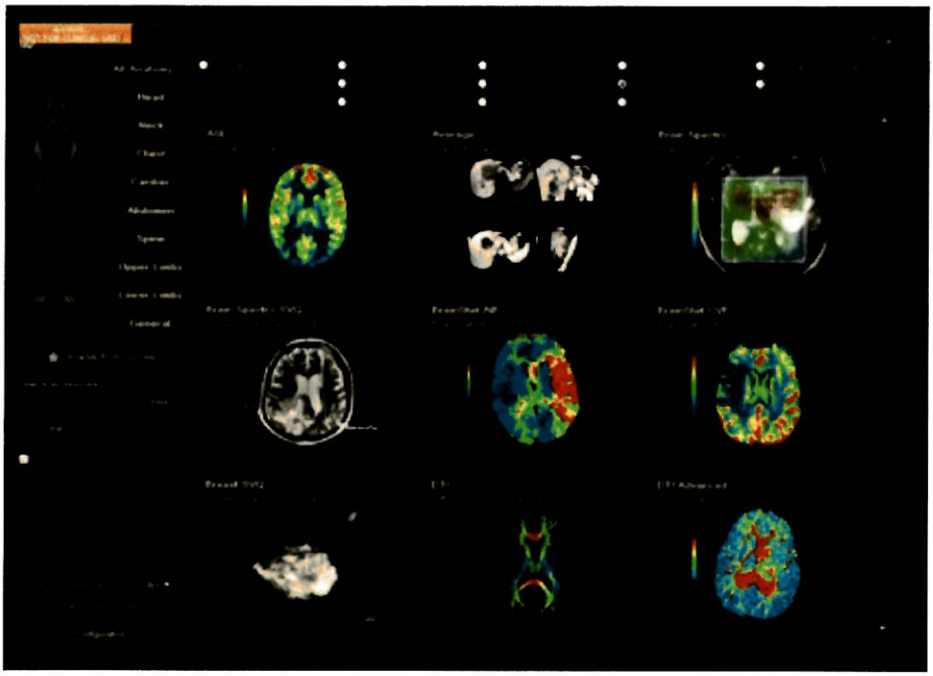
Visualization

READYView on MR Operator Console

Integrated Post Processing & Advanced Visualization

READYView is an image analysis software that allows the user to process dynamic or functional volumetric data and to generate maps that display changes in image intensity over time, echo time, b-value (diffusion imaging), frequency (spectroscopy). The combination of acquired images, reconstructed images, calculated parametric images, tissue segmentation, annotations and measurement performed by the clinician allows multiparametric analysis and may provide clinically relevant information for diagnosis.

- Automatically selects the most relevant post processing protocol*
- Provides guided workflow and general assistance for the processing algorithms
- Multiparametric protocols selection for Brain, Breast, Liver, Knee and Pelvis studies when two or more functional series are present
- MR general review enables efficient reading of multi-contrast exams based on Smart Layout Technology
- One-click – to select and process functional data
- One-click – to save all generated parametric images
- One-click – to save and restore the state of processed images at any stage
- One ROI – display all multi-parametric images and get all related functional values from a single ROI
- Export – display and export ROI statistics from the summary table
- Export graph values as csv files
- Customize workflows with adjustable layouts, personalized parameter settings, and custom review steps



Benefits

- 3D ROI
- 3D Reformat MPR
- Auto-contour
- Distortion Correction
- Fusion & Registration
- MIP & HD MIP
- Motion Correction
- Multiparametric protocols
- Multiple graphics display
- Ratio AB/CD
- Reformat & Graphview
- Subtraction
- Volume Rendering
- Volume segmentation ROI

* When only one protocol is compatible with the selected data, the access is made through the One-Touch mode. If more than one protocol is compatible, the Protocol page opens for user selection.

READYView

Standard Protocols

READYView One-Touch
Protocols uses display intelligence with pulse sequence, image contrast and scan plane recognition to enable direct access between a unique post processing that is associated with the series selection.

One-Touch ADC and eADC
Provide algorithms to process DWI images to generate ADC maps and eADC maps to eliminate T2 "shine through" in the isotropic (trace) DWI.

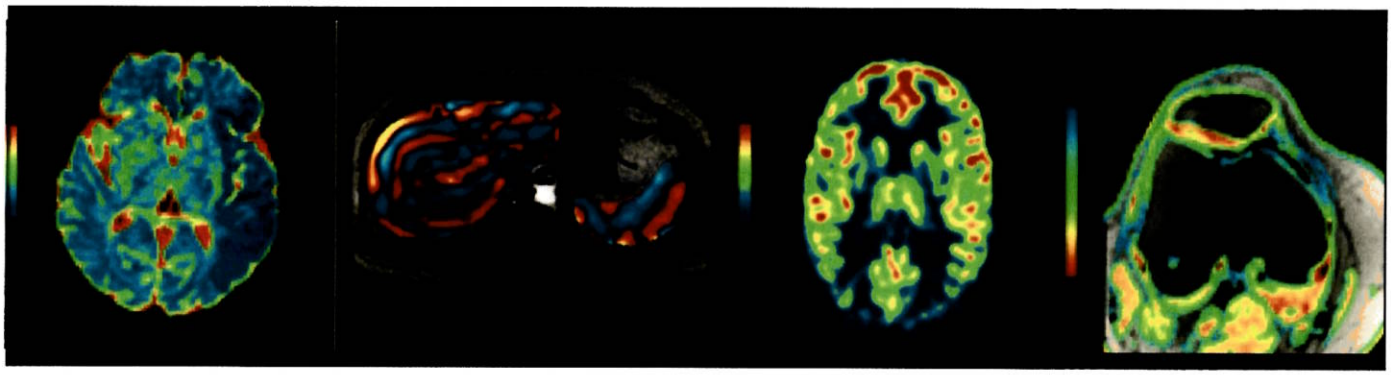
One-Touch ASL*
ASL READYView has algorithms that calculate Cerebral Blood Flow maps from a 3D ASL series. ASL acquisition is a non-invasive, one-click application that allows whole brain CBF measurements.

Ready View Spectroscopy*
The READY View MR spectroscopy protocols are used to display functional maps for metabolites and metabolite ratios in the brain and prostate.

One-Touch Brain*
The READYView Brain protocols are used to display functional maps for metabolites and metabolite ratios in the brain.

One-Touch MR-Touch*
READYView MR-Touch is a post process of an MR-Touch acquisition, which is a Phase Contrast (PC) application that generates an image contrast related to the shear stiffness of soft tissue. An algorithm is used to derive a relative stiffness map (Elastogram) and wave images from the phase images.

One-Touch T2 MAP*
The READYView T2 Map protocol post processes data sets acquired using the T2 Map (CartiGram) application. The T2 Map acquisition is displayed in READYView, where the T2 relaxation time color map is coded to capture T2 values from the TE range of the acquired images.



*Optional

READYView (continued)

Integrated Registration provides you with the capability to align and fuse two volumetric acquisitions from either the same or different acquisition modalities. Multiple 2D and 3D fusion capabilities.

The Integrated Registration application automatically detects the series that are the best candidates for registration based on the data set attributes and the use case. After the Reference (i.e., fixed) and Registered data sets are identified, the applicable registration methods will be automatically detected.

After the automatic registration is done, you can either directly accept automatic setup or validate it visually.

If you are still not satisfied with the result of the registration, it can be adjusted manually by translation or rotation, placing common anatomical landmarks, or a Region Of Interest (ROI) on the Registered dataset, where the registration should be performed, can be defined; the regions outside the ROI are ignored by the registration process.

BrainStat
BrainStat is an MR Time Course imaging READYView protocol that provides accurate spatial resolution for brain tissue viability given by hemodynamic parameters: BV, BF, TTP, MTT (SVD), BAT, Tmax. These hemodynamic parameters can provide unique information on tissue changes and improve delineation of vascular-deficient or vascular-rich regions in normal and abnormal anatomy.

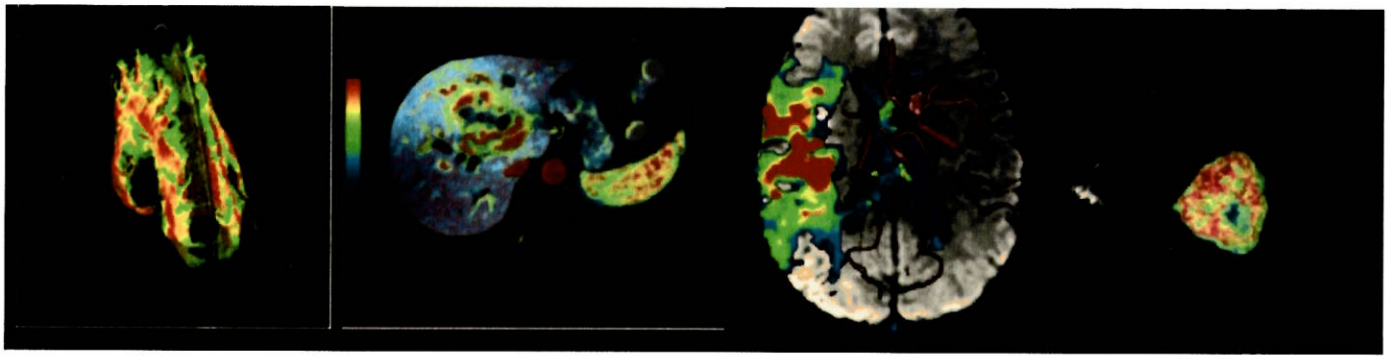
MR Standard
MR Standard is a time course protocol. The READYView MR Standard is a time course protocol that can be used to create the following maps: enhancement integral (negative and positive), time to peak, mean time to enhance, maximum slope of increase, maximum slope of decrease.

SER
SER is a time course protocol for analyzing T1-contrast changes. The READYView SER protocol can be used to create the following maps: Positive enhancement integral, signal enhancement ratio and maximum slope of increase.

FiberTrak*
FiberTrak is designed for the advanced analysis of MR images acquired with a DTI technique. It allows for processing of isotropic, ADC and FA maps among other options. The FiberTrak option augments this functionality to allow DTI processing to create: 2D color orientation maps, 2D color eigenvector maps and 3D tractography maps.

fMRI*
Functional imaging or BOLD provides fMRI analysis using the correlation coefficient algorithm to analyze an image set. Neuronal activity of either motor or cognitive functions can be mapped by fMRI through changes in signal intensity.
The resulting functional maps can be used for mapping the motor cortex and higher cognitive regions of the brain.

R2 Star*
The R2 Star feature uses water proton transverse relaxation rates (R2) technique. It provides parametric maps for R2* (Hz) and T2* (ms). The R2* values vary with tissue characteristics such as iron concentration.

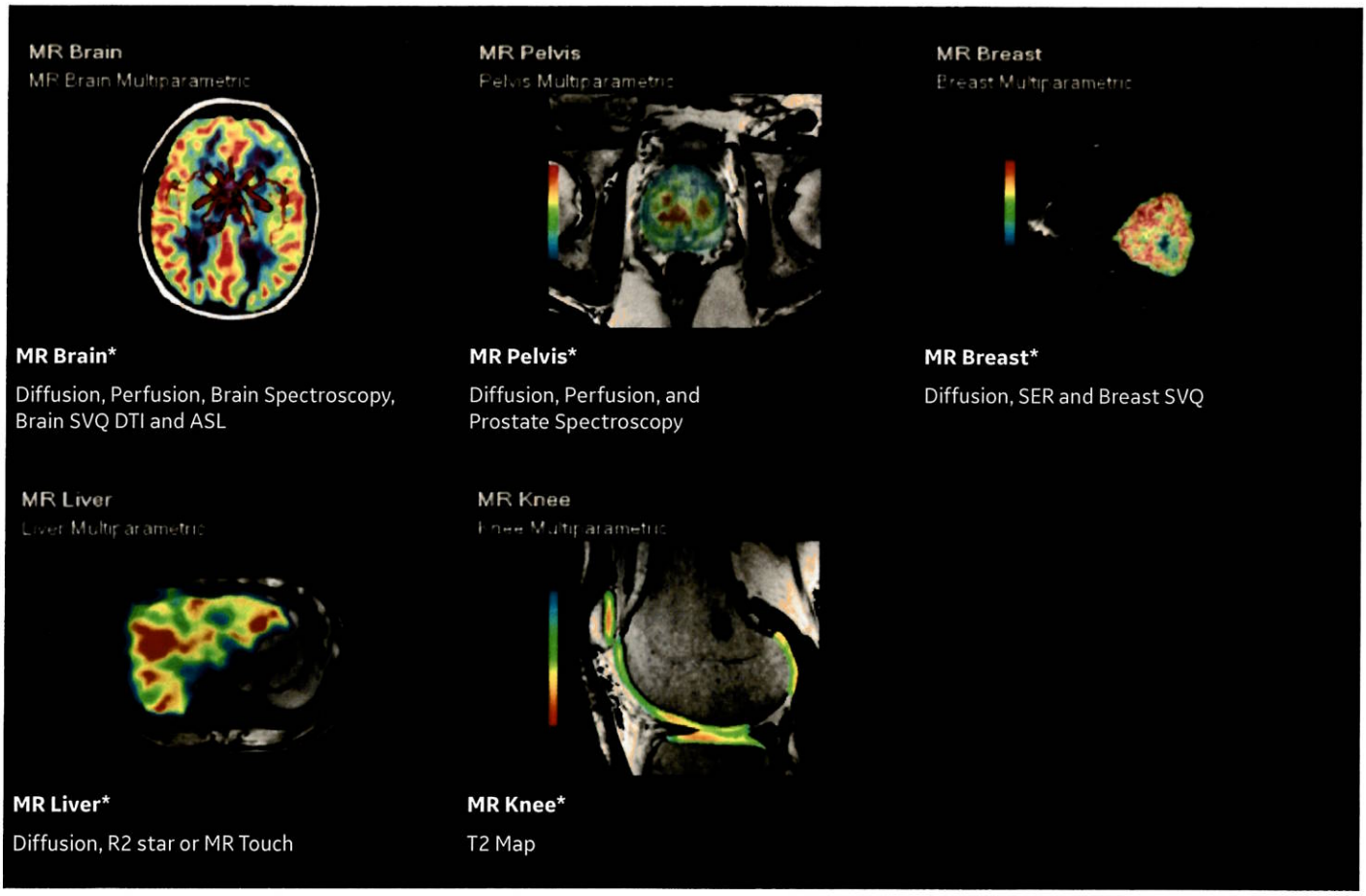


*Optional

READYView (continued)

Multiparametric Protocols: Visualization at a Glance

READYView multiparametric protocols provide a guided workflow to streamline post processing and analysis of multiparametric studies. All measurements can be obtained with one ROI and the user customizable workflow has the ability to display all processed maps in one screen.



MR Brain*

Diffusion, Perfusion, Brain Spectroscopy, Brain SVQ DTI and ASL

MR Pelvis*

Diffusion, Perfusion, and Prostate Spectroscopy

MR Breast*

Diffusion, SER and Breast SVQ

MR Liver*

Diffusion, R2 star or MR Touch

MR Knee*

T2 Map

* Optional and requires two or more of the functional series selected.

Siting

Siting and Other Specifications

Typical Room Layouts	
	System configuration minimum values
Magnet Room W x D	20.3 sq.m
Minimum Ceiling Height	2.5 m (8 ft. 2.4 in) min ceiling height
Equipment Room	7.9 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)	5.8 m	3.2 m

Electrical Supply Requirements

Supply system recommended configuration:

- 3-phase grounded WYE with neutral and ground (5-wire system)

Note: Neutral must be terminated inside main disconnect control

Alternate configuration:

- 3-phase DELTA with ground (4-wire)
- Recommended grounded delta configuration
- Voltage: 480/415/400/380/Vrms

Power Consumption / Water Requirements	
Power consumption depends on actual usage. The following values are approximate:	
Maximum continuous sustained power (> 5 secs)	99 kVA
Heat shield compressor	9 kVA
Maximum heat removal to customer-supplied water	49 kW
Water Flow	114 liters/min (30 gpm) min at max temperature of 10 °C

Workspace Monitor Positions	
	Maximum field strength
LCD flat panel monitor	5 mT (50 Gauss)

Temperature and Humidity Requirements			
	Magnet Room	Control Room	Equipment Room
Temperature	15 - 21 °C	15 - 32 °C	15 - 32 °C
Max. Temperature Change Rate	3 °C / hour	3 °C / hour	3 °C / hour
Humidity (non-condensing)	30 - 60 %	30 - 70 %	30 - 70 %
Max humidity change rate	5% RH/hr	5% RH/hr	5% RH/hr

Altitude Requirements	
Upper limit	2600 m
Lower limit	-30 m

Miscellaneous

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 project manager for a comprehensive installation and siting manual.

Filming considerations

Filming requires the SIGNA™ Artist analog or digital filming.

Interface (purchased separately) unless DICOM Print will be used exclusively for software filming to DICOM Print peripheral devices. An Analog/VDB or Digital/LCAM Camera Interface is typically required for most installations.

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).

Warranty

The published GE warranty in effect on the date of shipment shall apply. GE reserves the right to make changes.

InSite* Remote Diagnostics

GE's unique remote service and applications support including magnet monitoring. Also allows downloading of applications software such as eFlexTrials program.

Accessories package

A comprehensive suite of MR compatible accessories is available on the SIGNA™ Artist. Please contact your GE representative for details.

GE regulatory compliance

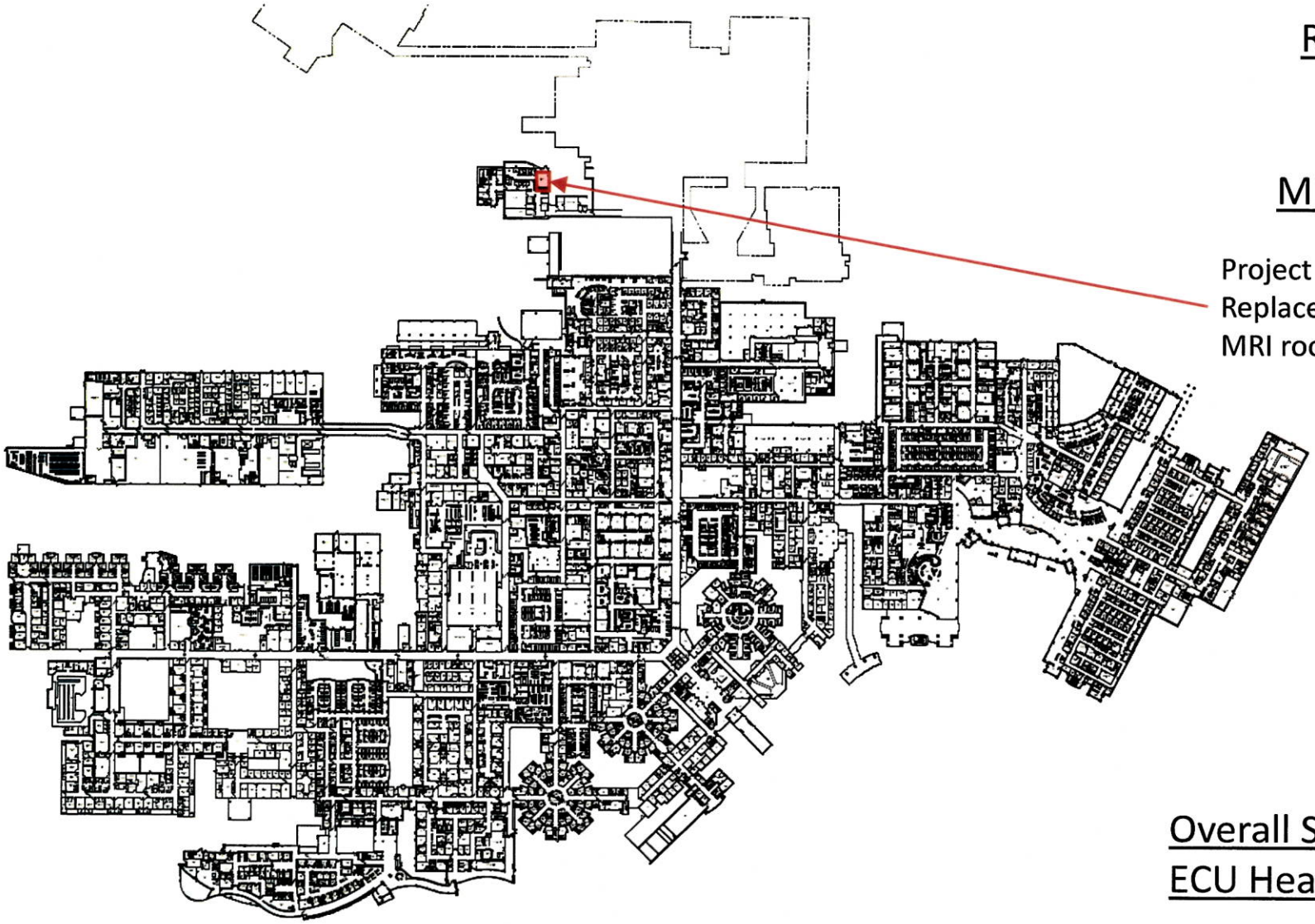
The SIGNA™ Artist complies with all applicable safety standards including but not limited to IEC60601-1, IEC60601-1-2 (Electromagnetic Compatibility), and IEC 60601-2-33 (MR).

Building a world that works

DOC2452375

Appendix E

Site and Floor Plan

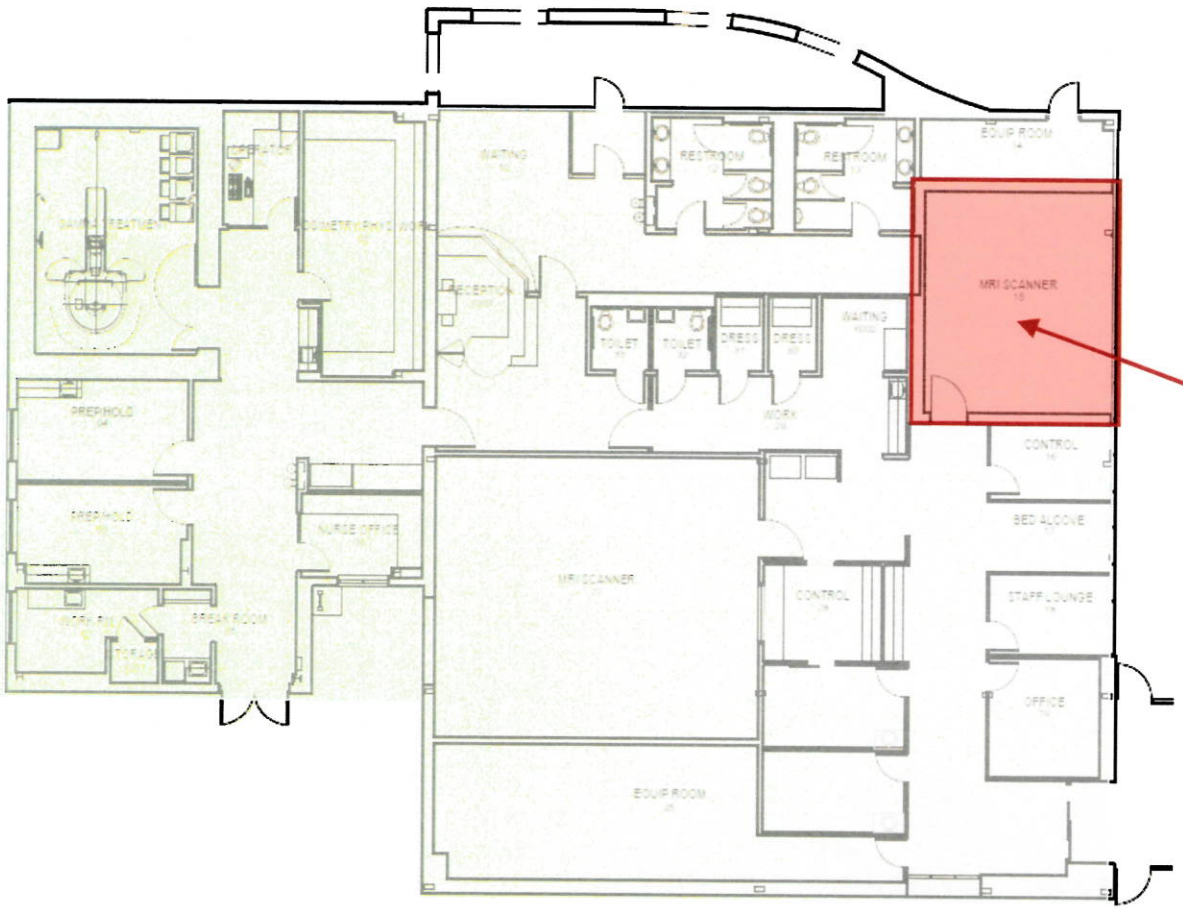


REPLACEMENT MRI FOR ECU HEALTH MEDICAL CENTER

Project Location for Proposed Replacement MRI in existing MRI room

Overall Site Plan
ECU Health Medical Center

REPLACEMENT MRI FOR ECU HEALTH MEDICAL CENTER



Enlarged Plan of Project Location

From: Lentz, Samuel
To: Yakaboski, Greg
Cc: Stancil, Tiffany C; Shovelin, Jeffrey
Subject: [External] ECU Health Medical Center - MRI Replacement
Date: Friday, April 4, 2025 9:49:41 AM
Attachments: ECU Health Med. Ctr. MRI Replacement - Final Submission.pdf

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Good morning, Greg. Please see the attached exemption letter associated with a MRI replacement at ECU Health Medical Center.

Thank you,
Sam

Sam Lentz, MHA
Senior Planner
Corporate Planning

ECU HEALTH

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