# Application for Certificate of Need

## BJC Outpatient MRI
## Acquire MRI

### Project #6221 HS

### Submitted To
### Missouri Health Facilities Review Committee

**June 2025**

Certificate of Need Program

# NEW OR ADDITIONAL EQUIPMENT APPLICATION

Applicant's Completeness Checklist and Table of Contents

Project Name: BJC Outpatient MRI Project No: 6221HS

Project Description: acquire MRI

| Done | Page | N/A | Description |
|---|---|---|---|
| | | | **Divider I. Application Summary:** |
| | 3 | | 1. Applicant Identification and Certification (Form MO 580-1861) |
| | 4 | | 2. Representative Registration (From MO 580-1869) |
| | 5 | | 3. Proposed Project Budget (Form MO 580-1863) and detail sheet with documentation of costs. |
| | | | **Divider II. Proposal Description:** |
| | 6 | | 1. Provide a complete detailed project description and include equipment bid quotes. |
| | 7 | | 2. Provide a timeline of events for the project, from CON issuance through project competition. |
| | 8 | | 3. Provide a legible city or county map showing the exact location of the project. |
| | 8 | | 4. Define the community to be served and provide the geographic service area for the equipment. |
| | 8 | | 5. Provide other statistics to document the size and validity of any user-defined geographic service area. |
| | 9 | | 6. Identify specific community problems or unmet needs the proposal would address. |
| | 9 | | 7. Provide the historical utilization for each of the past three years and utilization projections through the first three (3) **FULL** years of operation of the new equipment. |
| | 9 | | 8. Provide the methods and assumptions used to project utilization. |
| | 9 | | 9. Document that consumer needs and preferences have been included in planning this project and describe how consumers had an opportunity to provide input. |
| | 9 | | 10. Provide copies of any petitions, letters of support or opposition received. |
| | 9 | | 11. Document that providers of similar health services in the proposed service area have been notified of the application by a public notice in the local newspaper. |
| | 10 | | 12. Document that providers of all affected facilities in the proposed service area were addressed letters regarding the application. |
| | | | **Divider III. Service Specific Criteria and Standards:** |
| | 12 | | 1. For new units, address the minimum annual utilization standard for the proposed geographic service area. |
| ✔ | | | 2. For any new unit where specific utilization standards are not listed, provide documentation to justify the new unit. |
| ✔ | | | 3. For additional units, document compliance with the optimal utilization standard, and if not achieved, provide documentation to justify the additional unit. |
| ✔ | | | 4. For evolving technology address the following:<br>- Medical effects as described and documented in published scientific literature;<br>- The degree to which the objectives of the technology have been met in practice;<br>- Any side effects, contraindications or environmental exposures;<br>- The relationships, if any, to existing preventive, diagnostic, therapeutic or management technologies and the effects on the existing technologies;<br>- Food and Drug Administration approval;<br>- The need methodology used by this proposal in order to assess efficacy and cost impact of the proposal;<br>- The degree of partnership, if any, with other institutions for joint use and financing. |
| | | | **Divider IV. Financial Feasibility Review Criteria and Standards:** |
| | 15 | | 1. Document that sufficient financing is available by providing a letter from a financial institution or an auditor's statement indicating that sufficient funds are available. |
| | 16 | | 2. Provide Service-Specific Revenues and Expenses (Form MO 580-1865) projected through three (3) **FULL** years beyond project completion. |
| | 15 | | 3. Document how patient charges are derived. |
| | 15 | | 4. Document responsiveness to the needs of the medically indigent. |

## Divider I. Application Summary:

***1. Applicant Identification and Certification (Form MO 580-1861).***

See attached.

***2. Representative Registration (Form MO 580-1869).***

See attached.

***3. Proposed Project Budget (Form MO 580-1863) and detail sheet.***

See attached.

Certificate of Need Program

# APPLICANT IDENTIFICATION AND CERTIFICATION

*The information provided must match the **Letter of Intent** for this project, without exception.*

## 1. Project Location *(Attach additional pages as necessary to identify multiple project sites.)*

| Title of Proposed Project | Project Number |
|---|---|
| BJC outpatient MRI | 6221HS |
| **Project Address** *(Street/City/State/Zip Code)* | **County** |
| 1791 Clarkson Rd, St. Louis, 63017 | St. Louis Co. |

## 2. Applicant Identification *(Information must agree with previously submitted Letter of Intent.)*

| **List All Owner(s):** *(List corporate entity.)* | Address (Street/City/State/Zip Code) | Telephone Number |
|---|---|---|
| BJC Outpatient Imaging, LLC. | 1791 Clarkson Rd, St. Louis, 63017 | 314-323-1231 |
| | | |

| **List All Operator(s):** *(List entity to be licensed or certified.)* | Address (Street/City/State/Zip Code) | Telephone Number |
|---|---|---|
| Outpatient Imaging Affiliates, LLC | 1791 Clarkson Rd, St. Louis, 63017 | 314-323-1231 |
| | | |

## 3. Ownership *(Check applicable category.)*

- ☑ Nonprofit Corporation
- ☐ Individual
- ☐ City
- ☐ District
- ☐ Partnership
- ☐ Corporation
- ☐ County
- ☐ Other_____

## 4. Certification

In submitting this project application, the applicant understands that:

(A) The review will be made as to the community need for the proposed beds or equipment in this application;
(B) In determining community need, the Missouri Health Facilities Review Committee (Committee) will consider all similar beds or equipment within the service area;
(C) The issuance of a Certificate of Need (CON) by the Committee depends on conformance with its Rules and CON statute;
(D) A CON shall be subject to forfeiture for failure to incur an expenditure on any approved project six (6) months after the date of issuance, unless obligated or extended by the Committee for an additional six (6) months:
(E) Notification will be provided to the CON Program staff if and when the project is abandoned; and
(F) A CON, if issued, may not be transferred, relocated, or modified except with the consent of the Committee.

We certify the information and date in this application as accurate to the best of our knowledge and belief by our representative's signature below:

## 5. Authorized Contact Person *(Attach a Contact Person Correction Form if different from the Letter of Intent.)*

| Name of Contact Person | | Title |
|---|---|---|
| Greg Bratcher | | Dir., Government Relations |
| **Telephone Number** | **Fax Number** | **E-mail Address** |
| 314-323-1231 | | gbratcher@bjc.org |
| **Signature of Contact Person** | | **Date of Signature** |
| | | 6/26/2025 |

MO 580-1861 (03/13)

Certificate of Need Program

# REPRESENTATIVE REGISTRATION

*(A registration form must be completed for **each** project presented.)*

| Project Name | Number |
|---|---|
| BJC outpatient MRI | 6221HS |

*(Please type or print legibly.)*

| Name of Representative | Title |
|---|---|
| Greg Bratcher | Dir., Gov. Relations |

| Firm/Corporation/Association of Representative (may be different from below, e.g., law firm, consultant, other) | Telephone Number |
|---|---|
| BJC HealthCare | 314-323-1231 |

Address (Street/City/State/Zip Code)

4901 Forest Park Ave, Suite 1220, MS 90-75-574, St. Louis, MO 63108

Who's interests are being represented?
*(If more than one, submit a separate Representative Registration Form for each.)*

| Name of Individual/Agency/Corporation/Organization being Represented | Telephone Number |
|---|---|
| BJC HealthCare | 314-323-1231 |

Address (Street/City/State/Zip Code)

4901 Forest Park Ave, Suite 1220, MS 90-75-574, St. Louis, MO 63108

Check one. Do you:

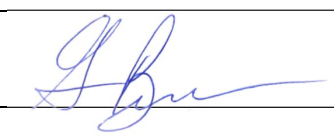
- ☑ Support
- ☐ Oppose
- ☐ Neutral

Relationship to Project:

- ☐ None
- ☑ Employee
- ☐ Legal Counsel
- ☐ Consultant
- ☐ Lobbyist
- ☐ Other (explain):

Other Information:

I attest that to the best of my belief and knowledge the testimony and information presented by me is truthful, represents factual information, and is in compliance with §197.326.1 RSMo which says: *Any person who is paid either as part of his normal employment or as a lobbyist to support or oppose any project before the health facilities review committee shall register as a lobbyist pursuant to chapter 105 RSMo, and shall also register with the staff of the health facilities review committee for every project in which such person has an interest and indicate whether such person supports or opposes the named project. The registration shall also include the names and addresses of any person, firm, corporation or association that the person registering represents in relation to the named project. Any person violating the provisions of this subsection shall be subject to the penalties specified in § 105.478, RSMo.*

| Original Signature | Date |
|---|---|
|  | 6/26/2025 |

MO 580-1869 (11/01)

Certificate of Need Program

# PROPOSED PROJECT BUDGET

| **Description** | **Dollars** |
|---|---|
| **COSTS:*** | *(Fill in every line, even if the amount is "$0".)* |
| 1. New Construction Costs *** | |
| 2. Renovation Costs *** | |
| **3. Subtotal Construction Costs** (#1 plus #2) | $0 |
| 4. Architectural/Engineering Fees | |
| 5. Other Equipment (not in construction contract) | |
| 6. Major Medical Equipment | $1,585,671 |
| 7. Land Acquisition Costs *** | |
| 8. Consultants' Fees/Legal Fees *** | |
| 9. Interest During Construction (net of interest earned) *** | |
| 10. Other Costs *** | |
| **11. Subtotal Non-Construction Costs** (sum of #4 through #10 | $1,585,671 |
| **12. Total Project Development Costs** (#3 plus #11) | $1,585,671 ** |
| **FINANCING:** | |
| 13. Unrestricted Funds | $1,585,671 |
| 14. Bonds | |
| 15. Loans | |
| 16. Other Methods (specify) | |
| **17. Total Project Financing** (sum of #13 through #16) | $1,585,671 ** |
| 18. New Construction Total Square Footage | |
| 19. New Construction Costs Per Square Foot ***** | |
| 20. Renovated Space Total Square Footage | |
| 21. Renovated Space Costs Per Square Foot ****** | |

* *Attach additional page(s) detailing how each line item was determined, including all methods and assumptions used. Provide documentation of all major costs.*

** *These amounts should be the same.*

*** *Capitalizable items to be recognized as capital expenditures after project completion.*

**** *Include as Other Costs the following: other costs of financing; the value of existing lands, buildings and equipment not previously used for health care services, such as a renovated house converted to residential care, determined by original cost, fair market value, or appraised value; or the fair market value of any leased equipment or building, or the cost of beds to be purchased.*

***** *Divide new construction costs by total new construction square footage.*

****** *Divide renovation costs by total renovation square footage.*

## Divider II. Proposal Description:

***1. Provide a complete detailed project description.***

BJC has been offering MRI to the community since the invention of MRI. Barnes-Jewish Hospital and Mallinckrodt Institute of Radiology were among the first in the world to install an MRI scanner for medical use—a Siemens machine in the early 1980s. Since then, we have been at the forefront of innovation and development in refining MRI across all of our campuses.

However, almost all of our machines are on hospital campuses. This project is our first effort to change that.

Patients tell us that they love our services, love the care they receive, and greatly appreciate being able to receive world-class medicine in St. Louis without traveling to one of the coasts. But they also say our hospital campuses are large, complex, and confusing to navigate. Patients would prefer a simpler environment when they have the option.

This project seeks to acquire an MRI unit at our first streamlined, focused outpatient imaging center.

This project seeks to acquire a Siemens Sola 1.5 tesla MRI unit to be located away from any BJC hospital campus. We have found a vacant space that can serve patients in western St. Louis County. It is easily accessible and has easy parking. The machine selected for this site is ideal for routine procedures while maintaining the technological proficiency that Siemens is known for.

MRI is an essential tool in modern medicine. Making use of the abundant hydrogen atoms in our body's cells, an MRI unit generates a strong magnetic field to align the hydrogen atoms. Radio waves are rapidly pulsed to disrupt this alignment. Between pulses, the hydrogen atoms emit their own radio signals, which are collected, amplified, and reconstructed with computers to create MRI images.

The proposed unit will offer the technological advantages Siemens has built into its MRI systems, which are ubiquitous across BJC:

- A larger opening that will accommodate obese patients.
- Innovative BioMatrix technology that compensates for anatomical and physiological differences to deliver more precise imaging.
- Algorithms account for anatomical and physiological differences to deliver more precise imaging. Patient variability, such as obesity, can make MRI imaging challenging. The new machine would compensate for this "biovariability."
- Sensors that help technicians set up and conduct MRI exams more consistently. This helps ensure that when comparing one MRI study with another conducted a month later, the differences are a result of biology and not technology.
- Respiratory sensors in the patient table that reduce or eliminate the need for a patient's breath hold.
- Deep Resolve, an AI-driven image reconstruction technology.

This project is an important new effort by BJC to serve patients in a less intimidating, simpler facility. It will be easy to access, easy to park, and it will be easy to navigate once inside. It is modest in scope, but a significant step forward for our patients.

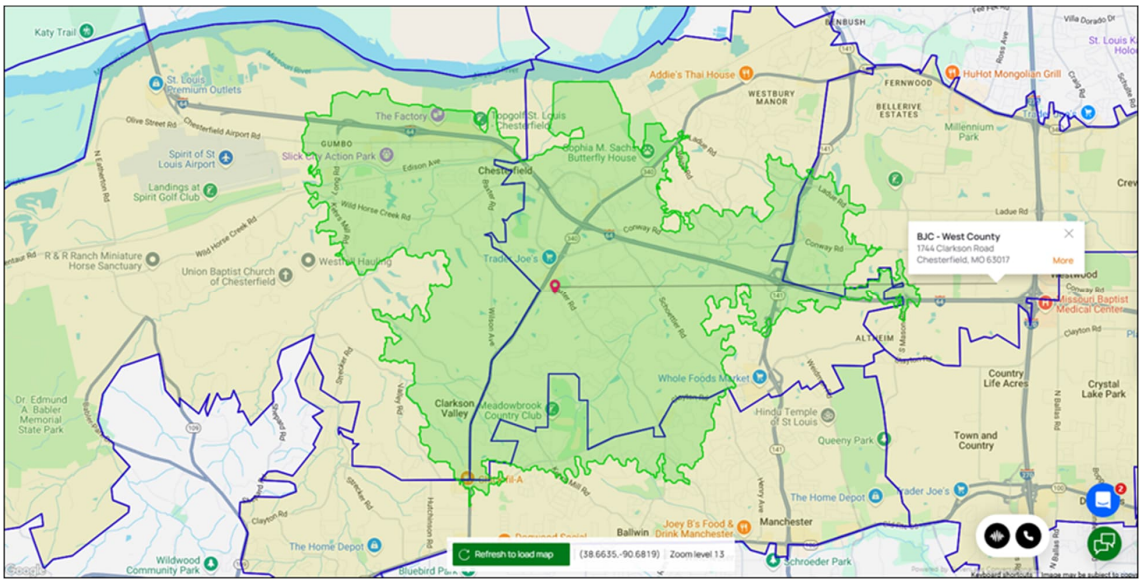
The value of the unit plus shielding is $1,585,671.

***2. Provide a timeline of events for the project, from CON issuance through project competition.***

Provided a CON is issued, this estimated timeline should follow:

| | |
|---|---|
| **Order system** | If approved, soon after CON approval |
| **Delivery of the system** | Fall 2025 |
| **First patient** | Late 2025 or early 2026 |

***3. Provide a legible city or county map showing the exact location of the project.***




***4. Define the community to be served and provide the geographic service area.***

The outpatient MRI will serve an area within a 10-minute drive from our found site. The following table reflects an estimate of the service area population from the State of Missouri, as required by CON rules, and adjusted according to the methodology described in the rules (see Addendum 1 for a population density map that informs the adjustment factors):

| ZIP | Total Pop 2030 | % In ZIP | Adjusted Total Pop 2030 |
|---|---|---|---|
| 63005 | 19,895 | 50% | 9,948 |
| 63017 | 42,115 | 85% | 35,798 |
| 63141 | 22,425 | 10% | 2,243 |
| 63011 | 36,924 | 10% | 3,692 |
| | 121,359 | | 51,680 |

***5. Provide other statistics to document the size and validity of any user-defined geographic service area.***

BJC is a leading healthcare provider across metro St. Louis and the Midwest. The geographic service area is a very small and conservative estimation; it reflects a start toward meeting our patients' desire for simpler settings for care. It is located near almost 400 BJC-affiliated physicians, but is not on a hospital campus.

***6. Identify specific community problems or unmet needs the proposal would address.***

Imaging is one of the most important tools in healthcare. It is essential in all phases of a patient's treatment experience. It is one of the primary tools we use to make informed diagnoses to create a treatment plan, and it is also a key tool for monitoring the progress and effectiveness of any treatment plan. Many patients need MRI imaging, and some need repeated, regular MRIs to ensure their best outcome. This project seeks to make this easier for our patients.

***7. Provide historical utilization for each of the past three years and utilization projections through the first three years of operation of the new equipment.***

The following is the projected utilization (there is no historical):

| Year | 2025 | 2026 | 2027 | 2028 | 2029 |
|---|---|---|---|---|---|
| # of MRI units | 0.2 | 1.0 | 1.0 | 1.0 | 1.0 |
| Utilization | 398 | 2,388 | 3,343 | 4,345 | 5,215 |

***8. Provide the methods and assumptions used to project utilization.***

Our partners, Outpatient Imaging Affiliates, have a recognized expertise in establishing and operating outpatient centers. BJC has a long-established record providing MRI services, albeit predominately on hospital campuses. Working together, we arrived at the conservative estimates for the MRI volume.

***9. Document that consumer needs and preferences have been included in planning this project and describe how consumers had an opportunity to provide input.***

BJC has a board comprised of community and business leaders. Outpatient Imaging Affiliates has a long record of patient feedback from across the country asking for convenient outpatient MRI services. These groups' counsel has been solicited and many of their ideas have been incorporated into components of the project. Furthermore, as is a standard process throughout BJC, departmental planning teams incorporate feedback from doctors and patient-care staff, who are on the frontlines and aggregate the needs and preferences of patients.

***10. Provide copies of any petitions, letters of support or opposition received.***

Letters will be provided as they become available.

***11. Document that providers have been notified of the application by a public notice in the local newspaper.***

A public notice seeking comment has been published in the *St. Louis Post-Dispatch* and was also posted to the paper's website.

***12. Document that providers of all affected facilities were addressed letters regarding the application.***

The following notice was sent via US Mail to the addresses shown below.

Subject: CON notice for BJC Outpatient MRI

BJC is applying to the Missouri Health Facilities Review Committee to add an MRI to an outpatient location at 1791 Clarkson Rd. in St. Louis County. Missouri Certificate of Need rules ask that we notify you of this filing.

If you have questions or concerns about the project, please contact Greg Bratcher at gbratcher@bjc.org, or at 314-323-1231.

Best Wishes

Greg Bratcher
BJC HealthCare

| Facility Name | Address | City | St | Zip Code | MRI |
|---|---|---|---|---|---|
| Barnes-Jewish Hospital | 14532 S Outer Forty Road | Chesterfield | MO | 63017 | 2.0 |
| Imaging Partners of Missouri | 14825 N Outer Forty Road | Chesterfield | MO | 63017 | 1.0 |
| Mercy Hospital St. Louis | 15945 Clayton Road | Ballwin | MO | 63011 | 2.0 |
| St. Luke's Center for Diagnostic Imaging | #6 McBride & Sons Corp. Ctr. | Chesterfield | MO | 63005 | 2.0 |
| St. Luke's Hospital Chesterfield | 232 S. Woods Mill Road | Chesterfield | MO | 63017 | 2.0 |
| St. Luke's Outpatient Center | 121 St. Luke's Center Drive | Chesterfield | MO | 63017 | 2.0 |
| Yates Imaging, Inc. | 15409 Clayton Rd. | Ballwin | MO | 63011 | 1.0 |

# Customer Ad Proof

**220-60000645 BJC HEALTH CARE-90-74-574 (LEGAL) Order Nbr 149082**

| | | | |
|---|---|---|---|
| Publication | **Post - Dispatch** | | |
| Contact | BJC HEALTH CARE-90-74-574 (LEGAL) | PO Number | Gregory Bratcher |
| Address 1 | 4901 FOREST PARK AVE | Rate | Legal |
| Address 2 | | Order Price | 250.82 |
| City St Zip | ST LOUIS MO 63108 | Amount Paid | 0.00 |
| Phone | 3142860629 | Amount Due | 250.82 |
| Fax | | | |
| Section | Legals | Start/End Dates | 06/29/2025 - 06/29/2025 |
| SubSection | | Insertions | 1 |
| Category | 9000 Public Notices | Size | 7 |
| Ad Key | 149082-1 | Salesperson(s) | Tanya Lemons I023 |
| Keywords | BJC is applying for a Cert. of | Taken By | Tanya Lemons |
| Notes | | | |

Ad Proof

BJC is applying for a Cert. of Need to add an MRI at 1791 Clarkson Rd. in St. Louis Co. Email G Bratcher with any questions or concerns at gbratcher@bjc.org.

9589 0710 5270 2932 7633 26

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**CERTIFIED MAIL® RECEIPT**
*Domestic Mail Only*

For delivery information, visit our website at *www.usps.com®*.

Chesterfield MO 63017

OFFICIAL USE

Certified Mail Fee $4.85

Extra Services & Fees (check box, add fee as appropriate)
- ☐ Return Receipt (hardcopy) $
- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postage $0.73

Total Postage and Fees $5.58

Postmark Here
BRENTWOOD POST OFFICE
ST. LOUIS, MO 63144
JUN 26 2025
06/26/2025

Sent To: Imaging Dept. of MRO
Street and Apt. No., or PO Box No.: 14525 N. Outer Forty Rd
City, State, ZIP+4®: Chesterfield MO 63017

PS Form 3800, January 2023 PSN 7530-02-000-9047 See Reverse for Instructions

9589 0710 5270 2932 7633 33

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Ballwin MO 63011

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Certified Mail Fee $4.85

Extra Services & Fees (check box, add fee as appropriate)
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Postage $0.73

Total Postage and Fees $5.58

Postmark Here
BRENTWOOD POST OFFICE
ST. LOUIS, MO 63144
JUN 25 2025
06/26/2025

Sent To: Mercy Hosp
Street and Apt. No., or PO Box No.: 15945 Clayton Rd
City, State, ZIP+4®: Ballwin MO 63011

PS Form 3800, January 2023 PSN 7530-02-000-9047 See Reverse for Instructions

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- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postage $0.73

Total Postage and Fees $5.58

Postmark Here
ST. LOUIS, MO 63144
JUN 26 2025
06/26/2025

Sent To: St. Lukes Ch Portiag. Imag.
Street and Apt. No., or PO Box No.: the McBride & Sons Corp. Ctr.
City, State, ZIP+4®: Chesterfield MO 63005

PS Form 3800, January 2023 PSN 7530-02-000-9047 See Reverse for Instructions

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- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postage $0.73

Total Postage and Fees $5.58

Postmark Here
BRENTWOOD POST OFFICE
ST. LOUIS, MO 63144
JUN 26 2025
06/26/2025

Sent To: St. Lukes Hosp. Chest.
Street and Apt. No., or PO Box No.: 2325 Woods Mill Rd
City, State, ZIP+4®: Chesterfield MO 63017

PS Form 3800, January 2023 PSN 7530-02-000-9047 See Reverse for Instructions

9589 0710 5270 2932 7633 64

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Chesterfield MO 63017

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Certified Mail Fee $4.85

Extra Services & Fees (check box, add fee as appropriate)
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- ☐ Adult Signature Restricted Delivery $

Postage $0.73

Total Postage and Fees $5.58

Postmark Here
BRENTWOOD POST OFFICE
ST. LOUIS, MO 63144
JUN 26 2025
06/26/2025

Sent To: St. Lukes O.P. Ctr.
Street and Apt. No., or PO Box No.: 12151 St. Lukes Ctr. Dr.
City, State, ZIP+4®: Chesterfield MO 63017

PS Form 3800, January 2023 PSN 7530-02-000-9047 See Reverse for Instructions

9589 0710 5270 2932 7633 71

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Extra Services & Fees (check box, add fee as appropriate)
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- ☐ Certified Mail Restricted Delivery $ $0.00
- ☐ Adult Signature Required $ $0.00
- ☐ Adult Signature Restricted Delivery $

Postage $0.73

Total Postage and Fees $5.58

Postmark Here
BRENTWOOD POST OFFICE
ST. LOUIS, MO
JUN 26 2025

Sent To: Yoder Imaging
Street and Apt. No., or PO Box No.: 15409 Clayton Rd.
City, State, ZIP+4®: Ballwin MO 63011

PS Form 3800, January 2023 PSN 7530-02-000-9047 See Reverse for Instructions

**Divider III. Community Need Criteria and Standards:**

***1. For new units address the need formula for the proposed geographic service area.***

The proposed unit is projected to meet the CON criterion of 2,000 procedures per unit by the first full year of operation. Regarding other locations, research shows 13 MRI units within the service area. Our Barnes-Jewish West County campus is one location. And the units at Barnes-Jewish West Co. operate well above that threshold.

For the other two hospital-based providers, address-specific breakdowns are not provided in state data; however, it appears from their reported number of units that their alternate locations might be incorporated into the overall hospitals' counts. Regardless, all their MRIs operate above the threshold, whether in or out of the service area. This leaves perhaps two locations unaccounted for. Unfortunately, unlike hospitals, none of the other listed providers report volume in any way, or certainly not in a verified, public way.

**MRI Providers Other than BJC in Service Area (see map on next page)**

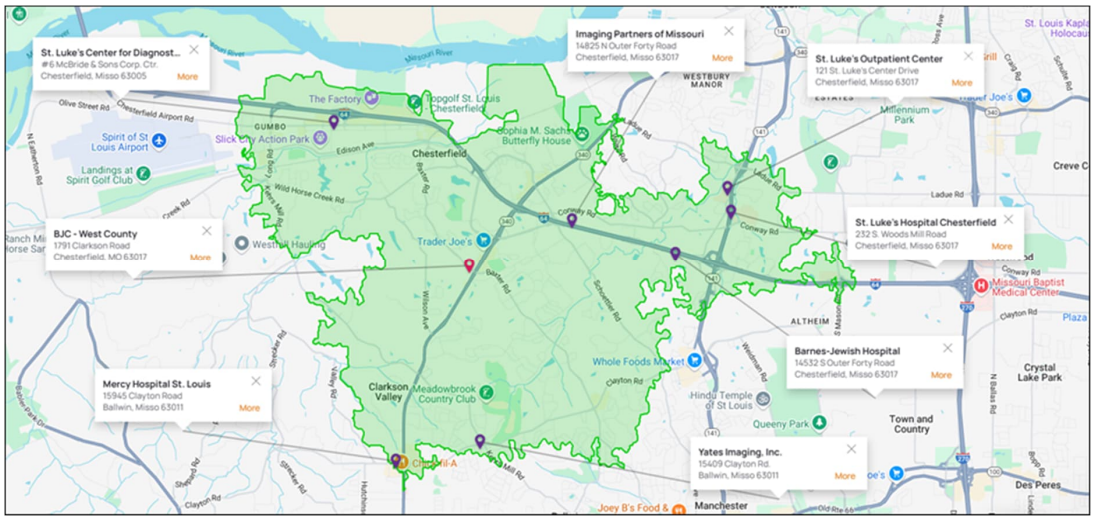
| Facility Name | Address | City | St | Zip Code | MRI |
|---|---|---|---|---|---|
| Imaging Partners of Missouri | 14825 N Outer Forty Road | Chesterfield | MO | 63017 | 1.0 |
| Mercy Hospital St. Louis | 15945 Clayton Road | Ballwin | MO | 63011 | 2.0 |
| St. Luke's Center for Diagnostic Imaging | #6 McBride & Sons Corp. Ctr. | Chesterfield | MO | 63005 | 2.0 |
| St. Luke's Hospital Chesterfield | 232 S. Woods Mill Road | Chesterfield | MO | 63017 | 2.0 |
| St. Luke's Outpatient Center | 121 St. Luke's Center Drive | Chesterfield | MO | 63017 | 2.0 |
| Yates Imaging, Inc. | 15409 Clayton Rd. | Ballwin | MO | 63011 | 1.0 |

| ID | YEAR | NAME | ADDRESS | CITY | ST | ZIP | # MRI units | Tot MRI Proc | Avg per Unit |
|---|---|---|---|---|---|---|---|---|---|
| MO0162 | 2021 | Barnes-Jewish West Cour | 12634 Olive Blvd. | St. Louis | MO | 63141-6337 | 3 | 9,651 | 3,217 |
| MO0162 | 2022 | Barnes-Jewish West Cour | 12634 Olive Blvd. | St. Louis | MO | 63141-6337 | 3 | 11,327 | 3,776 |
| MO0162 | 2023 | Barnes-Jewish West Cour | 12634 Olive Blvd. | St. Louis | MO | 63141-6337 | 3 | 13,633 | 4,544 |
| MO0163 | 2024* | Barnes-Jewish West Cour | 12635 Olive Blvd. | St. Louis | MO | 63141-6338 | 3 | 13,999 | 4,666 |
| MO0164 | 2025*† | Barnes-Jewish West Cour | 12636 Olive Blvd. | St. Louis | MO | 63141-6339 | 3 | 15,091 | 5,030 |
| MO0020 | 2021 | Mercy Hospital St. Louis | 615 South New Ballas Road | St. Louis | MO | 63141-8221 | 9 | 29,098 | 3,233 |
| MO0020 | 2022 | Mercy Hospital St. Louis | 615 South New Ballas Road | St. Louis | MO | 63141-8221 | 9 | 31,594 | 3,510 |
| MO0020 | 2023 | Mercy Hospital St. Louis | 615 South New Ballas Road | St. Louis | MO | 63141-8221 | 9 | 33,350 | 3,706 |
| MO0179 | 2021 | St. Luke's Hospital | 232 South Woods Mill Road | Chesterfield | MO | 63017-3406 | 11 | 28,387 | 2,581 |
| MO0179 | 2022 | St. Luke's Hospital | 232 South Woods Mill Road | Chesterfield | MO | 63017-3406 | 13 | 35,147 | 2,704 |
| MO0179 | 2023 | St. Luke's Hospital | 232 South Woods Mill Road | Chesterfield | MO | 63017-3406 | 13 | 40,941 | 3,149 |

* Self-reported; 2024 state-wide data not available until late summer

† Annualized from Jan to May data

**MRI Locations in Service Area**




***2. For new units, address the minimum annual utilization standard for the proposed geographic service area.***

NA

***3. For any new unit where specific need and utilization standards are not listed provide the methodology for determining need.***

NA

***4. For additional units, document compliance with the optimal utilization standard, and if not achieved, provide documentation to justify the additional unit.***

NA

***5. For evolving technology address the following:***

***– Medical effects as described and documented in published scientific literature***

NA

***– The degree to which the objectives of the technology have been met in practice***

NA

***– Any side effects, contraindications, or environmental exposures***

NA

***– The relationships, if any, to existing preventive, diagnostic, therapeutic or management technologies and the effects on the existing technologies***

NA

***– Food and Drug Administration approval***

NA

***– The need methodology used by this proposal in order to assess the efficacy and cost impact of the proposal; and***

NA

***– The degree of partnership, if any, with other institutions for joint use and financing.***

NA

**Divider IV. Financial Feasibility Review Criteria & Standards:**

***1. Document that sufficient financing is available by providing a letter from a financial institution or an auditor's statement indicating that sufficient funds are available.***

Audited statements were recently submitted.

***2. Provide Service-Specific Revenues and Expenses (Form MO 580-1865) projected through three (3) years beyond project completion.***

See attached financial forms.

***3. Document how patient charges were derived.***

Charges, in general, are arrived at by determining the reasonable and customary unit charge for delivering a given procedure through routine market checks of pricing at other facilities and comparing the expected unit cost using a cost accounting package tailored specifically for hospitals. Finally, annual inflation adjustments are made, usually averaging 2% to 3%.

***4. Document responsiveness to the needs of the medically indigent.***

BJC is one of the largest providers of charity care, unreimbursed care, and community benefits in the state of Missouri, offering the community over $900 million in care and services. The outpatient center will honor the same BJC charity policies as all other BJC facilities. BJC hospitals have a long-standing policy of providing charity care and reduced-fee care to those in need, and this policy will continue.

The hospital offers financial counseling for all patients to ensure adequate coverage is obtained. For patients who are indigent, our financial counselors assist these families in obtaining Medicaid assistance. If financial assistance is not attainable, charity care may be extended as appropriate. The hospital financial assistance guidelines are based on family size and income relative to the US poverty level guidelines. Each case is reviewed on an individual basis.

Although community benefit is often measured by the value of current programs, BJC's contributions also sustain the future of health care by investing in the education of health professionals. In 2022, BJC invested nearly $200 million in the education of nurses, doctors, therapists, pharmacists, and medical technologists.

BJC and its hospitals and health service organizations impact countless lives daily with programs that bring health and wellness resources into schools, neighborhoods, workplaces, houses of worship, and wherever neighbors gather. BJC organizations provide services to hundreds of thousands of children, adults, and seniors across eastern Missouri.

Certificate of Need Program

# SERVICE-SPECIFIC REVENUES AND EXPENSES

**Project Title:** **Project #:**

**Historical Financial Data for Latest Three Full Years plus Projections Through Three Full Years Beyond Project Completion**

*Use an individual form for each affected service with a sufficient number of copies of this form to cover entire period, and fill in the years in the appropriate blanks.*

| | Year 2025 | Year 2026 | Year 2027 |
|---|---|---|---|
| **Amount of Utilization:*** | 398 | 2,388 | 3,343 |
| **Revenue:** | | | |
| Average Charge** | $577 | $577 | $577 |
| Gross Revenue | $229,606 | $1,377,637 | $1,928,577 |
| Revenue Deductions | 68,870 | 413,222 | 578,510 |
| Operating Revenue | 160,736 | 964,415 | 1,350,067 |
| Other Revenue | 0 | 0 | 0 |
| **TOTAL REVENUE** | **$160,736** | **$964,415** | **$1,350,067** |
| **Expenses:** | | | |
| Direct Expenses | | | |
| Salaries | 26,657 | 159,942 | 218,600 |
| Fees | 53,030 | 318,181 | 565,453 |
| Supplies | 4,330 | 25,977 | 36,368 |
| Other | 3,877 | 23,261 | 32,565 |
| TOTAL DIRECT | $87,894 | $527,361 | $852,986 |
| Indirect Expenses | | | |
| Depreciation | 40,569 | 243,413 | 243,413 |
| Interest*** | 0 | 0 | 0 |
| Rent/Lease | 0 | 0 | 0 |
| Overhead**** | 7,442 | 44,652 | 50,483 |
| TOTAL INDIRECT | $48,011 | $288,065 | $293,896 |
| **TOTAL EXPENSES** | **$135,905** | **$815,426** | **$1,146,882** |
| **NET INCOME (LOSS):** | **$24,831** | **$148,989** | **$203,185** |

*Utilization will be measured in "patient days" for licensed beds, "procedures" for equipment, or other appropriate units of measure specific to the service affected.

**Indicate how the average charge/procedure was calculated.

***Only on long term debt, not construction.

****Indicate how overhead was calculated.

Certificate of Need Program

# SERVICE-SPECIFIC REVENUES AND EXPENSES

**Project Title:** **Project #:**

## Historical Financial Data for Latest Three Full Years plus Projections Through Three Full Years Beyond Project Completion

*Use an individual form for each affected service with a sufficient number of copies of this form to cover entire period, and fill in the years in the appropriate blanks.*

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|---|---|---|---|
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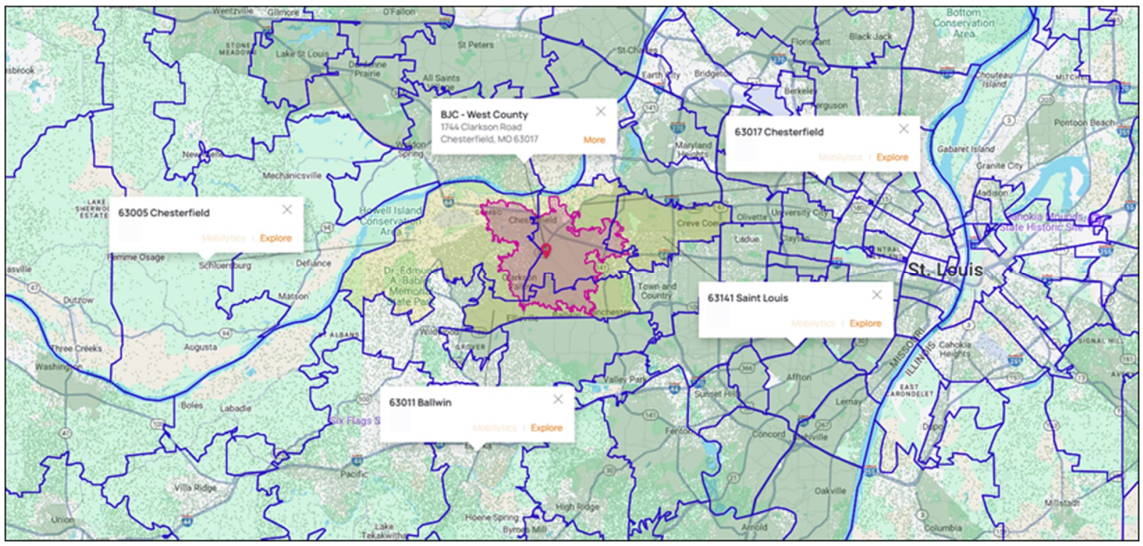
**Indicate how the average charge/procedure was calculated.

***Only on long term debt, not construction.

****Indicate how overhead was calculated.

**Addendum 1**
**Population Density**



**Siemens Medical Solutions USA, Inc.**
40 Liberty Boulevard, Malvern, PA 19355

**SIEMENS REPRESENTATIVE**
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Customer Number: 0000060514

Date: 04/28/2025

**OUTPATIENT IMAGING AFFILIATES LLC**
840 CRESCENT CENTRE DR STE 400
FRANKLIN, TN 37067

Siemens Medical Solutions USA, Inc. is pleased to submit the following quotation for the products and services described herein at the stated prices and terms, subject to your acceptance of the terms and conditions on the face and back hereof, and on any attachment hereto.

**Table of Contents** **Page**



**Contract Total: $ 1,435,671**
*(total does not include any Optional or Alternate components which may be selected)*

Proposal valid until 06/29/2025

Estimated Delivery Date: 03/15/2026

Estimated delivery date is subject to change based upon factory lead times, acceptance date of this quote, customer site readiness, and other factors. A Siemens representative will contact you regarding the final delivery date.

Notwithstanding anything else in this Agreement, or in any applicable group purchasing agreement terms, if Purchaser does not accept delivery within twenty-four (24) months of the date this quotation is executed, then Seller may, at its option, adjust the prices in the quotation by written notice. In such event, Purchaser will then have the option to cancel the order without payment of a cancellation charge provided Purchaser notifies Seller within ten (10) days of the date of Seller's notice of the price adjustment.

Factory recommended applications training has been modified at Customer's request. Customer takes responsibility for the system's proper use and application. The Customer will be required to purchase any unordered training classes that have been options and/or removed at the Customer's request, should the need arise.

This is a CONFIDENTIAL, one-time multi-modality offer which may not be shared with any third parties, buying evaluation groups or anyone not directly employed by customer. This offer is only valid if firm, non-contingent orders for quote #'s CPQ-1291678, CPQ-1404745, CPQ-1410369, CPQ-1372600, CPQ-1405344, CPQ-1408673, CPQ-1319711, CPQ-1319751, CPQ-1409982, CPQ-1410022, CPQ-1289230, CPQ-1411384, CPQ-1380288, CPQ-1411393 and CPQ-1411387 are placed with Siemens by 06/29/2025. This date supersedes any other validity date indicated in the proposal.

This offer is only valid if a firm, non-contingent order is placed with Siemens and a signed POS contract must

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accompany the equipment order.

Siemens' ecoline systems are systems which were previously owned. These units have been refurbished by the Siemens Refurbished Systems (RS) business unit so that they meet Siemens' stringent quality standards. It is the goal of the Siemens RS business unit to assure excellent functionality and reliability, similar to that of new systems. This allows Siemens to provide a 12-month warranty for refurbished equipment.

Please note: Siemens' ecoline systems are offered subject to availability on a "first-come, first-served" basis.

This quote is based upon standard delivery terms and conditions (e.g., standard work hours, first floor delivery, etc.), basic rigging, mechanical installation and calibration. Siemens Medical Solutions USA, Inc., Project Management shall perform a site-specific assessment to ascertain any variations that are out of scope and not covered by the standard terms (examples such as, but not limited to: larger crane, nonstandard work hours, removal of existing equipment, etc.). Any noted variations identified by Siemens Project Management shall remain the responsibility of the customer and will be subject to additional fees.

Accepted and Agreed to by:

| **Siemens Medical Solutions USA Inc.** | | **OUTPATIENT IMAGING AFFILIATES LLC** | |
|---|---|---|---|
| By (sign): | _____ | By (sign): | _____ |
| Name: | Gregory Thudium | Name: | _____ |
| Title: | _____ | Title: | _____ |
| Date: | _____ | Date: | _____ |

***By signing below, signor certifies that no modifications or additions have been made to the Quotation. Any such modifications or additions will be void.***

By (Sign): _____

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| | |
|---|---|
| **Quote Nr:** | **CPQ-1411393 Rev. 0** |
| **Terms of Payment:** | **00% Down, 80% Delivery, 20% Installation**<br>**Free On Board: Destination** |
| **Purchasing Agreement:** | VIZIENT SUPPLY LLC<br>VIZIENT SUPPLY LLC terms and conditions apply to Quote Nr CPQ-1411393<br>Customer certifies, and Siemens relies upon such certification, that : (a) VIZIENT MRI XR0885 is the sole GPO for the purchases described in this Quotation, and (b) the person signing this Quotation is fully authorized under the Customer's policies to choose and indicate for Customer such appropriate GPO. |

## RS MAGNETOM Sola - System

**All items listed below are included for this system:**

| Qty | Part No. | Item Description |
|---|---|---|
| 1 | 14483533 | **RS MAGNETOM Sola - System**<br>MAGNETOM Sola - the first 1.5T BioMatrix system - leverages the intelligent combination of Tim 4G and the Siemens unique BioMatrix technology to be ready to embrace the unique set of challenges that each and every patient brings to the MRI exam.<br>System Design<br>- Short and open appearance (157 cm total system length cover-to-cover and 70 cm Open Bore Design) to reduce patient anxiety and claustrophobia<br>- Whole-body superconductive Zero Helium Boil-Off 1.5T magnet<br>- Weight-optimized magnet technology based on high performance 3T and 7T magnet design<br>- Actively Shielded water-cooled Siemens gradient system for maximum performance<br><br>Evolving from Total imaging matrix, MAGNETOM Sola comprises a new technology that addresses the intrinsic biovariability in humans - BioMatrix Technology.<br><br>Tim 4G (Total imaging matrix in the 4th generation) for excellent image quality and speed<br>- Siemens unique DirectRX technology enabling all digital-in/digital-out design<br>- Dual-Density Signal Transfer Technology<br><br>Push-button exams with GO technologies |

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| Qty | Part No. | Item Description |
|---|---|---|
| | | Select&GO<br>DotGO/ myExam Companion<br>Recon&GO<br>MR View&GO<br><br>Tim Application Suite allowing excellent head-to-toe imaging for<br>- Neuro<br>- Angio<br>- Cardiac<br>- Body<br>- Onco<br>- Breast<br>- Ortho<br>- Pediatric<br>- Scientific<br><br>Further included<br>- High performance host computer and measurement and reconstruction system<br>- Patient communication including headphones<br>- Turbo Suite Essential<br>- syngo MR software including<br>- 1D/2D PACE<br>- BLADE<br>- Phoenix<br>- Inline Diffusion<br>- MDDW (Multiple Direction Diffusion Weighting)<br>- CISS<br>- DESS<br>- TGSE<br>- Offline Composing |
| 1 | 14434766 | **RS ecoline MR System Delivery**<br>With ecoline, Siemens Healthineers offers a portfolio of systems with certified performance at exceptional value.<br><br>ecoline systems contain components, which have been in use and are refurbished to a quality level as good as new.<br>All ecoline systems are manufactured according to externally certified procedures in compliance with the applicable standards for medical devices[1]. This takes place in alignment with the procedures of the global refurbishment standard for medical imaging equipment[2]. Thus, every ecoline system receives our Proven Excellence Label.<br><br>Siemens Healthineers´ ecoline systems provide exceptional value performing and looking like new, configurable to individual customer needs and offered at affordable prices. |

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| Qty | Part No. | Item Description |
|---|---|---|
| | | [1] ISO 13485:2016 Medical devices - Quality management systems - Requirements for regulatory purposes<br><br>[2] IEC 63077:2019 Good refurbishment practices for medical imaging equipment |
| 1 | 14435099 | **RS Upgrade Magnet Cooling System**<br>Replacement of the magnet cooling components (helium compressor and cold head) according to our ecoline standards. |
| 1 | 14430263 | **MR General Engine #BM**<br>syngo.MR General Engine extends Numaris/X by adding dedicated workflows and tools for routine and advanced reading of MR examinations.<br>A generic MR Basic workflow is provided, as well as specific MR Neurology, MR Prostate Reading, MR Breast Reading, and MR Cardio-Vascular workflows. |
| 1 | 14483146 | **RS myExam Brain Assist**<br>myExam Brain Assist provides guided and flexible workflows. Optimized scan strategies are provided and can be selected based on the patient's condition, which allows for reproducible, high image quality and time efficient exams. The built-in flexibility allows users to change predefined strategies at any time during the brain workflow, and to personalize to the individual patient's condition and clinical need. myExam Brain Assist is customizable to the site-specific standards of care. |
| 1 | 14483147 | **RS myExam Spine Assist**<br>myExam Spine Assist provides guided and flexible workflows for cervical, thoracic and lumbar spine. Optimized scan strategies are provided and can be selected based on the patient's condition, which allows for reproducible, high image quality and time efficient exams. The built-in flexibility allows users to change predefined strategies at any time during the spine workflow, and to personalize to the individual patient's condition and clinical need. myExam Spine Assist is customizable to the site-specific standards of care. |
| 1 | 14483148 | **RS myExam Large Joint Assist**<br>myExam Large Joint Assist provides guided and flexible workflows for knee, hip and shoulder. Optimized scan strategies are provided and can be selected based on the patient's condition, which allows for reproducible, high image quality and time efficient exams. The built-in flexibility allows users to change predefined strategies at any time during the scan workflow, and to personalize to the individual patient's condition and clinical need. myExam Large Joint Assist is customizable to the site-specific standards of care. |
| 1 | 14483174 | **myExam Brain Autopilot**<br>myExam Brain Autopilot enables less experienced staff to scan brain MRI at high quality with just a few simple clicks. By using automation and AI-based technology, it takes away burdensome routine tasks for all technologists. Predefined automated protocols |

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| Qty | Part No. | Item Description |
|---|---|---|
| | | allow users to scan with no manual adjustments. A new and intuitive user interface simplifies scanning so that exams can be performed, or strategies can be changed easily. This new approach to operate MRI helps any user to generate consistent, comprehensive results. myExam Brain Autopilot is customizable to the site-specific standards of care. |
| 1 | 14483583 | **RS myExam Knee Autopilot**<br>myExam Knee Autopilot enables less experienced staff to scan knee MRI at high quality with just a few simple clicks. By using automation and AI, it takes away burdensome routine tasks for all technologists. Predefined automated protocols allow users to scan with no manual adjustments.<br><br>A new and intuitive user interface simplifies scanning so that exams can be performed, or strategies can be easily changed. This new approach to operate MRI helps any user to generate consistent, comprehensive results.<br><br>myExam Knee Autopilot is customizable to the site-specific standards of care. |
| 1 | 14483588 | **RS myExam Implant Suite**<br>myExam Implant Suite supports in examinations of patients with a wide range of active or passive MR Conditional implants. Limits for B1+ rms or SAR (Head and whole body) as specified by the implant manufacturer may be set by the operator and will not be exceeded during the exam. |
| 1 | 14442780 | **RS Quiet Suite #T+D**<br>Quiet Suite enables complete, quiet examinations for neurology and orthopedics with at least 70% reduction in sound pressure levels. |
| 1 | 14483543 | **RS Tim Whole Body Suite #NX**<br>Tim Whole Body Suite puts it all together. This suite enables table movement for imaging of up to 205 cm (6' 9") FoV without compromise. In combination with Tim's newly designed ultra-high density array higher spatial and temporal resolution can be achieved along with unmatched flexibility of any coverage up to Whole Body.<br>For faster exams and greater diagnostic confidence. |
| 1 | 14430265 | **Tim Planning Suite #BM**<br>With the Tim Planning Suite, multiple regions in the entire body can be examined in a minimum of time through measurement planning on a single FoV of any desired size. |
| 1 | 14430261 | **syngo TimCT FastView #BM**<br>TimCT FastView is the "one go" localizer for the whole body or large body regions such as the whole spine or the whole abdomen. It acquires the complete extended Field of View in one volume with isotropic resolution. Transverse, coronal and sagittal reformats of |

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| Qty | Part No. | Item Description |
|---|---|---|
| | | the volume are calculated Inline and displayed for planning subsequent exams.<br>- Inline reconstruction of the localizer images during the scan.<br>- Localizing images in three planes over the maximum Field of View available for subsequent planning in all orientations.<br>- TimCT FastView runs without laser light positioning to further streamline the workflow for several indications. |
| 1 | 14430262 | **Advanced Diffusion #NX**<br>QuietX DWI and RESOLVE together make up the Advanced Diffusion package.<br><br>QuietX DWI enables quieter diffusion-weighted imaging of the brain with up to 70% reduction in sound pressure relative to conventional diffusion-weighted imaging.<br>RESOLVE (Readout Segmentation Of Long Variable Echo-trains) is a multi-shot, readout segmented EPI sequence for high-resolution, low-distortion diffusion-weighted imaging (DWI). This technique is largely insensitive to susceptibility effects, providing anatomically accurate diffusion imaging for the brain, spine, breast and prostate. In combination with syngo.MR Tractography, RESOLVE enables excellent white-matter tract imaging even in regions of high susceptibility, such as the spine. |
| 1 | 14478814 | **RS WARP & Advanced WARP**<br>WARP and Advanced WARP (SEMAC) integrates different techniques tailored to reduce susceptibility artifacts caused by orthopedic MR-conditional metal implants. |
| 1 | 14483538 | **RS Advanced Cardiac incl. PSIR #BM**<br>This package contains special sequences and protocols for advanced cardiac imaging including 3D and 4D BEAT functionalities. It supports advanced techniques for ventricular function imaging, dynamic imaging, tissue characterization, coronary imaging, and more. |
| 1 | 14430264 | **Inline Composing syngo**<br>Automatic anatomical or angiographic composing of multiple adjacent coronal or sagittal images for presentation and further evaluation. Composed images can be automatically loaded into Graphical Slice Positioning for scan planning purposes. |
| 1 | 14483220 | **RS syngo Expert-i XA60**<br>This software application enables remote access to the system (connected via local area network) for planning and processing. |
| 1 | 14483549 | **RS Tim [204x48] XJ Gradient #So**<br>Tim [204x48] XJ-gradients performance level<br>Tim 4G's RF system and innovative coil architecture enables high-resolution imaging and increased throughput.<br>The system provides a maximum number of 204 channels (coil elements) that can be connected simultaneously. Flexible parallel imaging is achieved by the standard 48 independent RF channels |

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| Qty | Part No. | Item Description |
|---|---|---|
| | | that can be used simultaneously in one single scan and in one single FOV, each generating an independent partial image.<br><br>XJ - gradients<br>Max. amplitude: 57 mT/m (Actual 33 mT/m for every gradient axis)<br>Max. slew rate: 216 T/m/s (Actual 125 T/m/s for every gradient axis)<br>Min. rise time from 0 to 57 mT/m: 264 µs<br><br>Note: max. amplitude and max. slew rate achieved through vector addition of all three gradient axes simultaneously, actual maximum amplitude of 33 mT/m and actual maximum slew rate of 125 T/m/s are achievable simultaneously along each axis.<br><br>The XJ gradients are designed for high performance and linearity to support clinical whole body imaging at 1.5T.<br>The force compensated gradient system minimizes vibration levels and acoustic noise.<br><br>High-performance measurement and reconstruction system. |
| 1 | 14483553 | **RS Coil Package Tim [204x48] #So**<br>This package includes (if not exchanged with different variants via respective quote items):<br>- BioMatrix Head/Neck 20 tiltable with CoilShim<br>- BioMatrix Spine 32 with Respiratory Sensors<br>- Body 18<br>- Flex Large 4<br>- Flex Small 4<br>- Flex Coil Interface |
| 1 | 14483542 | **RS BioMatrix Technology**<br>The new and unique BioMatrix technology addresses the different aspects of patient bio-variability. It is based on three technological clusters:<br>- BioMatrix Sensors address patient physiology, in order to anticipate challenges<br>- BioMatrix Tuners address patient anatomy, in order to adapt to all patients, especially critical ones.<br>- BioMatrix Interfaces address user interaction with the patient, to accelerate the workflow in the face of patient variability. |
| 1 | 14483575 | **RS BioMatrix Respiratory Sensors**<br>Highly integrated BioMatrix Respiratory sensors measure the patient’s breathing cycle in head-first and feet-first orientation. |
| 1 | 14483576 | **RS BioMatrix Beat Sensor**<br>The BioMatrix Beat Sensor measures the motion of the heart and enables Cardiac triggering without the need of ECG triggering. |
| 1 | 14483577 | **RS BioMatrix Coil Shim #Vi,So,Ci**<br>BioMatrix CoilShim helps to reduce patient induced strongly localized B0 inhomogeneities by dedicated local shim channels. |

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| Qty | Part No. | Item Description |
|---|---|---|
| 1 | 14483144 | **RS BioMatrix SliceAdjust #BM**<br>BioMatrix SliceAdjust helps to avoid station boundaries and apparent broken spine artifacts as well as to preserve the SNR for whole-body diffusion. |
| 1 | 14483558 | **RS BioMatrix Table #So**<br>The new BioMatrix Table is designed for smooth patient preparation, high patient comfort and easy cleanability. The unique design of the BioMatrix table can support up to 250 kg (550 lbs) without restricting the vertical or horizontal movement. |
| 1 | 14483578 | **RS BioMatrix Select & GO #Vi,So,Ci**<br>The BioMatrix Select&GO interface enables fast and easy single-touch patient positioning from both sides of the patient table. The interfaces are integrated left and right into the front covers. Correct positioning saves unnecessary wasted time for repositioning and additional adjustments, therefore shortening the total room time. |
| 1 | 14483271 | **RS Green Technology Package**<br>Green Technology comprises three features that allow users to reduce their scope 2 emissions and reduce the system's use of finite resources.<br><br>Eco Gradient Mode<br>Enables the gradient amplifier to temporarily turn off when the system table is in the home position and is inactive for 10 minutes. Power up is enabled when the system is interacted with and is < 5 secs. Comparatively saving 7% energy and reducing scope 2 emissions by up to 7%.<br><br>Eco Power Mode<br>Intelligent self-control of the magnet cooling cycles. The cold head compressor is temporarily switched off during non-productive times saving 12% energy when in use.<br><br>Zero Helium Boil-Off<br>Our MRI scanners are equipped with Zero Helium Boil-Off technology which ensures normal MRI operations over a lifetime without helium loss, avoiding refills. And due to a completely redesigned magnet and gradient architecture, we have reduced the helium inventory of our current MRI scanners by up to 37%. |
| 1 | 14483557 | **RS Silver & White Design #So**<br>MAGNETOM Sola is available in two different light and appealing design variants which perfectly integrate into different environments. The Silver &White Design Variant comprises a brilliant white front design ring with integrated unique Select&GO panels. The smoothly embracing deco area on the left side and the outer rings in the front and the back of the system is colored in brilliant silver.<br>The table cover is presented also in the same color and material selection. |

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| Qty | Part No. | Item Description |
|---|---|---|
| 1 | 14478546 | **RS PC Keyboard US English #NX**<br>Standard PC keyboard with 105 keys. |
| 1 | 14483561 | **RS High-End Computing [204x48] #So**<br>Tim 4G power computing upgrade for MAGNETOM Sola/ Sola Fit Tim [204x48]. This upgrade brings a high-end image reconstruction computer to the Tim [204x48] configuration. |
| 1 | 14458320 | **RS Peripheral Pulse Unit #NX**<br>Peripheral Pulse Unit for Pulse Triggering |
| 1 | 14458094 | **RS In-Ear Headphones #T+D**<br>In-Ear Headphone for easy communication with patient while using the head coil. |
| 1 | 14483585 | **RS SW syngo MR XA61A**<br>syngo MR XA61A is the new software platform, bringing the latest features and functionality for daily clinical excellence. syngo MR XA61A guides and enables the user throughout the entire workflow: from patient registration; patient set up with guided workflows on the Select&GO; protocol management and selection; image acquisition and viewing; data handling; and post processing and reporting. This software together with the hardware enables diagnostic excellence for your daily clinical needs.<br><br>The syngo MR XA61A platform offers myExam Companion which introduces a new MRI operation philosophy by providing built-in expertise and automation for users and clinical questions. myExam Companion provides different workflow modes for tailored assistance: myExam Autopilot, myExam Assist and myExam Cockpit. No matter the user or patient, myExam Companion helps generate consistent, comprehensive results. |
| 1 | 14458089 | **Turbo Suite Essential**<br>Turbo Suite Essential comprises established acceleration techniques to maximize productivity for all contrasts, orientations and all routine imaging applications from head-to-toe. |
| 1 | 14483584 | **RS Deep Resolve Pro Package**<br>The Deep Resolve Pro Package combines the three applications Deep Resolve Gain, Deep Resolve Sharp and Deep Resolve Boost which use intelligent reconstruction algorithms and Deep Learning networks to reconstruct accelerated images with higher signal to noise ratio and better image sharpness. |
| 1 | 14413869 | **RS SWI #Tim**<br>Susceptibility Weighted Imaging is a high-resolution 3D imaging technique for the brain with ultra-high sensitivity for microscopic magnetic field inhomogeneities caused by deoxygenated blood, products of blood decomposition and microscopic iron deposits. Among other things, the method allows for the highly sensitive proof of cerebral hemorrhages and the high-resolution display of venous cerebral blood vessels. |
| 1 | 14483574 | **RS BioMatrix Body 18 long #1.5T** |

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| Qty | Part No. | Item Description |
|---|---|---|

The BioMatrix Body 18 long combines Tim 4G coil technology with a new highly flexible and lightweight design to ensure excellent image quality, high patient comfort, and unmatched flexibility.

Key features are:
- 18 channels
- Dual Density Signal Transfer
- SlideConnect Technology
- Highly flexible and light-weight design
- Exchangeable cable design

The 18-channel design with its 18 integrated pre-amplifiers ensures excellent signal-to-noise ratio while provide extensive coverage in all directions. The single SlideConnect plug allows for fast and easy patient preparation. The new highly flexible and light-weight design provides highest patient comfort. Through the exchangeable cable design, a single coil can be used with either a standard-sized cable (95 cm length) or a longer version (165 cm length). The BM Body 18 long is shipped with a long cable.

The BioMatrix Body 18 long features:
- 18-element design with 18 integrated preamplifiers (3 clusters of 6 elements each)
- Operates in an integrated fashion with the system’s spine coil
- Can be combined with further Body 18 or BM Body 18 coils for larger coverage
- Can be positioned in different orientations (0°, 90°, 180°, 270°) for patient specific adaptations
- Requires no coil tuning
- iPAT compatible in all directions

The highly flexible design enables a wide variety of applications including:
- Thorax (incl. heart)
- Abdomen
- Pelvis
- Hip
- Vascular

The BioMatrix Body 18 long is typically combined with:
- BM Head/Neck 20
- BM Spine coil
- Additional Body 18 coil(s) or BM Body 18 coils (optional)
- Peripheral Angio 16 and 36 (optional)
- Flex Large 4
- Flex Small 4
- UltraFlex Large 18 (depending on availability, optional)
- UltraFlex Small 18 (depending on availability, optional)

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| Qty | Part No. | Item Description |
|---|---|---|
| | | - Loop coils (optional)<br>- Endorectal coil (optional) |
| 1 | 14483563 | **RS Tx/Rx Knee 18 #1.5T**<br>New 18-channel transmit/receive coil optimized for knee imaging. The spacious design with a flared opening towards the thigh allows scanning even of large and swollen knees with exceptional image quality and signal to noise ratio.<br>Main features :<br>- 18-element design (3x6 coil elements) with 18 integrated preamplifiers<br>- iPAT-compatible<br>- SlideConnect Technology |
| 1 | 14478589 | **RS UltraFlex Large 18 #1.5T**<br>Light-weight, iPAT compatible, 18-element no-tune receive coil made of highly flexible and soft material. It is used for examinations of larger extremities (e.g. medium to large shoulder, hip, knee ankle and hand) and for abdominal examinations. A dedicated positioning aid for larger extremities, like knee is delivered with the coil. |
| 1 | 14478588 | **RS UltraFlex Small 18 #1.5T**<br>Light-weight, iPAT compatible, 18-element no-tune receive coil made of highly flexible and soft material. It is used for examinations of smaller extremities (e.g. small to medium shoulder, smaller ankle, elbow and hand) and for abdominal examinations. A dedicated positioning aid for smaller extremities, like ankle or elbow is delivered with the coil. |
| 1 | 14478556 | **RS Positioning Aids Shoulder&Ankle #NX**<br>This package contains additional positioning aids that can be used for the UltraFlex Large 18 and UltraFlex Small 18. |
| 1 | 14483539 | **RS Separator 45kW/60kW/75kW #BM**<br>The SEP (Separation cabinet) has to be used if a central hospital chilled water supply is available or if a chiller of any brand/type is already available.<br>The SEP is the interface between the on-site water chiller (of any brand or type) or the interface to the central hospital cooling water supply.<br>For the above-mentioned cases the SEP is mandatory!<br><br>In these cases, the primary water specifications must fulfill the requirements:<br>XJ: 45kW; water temperature: 6 - 14°C<br>XQ: 60kW; water temperature: 6 - 14°C<br>XT: 75kW; water temperature: 6 - 12°C<br><br>For all gradient systems:<br>Flow: 100+-10l/min; pH value 6-8; max working pressure 6 bar. |

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| Qty | Part No. | Item Description |
|---|---|---|
| | | Dimensions: 1950mm x 650mm x 650mm (height x width x depth)<br>Weight: approx. 350kg |
| 1 | 14483547 | **RS UPS system #BM**<br>UPS system Liebert GXT5 3000IRT2UXLE for MAGNETOM NumX systems for safeguarding computers. Including Power Cable of 9 m for connecting the UPS.<br>Power output: 3.0 kVA / 3 kW<br>Bridge time: 3 min full load / 12 min half load<br>Input voltage: 230 VAC |
| 1 | 14457412 | **RS UPS Battery module (Libert GXT4 BATT)**<br>UPS battery module Liebert GXT5 72VBATTE for MAGNETOM Aera, Skyra, Prisma, ESSENZA, Amira, Spectra, C! for safeguarding computers.<br>Extension for: Liebert GXT5 3000IRT2UXLE (14456315)<br>Battery type: Closed, maintenance-free<br>Extension of the bridge time to: 21 minutes full load / 48 min half load with one module<br>Dimensions (H x D x W): Battery module: 430 x 540 x 85 mm<br><br>Weight: approx. 30 kg |
| 1 | 14483537 | **RS System Start Timer #BM**<br>Timer clock that can be installed together with the MAGNETOM MR system to start the system automatically at user-definable times, eliminating waiting times during system boot up. |
| 1 | 14410642 | **RS MR Workplace Table; height adjust.**<br>The table is suitable for the syngo Acquisition Workplace and the syngo MR Workplace based on syngo hardware.<br>This 110V version has motorized table height adjustment. |
| 1 | 14410644 | **RS MR Workplace Container; 50cm**<br>50 cm wide extra case for the syngo host computer with sliding front door to allow change of storage media (CD/DVD/USB). |
| 1 | MR_STD_RIG_INST | **MR Standard Rigging and Installation**<br>MR Standard Rigging and Installation<br><br>This quotation includes standard rigging and installation of your new MAGNETOM system<br><br>Standard rigging into a room on ground floor level of the building during standard working hours (Mon. – Fri./ 8 a.m. to 5 p.m.)<br>It remains the responsibility of the Customer to prepare the room in accordance with the SIEMENS planning documents<br>Any rigging requiring a crane over 80 tons and/or special site requirements (e.g. removal of existing systems, etc.) is an incremental cost and the responsibility of the Customer.<br>All other “out of scope” charges (not covered by the standard rigging and installation) will be identified during the site assessment and remain the responsibility of the Customer. |

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| Qty | Part No. | Item Description |
|---|---|---|
| 1 | MR_BTL_INSTALL | **MR Standard Rigging & Install** |
| 1 | MR_PREINST_FIXED | **T+D Preinstall kit for fixed table** |
| 1 | MR_CRYO | **Standard Cryogens** |
| 1 | MR_PM | **MR Project Management**<br>A Siemens Project Manager (PM) will be the single point of contact for the implementation of your Siemen's equipment. The assigned PM will work with the customer's facilities management, architect or building contractor to assist you in ensuring that your site is ready for installation. Your PM will provide initial and final drawings and will coordinate the scheduling of the equipment, installation, and rigging, as well as the initiation of on-site clinical education. |
| 1 | HASKRISFG23041 | **Haskris OPC24 Chiller- 63kW**<br>The Haskris outdoor, air-cooled, water/glycol chiller has been specially designed for medical applications to provide stable, fully dedicated cooling to a single MR system.<br><br>The Haskris chiller must be used in combination with a Siemens SEP cabinet.<br><br>The Haskris chiller is suitable for use in all siting conditions: normal, coastal, low-ambient, and/or OSHPD-compliant locations.<br><br>Specifications<br>Cooling Capacity: 63kW<br>Fluid Supply Temp: 43°F (6°C) to 59°F (15°C)<br>Pump Capacity: 32 GPM (120 LPM)<br>Condenser: Air-cooled (heat dissipated into ambient air)<br>Outdoor ambient air temperature: -40°F (-40°C) to 122°F (50°C)<br>Electrical: 460V-3Ø-60Hz<br>Dimensions: 77"W x 40"D x 74"H (196cm x 102cm x 188cm)<br><br>Siemens' Pricing Also Includes:<br>Delivery<br>Chiller Start-Up (Post Installation)<br>1x Preventative Maintenance Service Visit<br>Remote Monitoring Panel with 1-Year Cellular Connectivity and Cloud Service<br><br>Installation:<br>Customer is responsible for the rigging and installation of the chiller.<br>Customer is responsible for providing a 35% solution of propylene glycol with water; 25 gal (95 L) for the chiller plus 1 gal (3.8 L) per 10 ft (3m) external pipe run assuming 1 ½" pipe diameter. |

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|---|---|---|
| | | Warranty:<br>12 months from date of Start-Up |
| 1 | HASKRIS_STARTUP | **Haskris Chiller Start-Up**<br>Chiller start-up by Haskris vendor after installation of chiller and completion of paperwork. |
| 1 | NV866185X45 | **MR400 Basic + AA,O2,IBP(x2)**<br>Feature set includes non-invasive blood pressure, wireless ECG, wireless SpO2, low-flow CO2, respiration monitoring, dual anesthetic agent detection, O2 monitoring, invassive blood pressure (2 channel). Includes all standard accessories.<br><br>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.<br><br>Includes all hardware accessories, and reusable and disposable accessories for 20 Adult and Pediatric patients.<br><br>One (1) day on-site system training, One (1) year limited warranty and factory service for hardware provided by Invivo. |
| 1 | NV866428X54 | **MR400-X44 Patient Accessories**<br>Bundled accessories to be used with the Expression MR400 MRI patient monitor.<br><br>Includes all hardware accessories and reusable and disposable accessories for 20 adult and pediatric patients. |
| 1 | NV866162 | **Portal 5000 Monitor**<br>MR Patient Care Portal 5000 is a remote display and controller for use with the Philips Expression MRI Patient Monitoring Systems. The Portal 5000 is for use in the control room, induction, or recovery areas and not intended for use in the MR scan room.<br><br>Portal 5000 includes:<br>Desktop unit<br>Touch Screen Display Monitor (Medical Grade)<br>Radio and Cradle module |
| 1 | NV866162_A06 | **Portal 5000 Flex Antenna**<br>MR Patient Care Portal 5000 Control Room Flex Antenna<br>The Control Room Flex Antenna option enhances radio communication when there are breaks in wireless communication indicated by small gaps in the vital signs waveforms display. The Flex Antenna utilizes a passive directional antenna mounted in the |

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| Qty | Part No. | Item Description |
|---|---|---|
| | | MR control room to improve wireless radio communication performance in certain MRI Rooms. This antenna is customer installable and easy to set up with three mounting configurations. |
| 1 | MR_GOKNEE3D | **GOKnee3D**<br>GOKnee3D is a 10-minute, push-button examination for diagnostic imaging of the knee developed and clinically validated by the US board certified MSK radiologists at John Hopkins University Hospital. GOKnee3D exam consists of AutoAlign localizer in the knee, PD weighted contrast and T2 weighted contrast with fat suppression. The AutoAlign technology provides a push-button functionality and ensures consistency in imaging. The 3D protocols are high resolution and isotropic, enabled by SPACE sequence with CAIPIRINHA techniqueExamination time for 3T system is 10 minutes, for a 1.5T system is up to 11 minutes. All given examination times are examination only, adjustments have been excluded. When using GOKnee3D one of two software and coil combinations is required. Measurements made with GOKnee3D using the 15 channel knee coil require software version syngo MR E11C AP04 or higher. Measurements made with GOKnee3D using the 18 channel knee coil require software version syngo MR Numaris VA11A or higher. |
| 1 | MR_GOBRAIN | **GOBrain**<br>GOBrain delivers reliable quality at exceptional speed. It enables clinically validated, push-button brain exams, with multiple orientations and all relevant contrasts. This fast exam is more tolerable for patients, and helps reduce motion-related artifacts and the need for rescans and sedation. As a result, GOBrain potentially doubles throughput and reduces costs per scan. Supported by our Tim 4G technology and DotGO, it delivers consistently high quality and maximizes the productivity of your MRI scanner - while improving patient care. |
| 1 | MR_GREEN_PKG | **MR Green Package**<br>MRI Green Package Enhances environmental sustainability of equipment by reducing emissions.<br><br>Eco Power Mode reduces power consumption by up to 12% with Eco Power Mode alone.<br><br>Eco Gradient Mode reduces scope 2 emissions by up to 7%.<br><br>System Start-Up Timer reduces scope 2 emissions in non-productive times.<br><br>Zero Helium Boil-Off technology - No helium refill for a lifetime and up to 37 % reduction in helium inventory compared to the previous scanner generation.<br><br>Environmental Product Declaration provides environmental |

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| Qty | Part No. | Item Description |
|---|---|---|
| | | relevant information of product and packaging material, operating, cleaning and disposal data as well as life cycle impact information.<br><br>Results were achieved by Siemens Healthineers using both standard and optional features. There can be no 'typical' hospital setting (case mix, system type, etc.) and so results by users may vary with no guarantee that the same results can be achieved. |
| 1 | MRIMAB_100 | **MRI Armboard w/ Pad** |
| 1 | ML11685 | **MR Wall sign -English**<br>Highly durable 1mm PVC wall signs with high-tack, double-back tape. Sticks to most any surface. English. 12" x 18". |
| 1 | MRISMNS0001 | **MRI Patient Audio System**<br>The MRI Patient Audio System is to be installed in the technologist room and is connected to the Siemens intercom system. The package provides the following benefits:<br><br>• Create custom, commercial-free radio stations based on artist, song or genre preferences<br>• Avoid any AM/FM tuning issues that may occur in RF-shielded rooms<br>• Compatible with all popular audio apps<br><br>Includes all cables and adapters; Bose Companion 2 technologist speakers; 3.5 mm to RCA cable; and customized iPAD Mini with all original accessories and iPad stand.<br><br>The MR Stereo can play internet radio (depending on quality of and access to Wi-Fi signals) and device (iPAD) stored audio content. Optimal performance requires access to Wi-Fi signal for Internet radio through the facility's wireless network.<br><br>The audio system is not MR safe and is only intended for use outside the MRI suite.<br><br>Installation is not included unless purchased with the Siemens system.<br><br>Includes 1-year limited liability warranty on all system components through MRI Med. |
| 1 | MR14460428 | **ACR Phantom Holder (USA)**<br>An MR compatible cradle device used to consistently and precisely position the American College of Radiology (ACR) MRI Accreditation phantom, for use with Siemens MAGNETOM standard Head Coil during test measurements for ACR system accreditation or QA testing |
| 1 | MR_ADDL_RIGGING | **Additional Rigging MR $30,000** |

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| Qty | Part No. | Item Description |
|---|---|---|
| 1 | MR_EP1_28 | **Essential Training PH 1 (Onsite-28) MR**<br>Up to (28) hours of on-site clinical education training, scheduled consecutively (Monday – Friday) during standard business hours for a maximum of (4) imaging professionals. Training will cover agenda items on the ASRT approved checklist if applicable. This educational offering must be completed (12) months from install end date. If training is not completed within the applicable time period, Siemens obligation to provide the training will expire without refund |
| 1 | MR_EP2_24 | **Essential Training PH 2 (Onsite-24) MR**<br>Up to (24) hours of on-site clinical education training, scheduled consecutively (Monday – Friday) during standard business hours for a maximum of (4) imaging professionals. Training will cover agenda items on the ASRT approved checklist if applicable. This educational offering must be completed (12) months from install end date. If training is not completed within the applicable time period, Siemens obligation to provide the training will expire without refund. |
| 1 | MR_PRO_OPT | **Protocol Optimization Package(MR)**<br>This offering provides the customer with up to 16 hours of remote system support (simulator or system remote access) with a Siemens Clinical Education Specialist (CES) for protocol development and optimization before or after initial turnover training. This includes:<br>• Consultation with the customer on MR protocol expectations.<br>• If Used Prior to Initial Turnover – The use of a simulator workstation is utilized by a CES to optimize/customize up to 75 protocols to fit customer-specific needs. Optimized protocols will then be imported for customer's usage prior to or during system turnover.<br>• If Used Post System Turnover – The customer's system will be logged in remotely via SRS by CES to work alongside customer to help build/optimize existing or new protocols (Max of 16 hours). This educational offering must be completed (12) months from install end date. If training is not completed within the applicable time period, Siemens obligation to provide the training will expire without refund. For US Federal Government orders placed under the HTME IDIQ contract, the terms and conditions of that contract govern in lieu of the foregoing. |

**System Total** **$ 1,435,671**

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**OPTIONS on Quote Nr : CPQ-1411393 Rev. 0**

## OPTIONS for RS MAGNETOM Sola - System

**All items listed below are OPTIONS and will be included on this system ONLY if initialed:** *(See Detailed Technical Specifications at end of Proposal.)*

| Qty | Part No. | Item Description | Extended Price | Initial to Accept |
|---|---|---|---|---|
| 1 | BMRXP200 | **BAYER MEDRAD MRXperion**<br>The MRXperion injector has the following features:<br>Streamlined Injection Workflow<br>Enhanced Point of Care - On-board eGFR and Weight Based Dosing Calculators, an Injection Pressure Graph, and independent Test Inject and KVO functions.<br>Informatics-ready - Connect with the Radimetrics Enterprise Platform for automated documentation, advanced analytics and viewable patient histories to facilitate standardized injection protocols and enhanced operational consistency.<br>Maximized Uptime Support - Connect to VirtualCare Remote Support for advanced injector system diagnostics, seamless software updates, and fast repairs.<br><br>Price includes installation, training and one year warranty through Bayer Healthcare. | **+ $ 45,336** | _____ |
| 1 | BMRXPENPNL | **MRXperion penetration panel**<br>Includes penetration panel and installation by Bayer.<br><br>To be selected only if the customer has no wall outlets in the MR suite and requires the power to be sourced from outside the room. | **+ $ 2,015** | _____ |
| 1 | NC149030 | **NeoCoil Breast Coil, 1.5T**<br>The NeoCoil 16ch Breast Coil is a phased array coil for imaging structures of the breast, axilla and chest wall. The 16ch Breast Coil includes a coil support structure, patient support structure, biopsy components and comfort pads. The 16ch Breast Coil supports both diagnostic and biopsy imaging modalities while accommodating various anatomic shapes and sizes.<br><br>Coil Coverage: 36cm R/L, 20cm A/P, 24cm S/I<br>Kit Includes: Medial Array, Lateral Array Left, Lateral Array Right, Baseplate Assy including system cable, Pad Kit, Accessories Kit | **+ $ 70,850** | _____ |

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| Qty | Part No. | Item Description | Extended Price | Initial to Accept |
|---|---|---|---|---|
| | | Installation:<br>Installation quoted separately<br>Warranty:<br>1-year warranty through NeoCoil | | |
| 1 | NC_INSTALL_APPS | **NeoCoil Breast Coil Install, Basic Apps**<br>On-site installation and basic Applications training for the 16-Channel NeoCoil Breast Coil including: installation of the coil file on the scanner, a quality check of the coil, and demonstration on coil setup and patient positioning. Includes all travel expenses. Continental US only. | **+ $ 4,250** | _____ |
| 1 | 14431432 | **RS Foot/Ankle 16 #Ae**<br>The new Tim 4G coil technology with Dual Density Signal Transfer and DirectConnect Technolgy combines key imaging benefits: excellent image quality, high patient comfort, and unmatched flexibility.<br>Foot/Ankle 16 for examinations of the left or right foot and ankle region consists of a base plate and an iPAT compatible 16-channel coil and allows high resolution imaging of the foot and ankle within one examination. Foot/Ankle 16 is a cable-less coil and will be connected via DirectConnect for fast and easy patient preparation. | **+ $ 31,411** | _____ |
| 1 | 14442420 | **RS 2/10/16ch Sentinelle BreastCoil #Ae**<br>The 2/10/16-channel Sentinelle Breast Coil can be used as a breast imaging coil, a bilateral biopsy coil, as well as a unilateral biopsy coil providing large biopsy access<br><br>This coil consists of a positioning frame with exchangeable coils with different numbers of channels as described in detail in the E text.<br><br>The preamplifiers are integrated into the coil.<br>The coil is iPAT-compatible. | **+ $ 93,600** | _____ |
| 2 | 14431434 | **RS Tim Coil Interface 1.5T**<br>Coil adapter plug for up to 8 receive and 1 transmit channels. This adapter will be required if the following Tim coils will be used on a compatible 1.5T MAGNETOM system with Tim 4G technology. | **+ $ 6,282** | _____ |
| 1 | 14442419 | **RS Breast 18 #Ae**<br>Main features of the 18-channel Breast Coil:<br>- 18-element design with 18 integrated preamplifiers.<br>- The coil has 8 elements arranged around each breast, and 2 elements for the axilla regions.<br>- Weighs only 5.5 kg (including the positioning | **+ $ 41,881** | _____ |

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| Qty | Part No. | Item Description | Extended Price | Initial to Accept |
|---|---|---|---|---|
| | | frame).<br>- Comes with an extra-wide abdominal support wedge and a comfortable cushion for the arms.<br>- The coil can accommodate breasts with a volume of up to approximately 2.2 liters per breast and has adjustable immobilization units for each breast.<br>- Adjustable head support for optimum patient comfort.<br>- Accessories (available separately) allow shared use between 60 cm and 70 cm bore systems.<br><br>Application:<br>- MR breast examinations (MR imaging + spectroscopy)<br><br>Special feature:<br>- Includes reference tube for quantitative spectroscopy. The tube is supplied with the syngo GRACE application. | | |
| 1 | 14442439 | **RS Accessory Breast 18 70cm**<br>The accessories kit 70 cm for the Breast 18 contains a mechanical adapter and the connection wedge 70, which holds the patient around the abdominal area and sits on top of the spinal coil. | **+ $ 628** | _____ |

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**FINANCING:** The equipment listed above may be financed through Siemens Financial Services, Inc. Ask us about our full range of financial products that can be tailored to meet your business and cash flow requirements. For further information, please contact your local Sales Representative.

**PAYMENT OPTIONS:** In order to lower the costs of financial processing for all parties, Siemens encourages the use of electronic funds transfer via the Automated Clearing House (ACH) system. Siemens also accepts certain other forms of payment, but credit card or other surcharge or processing fees may apply. For further information, please contact your local Sales Representative.

**ACCESSORIES:** Don't forget to ask us about our line of OEM imaging accessories to complete your purchase. All accessories can be purchased or financed as part of this order. To purchase accessories directly or to receive our accessories catalog, please call us directly at 1-888-222-9944 or contact your local Sales Representative.

**COMPLIANCE:** Compliance with legal and internal regulations is an integral part of all business processes at Siemens. Possible infringements can be reported to our communication channel “Let Us Know”.

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# Siemens Medical Solutions USA, Inc. General Terms and Conditions

## 1. GENERAL

**1.1 Contract Terms and Acceptance.** These terms and conditions ("Agreement") constitute an integral part of any contract between Seller and Purchaser identified on the first page hereof and shall govern the sale of the products identified in such quotation ("Products"). Purchaser acknowledges that this is a commercial and not a consumer transaction. Purchaser shall be deemed to have assented to, and to have waived any objection to, this Agreement upon the earliest to occur of any of the following: Purchaser's completion or execution of this Agreement; Purchaser's acceptance of all or any part of the Products; Purchaser's issuance of a purchase order for any Products identified on Seller's quotation or proposal; or delivery of the Products to the common carrier for shipment pursuant hereto.

**1.2 Refurbished/Used Products**. For Products identified on this Agreement as used or refurbished Products, these Products have been previously owned and used. When delivered to Purchaser, such Products will perform in accordance with the manufacturer's specifications. Since pre-owned Products may be offered simultaneously to several customers, the availability of such Products to Purchaser cannot be guaranteed. If the Products are no longer available, Seller will use its best efforts to identify other suitable products in its inventory. If substitute products are not acceptable to Purchaser, then Seller will cancel the order and refund to Purchaser any deposits previously paid. The warranty period for any used or refurbished Products will be separately stated on the quotation.

**1.3 Third Party Products.** If this Agreement includes the sale of third party products not manufactured by Seller, then Purchaser agrees and acknowledges that (a) Purchaser has made the selection of these products on its own, (b) the products are being acquired by Seller solely at the request of and for the benefit and convenience of Purchaser, (c) no representation, warranty or guarantee has been made by Seller with respect to the products, (d) the obligation of Purchaser to pay Seller for the products is absolute and unconditional, (e) use of the products may be subject to Purchaser's agreement to comply with any software licensing terms imposed by the manufacturer; and (f) unless otherwise indicated by Seller in writing, Seller is not responsible for any required installation, validation, product recall, warranty service, maintenance, complaint handling, or any other applicable FDA regulatory requirements, and the Purchaser will look solely to the manufacturer regarding these services and will assert no claim against Seller with respect to these products.

## 2. PRICES

**2.1 Quotations**. Unless otherwise agreed to in writing or set forth in the quotation, all prices quoted by Seller and amounts payable by Purchaser are in U.S. dollars, and include Seller's standard packaging. The prices quoted to Purchaser assume that the Purchaser is located in, and will use the Products in, the U.S. If not, such quotation will be void. Unless otherwise stated, the quotation shall only be valid for forty-five (45) days from the date of the quotation. Payment shall be made via check or ACH/Wire; any use of alternative payment method must be approved in advance by Seller and may include any applicable services charges.

**2.2 Delay in Acceptance of Delivery.** Should the agreed delivery date be postponed by Purchaser, Seller shall have the right to deliver the Products to storage at Purchaser's risk and expense, and payments due upon delivery shall become due upon such delivery to storage.

## 3. TAXES

**3.1** Any sales, use or manufacturer's tax which may be imposed upon the sale or use of Products, or any property tax levied after readiness to ship, or any excise tax, license or similar fee (excluding the Medical Device Excise Tax as set forth in Section 4191 of the Internal Revenue Code of 1986, as amended) required under this transaction, shall be in addition to the quoted prices and shall be paid by Purchaser. Notwithstanding the foregoing, Seller agrees to honor any valid tax exemption certificate provided by Purchaser.

## 4. TERMS OF PAYMENT; DEFAULT

**4.1 Payments; Due Date.** Payment shall be made in accordance with the 'Terms of Payment' reflected in the quotation detailed above based upon Purchaser's group purchasing organization ("GPO") affiliation as of the date of the quotation. In the event no terms of payment are detailed in the quotation above, then Purchaser shall pay Seller as follows: an initial deposit of 10% of the purchase price for each Product is due upon submission of the purchase order, an additional 80% of the purchase price is due upon delivery of each Product, and the final 10% of the purchase price is due upon completion of installation or when the Products are available for first patient use, whichever occurs first. Unless otherwise agreed, all payments other

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than the initial deposit are due net thirty (30) days from the date of invoice. Seller shall have no obligation to complete installation until the payment due upon delivery is received. Partial shipments shall be billed as made, and payments for such shipments will be made in accordance with the foregoing payment terms.

**4.2 Late Payment.** A service charge of 1½% per month, not to exceed the maximum rate allowed by law, shall be made on any portion of Purchaser's outstanding balance which is not paid when due. Payment of such service charge shall not excuse or cure Purchaser's breach or default for late payment.

**4.3 Payment of Lesser Amount.** If Purchaser pays, or Seller otherwise receives, a lesser amount than the full amount provided for under this Agreement, such payment shall not constitute or be construed other than as on account of the earliest amount due Seller. No endorsement or statement on any check or payment or elsewhere shall constitute or be construed as an accord or satisfaction.

**4.4 Where Payment Due Upon Installation or Completion.** Should any terms of payment provide for either full or partial payment upon completion of installation or thereafter, and completion of installation is delayed for any reason for which Seller is not responsible beyond the installation date set forth in the Notice to Manufacture Letter issued by Seller (or as otherwise agreed by both parties in writing), as applicable, then the balance of payments shall be due on the day following such scheduled installation date.

**4.5 Default; Termination**. Each of the following shall constitute an event of default under this Agreement: (i) a failure by Purchaser to make any payment when due; (ii) a failure by Purchaser to perform any other obligation under this Agreement within thirty (30) days of receipt of written notice from Seller; or (iii) the commencement of any insolvency, bankruptcy or similar proceedings by or against Purchaser.

Upon the occurrence of any event of default, at Seller's election: (a) the entire amount of any indebtedness and obligation due Seller under this Agreement and interest thereon shall become immediately due and payable; (b) Seller may suspend the performance of any of Seller's obligations hereunder, including, but not limited to, obligations relating to delivery, installation and warranty services; (c) Purchaser shall put Seller in possession of the Products upon demand; (d) Seller may sell or otherwise dispose of all or any part of the Products and apply the proceeds thereof against any indebtedness or obligation of Purchaser under this Agreement; and/or (e) if this Agreement or any indebtedness or obligation of Purchaser under this Agreement is referred to an attorney for collection or realization, Purchaser shall pay to Seller all costs of collection and realization (including, without limitation, a reasonable sum for attorneys' fees); and Purchaser shall pay any deficiency remaining after collection of or realization by Seller on the Products. In addition, Seller may terminate this Agreement upon written notice to Purchaser in the event that Purchaser is not approved for credit or upon the occurrence of any material adverse change in the financial condition or business operations of Purchaser.

**4.6 Financing**. Notwithstanding any arrangement that Purchaser may make for the financing of the purchase price of the Products, the parties agree that any such financing arrangement shall have no effect on the Purchaser's payment obligations under this Agreement, including but not limited to Sections 4.1 and 4.2 above.

## 5. EXPORT TERMS

**5.1** Purchaser shall comply with all applicable sanctions, embargoes, and (re-)export control laws and regulations and, in any event with those of the United States of America and any locally applicable jurisdiction (collectively "Export Regulations").

**5.2** Upon request by Seller, Purchaser shall promptly provide Seller with all information pertaining to the particular end customer, the particular destination and the particular intended use of the Products and Services provided herein. Purchaser will notify Seller prior to Purchaser disclosing any information to Seller that is defense related or requires controlled or special data handling pursuant to applicable government regulations and will use the disclosure tools and methods specified by Seller.

**5.3** Purchaser will indemnify and hold harmless Seller, its affiliates, subcontractors, and their representatives against any claims, damages, fines and costs (including attorney's fees and expenses) relating in any way to Purchaser's noncompliance with this Section 5, including Purchaser's and its third party business partners' violation or alleged violation of any Export Regulations, and Purchaser will compensate Seller for all losses and expenses resulting thereof.

## 6. DELIVERY, RISK OF LOSS

**6.1 Delivery Date.** Delivery and installation dates will be established by mutual agreement of the parties as set forth in the Notice to Manufacture Letter issued by the Seller, as applicable or as otherwise agreed by the parties in writing. Seller shall make reasonable efforts to meet such delivery date(s).

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**6.2 Risk of Loss; Title Transfer.** Unless otherwise agreed to in writing, the following shall apply:

(a) For Products that do not require installation by Seller, and for options and add-on products purchased subsequent to delivery and installation of Products purchased under this Agreement, delivery shall be complete upon transfer of possession to common carrier, F.O.B. Shipping Point, whereupon title to and all risk of loss, damage to or destruction of the Products shall pass to Purchaser.

(b) For Products that require installation by Seller, delivery shall be complete upon delivery of the Products to Purchaser's designated site, F.O.B. Destination; whereupon title to and all risk of loss, damage to or destruction of such Products shall pass to Purchaser upon completion of delivery.

(c) All freight charges and other transportation, packing and insurance costs, license fees, custom duties and other similar charges shall be the sole responsibility of Purchaser unless included in the purchase price of the Products or shown as included in the quotation or otherwise agreed to in writing by Seller. In the event of any loss or damage to any of the Products during shipment, Seller and Purchaser shall cooperate in making any insurance claim.

**7. SECURITY INTEREST/FILING**

**7.1** Purchaser grants to Seller a security interest in the Products until payment in full by Purchaser. Purchaser shall sign any financing statements or other documents necessary to perfect Seller's security interests in the Products. Purchaser further represents and covenants that (a) it will keep the Products in good order and repair until the purchase price has been paid in full, (b) it will promptly pay all taxes and assessments upon the Products or the use thereof, (c) it will not attempt to transfer any interest in the Products until the purchase price has been paid in full, and (d) it is solvent and financially capable of paying the full purchase price for the Products.

**8. CHANGES, CANCELLATION, AND RETURN**

**8.1** Orders accepted by Seller are not subject to change except upon Seller's written agreement.

**8.2** Orders accepted by Seller are non-cancellable by Purchaser except upon Seller's written consent and payment by Purchaser of a cancellation charge equal to 10% of the price of the affected Products, plus any shipping, insurance, inspection and refurbishment charges; the cost of providing any training, education, site evaluation or other services completed by Seller; and any return, cancellation or restocking fees with respect to any Third Party Products ordered by Seller on behalf of Purchaser. Seller may retain any payments received from Purchaser up to the amount of the cancellation charge. In no event can an order be cancelled by Purchaser or Products be returned to Seller after shipment.

**8.3** Seller reserves the right to change the manufacture and/or design of its Products if, in the judgment of Seller, such change does not alter the general function of the Products.

**9. FORCE MAJEURE**

**9.1** Seller shall not be liable for any loss or damage for delay in delivery, inability to install or any other failure to perform due to causes beyond its reasonable control including, but not limited to, acts of God or the public, war, civil commotion, blockades, embargoes, calamities, floods, fires, earthquakes, explosions, storms, epidemics, pandemics, strikes, lockouts, labor disputes, or unavailability of labor, raw materials, power or supplies. Should such a delay occur, Seller may reasonably extend delivery or production schedules or, at its option, cancel the order in whole or part without liability other than to return any unearned deposit or prepayment.

**10. WARRANTY**

**10.1** Seller warrants that the Products manufactured by Seller and sold hereunder shall be free from defects in material or workmanship under normal use and service for the warranty period. The final assembled Products shall be new although they may include certain used, reworked or refurbished parts and components (e.g., circuit boards) that comply with performance and reliability specifications and controls. Seller's obligation under this warranty is limited, at Seller's option, to the repair or replacement of the Product or any part thereof. Unless otherwise set forth in the Product Warranty attached hereto and incorporated herein by reference ("Product Warranty"), the warranty period shall commence upon the earlier of the date that the Products have been deemed installed in accordance with Section 12 hereof (which date shall be confirmed in writing by Seller) or first patient use, and shall continue for twelve (12) consecutive months. Seller makes no warranty for any Products made by persons other than Seller or its affiliates, and Purchaser's sole warranty therefor, if any, is the original manufacturer's warranty, which Seller agrees to pass on to Purchaser, as applicable. The warranty provided by Seller under this Section 10 extends only to the original Purchaser, unless the Purchaser obtains the Seller's prior written consent with respect to any sale or other transfer of the Products during the term of the warranty.

**10.2** No warranty extended by Seller shall apply to any Products which have been damaged by fire, accident, misuse, abuse, negligence, improper application or alteration or by a force majeure occurrence as described in Section 9 hereof or by the Purchaser's failure to operate the Products in accordance with the manufacturer's

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instructions or to maintain the recommended operating environment and line conditions; which are defective due to unauthorized attempts to repair, relocate, maintain, service, add to or modify the Products by the Purchaser or any third party or due to the attachment and/or use of non-Seller supplied parts, equipment or software without Seller's prior written approval; which failed due to causes from within non-Seller supplied equipment, parts or software including, but not limited to, problems with the Purchaser's network; or which have been damaged from the use of operating supplies or consumable parts not approved by Seller. In addition, there is no warranty coverage for any transducer or probe failure due to events such as cracking from high impact drops, cable rupture from rolling equipment over the cable, delamination from cleaning with inappropriate solutions, or TEE bite marks. Seller may effectuate any repairs at Purchaser's facility, and Purchaser shall furnish Seller safe and sufficient access for such repair. Repair or replacement may be with parts or products that are new, used or refurbished. Repairs or replacements shall not interrupt, extend or prolong the term of the warranty. Purchaser shall, upon Seller's request, return the non-complying Product or part to Seller with all transportation charges prepaid, but shall not return any Product or part to Seller without Seller's prior written authorization. Purchaser shall pay Seller its normal charges for service and parts for any inspection, repair or replacement that falls outside of Seller's warranty. Seller's warranty does not apply to consumable materials, disposables, supplies, accessories and collateral equipment, except as specifically stated in writing or as otherwise set forth in the Product Warranty.

**10.3** This warranty is made on condition that immediate written notice of any noncompliance be given to Seller and Seller's inspection reveals that Purchaser's claim is covered under the terms of the warranty (i.e., that the noncompliance is due to traceable defects in original materials and/or workmanship).

**10.4** Purchaser shall provide Seller with both on-site and remote access to the Products. The remote access shall be provided through the Seller's Smart Remote Services software in accordance with the Smart Remote Services Schedule attached hereto and incorporated herein.

**10.5** Warranty service will be provided without charge during Seller's regular working hours (8:30-5:00), Monday through Friday, except Seller's recognized holidays, unless otherwise agreed to in writing by both parties. If Purchaser requires that service be performed outside these hours, such service can be made available at an additional charge, at Seller's then current rates. The obligations of Seller described in this Section are Seller's only obligations and Purchaser's sole and exclusive remedy for a breach of product warranty.

**10.6 SELLER MAKES NO WARRANTY OTHER THAN THE ONE SET FORTH HEREIN AND IN THE PRODUCT WARRANTY. SUCH WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSES, AND SUCH CONSTITUTES THE SOLE AND EXCLUSIVE WARRANTY MADE WITH RESPECT TO THE PRODUCTS, SERVICE OR OTHER ITEM FURNISHED UNDER THIS AGREEMENT.**

**10.7** In the event of any inconsistencies between the terms of this Section 10 and the terms of the Product Warranty, the terms of the Product Warranty shall prevail.

## 11. LIMITATION OF LIABILITY

**11.1** In no event shall Seller's liability hereunder exceed the actual loss or damage sustained by Purchaser, up to the purchase price of the Products. The foregoing limitation of liability shall not apply to claims for bodily injury or damages to real property or tangible personal property to the extent arising from Seller's negligence or a product defect.

**11.2 SELLER SHALL NOT BE LIABLE FOR ANY LOSS OF USE, REVENUE OR ANTICIPATED PROFITS; COST OF SUBSTITUTE PRODUCTS OR SERVICES; LOSS OF STORED, TRANSMITTED OR RECORDED DATA; OR FOR ANY INDIRECT, INCIDENTAL, UNFORESEEN, SPECIAL, PUNITIVE OR CONSEQUENTIAL DAMAGES WHETHER BASED ON CONTRACT, TORT, STRICT LIABILITY OR ANY OTHER THEORY OR FORM OF ACTION, EVEN IF SELLER HAS BEEN ADVISED OF THE POSSIBILITY THEREOF, ARISING OUT OF OR IN CONNECTION WITH THIS AGREEMENT OR THE SALE OR USE OF THE PRODUCTS. THE FOREGOING IS A SEPARATE, ESSENTIAL TERM OF THIS AGREEMENT AND SHALL BE EFFECTIVE UPON THE FAILURE OF ANY REMEDY, EXCLUSIVE OR NOT.**

## 12. INSTALLATION - ADDITIONAL CHARGES

**12.1 General**. Unless otherwise expressly stipulated in writing, the Products shall be installed by and at the expense of Seller except that Seller shall not provide rigging or site preparation services unless otherwise agreed to in writing by Seller for an additional charge. Seller will not install accessory items such as cabinets, illuminators, darkroom equipment or processors for X-Ray and CT equipment, unless otherwise agreed to in writing by Seller.

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**12.2 Installation by Seller.** If Seller specifies it will install the Products, the following applies: subject to fulfillment of the obligations set forth in Section 12.3 below, Seller shall install the Products and connect them to the requisite safety switches and power lines to be installed by Purchaser. Except as otherwise specified below, if such installation and connection are performed by Seller's technical personnel, prices shown include the cost thereof, provided that the installation and connection can be performed within the Continental United States or Puerto Rico and during normal business hours. Any overtime charges or other special expenses required to install the Products shall be additional charges to the prices shown.

**12.3 Purchaser's Obligations.** Purchaser shall, at its expense, provide all proper and necessary labor and materials for plumbing service, carpentry work, conduit wiring, and other preparations required for such installation and connection. All such labor and materials shall be completed and available at the time of delivery of the Products so that Seller may commence with installation and final calibration without delay. Additionally, Purchaser shall provide free access to the installation site and, if necessary, safe and secure space for storage of Products and equipment prior to installation by Seller. Purchaser shall be responsible, at its sole cost and expense, for obtaining all permits, licenses and approvals required by any federal, state or local authorities in connection with the installation and operation of the Products, including but not limited to any certificate of need and zoning variances. Purchaser shall provide a suitable environment for the Products and shall ensure that its premises are free of hazardous conditions and any concealed or dangerous conditions and that all site requirements are met at time of delivery. Seller shall delay installation of the Products until Purchaser has completed the removal of any hazardous materials and has taken any other precautions and completed any other pre-installation work required by applicable regulations and/or Seller specifications; and Purchaser shall reimburse Seller for any increased costs and expenses incurred by Seller that are the result of or are caused by such delay. In the event that Purchaser requests delivery prior to the completion of its site readiness obligations, Purchaser assumes all risk of damage or loss to the Products associated with such early delivery and shall reimburse Seller for any increased costs and expenses incurred by Seller that are the result of or are caused by any such early delivery. In the event the delivery of the Products is delayed without prior written approval by Seller by more than forty-five (45) calendar days from the scheduled delivery date in accordance with Section 6.1 herein due to Purchaser's failure to complete all requisite pre-installation work or Purchaser's refusal to accept delivery, then the Products shall be deemed installed on the scheduled delivery date for the purposes of Section 10.1 herein.

In the event that Seller is requested to supervise the installation of the Products, it remains the Purchaser's responsibility to comply with local regulations. Seller is not an architect and all drawings furnished by Seller are not construction drawings. If local labor conditions, including a requirement to use union labor, require the use of non-Seller employees to participate in the installation of the Product or otherwise causes delays or any additional expenses, then any such additional costs shall be at Purchaser's expense.

**12.4 Regulatory Reporting.** In the event that any regulatory activity is performed by anyone other than Seller's authorized personnel, then Purchaser shall be responsible for fulfilling any and all reporting requirements.

**12.5 Completion of Installation.** Installation shall be complete upon the conclusion of final calibration and checkout under Seller's standard procedures to verify that the Products meet applicable written performance specifications. Notwithstanding the foregoing, first use of the Products by Purchaser, its agents or employees for any purpose after delivery shall constitute completion of installation.

## 13. PATENT, COPYRIGHT AND OTHER INFRINGEMENT CLAIMS

**13.1 Infringement by Seller.** Seller warrants that the Products manufactured by Seller and sold hereunder do not infringe any U.S. patent or copyright. If Purchaser receives a claim that any such Products, or parts thereof, infringe upon the rights of others under any U.S. patent or copyright, Purchaser shall notify Seller immediately in writing. Provided that Purchaser gives Seller information, assistance and exclusive authority to evaluate, defend and settle such claims, Seller shall at its own expense and option: indemnify and defend Purchaser against such claims; settle such claims; procure for Purchaser the right to use the Products; or remove or modify them to avoid infringement. If none of these alternatives is available on terms reasonable to Seller, then Purchaser shall return the Products to Seller and Seller shall refund to Purchaser the purchase price paid by Purchaser less reasonable depreciation for Purchaser's use of the Products. The foregoing states Seller's entire obligation and liability, and Purchaser's sole remedy, for claims of infringement.

**13.2 Infringement by Purchaser**. If some or all of the Products sold hereunder are made by Seller pursuant to drawings or specifications furnished by Purchaser, or if Purchaser modifies or combines, operates or uses the Products other than as specified by Seller or with any product, data, software, apparatus or program not provided

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or approved by Seller, then the indemnity obligation of Seller under Section 13.1 shall be null and void.

**14. DESIGNS AND TRADE SECRETS; LICENSE; CONFIDENTIALITY**

**14.1** Any drawings, data, designs, software programs or other technical information supplied by Seller to Purchaser in connection with the sale of the Products shall remain Seller's property and shall at all times be held in confidence by Purchaser.

**14.2** For all Products which utilize software for their operation, such "Applications Software" shall be licensed to Purchaser under the terms of Seller's Software License Schedule attached hereto (if applicable).

**14.3** Seller and Purchaser shall maintain the confidentiality of any information provided or disclosed to the other party relating to the business, customers and/or patients of the disclosing party, as well as this Agreement and its terms (including the pricing and other financial terms under which the Purchaser will be purchasing the Products). Each party shall use reasonable care to protect the confidentiality of the information disclosed, but no less than the degree of care it would use to protect its own confidential information, and shall only disclose the other party's confidential information to its employees and agents having a need to know this information. The obligations of confidentiality set forth herein shall not apply to any information in the public domain at the time of disclosure or that is required to be disclosed by court order or by law.

**15. ASSIGNMENT**

**15.1** Neither party may assign any rights or obligations under this Agreement without the prior written consent of the other, which shall not be unreasonably withheld. Any attempt to do so shall be void, except that Seller may assign this Agreement without consent to any subsidiary or affiliated company, and may delegate to authorized subcontractors or service suppliers any work to be performed under this Agreement so long as Seller remains liable for the performance of its obligations under this Agreement. This Agreement shall inure to and be binding upon the parties and their respective successors, permitted assigns and legal representatives.

**16. COSTS AND FEES**

**16.1** In the event that any dispute or difference is brought arising from or relating to this Agreement or the breach, termination or validity thereof, the prevailing party shall be entitled to recover from the other party all reasonable attorneys' fees incurred, together with such other expenses, costs and disbursements as may be allowed by law.

**17. MODIFICATION**

**17.1** This Agreement may not be changed, modified or amended except in writing signed by duly authorized representatives of the parties.

**18. GOVERNING LAW; WAIVER OF JURY TRIAL**

**18.1** This Agreement shall be governed by the laws of the state where the Product(s) will be installed, without regard to that state's choice of law principles.

**18.2 EACH OF THE PARTIES EXPRESSLY WAIVES ALL RIGHTS TO A JURY TRIAL IN CONNECTION WITH ANY DISPUTE UNDER THIS AGREEMENT.**

**19. COST REPORTING**

**19.1** Purchaser agrees that it must fully and accurately report prices paid under this Agreement, net of all discounts, as required by applicable law and contract, including without limitation 42 CFR §1001.952(h), in all applicable Medicare, Medicaid and state agency cost reports. Purchaser shall retain a copy of this Agreement and all other communications regarding this Agreement, together with the invoices for purchase and permit agents of the U.S. Department of Health and Human Services or any state agency access to such records upon request.

**20. INTEGRATION**

**20.1** These terms and conditions, including any attachments or other documents incorporated by reference herein, constitute the entire, complete and exclusive statement of agreement with respect to the subject matter hereof, and supersede any and all prior agreements, understandings and communications between the parties with respect to the Products. Purchaser's additional or different terms and conditions stated in a purchase order, bid documents or any other document issued by Purchaser are specifically rejected and shall not apply to the transactions contemplated under this Agreement. In the event Purchaser's GPO affiliation is identified in the 'Purchasing Agreement' section of the quotation, then the terms of such GPO agreement to which Purchaser is a participating member shall apply as identified, provided that in the event of a conflict between the terms and conditions of this Agreement and the terms and conditions of any applicable GPO agreement to which Purchaser is a participating member, the terms and conditions of this Agreement shall control.

**21. SEVERABILITY; HEADINGS**

**21.1** No provision of this Agreement which may be deemed unenforceable will in any way invalidate any other

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portion or provision of this Agreement. Section headings are for convenience only and have no substantive effect.

**22. WAIVER**

**22.1** No failure and no delay in exercising, on the part of any party, any right under this Agreement will operate as a waiver thereof, nor will any single or partial exercise of any right preclude the further exercise of any other right.

**23. NOTICES**

**23.1** Any notice or other communication under this Agreement shall be deemed properly given if in writing and delivered in person or mailed, properly addressed and stamped with the required postage, to the intended recipient at its address specified on the face hereof.

**24. RIGHTS CUMULATIVE**

**24.1** The rights and remedies afforded to Seller under this Agreement are in addition to, and do not in any way limit, any other rights or remedies afforded to Seller by any other agreement, by law or otherwise.

**25. END USER CERTIFICATION**

**25.1** Purchaser represents, warrants and covenants that it is acquiring the Products for its own end use and not for reselling, leasing or transferring to a third party (except for lease-back financing arrangements that have been approved by Seller).

**26. ACCESS TO BOOKS AND RECORDS**

**26.1** To the extent required by Section 1861(v)(1)(I) of the Social Security Act and the regulations promulgated thereunder, until the expiration of four (4) years after the furnishing of any Product or service pursuant to this Agreement, Seller shall make available, upon written request by the Secretary of Health and Human Services (the "Secretary"), or upon request by the Comptroller General (the "Comptroller"), or any of their duly authorized representatives, copies of this Agreement and any books, documents, records or other data of Seller that are necessary to certify the nature and extent of any costs incurred by Purchaser for such Products and services. If Seller carries out any of its duties under this Agreement through a subcontract with a related organization involving a value or cost of ten thousand dollars ($10,000) or more over a twelve (12) month period, Seller will cause such subcontract to contain a clause to the effect that, until the expiration of four (4) years after the furnishing of any Product or service pursuant to said contract, the related organization will make available upon the written request of the Secretary or the Comptroller, or any of their duly authorized representatives, copies of records of said related organization that are necessary to certify the nature and extent of cost incurred by Purchaser for such Product or service.

**Smart Remote Services Schedule**
**To the Terms and Conditions of Sale**

Seller and Purchaser agree that the provision of service and support for the Products shall be provided in accordance with this Smart Remote Services ("SRS") Schedule. All capitalized terms not defined herein shall have the meanings given to them in the Agreement detailed above.

a. System Monitoring. Seller provides services for remote monitoring of certain Products used by Purchaser (hereafter, "Applicable Equipment"). In connection with such services, Seller uses SRS, a persistent online connection between Seller or its affiliates and the Applicable Equipment to monitor the performance of Applicable Equipment and deliver updates and patches to permit Seller monitoring of the performance of the Applicable Equipment anonymously ("SRS Connection"). SRS is installed on the analyzer computer or server, and works within a domain environment, workgroup, or on a standalone system. In the event that Purchaser fails to provide or maintain the SRS Connection for the Applicable Equipment, then Seller shall have the option to terminate the provision of warranty service and support under the Agreement and any applicable Supplements or Schedules thereto. In addition, any Uptime Performance Guarantee or Availability Commitment of the Applicable Equipment (if applicable) shall be void if the SRS Connection is not provided and available 24 hours per day, 7 days a week. For the purposes of this Schedule, 'Security Concept' means Seller IT security concept, which can be found under the following link or which Seller will send to Purchaser upon request:

https://www.siemens-healthineers.com/services/customer-services/connect-platforms-and-smart-enablers/smart-remote-services

'Technical Data' means information available through the SRS Connection and may include: (i) application logfiles, errors occurred, device properties, quality control (technical status information); (ii) configuration, software versions, patches, licenses, network settings, device service history (asset and configuration data); (iii) sequences of performance of various tasks, used applications/licenses and interactions with the application (utilization data); (iv) any reagents and consumables loaded onto the Applicable

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Equipment; (v) any other data explicitly agreed; and in each case not related to an identified or identifiable natural person. 'Smart Technical Data' means correlated Technical Data derived from the Applicable Equipment to support prediction of the Applicable Equipment service requirements. Cyberthreat" means any circumstance or event with the potential to adversely impact the Products via unauthorized or unlawful access, damage and/or destruction, disclosure of information, modification, corruption or alteration of information, and/or denial of service rendering the Products unavailable or inoperable. "EoS" means End of Support, the date Seller notifies Purchaser that the service parts and any other services for the Products will no longer be available. "Insignificant" means a categorization of a Vulnerability the exploitation of which, taking into account the individual Products attributes and/or the respective operating environment, is not reasonably expected and/or would not result in a foreseeable impairment of the Products' secure operation or provide access to personal information. "IT Security" means safeguarding the uninterrupted operation of the Products against interference caused by exploited Vulnerabilities, as well as the availability, confidentiality and integrity of data and information created, stored, and/or transmitted by the Products. "Patch(es)" means a Products and/or operating system (OS) update that addresses security vulnerabilities within the Products. "Vulnerability" means a weakness in the Products that could be exploited by a Cyberthreat and are assigned a significance level in accordance with FDA Post-Market Guidance for Cybersecurity of Medical Devices.

Seller and its affiliates are authorized to access, maintain, repair, calibrate, update or patch the Applicable Equipment that is the object of the SRS Connection or provide remote training in every case through the SRS Connection and use any Technical Data collected via the SRS Connection for the aforementioned purposes. If the Applicable Equipment hereunder is covered by a warranty period or extended service plan, then Seller, its affiliates and other companies engaged by Seller are also authorized to carry out through the SRS Connection additional system monitoring services supported by the covered Applicable Equipment.

b. Access to Data and Use of Data. Purchaser hereby irrevocably permits Seller and its affiliates to use for their own business, product surveillance, research or development purposes (e.g. determine trends of usage products and services, improvement of products, services and software), for facilitating and advising on continued and sustained use of products and services, substantiation of aggregated product and services marketing claims and for benchmarking purposes, without restrictions in terms of time, transferability, replication, location or content: (i) Technical Data that is collected via the SRS Connection; and (ii) Smart Technical Data that is collected via the SRS Connection from the Applicable Equipment.

c. Purchaser Obligations for SRS Connection. (i) Purchaser shall permit the SRS Connection to be established by connecting the Applicable Equipment either directly or through a gateway or networked computer at Purchaser's own expense to a secured telecommunications link via a broadband connection and Purchaser shall bear the cost of any technical requirements for any such connection that is not a part of the Applicable Equipment (e.g. establishing a broadband connection); (ii) Purchaser shall support Seller in protecting against Cyberthreats by implementing and continuously maintaining a holistic, state-of-the-art security concept protecting Purchaser's IT infrastructure; (iii) Purchaser shall not connect any Applicable Equipment to the SRS Connection that does not comply with state-of-the-art security policies or is otherwise approved by Seller; (iv) Purchaser shall not use the SRS Connection in a way that impairs or disrupts the integrity of the SRS Connection or Seller's IT infrastructure; and (v) Purchaser shall not transmit any data containing viruses, Trojan horses or other programs that may damage or impair the SRS Connection or Seller's IT infrastructure.

d. Purchaser's Cybersecurity Obligations. In order to protect the Products against Cyberthreats, Purchaser shall implement and continuously maintain a holistic, state-of-the-art security program for its IT infrastructure, including regular network scanning, provided however, that:

(i) network scanning or penetration testing shall not be performed during clinical use of the Products and should optionally be scheduled, with Seller assistance, during downtime;

(ii) the system configuration and/or IT Security controls of the Products as stated in the MDS2 and/or Security Whitepaper provided or made available by Seller at, or prior to, the time of purchase must not be modified;

(iii) if during the deployment of the Products, Vulnerabilities are identified by Purchaser, Purchaser shall align with Seller regarding the severity of the Vulnerabilities taking into account the individual Products attributes and intended operating environment and shall not refuse acceptance of the Products, if the Vulnerability is classified as 'low' by Seller using the Common Vulnerability Scoring System ("CVSS"); and

(iv) Seller's initial response to Purchaser's inquiry on a Vulnerability will be within fifteen (15) days. Seller will evaluate all Vulnerabilities using CVSS and FDA's

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definition of "controlled" and "uncontrolled" Vulnerabilities and will make such evaluations available to Purchaser. Seller will periodically release Patches depending on the age of the device and the Products version. If Seller determines the Vulnerability to be critical and uncontrolled, Seller will communicate this determination to Purchaser within thirty (30) days and utilize commercially reasonable efforts to have a mitigation (workaround, patch, etc.) available within sixty (60) days of Seller's determination of an uncontrolled Vulnerability. Unless otherwise specified, no patches may be loaded by Purchaser onto the Products. In the event of a Vulnerability that is reasonably determined by Purchaser to constitute an emergency (meaning that the Products must be taken out of clinical use until the Vulnerability is remedied) needing an expedited response, Seller will collaborate with Purchaser to jointly determine the most prudent action necessary in light of the circumstances.

(v) Purchaser is responsible for preventing unauthorized access to the Products licensed to Purchaser, including but not limited to changing passwords and other protective settings from their default values to individual ones. The Products shall only be connected to an enterprise network or the internet if and to the extent such a connection is authorized by Seller in the instructions for use and only when appropriate security measures (e.g., firewalls, network Purchaser authentication and/or network segmentation) are in place.

(vi) USB-storage media and other removable storage devices shall only be connected to the Products if and to the extent such connection is authorized by Seller in the instructions for use and only when the risk of a malware infection of the Products is minimized through malware scanners or other appropriate means.

(vii) The Product(s) undergoes regular development to further improve its IT Security. Seller strongly recommends that Products updates be applied as soon as they are available and that the latest Products versions are used by Purchaser. The latter might include the purchase of upgrades of hardware and additional Products by Purchaser; provided however, updates to remedy uncontrolled Vulnerabilities and/or clinical performance based on the Products Specification will be provided without additional charge. Use of Products versions that are no longer supported, and failure to apply the latest updates/upgrades may increase Purchaser's exposure to Cyberthreats.

(viii) Purchaser shall notify Seller without delay in case of suspected or actual Cyberthreats or Vulnerabilities of the Products. Disclosure by Purchaser of such information to third parties during the immediately following sixty (60) day period requires prior written consent by Seller.

(ix) In the event that Purchaser resells an item of Applicable Equipment, it shall inform Seller in writing of the name and address of the new owner and shall impose upon that new owner a corresponding obligation in case of further resale. Purchaser is not granted any right to sell or assign its right to use the Applicable Equipment without first obtaining Seller's express written consent.

(x) If Seller provides a Patch via SRS or for download, Purchaser shall promptly install the Patch in accordance with the respective installation instructions given by Seller.

e. Seller Cybersecurity Obligations. In order to protect the Products against Cyberthreats, Seller shall implement and continuously maintain a holistic, state-of-the-art security program for its IT infrastructure, including regular network scanning. In the event that Seller becomes aware of a Vulnerability that Seller does not classify as Insignificant, it shall make available Patches until EoS, until the termination of this Agreement, or up to ten (10) years following the Products delivery, whichever occurs first, provided that Purchaser's Products version is the most recent or at least the penultimate version at the given time, except in the case of third-party Products where the respective Products provider does not have a Patch available, Seller will use commercially reasonable efforts to make a mitigation available for the Vulnerability within 120 days following Seller becoming aware of such Vulnerability. In the case of third-party Products, Seller will make the Patch available to Purchaser without undue delay after such Patches are made available by Seller's licensors and Seller performs the required testing and validating on the Products. Depending on the severity of the Vulnerability as determined by Seller (after consultation with Purchaser), Seller may elect to provide the Patch at the time and as part of upcoming routine updates. If the Applicable Equipment is connected to SRS and Purchaser enables remote distribution of the Patch via SRS, or if Patches are made available for download, the Patches shall be free of charge. However, if the Patch needs to be installed on site by Seller, Seller may charge Purchaser for the expenses (time and material) resulting from the installation. For the sake of clarity; (i) safety, uncontrolled Vulnerability and clinical performance Updates are mandatory and will be provided without additional charge to Purchaser regardless of contract status, and will be implemented by Seller regardless of who may otherwise be servicing the Products; and (ii) all other Updates are non-mandatory ("Refinement Updates") and are not performed unless requested by Purchaser and may be chargeable (e.g., travel, labor, and sometimes charges for parts) depending on Update.

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NOTWITHSTANDING THE FOREGOING, SELLER ASSUMES NO LIABILITY WHATSOEVER FOR DAMAGE TO THE EXTENT SUCH DAMAGE IS CAUSED BY THE FOLLOWING:

(i) Purchaser's intrusive IT Security testing;
(ii) unauthorized modification of the system configuration or IT Security controls of the Products;
(iii) the installation of Patches which are not authorized by Seller;
(iv) Purchaser delaying the self-installation of Patches made available by Seller via SRS or for download;
(v) Hacker attacks, cyberthreats or related preventative measures; or
(vi) Failure to perform and maintain adequate backups of Purchaser's data.

f. SRS Limited Warranty. Unless explicitly otherwise regulated the SRS Connection is provided "as is" and Seller does not provide Purchaser with any warranty or guarantee regarding the availability, performance, or quality of the SRS Connection. Seller will not provide an SRS Connection if: (i) the provision is prevented by any impediments arising out of national or international foreign trade or custom requirements or any embargoes or other sanctions; or (ii) there is a defect, malfunction, or other problem with the telecommunications network; or (iii) there is a defect, malfunction, insufficient configuration, or other problem with Purchaser`s infrastructure.

g. Update of Terms and Security Concept. Seller shall set up the technical and organizational process for the SRS Connection and IT infrastructure used by Seller for the establishment of the SRS Connection according to the Security Concept. Seller shall be entitled to modify and/or update the terms of this Schedule for the SRS Connection and/or the Security Concept to reflect technical progress, changes in law and the further development of its offerings. Such modifications and/or updates shall not jeopardize the quality and execution of the SRS Connection. Seller shall inform Purchaser of changes by giving Purchaser at least thirty (30) days prior written notice. Seller will provide Purchaser with access to the updated terms and conditions.

h. Certification of SRS. Seller's service organization shall maintain a certified information security management system for the purposes of the SRS Connection. In this regard, Seller shall be subject to regular external audits by independent third parties. The scope and details of the certification are determined in the current Security Concept.

i. SRS Connection Termination. Seller shall be entitled to suspend the SRS Connection with immediate effect if Purchaser is in breach of the terms contained herein or if Seller, acting reasonably, is of the opinion that the SRS Connection to one or more of Purchaser's Applicable Equipment contains a risk for the security and performance of the IT infrastructure used by Seller.

j. SRS Intellectual Property. Seller (and its licensors, where applicable) will retain all intellectual property rights relating to the Products, including improvements thereto, including any improvements derived from Technical Data or Smart Technical Data, as well as any suggestions, ideas, enhancement requests, feedback, recommendations or other information provided by Purchaser which are hereby assigned to Seller.

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# Software License Schedule
# to the Siemens Medical Solutions USA, Inc General Terms and Conditions

**1. DEFINITIONS:** The following definitions apply to this Schedule:

"**Agreement**" shall mean the attached (i) Quotation for Products and/or Services including the Terms and Conditions of Sale and applicable schedules; and/or (ii) Software License Agreement describing the software licensed herein and the specific system for which the license is issued.
"**Licensor**" shall mean Siemens Medical Solutions USA, Inc.
"**Licensee**" shall mean the end-user to whom Licensor provides Software or Documentation for its internal use under the Agreement.
"**Software**" shall mean the software described in the attached Agreement, including the following as contained therein: (i) software programs consisting of a series of statements or instructions to be used directly or indirectly in a programmable controller or computer to bring about a certain result and (ii) databases consisting of systemized collections of data to be used or referenced directly or indirectly by a programmed controller or computer. Notwithstanding the foregoing, "Software" does not include "firmware" as such term is conventionally understood. Diagnostic/Maintenance Software also is not included within the scope of the Software licensed under this Schedule, and is available only as a special option under a separate Diagnostic Materials License Agreement and may be subject to a separate licensing fee.
"**Documentation**" shall mean the documents and other supporting materials which are intended to support the use of an associated product, including (but not limited to) instructions, descriptions, flow charts, logic diagrams and listings of the Software, in text or graphic form, on machine readable or printed media.
"**Designated Unit**" shall mean a single control unit or computer identified on the first page of the Agreement, on which Software licensed hereunder may be used by Licensee.
**2. SCOPE:** The following terms and conditions shall apply to all Software and Documentation provided by Licensor to Licensee under the Agreement (whether included with other products listed in the Agreement or listed separately in the Agreement), together with any updates or revisions thereto which Licensor may provide to Licensee, and all copies thereof, except any Software and/or Documentation licensed directly by Licensor's supplier under a separate end-user license agreement accompanying the Software or the Documentation, in which case Licensee agrees to be bound by that license agreement as a condition to using the Software and/or Documentation. Except as expressly provided herein, and provided that in no event shall the warranties or other obligations of Licensor with respect to such Software or Documentation exceed those set forth in this Schedule, this Schedule shall be subject to the liability limitations and exclusions and other terms and conditions set forth in the Agreement. **ANY USE OF THE SOFTWARE, INCLUDING BUT NOT LIMITED TO USE ON THE DESIGNATED UNIT, WILL CONSTITUTE LICENSEE'S AGREEMENT TO THIS SOFTWARE LICENSE SCHEDULE (OR RATIFICATION OF ANY PREVIOUS CONSENT).**
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capability for which the Licensee will be charged. In addition, some updates may require Applications Training performed by Licensor's personnel that will be offered at Licensor's prevailing rates. Licensor retains the sole right to determine whether an update requires such training.

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# TRADE-IN EQUIPMENT REQUIREMENTS

**THE FOLLOWING APPLIES ONLY TO THE EXTENT THAT THE QUOTATION INCLUDES AN EQUIPMENT TRADE IN OR IF A TRADE-IN IS LATER ADDED TO THS QUOTATION VIA A CHANGE ORDER. THESE REQUIREMENTS ARE IN ADDITION TO ANY OTHER REFERENCED TERMS AND CONDITIONS OF THE QUOTATION AND SHALL REMAIN IN EFFECT REGARDLESS OF ANY CONTRARY LANGUAGE IN THE QUOTATION.**

This Quotation includes the trade-in equipment described herein and referenced by either the Project Number identified in the Quotation hereof (non-Ultrasound) or the Trade In Part Number (Ultrasound) as further described in the associated Trade Sheet which is incorporated herein by reference. Purchaser certifies that the description of the trade-in equipment as set forth on the Trade Sheet is a true and accurate representation of the equipment, and that the equipment is in good working condition unless otherwise noted on the Trade Sheet.

The trade-in equipment must be made available for removal no later than turnover of the new equipment. Purchaser must vacate the room of all items not listed on the Trade Sheet, or otherwise clearly identify all items listed on the Trade Sheet, prior to the start of the de-installation. If this is not done, Seller will have no liability for items which are subsequently removed or scrapped. If the de-installation or return of the trade-in equipment is delayed by Purchaser for reasons other than a force majeure event, or if upon inspection by Seller it is determined that the equipment does not meet the manufacturer's operating specifications, or if any items listed as included on the Trade Sheet are not made available at the time of de-installation, then trade-in value will be re-evaluated and any loss in value or additional costs incurred by Seller shall be deducted from the established trade-in value and the pricing set forth on this Quotation will be adjusted by change order. In the event that access to the non-ultrasound trade-in equipment is denied past 14 days from turnover, or access to ultrasound trade-in equipment is denied past 30 days from turnover, then Purchaser shall pay to Seller a rental fee in the amount 3.5% of the total trade-in value plus any additional value provided by an Elevate/Promotional program included in this quotation (no less than $1000) for each month, or part thereof, that access is denied. In addition, if the purchase and installation of the new equipment covered by this Quotation is not completed, then Seller shall invoice Purchaser for all costs and expenses incurred by Seller in connection with the de-installation and removal of the trade-n equipment, including but not limited to labor, materials, rigging out, and transportation, which costs shall be paid by Purchaser within thirty (30) days of the invoice date.

Purchaser further acknowledges and agrees that (i) the trade-in equipment will be free and clear of all liens and encumbrances including, but not limited to, unpaid leases and loans, and that upon request, it will execute a bill of sale or other documents reasonably satisfactory to Seller to transfer title and ownership of the equipment to Seller, (ii) it is Purchaser's sole responsibility to delete all protected health information and any other confidential information from the equipment prior to de-installation, without damaging or cannibalizing the equipment or otherwise affecting the operation of the equipment in accordance with its specifications, (iii) any radioactive sources and other hazardous materials are removed from the equipment (iv) equipment has been wiped down and decontaminated of any blood or other potentially infectious materials (v) the equipment, including all updates, upgrades, modifications, enhancements, revisions, software, S/W disks and manuals, shall be returned to Seller in good operating condition, reasonable wear and tear excepted, and (vi) to the extent not prohibited by applicable law, Purchaser shall indemnify and hold Seller harmless from and against any and all claims, demands, causes of action, damages, liability, costs and expenses (including reasonable attorney's fees) resulting or arising from Purchaser's failure to comply with item (i) above.

FOR MR SYSTEMS: Cryogen levels must be least 65% upon time of de-installation.
FOR MOBILE SYSTEMS: System must be road worthy, and a state issued title transferring ownership to Seller (or Designee) must be received prior to the removal of the mobile system.
FOR MODALITY TRADE SYSTEMS (non-ultrasound): The trade-in equipment must be available for inspection within two weeks of the scheduled de-installation date. In addition, Purchaser must provide a clear path for the removal of the trade-in equipment and on the date of de-installation after final inspection and test by the Seller (or Designee) has occurred, the Purchaser must supply licensed tradespeople to disconnect the power and plumbing (including draining and removing and disposing of any hazardous materials including, but not limited to glycol from the chiller and oil from the transformer and radioactive sources, as examples.) Any additional costs due to the need to use a larger rig (other than a standard 80 ton rig), as well as any construction activities, street closings, permits, etc., required to de-install/remove the equipment are out-of-scope costs and will be the responsibility of Purchaser. FOR MI SYSTEMS: It is the Purchaser's sole responsibility to (i) ensure that all radioactive sources and identifying labels are removed from the trade in equipment prior to de-installation; and (ii) for arranging and covering any associated costs and scheduling of service companies required to complete such work.
FOR ULTRASOUND SYSTEMS – Purchaser may provide transducers with the ultrasound unit being traded in, but will not receive additional credit for such transducers.

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# MR Warranty Information

| **Product** (New Systems and "ECO" Refurbished Systems Only) | **Period of Warranty**[1] | **Coverage**[2, 4] | **Special Conditions** |
|---|---|---|---|
| MR Systems | 12 months | Full Warranty (wear/failure) parts and labor, including key components (not including consumables)<br>PCP: 8:30 am to 5:00 pm.<br>Typical response time: next day | MAGNETOM Sempra, Free.MAX, and Free.STAR require Smart Remote Services (SRS) Connection prior to system installation. |
| FIT Upgrades: MAGNETOM Avanto/Skyra Fit, BioMatrix, MAGNETOM_Sola/Vida_Fit | 12 months | Full Warranty (wear/failure) parts and labor, including key components (not including consumables)<br>PCP: 8:30 am to 5:00 pm.<br>Typical response time: next day | Fit Upgrade warranty excludes Magnet, Magnet Refrigeration System (CryoCare), Liquid Helium Refills and Gradient Coil (if the Gradient Coil is not replaced with the Fit upgrade). |

| **Post System Warranty for T&M Spare Parts**[3] | | | |
|---|---|---|---|
| **Spare Parts (excluding key components)** | **Period of Warranty** | **Coverage**[4] | **Special Conditions** |
| Consumables | Not covered | | |
| Spare parts | 6 months | Full credit (100%) wear/failure parts only. | |
| **Key Components** | **Period of Warranty** | **Coverage**[4] | **Special Conditions** |
| Magnet | 12 months | Parts only | |

1. Period of Warranty commences from the date of first use or completion of installation, whichever occurs first. In the event the completion of installation is delayed for reasons beyond Siemens' control, the stated warranty period shall commence 60 days after delivery of equipment.
2. If a part is replaced during the 12-month system warranty, that part will be covered. However, the replaced part will not carry a separate warranty.
3. Replacement spare parts warranty commences from the date of Siemens' invoice.
4. If the cause of failure on a returned part is determined to be from damage or negligence, the warranty is voided.

**Note for Federal Government Customers Only**: No warranty extended by Contractor shall apply to any products which have been damaged by fire, accident, misuse, abuse, negligence, improper application or alteration or by a force majeure occurrence or by the Customer's failure to operate the products in accordance with the manufacturer's instructions or to maintain the recommended operating environment and line conditions; which are defective due to unauthorized attempts to repair, relocate, maintain, service, add to or modify the products by the Customer or any third party or due to the attachment and/or use of non-Contractor supplied parts, equipment or software without Contractor's prior written approval; which failed due to causes from within non-Contractor supplied equipment, parts or software including, but not limited to, problems with the Customer's network; or which have been damaged from the use of operating supplies or consumable parts not approved by Contractor. In addition,

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there is no warranty coverage for any transducer or probe failure due to events such as cracking from high impact drops, cable rupture from rolling equipment over the cable, delamination from cleaning with inappropriate solutions, or TEE bite marks.

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# Detailed Technical Specifications

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## RS MAGNETOM Sola - System

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| | |
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| **14483533**<br>**RS MAGNETOM Sola - System** | MAGNETOM Sola - the first 1.5T BioMatrix system - leverages the intelligent combination of Tim 4G and the Siemens unique BioMatrix technology to be ready to embrace the unique set of challenges that each and every patient brings to the MRI exam.<br>System Design<br>- Short and open appearance (157 cm total system length cover-to-cover and 70 cm Open Bore Design) to reduce patient anxiety and claustrophobia<br>- Whole-body superconductive Zero Helium Boil-Off 1.5T magnet<br>- Weight-optimized magnet technology based on high performance 3T and 7T magnet design<br>- Actively Shielded water-cooled Siemens gradient system for maximum performance<br><br>Evolving from Total imaging matrix, MAGNETOM Sola comprises a new technology that addresses the intrinsic biovariability in humans - BioMatrix Technology.<br><br>Tim 4G (Total imaging matrix in the 4th generation) for excellent image quality and speed<br>- Siemens unique DirectRX technology enabling all digital-in/digital-out design<br>- Dual-Density Signal Transfer Technology<br><br>Push-button exams with GO technologies<br>Select&GO<br>DotGO/ myExam Companion<br>Recon&GO<br>MR View&GO<br><br>Tim Application Suite allowing excellent head-to-toe imaging for<br>- Neuro<br>- Angio<br>- Cardiac<br>- Body<br>- Onco<br>- Breast<br>- Ortho<br>- Pediatric<br>- Scientific<br><br>Further included<br>- High performance host computer and measurement and reconstruction system<br>- Patient communication including headphones<br>- Turbo Suite Essential<br>- syngo MR software including<br>- 1D/2D PACE<br>- BLADE<br>- Phoenix<br>- Inline Diffusion<br>- MDDW (Multiple Direction Diffusion Weighting)<br>- CISS<br>- DESS<br>- TGSE<br>- Offline Composing |

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| | MAGNETOM Sola - the first 1.5T BioMatrix system - leverages the intelligent combination of Tim 4G and the Siemens unique BioMatrix technology to be ready to embrace the unique set of challenges that each and every patient brings to the MRI exam.<br><br>The system includes:<br><br>**BioMatrix Technology**<br>In order to meet the requirements of the changing healthcare market, Tim® is now further enhanced with the ability to address patient biovariablity: Evolving from Total imaging matrix, BioMatrix® technology addresses the intrinsic biovariability in humans.<br><br>BioMatrix can anticipate challenges in MR examinations, for example, the limited ability to hold one's breath, to manage growing patient populations and increasing exam complexity in MRI.<br><br>BioMatrix can adapt to all patients and their anatomic individuality, even the critical ones, to make MRI more predictable and consistent for all patients, even critical ones. BioMatrix can accelerate the workflow, without compromising quality of care by assisting interactions between the patient and the user, to improve MRI cost-effectiveness and patient outcomes.<br><br>BioMatrix anticipates, adapts and accelerates to embrace human nature.<br><br>**Tim 4G**<br>Tim 4G provides excellent image quality and speed in MRI combined with increased patient comfort and optimized workflow efficiency. Only one patient setup, no repositioning, no changing of coils. Ultra-light-weighted coils with high density of coil elements for maximized patient comfort and increased SNR. Feet-first positioning reduces claustrophobia.<br>Tim 4G with its 4G flexibility, 4G accuracy and 4G speed brings image quality and acquisition speed to a new level.<br><br>**Magnet:**<br>- Short 145 cm long (157 cm with covers), whole-body superconductive 1.5T magnet with active shielding (AS) technology with counter coils<br>- External Interference Shielding (E.I.S.)<br>- Excellent homogeneity enabled magnet design which allows for a cylindrically optimized homogeneity volume resulting in higher image quality (50 × 50 × 45 cm³ DEV, typ. 2,8 ppm based on the 24-plane plot method)<br>- Temperature sensors with real time correction algorithm for unmatched long-term stability at 70 cm<br>- The magnet has a typical Helium boil-off rate of 0 l/yr during typical, undisturbed clinical operation depending on the sequences used and examination time, and provided the system is serviced in regular intervals.<br>- It has an integrated magnet cooling system.<br>- The combination of standard active shim and passive shim allows for maximized magnetic field homogeneity and consistent high image quality for a wide range of applications<br>- Integrated Eco-Power technology to save around 30% of energy during standby of the system.<br><br>**Gradient system:**<br>- Actively shielded water-cooled world-class gradient system<br>- All axes force compensated for lowest vibrations and acoustic performance<br><br>**DirectRF - RF Transmit/Receive System:** |

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| | - Fully integrated Transmit- and Receive path in the magnet housing including extremely compact water-cooled solid state amplifier with 26.1 kW peak power<br>- High dynamic range<br>- Immediate feedback loop for real-time sequence adaptation<br>- Integrated no tune transmit/receive Body Coil<br>- The revolutionary Tim 4G technology allows connecting 204 channels (coil elements) simultaneously enabling higher SNR and iPAT in all directions. No repositioning of patients is needed even for large Field of View examinations. Dual-Density Signal Transfer enables ultra-high density coil design by integrating key RF components into the local coil.<br><br>Select&GO<br>The Select&GO interface enables fast and easy single-touch patient positioning. Correct positioning saves unnecessary wasted time for repositioning and additional adjustments, therefore shortening the total room time.<br>- The ergonomically designed Select&GO touch panels are integrated into the front cover on each side of the patient tunnel for controlling table movement, guidance for patient setup and comfort features. They are well illuminated for easy visual recognition.<br>- Automated table move to upmost position, to center position or Home position facilitate smooth patient preparation and will reduce table time<br>- Variable (6 levels) ventilation and lighting inside the magnet bore or volume adjustments are possible for increased patient comfort The Select&GO touch panels provide on board guidance for patient set up where it's needed - directly at the scanner. Information such as patient name or exam type or required patient position, guidance for ECG set up and immediate visualization of physiological curves will be provided for convenient operation.<br>- Almost all table control functions, including ventilation and illumination of the magnet bore, can be also controlled from the operator console for convenient operation.<br><br>DotGO (≤ SW *syngo* MR XA31)<br>Go for consistent results, efficiently with Dot Engines.<br>Dot offers a customizable framework for patient personalization, user guidance and exam automation. Optimized scan strategies are provided and can be selected based on patient condition, which allow for high quality exams even when conditions change.<br>Integrated decision points allow the user to easily add or remove one or a group of protocols with one click. Step by step image and text guidance guides novice users even through the most complicated exams. Exam automation allows optimal timing for breathing, scanning, planning or contrast arrival. Dot can be easily customized to follow the individual standards of care.<br>Dot is personalized, guided and automated and designed to improve workflow efficiency and image consistency.<br><br>Dot Cockpit<br>The central tool to continuously build knowledge into standardized exams strategies and to make those available for every user in the MRI department. Dot Cockpit is the new starting point for every exam.<br><br>**myExam Companion (≥ SW *syngo* MR XA51)**<br>myExam Companion stands for built-in expertise that works with the user to achieve consistent, reproducible results for all patients. It offers patient personalization, user guidance and process automation via myExam Assists and intuitive protocol management via myExam Cockpit. myExam Companion helps users efficiently achieve high-quality results – regardless of their experience level, the patient, or throughput.<br><br>*myExam Autopilot* |

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| | myExam Autopilot helps users to automate intelligently. It enables less trained staff to scan with just a few simple clicks. By using automation and AI, it takes away burdensome routine tasks for all technologists.<br><br>*myExam Assists*<br>myExam Assist provides guided and flexible workflows. Optimized scan strategies are provided and can be selected based on patient condition, which allows for reproducible, high image quality and time efficient exams. The built-in flexibility allows users to change predefined strategies at any time during the workflow, and to personalize to the individual patient's condition and clinical need. Integrated decision points allow the user to easily add or remove one or a group of protocols with one click. Step by step image and text guidance guides novice users even through the most complicated exams. Exam automation allows optimal timing for breathing, scanning, planning or contrast arrival. The different myExam Assists can be easily customized to follow the individual standards of care.<br><br>*myExam Cockpit*<br>myExam Cockpit allows users to customize intuitively. It provides a central workspace for protocol management. Users can set up and maintain protocols, build knowledge into standardized exams, and make those continuously available for every user in the MRI department.<br><br>Recon&GO<br>The Recon&GO technology encompasses a wide range of in-line functionalities automizing reconstruction and post-processing steps to provide ready-to-read results for the radiologist. Examples are Inline ADC calculation, inline subtraction of dynamic contrast-enhanced series, up to Inline Launch of advanced post-processing applications.<br><br>MR View&GO<br>MR View&GO is MAGNETOM Sola's all-in-one viewing and reading solution for fast and intuitive quality check and result distribution. It receives the images directly as they come on the scanner, giving the user a clear overview of the quality of images scanned, without being distracted by constant context switches. Once the images have been checked for acceptable quality, they can easily be sent to the PACS with minimal user interaction.<br>Beyond that, MR View&GO offers the additional advantage to perform extended post-processing, directly at the scanner. In-line launching of post-processing applications makes it possible to fully automate the evaluation of, for example, perfusion maps, permeability or cardiac function, all without additional user interaction. This makes it possible to save radiologist time by delivering quantitative, ready-to-read results, directly to the PACS.<br><br>**Tim Application Suite**<br>The Tim Application Suite offers a complete range of clinically optimized examinations for all regions. The Tim Application Suite -allowing excellent head-to-toe imaging - is provided standard on MAGNETOM Sola.<br><br>- Neuro Suite<br>- Angio Suite<br>- Cardiac Suite<br>- Body Suite<br>- Onco Suite<br>- Breast Suite<br>- Ortho Suite<br>- Pediatric Suite |

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| | - Scientific Suite<br><br>**Neuro Suite**<br>Comprehensive head and spine examinations can be performed with dedicated programs. High-resolution pulse sequences and motion-insensitive pulse sequences for patients which have difficulties to lay still are provided. The Neuro Suite also includes pulse sequences for diffusion imaging, perfusion imaging, and fMRI.<br>It includes for example:<br>- Fast 2D imaging with SE, TSE, GRE pulse sequences for high-resolution imaging<br>- BLADE for motion-insensitive TSE imaging<br>- EPI pulse sequences and protocols for diffusion imaging, perfusion imaging, and fMRI for advanced neuro applications. Diffusion-weighted imaging is possible with up to 16 b-values in the orthogonal directions. For reduced distortions and homogeneous signal intensity even in the presence of challenging susceptibility interfaces and at station boundaries, SliceAdjust (slice-by-slice adjustments) can be selected.<br>- 3D TOF for non-contrast-enhanced angiography<br>- 3D isotropic resolution volume imaging using T1 3D MPRAGE / 3D<br>- FLASH, SPACE DarkFluid, T1 SPACE and T2 SPACE pulse sequences<br>- High-resolution T2 SPACE pulse sequence optimized for inner ear examinations<br>- Double Inversion Recovery 3D pulse sequences (DIR SPACE) with two user-selectable inversion pulses for the simultaneous suppression of e.g. cerebro-spinal fluid and white matter<br>- MP2RAGE (Magnetization Prepared 2 Rapid Acquisition Gradient Echoes) provides homogeneous tissue contrast for segmentation and applications such as voxel-based morphometry. In combination with MapIt*, it also provides T1 mapping functionality.<br>- Whole-spine pulse sequences in multiple steps with software-controlled table movement<br>- 2D and 3D MEDIC pulse sequences for T2-weighted imaging, particularly for C-spine examinations in axial orientation where reproducibility is difficult due to CSF pulsations and blood flow artifacts<br>- RESOLVE (Readout Segmentation Of Long Variable Echo-trains) delivers high-resolution, low-distortion diffusion-weighted imaging (DWI) for accurate depiction of lesions.<br>- BioMatrix's CoilShim helps to reduce patient induced strongly localized B0 inhomogeneities as may arise, e.g., in the neck region.<br>- 3D Myelo with 3D HASTE for anatomical details<br>- 3D CISS (Constructive Interference in Steady State) for excellent<br>- visualization of fine structures such as cranial nerves. High-resolution imaging of inner ear<br>- TGSE sequence used primarily for T2-weighted imaging for shorter measurement time, decreased RF power deposition, and high resolution imaging of the brain<br>- AutoAlign Head LS providing a fast, easy, standardized, and reproducible patient scanning supporting reading by delivering a higher and more standardized image quality.<br><br>**Angio Suite**<br>Excellent MR Angiography can be performed to visualize arteries and veins with or without contrast agent.<br>- 3D MRA pulse sequences for carotid arteries, abdominal arteries, and peripheral arteries, with short TR and TE. The strong gradients make it possible to separate the arterial phase from the venous phase.<br>- Dynamic MRA for 3D imaging over time Signal from Respiratory Sensor can be selected to actively trigger MR image acquisition, e.g. with NATIVE*.<br><br>*Contrast-enhanced MRA* |

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| | 3D contrast-enhanced MRA pulse sequences for dynamic carotid, abdominal, and peripheral arteries, shortest TR and TE. The strong gradients make it possible to separate the arterial phase from the venous phase<br>- TestBolus workflow for optimal bolus timing and excellent image quality<br>- CareBolus functionality for accurate determination of the bolus arrival time and the “Stop and Continue” of the 3D ce-MRA pulse sequence after the 2D bolus control scan<br>- Dynamic ce-MRA for 3D imaging over time<br><br>*Non-contrast-MRA and venography*<br>- Time-of-Flight (ToF) pulse sequences for MRA for the Circle of Willis, carotids and neck vessels; can be adapted for venography, and Breath-hold protocols for abdominal vessels<br>- Triggered 2D ToF sequences for non-contrast-MRA in the legs<br>- MR venography and arteriography with Phase-Contrast<br>- TONE (Tilted optimized non-saturating excitation) techniques for improved<br>- Contrast-to-Noise Ratio (CNR)<br><br>*Image processing tools*<br>- Inline MIP for immediate results<br>- Inline subtraction of pre- and post-contrast measurements<br>- Inline standard deviation maps of Phase-Contrast measurements for delineation of arteries and veins<br><br>**Cardiac Suite**<br>The cardiac suite covers comprehensive 2D routine cardiac applications, ranging from morphology and ventricular function to tissue characterization. It moreover features BEAT 2D in conjunction with iPAT, T-PAT and e-PAT techniques.<br><br>*Cardiac views*<br>- Fast acquisition of the basic cardiac orientations for further examination planning<br>- Cardiac scouting provides users with a step-by-step procedure for the visualization and planning of typical cardiac views, e.g. based on TrueFISP or Dark Blood TurboFLASH: short axis, 4- chamber and 2-chamber views.<br>*BEAT*<br>- Unique tool for fast and easy cardiovascular MR imaging<br>- E.g. 1 click change from FLASH to TrueFISP for easy contrast optimization<br>- 1-click to switch arrhythmia rejection on / off<br>- 1-click change from Cartesian to radial sampling to increase effective image resolution (e.g. in pediatric patients) and avoid folding artifacts in large patients<br>*Visualization of structural cardiovascular pathologies with CMRBEAT*<br>- Breath-hold and free breathing techniques for strong contrast between the blood and vascular structures. Dark Blood TSE and HASTE imaging are available for the structural evaluation of the cardiothoracic anatomy, including vessels or heart valves. Cine techniques (FLASH & TrueFISP) for high-resolution valve evaluation.<br>- Multiple contrasts such as T1- and T2-weighted imaging for use in diseases such as myocarditis (inflammation / hyperaemia), ARVD (fibrous-fatty degeneration) or acute myocardial infarction (edema)<br>- Dark-blood TSE with motion compensation for high-quality vessel wall imaging in small or large vessels<br>*Tools for rapid evaluation of left or right ventricular function*<br>- Acquisition of a stack of short-axis slices (standard: advanced segmented TrueFISP) |

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| | - Automatic adjustment of the acquisition window to the current heart rate<br>- Use of the Inline ECG for graphical ECG triggering setup<br>- Retrospective gating with cine sequences (TrueFISP, FLASH)<br>- Pulse sequences for whole-heart coverage<br>- Integration of Compressed Sensing Cardiac Cine (optional) for highest temporal and spatial resolution (segmented and real-time pulse sequences)<br>- Real-time imaging in case the patient is not able to hold his breath<br><br>*4D imaging and tissue characterization with BEAT; pulse sequences for high-contrast and high-resolution tissue characterization*<br>- Pulse sequences for stress and rest imaging with TurboFLASH contrast support the acquisition of multiple slices with high-resolution and arbitrarily adjustable slice orientation for each slice T-PAT and e-PAT with mSENSE and GRAPPA for advanced parallel imaging provides fast high-resolution dynamic imaging<br>- Segmented IR TrueFISP / FLASH with TI scout for optimization of tissue contrast<br>- Advanced tissue characterization with 2D phase-sensitive IR (PSIR) pulse sequences with TrueFISP and FLASH contrast. Magnitude and phase-sensitive images with one acquisition.<br>- Simple: no adjustment of inversion time (TI) necessary with PSIR technique<br>- Motion correction/averaging of multiple measurements with iPAT or tPAT accelerated single-shot TrueFISP or GRE images of the heart, for free-breathing acquisition.<br><br>Physiological Measurement Unit (PMU) - Wireless Physio Control<br>- Synchronizes the measurement with the physiological cycles (triggering to minimize motion artifacts caused by cardiac and respiratory movements)<br>- Wireless Sensors<br>- Wireless Vector ECG / respiration for physiologically synchronized imaging, rechargeable battery-powered - for optimized patient handling<br>- Physiological Signals Display<br>- ECG (3 channels)<br>- Respiration<br>- External Trigger Input Display<br><br>ECG Triggering:<br>- Acquisition of multiple slices, e.g. of the heart, at different phases of the cardiac cycle<br>- Excellent image quality by synchronizing data acquisition with cardiac motion<br>- Respiratory Triggering: Excellent image quality by synchronizing data acquisition with the respiratory motion<br>- External Triggering: Interface for trigger input from external sources (e.g. Patient Monitoring System) inside the examination room<br>- Interface for trigger input from external sources (e.g. pulse generator, trigger sources for fMRI) outside the examination room<br>- Optical trigger output for fMRI<br>- Retrospective gating for ECG, peripheral pulse, and external trigger input<br><br>**Breast Suite**<br>MR imaging provides excellent tissue contrast that may be useful in the evaluation of the breasts. Extremely high spatial and temporal resolution can be achieved in very short acquisition times by using iPAT with GRAPPA and CAIPIRINHA. |

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| | Customized pulse sequences (e.g. with fat saturation or water excitation or silicone excitation), as well as flexible multiplanar visualization allow a fast, simple and reproducible evaluation of MR breast examinations.<br>This package includes:<br>- High-resolution 2D pulse sequences for morphology evaluation<br>- High-resolution 3D pulse sequences covering both breasts simultaneously<br>- Pulse sequences to support interventions (fine needle and vacuum biopsies, wire localization)<br>- Pulse sequences for evaluating breasts with silicone implants<br>- Automatic and manual frequency adjustment, taking into account the silicone signal<br>- Detection of the silicone signal either to suppress the silicone signal, if the surrounding tissue is to be evaluated, or to suppress the tissue signal in order to detect an implant leakage<br>- SPAIR - robust fat sat (robust fat suppression using an adiabatic frequency selective inversion pulse)<br>- DIXON - 2-point Dixon with 3D VIBE, the following contrasts can be obtained: in-phase, opposed phase, fat and water image iPAT with GRAPPA for maximum resolution in short time<br>- iPAT² with CAIPIRINHA that allows state-of-the-art sagittal breast imaging and further improvement of the temporal resolution in dynamic scans while maintaining spatial resolution<br>- Inline subtraction and MIP display<br>- Offline subtraction, MPR and MIP display<br>- REVEAL: diffusion imaging for breast exams. In pulse sequences with multiple b-values individual numbers of averages may be specified per b-value.<br>- RESOLVE: Diffusion-weighted, readout-segmented (multi shot) EPI sequence for high-resolution susceptibility-insensitive DWI of the breast<br>- RADIANT: Ultrasound-like reconstruction around the nipple<br><br>The Breast Suite also includes:<br>***syngo* VIEWS (Volume Imaging with Enhanced Water Signal)**<br>- Bilateral - both breasts are examined simultaneously<br>- Axial - the milk ducts are directly displayed<br>- fat-saturated or water-excited - fat complicates clinical evaluation and is suppressed<br>- Near-isotropic 3D measurement - the same voxel size in all three directions for reconstruction in any slice direction<br>- Submillimeter voxel - highest resolution for precise evaluation<br><br>**Body Suite**<br>The Body Suite is dedicated to clinical body applications. Ultra-fast high-resolution 2D and 3D pulse sequences are provided for abdomen, pelvis, MR Colonography, MRCP, dynamic kidney, and MR Urography applications.<br>2D PACE technique makes body imaging easy, allowing for multi-breath-hold examinations as well as free breathing during the scans.<br>Motion artifacts are greatly reduced with 2D PACE Inline technology.<br>This package includes:<br>- Free breathing 2D PACE applications with 2D HASTE (RESTORE) and 2D / 3D TSE- it is possible to use a phase navigator, which measures respiratory induced off-resonance effects. The positioning can be done automatically for most pulse sequences.<br>- Optimized fast single shot HASTE pulse sequences and high-resolution<br>- 3D pulse sequences based on SPACE and TSE for MRCP and MR Urography examinations<br>- REVEAL: diffusion imaging for abdomen and whole body exams. |

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| | - For reduced distortions and homogeneous signal intensity even in the presence of challenging susceptibility interfaces and at station boundaries, SliceAdjust (slice-by-slice adjustments) can be selected.<br>- In pulse sequences with multiple b-values, individual numbers of averages may be specified per b-value. Inline calculation of ADC maps, exponential ADC maps and inverted b-value images can be selected. Inline calculation (extrapolation) of high b-values (up to b=5000 s/mm²) is possible.<br>- Signal from Respiratory Sensor can be selected to actively trigger MR image acquisition.<br><br>***ABDOMEN:***<br>*2D:*<br>- T1 (FLASH) breath-hold scans with and without FatSat (SPAIR, Quick FatSat, in- / opp-phase)<br>- T2 (HASTE, TSE / BLADE, EPI) breath-hold scans with and without FatSat (SPAIR, FatSat, STIR)<br>- T1 (TFL) triggered scans (2D PACE free breathing) in- / opp-phase T2 (HASTE, TSE / BLADE, EPI) triggered scans (2D PACE free breathing) with and without FatSat (SPAIR, FatSat, STIR) as well as HASTE- and TSE-multi-echo<br>- Optimized fast single-shot HASTE pulse sequences and high-resolution pulse sequences based on SPACE and TSE for MRCP and MR urography examinations<br>3D:<br>- Dixon (VIBE 2pt-Dixon) breath-hold scans, following contrasts can be obtained: in-phase, opposed phase, fat and water image<br>- Dynamic (VIBE and Quick-FatSat) pulse sequences with Inline motion correction for visualization of focal lesions with high spatial and temporal resolution<br>- Colonography dark lumen with T1-weighted VIBE<br>- REVEAL: Diffusion-weighted imaging of the prostate, cervix, rectum and other organs with multiple b-values. Inline calculation of<br>- ADC maps, exponential ADC maps and inverted b-value images can be selected. Inline calculation (extrapolation) of high b-values (up to b=5000 s/mm2) is possible.<br>***PELVIS:***<br>- High-resolution T1, T2 pelvic imaging<br>- Isotropic T2 SPACE 3D pulse sequences<br>- Dynamic volume examinations with 3D VIBE<br>***THORAX:***<br>- High-resolution T1, T2 thorax imaging<br>- Motion-insensitive pulse sequences (BLADE, HASTE)<br>- TrueFISP pulse sequences for imaging of respiratory mechanics<br>- Dynamic imaging with TWIST (optional), TWIST-VIBE (optional)<br>- Non-contrast-enhanced vessel visualization with SPACE pulse sequences<br>- STIR pulse sequences for the evaluation of lymph nodes<br>- Diffusion-weighted imaging with REVEAL<br><br>**Onco Suite**<br>MR imaging provides excellent soft-tissue differentiation, multiplanar capabilities, and the possibility of selectively suppressing specific tissue, e.g. fat or water. The Onco Suite features a collection of pulse sequences and evaluation tools that may be used for a detailed assessment of a variety of oncological conditions.<br><br>General features: |

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| | - STIR TSE, HASTE, and FLASH in-phase and opposed-phase pulse sequences for highly sensitive visualization of focal lesions<br>- Dynamic imaging pulse sequences for assessment of the kinetic behavior of tissue<br>- Quantitative evaluation and fast analysis of the data with colorized Wash-in, Wash-out, Time-To-Peak, Positive-Enhancement-Integral, MIP-time and combination maps with Inline technology<br>- Display and analysis of the temporal behavior in selected regions of interest with the included MeanCurve postprocessing application.<br>- This includes the capability of using additional datasets as a guide for defining regions of interest even faster and easier than before.<br>- REVEAL: Diffusion-weighted imaging with multiple b-values. In pulse sequences with multiple b-values, individual numbers of averages may be specified per b-value. Inline calculation of ADC maps, exponential ADC maps and inverted b-value images can be selected. Inline calculation (extrapolation) of high b-values (up to b = 5000 s / mm2) is possible. For reduced distortions and homogeneous signal intensity even in the presence of challenging susceptibility interfaces and at station boundaries, SliceAdjust (slice-by-slice adjustments) can be selected.<br>- RESOLVE: high-resolution, low-distortion diffusion-weighted imaging (DWI). In pulse sequences with multiple b-values, individual numbers of averages may be specified per b-value. Inline calculation of ADC maps, exponential ADC maps and inverted b-value images can be selected. Inline calculation (extrapolation) of high b-values (up to b=5000 s / mm2) is possible.<br><br>Prostate:<br>- Dedicated prostate pulse sequences for a variety of clinical scenarios<br>- T1-weighted 3D VIBE pulse sequences with high temporal resolution (VIBE, TWIST (optional) and TWIST-VIBE (optional)) allow time course evaluation<br>- Prostate spectroscopy (3D CSI (optional) volume scan) with up to 8 sat bands (suppression of water and fat signal)<br><br>Whole-body imaging:<br>- TSE STIR pulse sequences for head-to-toe and head-to-pelvis imaging<br>- Dedicated pulse sequences for focus regions head, neck, thorax, abdomen and pelvis<br>- Diffusion-weighted imaging with REVEAL including SliceAdjust<br><br>**Ortho Suite**<br>Ortho Suite is a comprehensive collection of pulse sequences for joint and spine imaging.<br><br>This package includes:<br>- 2D TSE pulse sequences for PD, T1, and T2-weighted contrast with high in-plane resolution and thin slices<br>- 3D MEDIC, 3D TrueFISP pulse sequences with water excitation for T2-weighted imaging with high in-plane resolution and thin slices<br>- High-resolution 3D VIBE pulse sequences for MR Arthrography (knee, shoulder, and hip)<br>- 3D MEDIC, 3D TrueFISP, 3D VIBE pulse sequences with Water Excitation having high isotropic resolution optimized for 3D postprocessing<br>- T1 and PD SPACE 3D imaging with high isotropic resolution, optimized for post-processing Single-step, and multi-step pulse sequences<br>- Excellent fat suppression in off-center positions, e.g. in the shoulder due to high magnet homogeneity<br>- Dynamic TMJ pulse sequence (different joint positions) |

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| | - Multi Echo SE sequence with up to 32 echoes for T2 mapping<br>- High-resolution 3D DESS (Double Echo Steady State): T2 / T1- weighted imaging for excellent fluid-cartilage differentiation<br>- 2-point Dixon technique for fat and water separation - Turbo Spin Echo sequence<br>- WARP - 2D TSE sequence combining optimized high-bandwidth pulse sequences and View Angle Tilting (VAT), tailored to reduce susceptibility artifacts caused by orthopedic MR-conditional implants. This helps in evaluation of soft tissue in proximity of the implants. Available pulse sequences include T1- weighted, T2-weighted, proton density and STIR contrast.<br>- Advanced WARP enables the reduction of gross artifacts (i.e. through-plane artifacts) caused by large MR-Conditional* implants. It contains the 2D TSE based SEMAC technique and is especially useful in the case of hip and knee joint replacements.<br>- Available pulse sequences include T1-weighted, proton density and T2 TSE STIR contrast.<br><br>**Pediatric Suite**<br>Tissue relaxation times and examination conditions in pediatrics are very different compared to those of adults. The reasons for these differences range from developing tissues, body size and faster heart rates to non-compliance with breath-hold commands. Pulse sequences can be easily adapted for imaging infants.<br><br>**Scientific Suite**<br>The Scientific Suite supports scientific users by providing easy access to application-specific data for further processing and advanced image calculus.<br>- Support of USB Memory sticks<br>- Anonymization of patient data<br>- Easy creation of AVIs and screen snapshots to include in presentations or teaching videos<br>- Export of tables, statistics and signal time courses to communal exchange formats like e.g. tabulated text files (MeanCurve, Spectroscopy evaluation, DTI evaluation)<br>- Advanced image calculus including addition, subtraction, multiplication, and division of images<br><br>This *syngo* software version provides security settings to protect the scanner against known security threats.<br>- User management with authentication to prohibit unauthorized access<br>- Privileges to grant rights and define functionality based on user/role Hardened operating system and restricted network communication<br>- Whitelisting (Embedded Control) against manipulation of scanner software<br>- Security Delivery process to frequently distribute security updates Option to protect customer pulse sequences trees against unauthorized modifications<br>- Audit trail to log system and data access by the defined users and service<br>- Support of customers to implement their security policy including compliance with HIPAA (Health Insurance and Accountability Act)<br><br>The sequences, features and techniques for acquisition and reconstruction included in the Tim Application Suite are described in detail below.<br><br>**Sequences**<br>Spin Echo family of sequences:<br>- Spin Echo (SE) - Single, Double, and Multi Echo (up to 32 echoes); Inversion Recovery (IR)<br>- 2D / 3D Turbo Spin Echo (TSE) - Restore technique for shorter TR times while maintaining excellent T2 contrast; TurboIR: Inversion Recovery for STIR, DarkFluid, T1 and T2, TrueIR |

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| | - 2D TSE with multiple average - it is possible to acquire T2-weighted TSE images during shallow breathing, in a time efficient manner<br>- 2D / 3D HASTE (Half-Fourier Acquisition with Single-Shot Turbo<br>- Spin Echo) - Inversion Recovery for STIR and DarkFluid contrast<br>- SPACE for 3D imaging with high isotropic resolution with T1, T2, PD, and DarkFluid Contrast<br>- 2D Optimized high bandwidth TSE (T1, T2, and PD weighted and STIR) with WARP for the reduction of susceptibility artifacts caused by MR Conditional metal* implants.<br>Gradient Echo family of sequences:<br>- 2D / 3D FLASH (spoiled GRE) - dual echo for in- / opposed phase imaging 3D VIBE (Volume Interpolated Breath-hold Examination) - quick fat saturation; double echo for in-phase / opposed phase 3D imaging; DynaVIBE: Inline 3D elastic motion correction for multi-phase data sets of the abdomen; Inline Breast Evaluation<br>- 2D / 3D MEDIC (Multi Echo Data Image Combination) for high-resolution T2 weighted orthopedic imaging and excellent contrast<br>- 2D / 3D TurboFLASH - 3D MPRAGE; single shot T1 weighted imaging e.g. for abdominal imaging during free breathing<br>- 3D GRE for field mapping<br>- 2D / 3D FISP (Fast Imaging with Steady State Precession)<br>- 2D / 3D PSIF - PSIF Diffusion<br>- Echo Planar Imaging (EPI) - diffusion-weighted; single shot SE and FID e.g. for BOLD imaging and perfusion-weighted imaging; 2D / 3D Segmented EPI (SE and FID)<br>- RESOLVE (Readout Segmentation Of Long Variable Echo-trains) delivers high-resolution, low-distortion diffusion-weighted imaging (DWI) for accurate depiction of lesions.<br>- ce-MRA sequence with Inline subtraction and Inline MIP<br>- 2D / 3D Time-of-Flight (ToF) Angiography - single slab and multi slab; triggered and segmented<br>- 2D / 3D Phase Contrast Angiography<br>- BEAT Tool - TrueFISP segmented; 2D FLASH segmented; Magnetization-prepared TrueFISP (IR, SR, FS); IR TI scout; Retrogating<br><br>Standard Fat/Water Imaging<br>- Fat and Water Saturation. Additional frequency selective RF pulses used to suppress bright signal from fatty tissue. Two selectable modes: weak, strong<br>- Quick FatSat<br>- SPAIR: robust fat suppression for body imaging using a frequency selective inversion pulse<br>- Fat / Water Excitation. Spectral selective RF pulses for exclusive fat / water excitation<br>- Dixon technique for fat and water separation - available both based on VIBE (2 point Dixon)<br><br>Standard Techniques<br>- True Inversion Recovery to obtain strong T1-weighted contrast<br>- Dark Blood inversion recovery technique that nulls fluid blood signal<br>- Saturation Recovery for 2D TurboFLASH, gradient echo, and T1- weighted 3D TurboFLASH with short scan time (e.g. MPRAGE)<br>- Freely adjustable receiver bandwidth, permitting studies with increased signal-to-noise ratio<br>- Freely adjustable flip angle. Optimized RF pulses for image contrast enhancement and increased signal-to-noise ratio<br>- MTC (Magnetization Transfer Contrast). Off-resonance RF pulses to suppress signal from certain tissues, thus enhancing the contrast. Used e.g. in MRA |

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| | - Analysis Tools for addition, subtraction, division, multiplication, calculations of ADC maps and b-value images<br>- Image Filter<br>- 3D post-processing MPR, MIP, MinIP, VRT<br>- Data storage of images on CD / DVD with DICOM viewer (external CD/DVD burner required)<br>- Export of cine AVI files on external media<br>- Selectable centric elliptical phase reordering via the user interface<br>- Inversion Recovery to nullify the signal of fat, fluid or any other tissue<br>- Multiple Direction Diffusion Weighting (MDDW) - diffusion tensor imaging measurements can be done with multiple diffusion-weightings and up to 12 directions for generating data sets for diffusion tensor imaging.<br>- WARP - 2D TSE sequence combining optimized high-bandwidth protocols and View Angle Tilting (VAT), tailored to reduce susceptibility artifacts caused by orthopedic MR-Conditional* implants.<br>- Advanced WARP - 2D TSE based Slice Encoding for Metal Artifact Correction (SEMAC) technique for the reduction of through-plane distortions from large MR conditional* implants.<br><br>Standard techniques for Flow Artifact reductions<br>- LOTA (Long-Term Data Averaging) technique to reduce motion and flow artifacts<br>- Pre-saturation techniques using RF saturation pulses to suppress flow and motion artifacts<br>- Tracking SAT bands maintain constant saturation of venous and/or arterial blood flow e.g. for 2D/3D sequential MRA<br>- TONE (Tilted Optimized Non-saturating Excitation - variable excitation flip angle to compensate inflow saturation effects in 3D MRA - selectable on desired flow direction and speed<br>- GMR (Gradient Motion Rephasing). Sequences with additional bipolar gradient pulses, permitting effective reduction of flow artifacts<br><br>Standard Motion Correction<br>- BLADE - improves image quality by minimizing and correcting for the effects of motion during an MR sequence acquisition. e.g. head, spine, orthopedic imaging and the abdomen<br>- 1D PACE (Prospective Acquisition CorrEction) allows examination of patients with free breathing<br>- 2D PACE (Precise Motion Correction) detects and corrects respiratory motion e.g. of the heart or liver<br>- PSIR HeartFreeze (Phase-Sensitive Inversion Recovery) - Motion correction/averaging of multiple measurements with iPAT or tPAT accelerated single-shot TrueFISP or GRE images of the heart, for free-breathing acquisition<br><br>MAGNETOM Sola runs on *syngo* MR XA software that offers an acquisition workplace with a large 16:10 24” monitors, one keyboard and one mouse.<br>The MR acquisition workplace provides environments for scheduling, scanning and basic quality assurance as well as viewing, basic and advanced post-processing, and data handling (Export, Import, Transfer, Record to media). The acquisition workplace can host one MR View&GO for viewing, basic postprocessing, and data distribution and up to three post-processing applications in parallel.<br>For faster data transfer and reduced storage demand *syngo* MR XA uses the DICOM Enhanced MR Image format for its scanning result.<br>Features like Online Help, DICOM MPPS autocomplete, inline technologies, and scan@center additionally support the workflow. |

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| | **Patient Communication**<br>- The intercom system includes an ergonomically designed patient communication unit for desktop positioning on the *syngo* Acquisition Workplace and pneumatic headphones for the patient.<br>- It controls emergency table stop, volume control of speaker and headphones in the examination room, volume control of speaker in the control room, response to the patient's activation of the assistance-call button and provides a connection to an external audio system (external audio system is not included in the basic unit) for music playback.<br><br>**Computer System**<br>The PC-based computer system uses the intuitive *syngo* MR user interface and allows the usage of up to 3 advanced *syngo*.via applications at the scanner workplace.<br>High-performance host computer:<br>- Intel Xeon processor ≥ E5-1650 (6 core)<br>- Clock rate ≥ 3.5 GHz<br>- Main Memory (RAM) ≥ 64 GB<br>- SSD ≥ 480GB<br>- Electronic mouse<br>- One high-resolution 24” color LCD flatscreen monitors with 1920 x 1200 pixel display, integrated gamma correction for optimum display of radiographic grayscale images and automatic backlight control for long-term brightness stability.<br><br>**Installation**<br>- The relatively light-weight design of MAGNETOM Sola eliminates in most cases the need for structural building reinforcements and also facilitates installation in upper floors.<br>- The compact integrated design allows for short installation times and reduces the required space to less than 28 sqm (302 sq. ft.) for the entire installation. The minimum room height clearance is only 2.40 m (7' 10").<br>- MAGNETOM Sola allows siting of the system without a dedicated computer room - no additional cooling or floor requirements.<br>- MAGNETOM Sola combines state-of-the-art performance with peace of mind. High system availability is ensured by the expert - highly trained Siemens MR service engineers<br>- Your Siemens service contract (not included in the basic unit) offers a comprehensive range of benefits such as Uptime Remote Diagnostics for improved productivity and maximum uptime. |
| **14430263**<br>**MR General Engine**<br>**#BM** | syngo.MR General Engine extends Numaris/X by adding dedicated workflows and tools for routine and advanced reading of MR examinations.<br>A generic MR Basic workflow is provided, as well as specific MR Neurology, MR Prostate Reading, MR Breast Reading, and MR Cardio-Vascular workflows.<br>Main functionalities of *syngo*.MR General Engine:<br>- MR Basic workflow with Easy Reading mode for easy, fast, and intuitive MR reading, based on single-click and drag&drop interactions:<br>  - single-click interaction to navigate through the series<br>  - intelligent layout adaptation to compare series together<br>  - single-click fusion between different contrasts<br>- MR Cardio-Vascular Workflows: Cardiac Reading, Angio Single Station, Angio Multi Station, Angio TimCT and Angio TWIST<br>- MR Evaluation tools: Subtraction, MeanCurve, Image Filter, 2D/3D Distortion Correction. ADC and b-value tool (for extrapolated b-values), Multiplication, Division, Addition, Elastic Motion Correction. Workflow optimized report templates. |

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| | Scope of delivery:<br>*syngo*.MR General Engine software package with MR Radiology workflows, MR Cardio-Vascular workflows and MR Evaluation for a workstation-based server. |
| **14483146**<br>**RS myExam Brain Assist** | myExam Brain Assist provides guided and flexible workflows. Optimized scan strategies are provided and can be selected based on the patient's condition, which allows for reproducible, high image quality and time efficient exams. The built-in flexibility allows users to change predefined strategies at any time during the brain workflow, and to personalize to the individual patient's condition and clinical need. myExam Brain Assist is customizable to the site-specific standards of care.<br>myExam Brain Assist incorporates step-by-step user guidance which is seamlessly integrated into the exam. Example images and guidance texts are displayed for each individual step of the scanning workflow and are easily configurable by the user.<br><br>AutoAlign Head uses AI to provide automated positioning and alignment of slice groups to the anatomy, relying on multiple anatomical landmarks. This provides fast, easy, and reproducible patient scanning to consistently deliver high image quality with a standardized slice orientation.<br><br>AutoAlign Head can also automatically position and align for other structures within the head, such as the inner ear, orbits and optic nerve.<br><br>Inline Diffusion automatically calculates trace-weighted images and ADC maps in real time. |
| **14483147**<br>**RS myExam Spine Assist** | myExam Spine Assist provides guided and flexible workflows for cervical, thoracic and lumbar spine. Optimized scan strategies are provided and can be selected based on the patient's condition, which allows for reproducible, high image quality and time efficient exams. The built-in flexibility allows users to change predefined strategies at any time during the spine workflow, and to personalize to the individual patient's condition and clinical need. myExam Spine Assist is customizable to the site-specific standards of care.<br>myExam Spine Assist incorporates step-by-step user guidance which is seamlessly integrated into the exam. Example images and guidance texts are displayed throughout the scanning workflow and are easily configurable by the user.<br><br>AutoAlign Spine, with intervertebral disc detection, uses AI-based technology to provide automated positioning and alignment of slice groups to the anatomy, relying on multiple anatomical landmarks. This provides fast, easy, and reproducible patient scanning to consistently deliver high image quality with a standardized slice orientation.<br><br>Furthermore, it includes AutoCoverage, AutoSatPosition, as well as initial and interactive snapping. Users gain efficiency with AutoLabeling of vertebrae, automatic curved multiplanar reconstructions of 3D datasets and Inline Composing. |
| **14483148**<br>**RS myExam Large Joint Assist** | myExam Large Joint Assist provides guided and flexible workflows for knee, hip and shoulder. Optimized scan strategies are provided and can be selected based on the patient's condition, which allows for reproducible, high image quality and time efficient exams. The built-in flexibility allows users to change predefined strategies at any time during the scan workflow, and to personalize to the individual patient's condition and clinical need. myExam Large Joint Assist is customizable to the site-specific standards of care.<br>myExam Large Joint Assist incorporates step-by-step user guidance which is seamlessly integrated into the exam. Example images and guidance texts are displayed throughout the scanning workflow and are easily configurable by the user. |

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| | AutoAlign uses AI-based technology to automate the positioning and alignment of slice groups to the anatomy, relying on multiple anatomical landmarks. This provides fast, easy, and reproducible patient scanning by consistently delivering high image quality with a standardized slice orientation. AutoCoverage maximizes the speed of the examination by automatically setting the number of slices and the FoV to fully cover knee, hip or shoulder anatomy.<br><br>Inline Multi Planar Reconstruction (MPR) can be easily configured to automatically generate any required 2D images from high-resolution 3D acquisitions using the position information from the AutoAlign algorithm. For Knee and Hip, examinations using protocols with WARP to reduce artefacts caused by large orthopedic implants are included. |
| **14483174**<br>**myExam Brain Autopilot** | myExam Brain Autopilot enables less experienced staff to scan brain MRI at high quality with just a few simple clicks. By using automation and AI-based technology, it takes away burdensome routine tasks for all technologists. Predefined automated protocols allow users to scan with no manual adjustments. A new and intuitive user interface simplifies scanning so that exams can be performed, or strategies can be changed easily. This new approach to operate MRI helps any user to generate consistent, comprehensive results.<br>myExam Brain Autopilot is customizable to the site-specific standards of care.<br>myExam Brain Autopilot uses AutoAlign Head with AI-based technology to provide automated positioning and alignment of slice groups to the anatomy, relying on multiple anatomical landmarks. This provides fast, easy, and reproducible patient scanning and consistently delivers high image quality with standardized slice orientations.<br><br>AutoAlign Head can also automatically position and align for other brain structures such as the inner ear, the orbits and the optic nerve. Automatic real-time calculation of trace-weighted images and ADC maps with Inline Diffusion Technology is performed on the fly.<br><br>Users can switch to myExam Assist at any time to personalize the exam to the individual patient. |
| **14483583**<br>**RS myExam Knee Autopilot** | myExam Knee Autopilot enables less experienced staff to scan knee MRI at high quality with just a few simple clicks. By using automation and AI, it takes away burdensome routine tasks for all technologists. Predefined automated protocols allow users to scan with no manual adjustments.<br><br>A new and intuitive user interface simplifies scanning so that exams can be performed, or strategies can be easily changed. This new approach to operate MRI helps any user to generate consistent, comprehensive results.<br><br>myExam Knee Autopilot is customizable to the site-specific standards of care.<br>myExam Knee Autopilot uses AutoAlign with AI to provide automated positioning and alignment of slice groups to the anatomy, relying on multiple anatomical landmarks. This provides fast, easy, and reproducible patient scanning and consistently delivers high image quality with standardized slice orientations.<br><br>Furthermore, it provides AutoCoverage for consistent coverage of the patient's anatomy by automatically setting the number of slices and the FoV to fully cover knee.<br><br>Users can switch to myExam Assist at any time to further personalize the exam to the individual patient. |

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| **14483588**<br>**RS myExam Implant Suite** | myExam Implant Suite supports in examinations of patients with a wide range of active or passive MR Conditional implants. Limits for B1+ rms or SAR (Head and whole body) as specified by the implant manufacturer may be set by the operator and will not be exceeded during the exam.<br>myExam Implant Suite provides a guided workflow for scanning of active and passive MR conditional implants that require limitations of B1+ rms or SAR (head or whole body). Therefore, it is possible to provide access to MRI for patients with these implants even if they require limitations below IEC normal mode.<br>The myExam Implant Suite comes with the following features:<br><br>- The MR operator is able to set limits for MR parameters in examinations of patients that are registered as patients with an MR Conditional implant.<br>- Within a guided workflow the user may limit the RF-specific parameters specific absorption rate (SAR) for head and whole body or the B1+ magnetic field intensity (rms) to not exceed maximum values required by the implant manufacturer.<br>- Additionally the user may enter a maximum scan time. The system will show a warning dialogue before the maximum scan time is expired.<br>- During the MR examination the selected limits may be reviewed any time.<br>- The system will make sure that only coils supported for implant scanning are plugged if an implant patient is registered. |
| **14442780**<br>**RS Quiet Suite #T+D** | Quiet Suite enables complete, quiet examinations for neurology and orthopedics with at least 70% reduction in sound pressure levels.<br>Effective noise reduction is achieved through Quiet Suite by targeting the main source of MRI noise - rapid switching in the gradient coils. Quiet Suite consists of QuietX, an intelligent algorithm which effectively reduces noise through summation of gradients and reduction of slew rates while keeping timing parameters within the same range. QuietX has been enabled for TSE, SE and GRE sequences for T1, T2 and DarkFluid contrasts. Within the TSE-sequence, the parameter “Echo-spacing” allows the user to further lower the gradient slew-rates. QuietX has also been enabled for susceptibility and diffusion-weighted imaging and these sequences are available with the SWI and Advanced Diffusion licenses, respectively. The automated algorithm runs in parallel to normal protocol handling. All features and contrasts of the TSE, SE, and GRE sequences remain available.<br><br>In addition, Quiet Suite contains PETRA, a 3D T1 UTE sequence. The PETRA sequence allows for even lower gradient switching. With its unique gradient trajectories, no acoustic noise associated with gradient switching is generated during a PETRA scan. Residual noise may arise due to radio frequency switching.<br><br>With Quiet Suite, optimized quiet protocols for imaging the brain and large joints are also provided. |
| **14483543**<br>**RS Tim Whole Body Suite #NX** | Tim Whole Body Suite puts it all together. This suite enables table movement for imaging of up to 205 cm (6' 9") FoV without compromise. In combination with Tim’s newly designed ultra-high density array higher spatial and temporal resolution can be achieved along with unmatched flexibility of any coverage up to Whole Body.<br>For faster exams and greater diagnostic confidence.<br>Tim and the Tim Whole Body Suite enable for true whole body MR scanning for head-to-toe imaging. Whole body imaging with highest image quality without patient repositioning and without the need to change a single coil, not even once, this means whole body imaging without compromise.<br><br>The Tim Whole Body Suite features: |

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| | - The all-new Tim Table or Tim Dockable Table enable a full Field-of-View with coverage up to 205 cm (6' 9"). The table top has the same length as the standard system without whole body capabilities. Additional free space is required at the rear part of the magnet to ensure, that the table movement is not limited by the rear wall.<br>- Table movement to its full extent can be remotely controlled from the operator console either by the operator or by sequence protocols.<br>- Protocols and programs for whole body MR angiography and morphology e.g. for metastasis visualization and preventive care examinations.<br>- Whole body MR Angiography is possible with high speed, high resolution and high image contrast on the entire volume combining high speed gradients and iPAT.<br>- The large FoV of 205 cm supports the assessment of metastases distribution in the body with sequences such as TIRM (Turbo Inversion Recovery). |
| **14430265**<br>**Tim Planning Suite #BM** | With the Tim Planning Suite, multiple regions in the entire body can be examined in a minimum of time through measurement planning on a single FoV of any desired size.<br>The dedicated Tim Planning Suite user interface has been optimized for these comprehensive measurement requirements. Set-n-Go protocols for entirely automated examinations in each body region in one work step are available. For example, for orthopedic, oncological or angiographic imaging.<br><br>- Easy planning on a FoV of any desired size (up to 205 cm, depending on system scan range).<br>- Planning of multiple steps simultaneously, e.g. on a whole-body image, with only one Set-n-Go protocol - which includes several steps.<br>- Tim Planning Suite UI: Dedicated user interface and exclusive tools for effective and smooth working on a large FoV.<br>- Multiple slice groups with their overlap are displayed together and can be easily arranged.<br>- All steps can have independent sets of parameters.<br>- All steps are displayed together with a single mouse click.<br>- Easy positioning of all steps, for example, through Align FoV.<br>- Full support of Phoenix, thus maximum reproducibility, for example, for follow-up studies, multi-centric studies or exchange of experiences across different institutions.<br>- Dedicated protocols are provided for the Tim Planning Suite, for example, for orthopedic, oncological or angiographic indications.<br>- It is highly recommendable to order application training! |
| **14430262**<br>**Advanced Diffusion #NX** | QuietX DWI and RESOLVE together make up the Advanced Diffusion package.<br><br>QuietX DWI enables quieter diffusion-weighted imaging of the brain with up to 70% reduction in sound pressure relative to conventional diffusion-weighted imaging.<br>RESOLVE (Readout Segmentation Of Long Variable Echo-trains) is a multi-shot, readout segmented EPI sequence for high-resolution, low-distortion diffusion-weighted imaging (DWI). This technique is largely insensitive to susceptibility effects, providing anatomically accurate diffusion imaging for the brain, spine, breast and prostate. In combination with syngo.MR Tractography, RESOLVE enables excellent white-matter tract imaging even in regions of high susceptibility, such as the spine.<br>RESOLVE is a diffusion-weighted, readout-segmented EPI sequence optimized towards high-resolution imaging with reduced distortions. |

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| | The sequence uses a very short echo-spacing compared to single-shot EPI, substantially reducing susceptibility effects. A 2D-navigator correction is applied to avoid artefacts due to motion-induced phase errors. This combination allows diffusion weighted imaging of the breast, prostate (SEEit sequence for prostate DWI), brain and spine with a high level of detail and spatial precision.<br><br>Additionally, an automatic reacquisition of data with large phase errors can be used to ensure that diffusion-weighted images of the brain are not affected by CSF pulsation.<br><br>QuietX DWI protocols for the brain utilize QuietX, an intelligent algorithm which effectively reduces noise through summation of gradients and reduction of slew rates while keeping timing parameters within the same range. All features and contrasts of DWI remain available, delivering image quality comparable to a conventional single shot diffusion sequence, while providing at least 70% sound pressure reduction for increased patient comfort. |
| **14478814**<br>**RS WARP & Advanced WARP** | WARP and Advanced WARP (SEMAC) integrates different techniques tailored to reduce susceptibility artifacts caused by orthopedic MR-conditional metal implants.<br>2D TSE sequence combining optimized high-bandwidth protocols and View Angle Tilting (VAT) technique helps in evaluation of soft tissue in proximity of the implant. SEMAC (Slice Encoding for Metal Artifact Correction) is a technique to correct through-plane distortions by means of additional phase encoding in slice direction. It is especially useful in the case of hip and knee joint replacements.<br><br>WARP and Advanced WARP help in evaluation of soft tissue in proximity of the implant. Available protocols include T1-weighted, T2-weighted, proton density and STIR contrast.<br><br>Main Features:<br>- Can be switched on in the standard TSE sequences<br>- For each slice, additional phase encoding is performed to better characterize the distortion<br>- Distorted signals are corrected by dedicated inline processing |
| **14483538**<br>**RS Advanced Cardiac incl. PSIR #BM** | This package contains special sequences and protocols for advanced cardiac imaging including 3D and 4D BEAT functionalities. It supports advanced techniques for ventricular function imaging, dynamic imaging, tissue characterization, coronary imaging, and more. Combining the unique advantages of Tim and BEAT with iPAT and powerful gradients, it allows performing cardiac MR examinations without compromise in image resolution or acquisition speed. BEAT is a unique tool for fast and easy cardiovascular MR imaging. It provides 1-click switch from cine imaging to tagging for wall motion evaluation and 1-click switch from 2D to 3D imaging. BEAT automatically adjusts all parameters associated with the changes.<br><br>**Cardiac and Vessel Morphology**<br>- 3D aortopathy imaging with free breathing (SPACE)<br>**Global or Regional Wall Motion Analysis with BEAT**<br>- 3D cine acquisition for full CT-like heart coverage<br>- 2D segmented FLASH for visualization of the regional wall motion using various tagging techniques (grid or stripes)<br>**Dynamic myocardial imaging with BEAT**<br>- Ultra-fast, high-SNR sequence for dynamic imaging with GRE EPI contrast for stress and rest exams<br>**Tissue characterization with BEAT**<br>- Robust myocardial tissue characterization with 3D PSIR (phase-sensitive inversion recovery)<br>- Fast and complete coverage of the myocardium with IR 3D FLASH and TrueFISP |

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| | - Including PSIR HeartFreeze (motion correction) for free-breathing measurements<br>**Coronary imaging with BEAT**<br>- 3D Whole-Heart non-contrast Coronary MRA<br>- 3D Whole-Heart MRA with advanced free-breathing navigator compensating diaphragm shifts during the acquisition (motion-adaptive respiratory gating) |
| **14430264**<br>**Inline Composing syngo** | Automatic anatomical or angiographic composing of multiple adjacent coronal or sagittal images for presentation and further evaluation. Composed images can be automatically loaded into Graphical Slice Positioning for scan planning purposes.<br>**Inline Technology - Processing Instead of Post-processing**<br><br>The Inline Composing option includes the following functions:<br>- Inline calculation of full-format images of the spine, the central nervous system or the vessel tree, for example, combined from multiple overlapping steps.<br>- Dedicated composing algorithms, optimized for the generation of anatomical or angiographic full-format images.<br>- Data sets with different FoV, resolution, matrix and slice thickness can be combined.<br>- Generation of full-format images from inline-computed MIPs.<br><br>Different inline functions can be combined; e.g. in case of multiple-step angios, Inline subtraction, Inline MIP and Inline Composing can be performed fully automatically.<br><br>Full-format acquisitions from Inline Composing are ideal for further measurement planning on large FoV, e.g. with the Tim Planning Suite. |
| **14483220**<br>**RS syngo Expert-i XA60** | This software application enables remote access to the system (connected via local area network) for planning and processing.<br>The option is integrated in the *syngo* user interface thus enables easy access to the user interface of the *syngo* Acquisition Workplace for planning and processing support purposes.<br>The access is protected by appropriate security mechanisms (active enabling prior to every connection through the user present on site, password protection), in order to prevent unwanted connections.<br><br>The client software can be operated on any commercial PC with the following specification:<br>- Operating system: Windows 7/8.1/10<br>- .NET Framework version 4.5 or higher |

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| **14483549**<br>**RS Tim [204x48] XJ Gradient #So** | Tim [204x48] XJ-gradients performance level<br>Tim 4G's RF system and innovative coil architecture enables high-resolution imaging and increased throughput.<br>The system provides a maximum number of 204 channels (coil elements) that can be connected simultaneously. Flexible parallel imaging is achieved by the standard 48 independent RF channels that can be used simultaneously in one single scan and in one single FOV, each generating an independent partial image.<br><br>XJ - gradients<br>Max. amplitude: 57 mT/m (Actual 33 mT/m for every gradient axis)<br>Max. slew rate: 216 T/m/s (Actual 125 T/m/s for every gradient axis)<br>Min. rise time from 0 to 57 mT/m: 264 µs<br><br>Note: max. amplitude and max. slew rate achieved through vector addition of all three gradient axes simultaneously, actual maximum amplitude of 33 mT/m and actual maximum slew rate of 125 T/m/s are achievable simultaneously along each axis.<br><br>The XJ gradients are designed for high performance and linearity to support clinical whole body imaging at 1.5T.<br>The force compensated gradient system minimizes vibration levels and acoustic noise.<br><br>High-performance measurement and reconstruction system.<br>**Tim [204x48] performance level**<br>BioMatrix builds on DirectRF - The all digital-in/ digital-out design integrates all RF transmit and receive components at the magnet, eliminating analog cables for true signal purity. This compact and efficient design enables a dynamic feedback control for temporal stability and power linearity.<br>The innovative architecture packs more coil elements in a smaller space and the system provides a maximum number of 204 channels (coil elements) that can be connected simultaneously.<br>Advanced iPAT capabilities and SNR are enabled by the 48 independent RF channels that can be used simultaneously in one single scan and in one single FOV, each generating an independent partial image.<br>An additional benefit of multiple coil elements and receiver channels is improved performance in multi-directional, i.e. three dimensional, high-speed, high-resolution iPAT in the head-feet, anterior-posterior or left-right directions.<br><br>**XJ gradients**<br>Siemens XJ gradients provide actively shielded, water cooled world-class gradients. All axes are force-compensated.<br>The XJ gradients have:<br>- Max. amplitude: 57 mT/m (Actual 33 mT/m for every gradient axis)<br>- Max. slew rate: 216 T/m/s (Actual 125 T/m/s for every gradient axis)<br>- Min. rise time from 0 to 57 mT/m: 264 µs<br>- Note: max. amplitude and max. slew rate achieved through vector addition of all three gradient axes simultaneously, actual maximum amplitude of 33 mT/m and actual maximum slew rate of 125 T/m/s are achievable simultaneously along each axis.<br>- Maximum output voltage for each of the gradient axes 2000 V<br>- Maximum output current for each of the gradient axes 625 A<br>- Separate cooling channels that simultaneously cool primary and secondary coils allow the application of extremely gradient intensive techniques in a new class of performance. |

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| | - 100% duty cycle for fast and demanding techniques such as ultrashort TE MRA in continuous operation, thin slice single breath-hold liver studies and EPI imaging techniques (all optional in appropriate clinical packages).<br>- Variable Field-of-View selection from 0.5 cm to 50 cm (up to 50 cm in z direction) for optimal coverage and highest spatial resolution in diagnostic imaging. The minimum slice thickness in 2D and 3D is 0.1 mm and 0.05 mm, respectively.<br>- Acquisition of sagittal, transverse, coronal, single oblique and double oblique slices with highest resolution.<br>- The extremely compact water-cooled gradient amplifier features a modular expandable design with excellent linearity and pulse reproducibility. It is digitally controlled and has very low switching losses due to ultrafast solid state technology.<br><br>**Computer system**<br>The specifications of the high-performance measurement and reconstruction computer can be found within the data sheet.<br><br>The combination of host computer and the measurement and reconstruction system offers a truly powerful imaging system designed for large image matrix sizes of up to 1024 x 1024. The unrestricted multitasking capability allows time-saving parallel scanning and reconstruction. |
| **14483553**<br>**RS Coil Package Tim [204x48] #So** | This package includes (if not exchanged with different variants via respective quote items):<br>- BioMatrix Head/Neck 20 tiltable with CoilShim<br>- BioMatrix Spine 32 with Respiratory Sensors<br>- Body 18<br>- Flex Large 4<br>- Flex Small 4<br>- Flex Coil Interface<br>**Tim 4G & BioMatrix Coils**<br>The coils in the standard coil package combine the new BioMatrix functionalities CoilShim and Respiratory Sensor with the Tim 4G coil technology with Dual-Density Signal Transfer, DirectConnect and SlideConnect technology. The results are key imaging benefits: Excellent image quality, high patient comfort, and unmatched flexibility.<br><br>The Tim 4G & BioMatrix coils are designed for highest image quality combined with easy handling.<br>BioMatrix's CoilShim helps to reduce patient induced localized B0 inhomogeneities.<br>Respiratory sensors, embedded in the BioMatrix Spine 32, detect the breathing pattern of the patient as soon as he/she is on the table. The high coil element density increases SNR and reduces examination times. DirectConnect and SlideConnect™ technology reduce patient set up time significantly.<br>The coils are designed with the patient in mind. Light weight coils with an open design ensure highest patient comfort resulting in better patient cooperation and image quality. No coil changing with multi-exam studies saves patient setup- and table time.<br>AutoCoilSelect for dynamic, automatic, or interactive selection of the coil elements within the Field of View fastens the exam preparation at the host.<br>All coils are time-saving “no-tune” coils.<br>A comprehensive set of pads for comfortable and stable patient positioning together with safety straps are included.<br><br>**BioMatrix Head/Neck 20 tiltable with CoilShim** |

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| | The 20-channel coil with its 20 integrated pre-amplifiers ensures excellent signal-to-noise ratio. The unique DirectConnect technology allows users connecting the 20 coil elements of the Head/Neck 20 without cables. The possibility to tilt the coil in 3 different positions together with the patient friendly open design allows for maximum patient comfort which is supported in addition by a look-out mirror for claustrophobic patients. The high channel coil is iPAT compatible in all directions.<br>The open and light design of the upper coil part increases patient comfort and is removable for easy patient handling. The integrated CoilShim is located in the lower coil part which may remain on the table for most of the examinations and can be used without the upper part. The BioMatrix Head/Neck 20 and BioMatrix Spine 32 are smoothly integrated into the patient table, thus enabling high flexibility in imaging and fewer coil changes and easy handling when switching patients. The BioMatrix Head/Neck 20 coil is equipped with two removable cushioned head stabilizers for stable and comfortable patient positioning.<br>The BioMatrix Head/Neck 20 can be used for applications like head examinations, neck examinations, MR Angiography, combined head/neck examinations or for imaging of the TMJ (temporomandibular joints).<br>Typically combined with the BioMatrix Spine 32 and Body 18 but also other combinations e.g. with flexible coils like the Flex Large 4 are possible.<br>Whole-body set ups from Head to Toe are possible with the combination of BioMatrix Head/Neck 20, BioMatrix Spine 32, Body 18 coils, and Peripheral Angio 36 in one MR examination.<br><br>**BioMatrix Spine 32 with Respiratory Sensors**<br>The 32-channel coil with its 32 integrated pre-amplifiers ensures maximum signal-to-noise ratio. The unique integrated BioMatrix Respiratory Sensors measure the patient's respiratory signal in head-first and feet-first position. The DirectConnect technology allows connecting the 32 coil elements of the BioMatrix Spine 32 without the need to plug in any cable. The patient friendly ergonomic design allows for maximum patient comfort. The high element coil is iPAT compatible in all directions.<br>Smoothly integrated into the patient table the BioMatrix Spine 32 can remain on the patient table for nearly all exams.<br>The BioMatrix Spine 32 is typically combined with Body 18, BioMatrix Head/Neck 20, Peripheral Angio 36 (optional) or Flex Large 4, Flex Small 4.<br><br>**Body 18**<br>The 18-channel coil with its 18 integrated pre-amplifiers ensures maximum signal-to-noise ratio. The 18 coil elements of the Body 18 with only one SlideConnect Plug allows for fast and easy patient preparation resulting in less table time. Fast acquisition times enabled by iPAT in all directions. The light-weighted coil ensures highest patient comfort.<br>Body 18 operates in an integrated fashion with the BioMatrix Spine 32 resulting in a 30 channel body imaging setup.<br>Body 18 can be combined with further Body 18 coils for larger coverage and can be positioned in different orientations (0°, 90°, 180°, 270°) for patient specific adaptations.<br>The Body 18 is typically used in combination with the BioMatrix Spine 32 for examinations of the thorax, abdomen, pelvis or hip and operates as a 30 channel body coil (3 rings 10 elements).The Body 18 can also be used for cardiac or vascular applications.<br>Through the perfect combinability of the BioMatrix Spine 32, further Body 18 Coils (optional), the Peripheral Angio 36 (optional), but also the BioMatrix Head/Neck 20 and all flexible coils (e.g. Flex Large 4, Flex Small 4, UltraFlex Large 18 (optional) or UltraFlex Small 18 (optional) a broad range of indications up to whole-body imaging are covered.<br><br>**Flex Large 4/ Flex Small 4**<br>Light-weight, very flexible, iPAT compatible, 4-element no-tune receiver coils which are made of soft and smooth material.<br>The coils can be wrapped around or used flat. |

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| | Both coils can be connected via Flex Coil interface. One Flex Coil interface is already delivered as standard. The coils can be used for different examinations ranging from examinations of the extremities to abdominal examinations. |
| **14483542**<br>**RS BioMatrix Technology** | The new and unique BioMatrix technology addresses the different aspects of patient bio-variability. It is based on three technological clusters:<br>- BioMatrix Sensors address patient physiology, in order to anticipate challenges<br>- BioMatrix Tuners address patient anatomy, in order to adapt to all patients, especially critical ones.<br>- BioMatrix Interfaces address user interaction with the patient, to accelerate the workflow in the face of patient variability.<br>**BioMatrix Sensors anticipate challenges before they happen.**<br>Respiratory sensors are integrated in the BioMatrix Spine coils and measure the patient's respiratory signal in head-first and feet-first position. The sensor loops measure the change in impedance resulting from the shift of the tissue and organs during the inhaled and exhaled phase of the patient's respiration as soon as the patient is lying on the table.<br><br>**BioMatrix Tuners – adapt to all patients, even critical ones.**<br>The BioMatrix Tuners are CoilShim and SliceAdjust.<br>BioMatrix's CoilShim helps to reduce patient induced strongly localized B0 inhomogeneities by generating the respective anatomy-specific B0 field with 4 independent shim channels built into the system. Calculation and fine-tuning of local CoilShim currents integrated into global shim algorithm. BioMatrix Head/Neck 20 tiltable with CoilShim and the Head/Neck 64 with CoilShim have local shim elements integrated into the posterior part, addressing patient induced B0 distortions in the neck region.<br>BioMatrix SliceAdjust enables precise slice-by-slice tuning of resonance frequency, transmitter voltage, and first order B0-shim and B1-shim. For whole-body diffusion, the SliceAdjust technology helps to avoid station boundaries and apparent broken spine artifacts as well as to preserve the SNR for whole-body diffusion.<br><br>**BioMatrix Interfaces – accelerate workflow without compromising quality of care**<br>The BioMatrix body model, leveraged by the Select&GO panel on the front of the system, is able to derive the precise location of the organs based on the patient's individual characteristics. With a single touch, the technologist can quickly position the body part of interest at the isocenter and start the examination.<br>To simplify and speed up patient transportation, the BioMatrix table with eDrive (optional) and AutoDocking (optional) functionalities is motorized, making patient management easy in all situations: no matter their size or strength, all technologists can handle all patients.<br>By facilitating patient transport and accelerating patient positioning using individual characteristics, the BioMatrix Interfaces accelerate the complete workflow without compromising image quality. |
| **14483575**<br>**RS BioMatrix Respiratory Sensors** | Highly integrated BioMatrix Respiratory sensors measure the patient's breathing cycle in head-first and feet-first orientation.<br>Respiratory sensors are integrated in the BioMatrix Spine coils and measure the patient's breathing cycle in head-first and feet-first orientation. The sensor loops measure the change in impedance resulting from the shift of the patient's tissue and organs during the inhalation and exhalation phase of the breathing cycle. They do not require preparation and are active as soon as the patient is lying down on the coil. |

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| **14483576**<br>**RS BioMatrix Beat Sensor** | The BioMatrix Beat Sensor measures the motion of the heart and enables Cardiac triggering without the need of ECG triggering.<br>The BioMatrix Beat Sensor is seamlessly integrated into the BioMatrix Body 12 and BioMatrix Body 18 coil. When positioning these coils on the patient's chest, the Beat Sensor extracts a heart motion signal that can be used to trigger cardiac sequences to the cardiac cycle in order to minimize heart motion artifacts.<br><br>Please note that in versions XA31 and XA50 only cardiac cine sequences are supported. From version XA51 a full cardiac exam is supported. |
| **14483577**<br>**RS BioMatrix Coil Shim #Vi,So,Ci** | BioMatrix CoilShim helps to reduce patient induced strongly localized B0 inhomogeneities by dedicated local shim channels.<br>BioMatrix CoilShim helps to reduce patient induced strongly localized B0 inhomogeneities by generating the respective anatomy-specific B0 field with 4 independent shim channels built into the system. Calculation and fine-tuning of local CoilShim currents is integrated into the global shim algorithm. |
| **14483144**<br>**RS BioMatrix SliceAdjust #BM** | BioMatrix SliceAdjust helps to avoid station boundaries and apparent broken spine artifacts as well as to preserve the SNR for whole-body diffusion.<br>BioMatrix SliceAdjust enables precise slice-by-slice tuning of resonance frequency, transmitter voltage, and first order B0-shim and B1-shim. For whole-body diffusion, the SliceAdjust technology helps to avoid station boundaries and apparent broken spine artifacts as well as to preserve the SNR for whole-body diffusion. |
| **14483558**<br>**RS BioMatrix Table #So** | The new BioMatrix Table is designed for smooth patient preparation, high patient comfort and easy cleanability. The unique design of the BioMatrix table can support up to 250 kg (550 lbs) without restricting the vertical or horizontal movement.<br>The new BioMatrix table with its appealing design allows for a fast patient preparation and maximized patient comfort.<br>It provides unobstructed foot space for attending staff and direct access to the patient. The patient table can be lowered to a minimum height of 52 cm from the floor, for easier patient positioning and better accessibility for geriatric, pediatric or immobile patients.<br>The BioMatrix Table can be moved with two clicks into the isocenter – one click to the upmost position and one click into the isocenter. The tabletop travels beyond the rear end of the system, enabling additional patient access. An infusion stand is integrated to allow for fast patient set up of critical patients.<br>Multiple Tim 4G and BioMatrix coils can be connected at the same time for efficient and patient friendly examinations. The seamless integration of multiple Tim 4G and BioMatrix coils is possible via 4 SlideConnect and 4 DirectConnect connector slots, which are embedded in the table. This allows for comprehensive examinations without the need of repositioning. |
| **14483578**<br>**RS BioMatrix Select & GO #Vi,So,Ci** | The BioMatrix Select&GO interface enables fast and easy single-touch patient positioning from both sides of the patient table. The interfaces are integrated left and right into the front covers. Correct positioning saves unnecessary wasted time for repositioning and additional adjustments, therefore shortening the total room time.<br>The two BioMatrix Select&GO interface enables fast and easy single-touch patient positioning from both sides of the patient table. The interfaces are integrated left and right into the front covers. Correct positioning saves unnecessary wasted time for repositioning and additional adjustments, therefore shortening the total room time.<br>- The ergonomically designed Select&GO touch panels are integrated into the front cover on each side of the patient tunnel for controlling table movement, guidance for patient setup and comfort features. They are well illuminated for easy visual recognition.<br>- Automated table move to upmost position, to center position or Home position facilitate smooth patient preparation and will reduce table time |

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| | - Variable (6 levels) ventilation and lighting inside the magnet bore or volume adjustments are possible for increased patient comfort The Select&GO touch panels provide on board guidance for patient set up where it's needed - directly at the scanner. Information such as patient name or exam type or required patient position, guidance for ECG set up and immediate visualization of physiological curves will be provided for convenient operation.<br>- Almost all table control functions, including ventilation and illumination of the magnet bore, can be also controlled from the operator console for convenient operation |
| **14483557 RS Silver & White Design #So** | MAGNETOM Sola is available in two different light and appealing design variants which perfectly integrate into different environments. The Silver &White Design Variant comprises a brilliant white front design ring with integrated unique Select&GO panels. The smoothly embracing deco area on the left side and the outer rings in the front and the back of the system is colored in brilliant silver.<br>The table cover is presented also in the same color and material selection.<br>The unique color and material selection enhances the visual appeal of the new system design, thereby creating an enticing, patient friendly impression.<br>The unique Select&GO panels are neatly integrated into the front design ring. The aesthetically pleasing and ergonomically designed control elements are well illuminated for easy visual recognition.<br>In particular, the table cover and the smoothly embracing colored system cover parts have been designed to promote a modern visual appearance.<br>This combination of ingenuity and practical design as presented with the “Silver & White” design with its brilliant white and silver makes MAGNETOM Sola an overall visually appealing system and creates a patient-friendly environment. |
| **14478546 RS PC Keyboard US English #NX** | Standard PC keyboard with 105 keys.<br>The keys of the numerical key panel are assigned to *syngo*-specific functions and labeled with the corresponding *syngo* icons. The keyboard supports the country specific special characters. |
| **14483561 RS High-End Computing [204x48] #So** | Tim 4G power computing upgrade for MAGNETOM Sola/ Sola Fit Tim [204x48]. This upgrade brings a high-end image reconstruction computer to the Tim [204x48] configuration.<br>The high-end computing option brings high-end image reconstruction performance to the MAGNETOM Sola/ Sola Fit Tim [204x48]. The high-end image reconstruction computer offers faster processing power for intensive algorithms, high amount of data storage for large data sets acquired over long-term measurements, a large amount of main memory for fast processing of measurement data, and a general purpose graphic processing unit for highly intensive computational calculations.<br><br>The specifications of the high-end image reconstruction computer can be found within the data sheet. |
| **14458320 RS Peripheral Pulse Unit #NX** | Peripheral Pulse Unit for Pulse Triggering<br>Peripheral Pulse Unit for Pulse Triggering:<br>- Reduces flow artifacts caused by pulsatile blood flow.<br>- Excellent image quality by synchronizing data acquisition to the pulsatile blood flow. |
| **14458094 RS In-Ear Headphones #T+D** | In-Ear Headphone for easy communication with patient while using the head coil.<br>- Each headset comes with a 2.5 meters long cable that can be plugged into the headphone plug<br>- The set is fitted with (2x)10 disposable pairs of earplugs. The disposable ear plugs come in two different sizes that fit all patients.<br>- The user can communicate better with the patient during the exam. |

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| | - The patient can listen to music. |
| **14483585**<br>**RS SW syngo MR XA61A** | syngo MR XA61A is the new software platform, bringing the latest features and functionality for daily clinical excellence. syngo MR XA61A guides and enables the user throughout the entire workflow: from patient registration; patient set up with guided workflows on the Select&GO; protocol management and selection; image acquisition and viewing; data handling; and post processing and reporting. This software together with the hardware enables diagnostic excellence for your daily clinical needs.<br><br>The syngo MR XA61A platform offers myExam Companion which introduces a new MRI operation philosophy by providing built-in expertise and automation for users and clinical questions. myExam Companion provides different workflow modes for tailored assistance: myExam Autopilot, myExam Assist and myExam Cockpit. No matter the user or patient, myExam Companion helps generate consistent, comprehensive results.<br>*syngo* MR XA61A provides environments for: scheduling; scanning and basic quality assurance as well as viewing; basic and advanced post-processing; and data handling (Export, Import, Transfer, Record to media). For faster data transfer and reduced storage demand *syngo* MR XA61A uses the DICOM Enhanced MR Image format for its scanning result. Features like Online Help, DICOM MPPS autocomplete and inline technologies additionally support the workflow.<br><br>For scanning, myExam Companion provides tailored assistance enabling consistent image quality regardless of the operator's experience:<br>- **myExam Autopilot** helps users to automate intelligently. It enables less trained staff to scan with just a few simple clicks. By using automation and AI, it takes away burdensome routine tasks for all technologists (available for Sola and Altea).<br>- **myExam Assist** provides guided and flexible workflows. Optimized scan strategies are provided and can be selected or flexibly adapted based on the patient's condition.<br>- **myExam Cockpit** provides a central workspace for protocol management and customization. Users can set up and maintain protocols intuitively, build knowledge into standardized exams and make those continuously available for every user.<br>- **myExam Implant Suite** supports in examinations of patients with a wide range of active or passive MR Conditional implants. |
| **14458089**<br>**Turbo Suite Essential** | Turbo Suite Essential comprises established acceleration techniques to maximize productivity for all contrasts, orientations and all routine imaging applications from head-to-toe.<br>Turbo Suite Essential contains:<br>- iPAT and iPAT² parallel imaging capabilities for all contrasts, orientations and body regions<br>- T-PAT (temporal iPAT) for advanced parallel imaging provides fast high-resolution dynamic imaging in cardiac exams by distributing reference scans over time<br>- CAIPIRINHA for advanced iPAT² is a unique k-space reordering scheme that improves the g-factor significantly and therefore improves the SNR, which can be translated into higher imaging speed.<br>- CAIPIRINHA SPACE – high-resolution, fast 3D imaging with isotropic, sub-millimeter resolution, all contrasts. Protocols optimized for joints are provided.<br>- CAIPIRINHA VIBE – T1 weighted 3D imaging for high-resolution imaging throughout the body and significantly shortened breath-hold scans. |

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| **14483584**<br>**RS Deep Resolve Pro Package** | The Deep Resolve Pro Package combines the three applications Deep Resolve Gain, Deep Resolve Sharp and Deep Resolve Boost which use intelligent reconstruction algorithms and Deep Learning networks to reconstruct accelerated images with higher signal to noise ratio and better image sharpness.<br>With the Deep Resolve Pro Package you get access to our advanced image reconstruction environment which features deep learning methods.<br><br>Deep Resolve Gain uses a targeted algorithm to detect and remove noise in the image. Noise detection and removal is performed optimized for the individual scan thus addressing spatially varying noise of the specific acquisition. The method allows to gain SNR which can be turned into either improved resolution or into higher productivity, e.g. by reducing the number of averages or by increasing the acceleration factor of the scan. Deep Resolve Gain can be combined with standard GRAPPA and SMS acceleration and is available for following sequences:<br>- TSE, TSE DIXON, SE<br><br>Deep Resolve Boost is a deep learning reconstruction algorithm, which has been trained on a large amount of data sets to reconstruct high signal to noise ratio images from under-sampled raw data. The network has been optimized to work on highly accelerated scans, thus enabling fast acquisitions. It can be seamlessly applied to data acquired from head-to-toe with different contrast weightings and orientations. Deep Resolve Boost shows highest potential when combined with GRAPPA and SMS acceleration (if supported) and is available for following sequences:<br>- TSE, ep2d_diff, HASTE<br><br>Deep Resolve Sharp is a deep neural network, which has been trained on a large amount of high-resolution MR data to reconstruct sharp images from low resolution data. The reconstruction algorithm also reduces the Gibbs ringing which is present around edges. Consistency with the acquired raw data is ensured in the reconstruction process. It can be seamlessly applied to data acquired with different contrast weightings and orientations. Deep Resolve Sharp offers up to a factor of two in in-plane resolution. Deep Resolve Sharp can be combined with Deep Resolve Gain or Deep Resolve Boost and is available for following sequences:<br>- TSE, TSE DIXON, SE, ep2d_diff, HASTE<br><br>This package requires the option “High-End Computing”. |
| **14413869**<br>**RS SWI #Tim** | Susceptibility Weighted Imaging is a high-resolution 3D imaging technique for the brain with ultra-high sensitivity for microscopic magnetic field inhomogeneities caused by deoxygenated blood, products of blood decomposition and microscopic iron deposits. Among other things, the method allows for the highly sensitive proof of cerebral hemorrhages and the high-resolution display of venous cerebral blood vessels.<br>Despite a strong sensitivity for local magnetic field inhomogeneities Susceptibility Weighted Imaging (SWI) as a 3D technology keeps up the signal near large susceptibility leaps due to very thin slices and high resolution in the slice (high image quality e.g. in the area of the forebrain near the frontal sinus).<br>Moreover, the phase information of the MR signal is integrated in the image display. In order to further increase sensitivity for localized microscopic magnetic field inhomogeneities, large-area magnetic field inhomogeneities (e.g. caused by susceptibility leaps near the sinus) are specifically suppressed in the phase images.<br>This allows even smallest amounts of deoxygenated hemoglobin (e.g. in cerebral veins) or from products of hemoglobin decomposition (e.g. from hemorrhages) to be displayed.<br>Interesting measuring times for the ultra-high-resolution 3D protocols are achieved through parallel imaging with iPAT (GRAPPA).<br><br>The Susceptibility Weighted Imaging package includes: |

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| | - SWI measuring sequence, iPAT compatible<br>- optimized measuring protocols for the head<br>- inline-postprocessing for automatic calculation of relevant images within the scope of image reconstruction:<br>  - calculation of susceptibility-weighted images<br>  - venous angiography: MIP of a thin slice block<br>SWI has been optimized for clinical use to support diagnostics with cerebrovascular diseases (e.g. cerebral insult), venous malformation, brain trauma and tumors. |

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| **14483574**<br>**RS BioMatrix Body 18 long #1.5T** | The BioMatrix Body 18 long combines Tim 4G coil technology with a new highly flexible and lightweight design to ensure excellent image quality, high patient comfort, and unmatched flexibility.<br><br>Key features are:<br>- 18 channels<br>- Dual Density Signal Transfer<br>- SlideConnect Technology<br>- Highly flexible and light-weight design<br>- Exchangeable cable design<br><br>The 18-channel design with its 18 integrated pre-amplifiers ensures excellent signal-to-noise ratio while provide extensive coverage in all directions. The single SlideConnect plug allows for fast and easy patient preparation. The new highly flexible and light-weight design provides highest patient comfort. Through the exchangeable cable design, a single coil can be used with either a standard-sized cable (95 cm length) or a longer version (165 cm length). The BM Body 18 long is shipped with a long cable.<br><br>The BioMatrix Body 18 long features:<br>- 18-element design with 18 integrated preamplifiers (3 clusters of 6 elements each)<br>- Operates in an integrated fashion with the system's spine coil<br>- Can be combined with further Body 18 or BM Body 18 coils for larger coverage<br>- Can be positioned in different orientations (0°, 90°, 180°, 270°) for patient specific adaptations<br>- Requires no coil tuning<br>- iPAT compatible in all directions<br><br>The highly flexible design enables a wide variety of applications including:<br>- Thorax (incl. heart)<br>- Abdomen<br>- Pelvis<br>- Hip<br>- Vascular<br><br>The BioMatrix Body 18 long is typically combined with:<br>- BM Head/Neck 20<br>- BM Spine coil<br>- Additional Body 18 coil(s) or BM Body 18 coils (optional)<br>- Peripheral Angio 16 and 36 (optional)<br>- Flex Large 4<br>- Flex Small 4<br>- UltraFlex Large 18 (depending on availability, optional)<br>- UltraFlex Small 18 (depending on availability, optional)<br>- Loop coils (optional)<br>- Endorectal coil (optional)<br>The BioMatrix Body 18 long has an 18-element design with 18 integrated preamplifiers that are arranged in 3 clusters of 6 coil elements each. The BioMatrix Body 18 will be typically used together with the system's BM Spine coil with which it operates in an integrated fashion as a 30-element coil, resulting in 3 rings of 10 elements each for highest SNR and fast imaging. It can be positioned in different orientations and addresses the requirement range for the examinations of obese patient to pediatric patients. The highly flexible and light weight coil improves patient comfort and can be |

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| | easily connected via SlideConnect technology. No tuning of the fully iPAT-compatible BioMatrix Body 18 is necessary, allowing for an efficient and patient friendly set-up.<br><br>For examinations requiring larger anatomical coverage, up to four BM Body 18 can be used simultaneously. Typically two BM Body 18 will be used for coverage of the entire abdomen or in the case of large patients.<br><br>The BioMatrix Body 18 is typically used in combination with a BM Spine coil for examinations of the thorax, abdomen, pelvis or hip and is also well suited for cardiac or vascular applications. In addition, the BM Body 18 can be combined with further BM Body 18 (optional) or Body 18 (optional), the Peripheral Angio 36 (optional), but also the BM Head/Neck20, the 4-channel flex coils (e.g. Flex Large 4, Flex Small 4) and the 18-channel UltraFlex coils (e.g. UltraFlex Large 18, UltraFlex Small 18, depending on availability, optional).<br><br>The dimensions of the BioMatrix Body 18 long are 385 mm × 590 mm × 65 mm (L x W x H). Its weight is about 2 kg (4.5 lbs), whereas the patient feels as little weight as 1kg (2,25 lbs). |
| **14483563**<br>**RS Tx/Rx Knee 18 #1.5T** | New 18-channel transmit/receive coil optimized for knee imaging. The spacious design with a flared opening towards the thigh allows scanning even of large and swollen knees with exceptional image quality and signal to noise ratio.<br>Main features :<br>- 18-element design (3x6 coil elements) with 18 integrated preamplifiers<br>- iPAT-compatible<br>- SlideConnect Technology<br>Thanks to its 18-channel design this coil is perfectly suited for high-resolution images with excellent SNR. With the arrangement of the antennas in three rings of 6 elements each, the coil is specially designed for parallel imaging with high acceleration factors.<br>The coil is positioned on a laterally movable support and therefore allows for comfortable patient positioning of both legs for off-center examinations. SlideConnect Technology allows for fast and easy patient preparation, resulting in less table time. Furthermore, the upper part can be removed for easier patient positioning. Additional cushions allow for optimum patient immobilization.<br>The integrated transmission function makes volume-sensitive excitation with greatly reduced RF power possible on the one hand and, on the other, prevents aliasing artifacts (e.g. due to the other knee).<br>The housing of this coil has a flared opening towards the patient's thigh, as well as an easy coil sliding and opening mechanism. |
| **14478589**<br>**RS UltraFlex Large 18 #1.5T** | Light-weight, iPAT compatible, 18-element no-tune receive coil made of highly flexible and soft material. It is used for examinations of larger extremities (e.g. medium to large shoulder, hip, knee ankle and hand) and for abdominal examinations. A dedicated positioning aid for larger extremities, like knee is delivered with the coil.<br>The UltraFlex Large 18 can be wrapped around or placed flat on top of the area of interest. This rectangular coil measures approx. 29 cm x 59 cm and connects with only one SlideConnect Plug which allows for fast and easy patient preparation. The positioning aids that come with the coil enhance positioning flexibility and help minimize involuntary patient motion artifacts. |

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| **14478588**<br>**RS UltraFlex Small 18 #1.5T** | Light-weight, iPAT compatible, 18-element no-tune receive coil made of highly flexible and soft material. It is used for examinations of smaller extremities (e.g. small to medium shoulder, smaller ankle, elbow and hand) and for abdominal examinations. A dedicated positioning aid for smaller extremities, like ankle or elbow is delivered with the coil.<br>The UltraFlex Small 18 can be wrapped around or placed flat on top of the area of interest. This rectangular coil measures approx. 19 cm x 41 cm and connects with only one SlideConnect Plug which allows for fast and easy patient preparation. The positioning aids that come with the coil enhance positioning flexibility and help minimize involuntary patient motion artifacts. |
| **14478556**<br>**RS Positioning Aids Shoulder&Ankle #NX** | This package contains additional positioning aids that can be used for the UltraFlex Large 18 and UltraFlex Small 18.<br>This package contains a wedge shaped cushion that can be used together with the UltraFlex Large 18 or UltraFlex Small 18, e.g. for shoulder imaging and an L-shaped holder that can be used together with the coil holder of the UltraFlex Small 18 or UltraFlex Large 18 for ankle imaging to achieve a 90° angle of the patient's ankle. |
| **14483539**<br>**RS Separator 45kW/60kW/75kW #BM** | The SEP (Separation cabinet) has to be used if a central hospital chilled water supply is available or if a chiller of any brand/type is already available.<br>The SEP is the interface between the on-site water chiller (of any brand or type) or the interface to the central hospital cooling water supply.<br>For the above-mentioned cases the SEP is mandatory!<br><br>In these cases, the primary water specifications must fulfill the requirements:<br>XJ: 45kW; water temperature: 6 - 14°C<br>XQ: 60kW; water temperature: 6 - 14°C<br>XT: 75kW; water temperature: 6 - 12°C<br><br>For all gradient systems:<br>Flow: 100+-10l/min; pH value 6-8; max working pressure 6 bar.<br><br>Dimensions: 1950mm x 650mm x 650mm (height x width x depth)<br>Weight: approx. 350kg<br>Function:<br>- Interface between the on-site water chiller (of any brand/type) or<br>- Interface to the central hospital chilled water supply.<br><br>Delivery volume:<br>- Separator<br>- Two 3.0 m hoses (forward and return) for connecting the SEP to the local cooling water supply system<br>- Separation cabinet<br>- With the SEP configuration, the helium compressor is built into the SEP cabinet and connected internally<br>- Regional specific adapter for connection to the hospital installation |
| **14483547**<br>**RS UPS system #BM** | UPS system Liebert GXT5 3000IRT2UXLE for MAGNETOM NumX systems for safeguarding computers. Including Power Cable of 9 m for connecting the UPS.<br>Power output: 3.0 kVA / 3 kW<br>Bridge time: 3 min full load / 12 min half load<br>Input voltage: 230 VAC<br>Voltage range: 115 - 280 V |

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| | Input frequency: 40 / 70 Hz<br>Output voltage: 230 VAC<br>Dimensions (H x D x W): UPS 430 x 540 x 85 mm<br>incl. 9 m Power Cable<br>Weight: approx. 30 kg |
| **14483537**<br>**RS System Start Timer #BM** | Timer clock that can be installed together with the MAGNETOM MR system to start the system automatically at user-definable times, eliminating waiting times during system boot up.<br>The System Start Timer allows the user to define three different startup times for different days. The time switch can be programmed one year in advance. A programmed weekly schedule is repeated unless it is modified or suspended. |
| **14410642**<br>**RS MR Workplace Table; height adjust.** | The table is suitable for the syngo Acquisition Workplace and the syngo MR Workplace based on syngo hardware.<br>This 110V version has motorized table height adjustment.<br>The table design matches the MED-wide uniform design with silver-finished rim, use of friendly colors matching the Siemens color pattern for MAGNETOM and SOMATOM.<br>This table can electrically be adjusted to the ergonomically most suitable height via buttons at the front.<br>- Width 120 cm<br>- Depth 80 cm<br>- Height electrically adjustable between 68 cm and 118 cm |
| **14410644**<br>**RS MR Workplace Container; 50cm** | 50 cm wide extra case for the syngo host computer with sliding front door to allow change of storage media (CD/DVD/USB).<br>The table design matches the MED-wide uniform design with silver-finished rim, use of friendly colors matching the Siemens color pattern for MAGNETOM and SOMATOM.<br>Table height 72 cm, matching the *syngo* Acquisition Workplace and *syngo* MR Workplace console table, for installation in the operator room either directly to the left or right of the *syngo* Acquisition Workplace or *syngo* MR Workplace console table or separately.<br>- Width 50 cm<br>- Depth 80 cm<br>- Height 72 cm<br><br>Alternatively this casing is also suited for the Recon image processor (except for the MR systems with the new Tim generation: there the Recon image processor is always placed inside the electronics cabinet). |
| **14431432**<br>**RS Foot/Ankle 16 #Ae**<br>**(Optional)** | The new Tim 4G coil technology with Dual Density Signal Transfer and DirectConnect Technolgy combines key imaging benefits: excellent image quality, high patient comfort, and unmatched flexibility.<br>Foot/Ankle 16 for examinations of the left or right foot and ankle region consists of a base plate and an iPAT compatible 16-channel coil and allows high resolution imaging of the foot and ankle within one examination. Foot/Ankle 16 is a cable-less coil and will be connected via DirectConnect for fast and easy patient preparation.<br>The 16-element coil with 16 integrated pre-amplifiers excels in highest resolution imaging with exceptional signal/noise ratio, while taking full advantage of iPAT in all directions.<br><br>Foot/Ankle 16 is ergonomically designed and features a boot-like coil design. Together with the included stabilization pads the coil allows easy, fast and comfortable patient positioning. |

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| **14442420**<br>**RS 2/10/16ch Sentinelle BreastCoil #Ae**<br>**(Optional)** | The 2/10/16-channel Sentinelle Breast Coil can be used as a breast imaging coil, a bilateral biopsy coil, as well as a unilateral biopsy coil providing large biopsy access<br><br>This coil consists of a positioning frame with exchangeable coils with different numbers of channels as described in detail in the E text.<br><br>The preamplifiers are integrated into the coil.<br>The coil is iPAT-compatible.<br>The 16-channel imaging configuration of the Sentinelle Breast Coil consists of two lateral 4-channel coil elements and an 8-channel coil middle element.<br><br>The 16-channel Sentinelle Breast Coil delivers brilliant image quality for high-resolution 2D and 3D MR breast imaging. Techniques for reducing scan times, such as parallel imaging, can be used very well.<br><br>The coil can be used with any 1.5T Tim/ Tim 4G systems of sufficient receive channel count (with the exception of MAGNETOM ESSENZA).<br><br>Together with the Tim Whole Body Suite Option, the coil can also be operated in “feet first” mode (does not apply for the MAGNETOM Altea in combination with the 16-channel imaging configuration of the Sentinelle Breast Coil). This function substantially improves the examination flow with claustrophobic patients.<br><br>For optimal patient positioning, a set of 9 comfortable visco-elastic positioning cushions and aids, such as a height-adjustable head rest, is included.<br><br>The biopsy configuration consists of two lateral 1-channel coil elements and an 8-channel coil middle element. For the unilateral biopsy setup a contralateral support will be used.<br>The Sentinelle Breast Coil supports the Grid biopsy method.<br><br>A set of grid plates and a Biopsy Training Starter Kit (not for use on humans) are included in the delivery.<br><br>The 2/10/16-channel Sentinelle Breast Coil measures approx. 1097 mm x 582 mm x 279 mm (L x W x H) and weighs approx. 22 kg with base plate and 16 kg without base plate. |
| **14431434**<br>**RS Tim Coil Interface 1.5T**<br>**(Optional)** | Coil adapter plug for up to 8 receive and 1 transmit channels. This adapter will be required if the following Tim coils will be used on a compatible 1.5T MAGNETOM system with Tim 4G technology.<br>- Tx/Rx 15-channel Knee Coil (two adapters required)<br>- CP Extremity Coil<br>- 4-channel BI Breast Coil<br>- 16-channel AI Breast Coil (two adapters required)<br>- (2/4)/8-channel Sentinelle BreastCoil<br>- (2/10)/16-channel Sentinelle BreastCoil (two adapters required)<br><br>The adapter can be plugged in any the SlideConnect plug of the system. The Tim Coil Interface has a compact design and measures only approx. 190 mm x 90 mm x 33 mm (W x H x D). |

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| **14442419**<br>**RS Breast 18 #Ae**<br>**(Optional)** | Main features of the 18-channel Breast Coil:<br>- 18-element design with 18 integrated preamplifiers.<br>- The coil has 8 elements arranged around each breast, and 2 elements for the axilla regions.<br>- Weighs only 5.5 kg (including the positioning frame).<br>- Comes with an extra-wide abdominal support wedge and a comfortable cushion for the arms.<br>- The coil can accommodate breasts with a volume of up to approximately 2.2 liters per breast and has adjustable immobilization units for each breast.<br>- Adjustable head support for optimum patient comfort.<br>- Accessories (available separately) allow shared use between 60 cm and 70 cm bore systems.<br><br>Application:<br>- MR breast examinations (MR imaging + spectroscopy)<br><br>Special feature:<br>- Includes reference tube for quantitative spectroscopy. The tube is supplied with the syngo GRACE application.<br>The 18-channel Breast Coil has an 18-element design, with 18 integrated preamplifiers, in which the coil elements are arranged as 8 elements around each breast and 2 elements for the axilla regions.<br><br>The 18-channel Breast Coil delivers brilliant image quality for high-resolution 2D and 3D MR breast imaging. In addition, techniques for reducing scan times, such as parallel imaging, can be used in all directions.<br><br>The coil comes with a separate mechanical part for the head-support, an extra-wide abdominal wedge cushion providing a smooth transition between the surfaces of the patient table and the breast coil, and a small distance cushion. Furthermore, there is a cushion for supporting the arms at the head-end of the coil which can be placed on the patient table. An adapter is provided separately by which the customer can adapt the coil for usage in 60 and 70cm bore systems, respectively. Mechanical pushers inside each cup of the breast coil allow optional breast immobilization.<br><br>The coil is suitable for any 1.5T Tim 4G system.<br><br>Together with the Tim Whole Body Suite, the 18-channel Breast Coil can also be operated in “feet first” mode. This substantially improves the examination flow with claustrophobic patients.<br><br>The Breast 18 measures approx. 575 mm x 410 mm x 205 mm (LxWxH) and weighs approx. 5.5 kg including the positioning frame. |