

**From:** [Hill, Richard W.](#)  
**To:** [Fick, Mackinzey](#)  
**Subject:** RE: CON 6166 Review  
**Date:** Tuesday, November 26, 2024 9:48:53 AM  
**Attachments:** [image001.png](#)  
[Siemens Quote - Updated - 11-25-24 \(02661739x7A478\).PDF](#)  
[Winhaven - Budget - 11-26-24 \(02661895x7A478\).PDF](#)  
[Winghaven - Budget Detail - 11-26-24 \(02661893x7A478\).PDF](#)  
[Universal Quote - Updated - 11-25-24 \(02661741x7A478\).PDF](#)  
[ICS Quote - Updated - 11-25-24 \(02661740x7A478\).PDF](#)

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Mackinzey:

Please see below.

- Provide a service area for the staff analysis. [Saint Louis County, Saint Charles County, Lincoln County, Warren County.](#)
- The Siemens quote states valid until 10/20/2024. Provide an updated quote. [See attached.](#)
- It appears the trade in cost was deducted from the proposed project budget. Submit a revised project budget sheet and additional fee. [See attached revisions to budget detail and budget. Added trade in value back into the Siemens quote and reduced the project contingency by an equivalent amount. No new fee should be due. Apologies for the error.](#)
- Universal Shielding Corp is dated 8/12/2024. Is this still valid? [Yes, pricing is still valid. See attached quote.](#)
- McKesson is dated 11/12/2024. Is this still valid? [Yes, pricing is still valid. See below snip from Guerbet contract \(the McKesson vendor\), specifying contractual rates are valid through 9/30/2027.](#)



#### **SIXTH AMENDMENT TO AGREEMENT FOR IMAGING PRODUCTS**

This Sixth Amendment ("Amendment") shall amend and modify the AGREEMENT FOR IMAGING PRODUCTS implemented on May 7, 2019 (the "Contract"), entered into by and between **Guerbet LLC** ("Seller") and **RAYUS Radiology**, formerly **Center for Diagnostic Imaging, Inc.** located at 5775 Wayzata Boulevard, Suite 400, Minneapolis, MN 55416 ("Customer").

#### **RECITALS:**

- WHEREAS, Customer and Seller are parties to the Contract, as amended from time to time and
- WHEREAS, Customer and Seller desire to amend the terms of the Contract as set forth below.
- THEREFORE, the terms of the Contract are amended as set forth below.

#### **TERMS AND CONDITIONS:**

1. The term of the Contract pursuant to Section I.a is hereby extended with the Contract expiration date set for September 30th, 2027.

- ArchImages is dated 10/11/2024. Is this still valid? **Yes, pricing is still valid. The applicant is currently seeking to obtain an updated quote, but I wanted to make sure you have an answer prior to the Thanksgiving holiday.**
- SCI Engineering is dated 10/31/2024. Is this still valid? **Yes, pricing is still valid. The applicant is currently seeking to obtain an updated quote, but I wanted to make sure you have an answer prior to the Thanksgiving holiday.**
- ICS is dated 11/8/2024. Is this still valid? **Yes, pricing is still valid. See attached quote.**
- Were cents included in revenues and expenses? **Yes.**

Rich

RICHARD W. HILL  
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**From:** Fick, Mackinzey <Mackinzey.Fick@health.mo.gov>  
**Sent:** Thursday, November 21, 2024 3:52 PM  
**To:** Hill, Richard W. <RHill@lashlybaer.com>  
**Subject:** CON 6166 Review

Rich,

After review of application #6166 HT, some additional information is needed.

- Provide a service area for the staff analysis.
- The Siemens quote states valid until 10/20/2024. Provide an updated quote.
- It appears the trade in cost was deducted from the proposed project budget. Submit a revised project budget sheet and additional fee.
- Universal Shielding Corp is dated 8/12/2024. Is this still valid?
- McKesson is dated 11/12/2024. Is this still valid?
- ArchImages is dated 10/11/2024. Is this still valid?

- SCI Engineering is dated 10/31/2024. Is this still valid?
- ICS is dated 11/8/2024. Is this still valid?
- Were cents included in revenues and expenses?

**This information is needed by Friday, November 29<sup>th</sup>, 2024.**

*Mackinzey Fick*

Assistant Program Coordinator, Certificate of Need

Department of Health and Senior Services

920 Wildwood Drive, P.O. Box 570

Jefferson City, MO 65102

OFFICE: 573-751-6403

FAX: 573-751-7894

EMAIL: [mackinzey.fick@health.mo.gov](mailto:mackinzey.fick@health.mo.gov)

<http://health.mo.gov/information/boards/certificateofneed/index.php>

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Certificate of Need Program

**PROPOSED PROJECT BUDGET**

**Description**

**Dollars**

**COSTS:\***

*(Fill in every line, even if the amount is "\$0".)*

1. New Construction Costs ***	\$0
2. Renovation Costs ***	\$570,806
<b>3. Subtotal Construction Costs</b> (#1 plus #2)	<b>\$570,806</b>
4. Architectural/Engineering Fees	\$28,400
5. Other Equipment (not in construction contract)	\$0
6. Major Medical Equipment	\$1,406,741
7. Land Acquisition Costs ***	\$0
8. Consultants' Fees/Legal Fees ***	\$0
9. Interest During Construction (net of interest earned) ***	\$0
10. Other Costs ***	\$594,053
<b>11. Subtotal Non-Construction Costs</b> (sum of #4 through #10)	<b>\$2,029,194</b>
<b>12. Total Project Development Costs</b> (#3 plus #11)	<b>\$2,600,000 **</b>

**FINANCING:**

13. Unrestricted Funds	\$0
14. Bonds	\$0
15. Loans	\$2,600,000
16. Other Methods (specify)	\$0
<b>17. Total Project Financing</b> (sum of #13 through #16)	<b>\$2,600,000 **</b>

18. New Construction Total Square Footage	0
19. New Construction Costs Per Square Foot *****	\$0
20. Renovated Space Total Square Footage	374
21. Renovated Space Costs Per Square Foot *****	\$1,526

\* 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.

**St. Luke's RAYUS Radiology  
Winghaven MRI Replacement  
Budget Detail**

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>
	<b>Vendor</b>	<b>Quote ID</b>	<b>Description</b>	<b>Amount</b>	<b>CON Cost Category</b>
<b>1</b>	Siemens	P-CPQ-1236756-0-3	Magnetom Altea System	\$1,299,600.00	Major Medical Equipment
<b>2</b>	Universal Shielding Corp.	MRI-24-435	Shielding	\$80,391.00	Major Medical Equipment
<b>3</b>	McKesson	N/A	Injector	\$26,750.00	Major Medical Equipment
<b>4</b>	Archimages	24124	Architecture	\$18,900.00	Architecture & Engineering
<b>5</b>	SCI Engineering, Inc.	2024-1906.10,.G0	Engineering	\$9,500.00	Architecture & Engineering
<b>6</b>	ICS Construction Services, Ltd.	N/A	Renovation	\$570,806.00	Renovation
<b>7</b>	Escalation & Contingency	N/A	Escalation & Contingency	\$594,053.00	Other Costs
<b>8</b>	<b>Total</b>			<b>\$2,600,000.00</b>	



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

SIEMENS REPRESENTATIVE  
Tyler Chambers NL  
tchambers@deltamed.net

**PRELIMINARY PROPOSAL**

Customer Number: 0000005147

Date: 09/04/2024

**RAYUS RADIOLOGY**  
5775 WAYZATA BLVD STE 400  
SAINT LOUIS PARK, MN 55416

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.

<u>Table of Contents</u>	<u>Page</u>
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OPTIONS for MAGNETOM Altea - System (Quote Nr. CPQ-1236756 Rev. 0) .....	12
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**Contract Total: \$ 1,242,220**  
*(total does not include any Optional or Alternate components which may be selected)*

Proposal valid until 03/31/2025

**PRELIMINARY PROPOSAL**

**Quote Nr:** CPQ-1236756 Rev. 0

**Terms of Payment:** 00% Down, 80% Delivery, 20% Installation  
 Free On Board: Destination

**Purchasing Agreement:** VIZIENT SUPPLY LLC

VIZIENT SUPPLY LLC terms and conditions apply to Quote Nr CPQ-1236756

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.

**MAGNETOM Altea - System**

All items listed below are included for this system:

Qty	Part No.	Item Description
1	14461700	<p><b>MAGNETOM Altea - System</b></p> <p>MAGNETOM Altea is the new 1.5T Open Bore system that gives you full confidence to deliver the productivity, reproducibility, and patient satisfaction that you demand in MRI. Powered by our premium MR technology, MAGNETOM Altea combines our unique BioMatrix technology with the new syngo MR XA software platform and our exclusive Turbo Suite to fundamentally transform care delivery for the better.</p> <p>System Design</p> <ul style="list-style-type: none"> <li>- Short and open appearance (157 cm total system length cover-to-cover and 70 cm Open Bore Design) to reduce patient anxiety and claustrophobia</li> <li>- Whole-body superconductive Zero Helium Boil-Off 1.5T magnet</li> <li>- Weight-optimized magnet technology based on high performance 3T and 7T magnet design</li> <li>- Actively Shielded water-cooled Siemens gradient system for maximum performance</li> </ul> <p>Tim 4G (Total imaging matrix in the 4th generation) for excellent image quality and speed with Siemens unique DirectRX technology enabling all digital-in/digital-out design and Dual-Density Signal Transfer Technology</p> <p>Push-button exams with GO technologies</p> <p>Select&amp;GO            DotGO/ myExam Companion            Recon&amp;GO            MR View&amp;GO</p> <p>Tim Application Suite allowing excellent head-to-toe imaging for</p> <ul style="list-style-type: none"> <li>- Neuro</li> <li>- Angio</li> <li>- Cardiac</li> <li>- Body</li> <li>- Onco</li> <li>- Breast</li> </ul>

**PRELIMINARY PROPOSAL**

Qty	Part No.	Item Description
		<ul style="list-style-type: none"> <li>- Ortho</li> <li>- Pediatric</li> <li>- Scientific</li> </ul> <p>Further included</p> <ul style="list-style-type: none"> <li>- High performance host computer and measurement and reconstruction system</li> <li>- Patient communication including headphones</li> <li>- syngo MR software including</li> <li>- Turbo Suite Essential</li> <li>- 1D/2D PACE</li> <li>- BLADE</li> <li>- Phoenix</li> <li>- Inline Diffusion</li> <li>- MDDW (Multiple Direction Diffusion Weighting)</li> <li>- CISS</li> <li>- DESS</li> <li>- TGSE</li> <li>- Offline Composing</li> </ul>
1	14460161	<p><b>MR General Engine #Vi</b></p> <p>syngo.MR General Engine extends Numaris/X by adding dedicated workflows and tools for routine and advanced reading of MR examinations. A generic MR Basic workflow is provided, as well as specific MR Neurology, MR Prostate Reading, MR Breast Reading, and MR Cardio-Vascular workflows.</p>
1	14475308	<p><b>myExam Brain Assist</b></p> <p>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.</p>
1	14475309	<p><b>myExam Spine Assist</b></p> <p>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.</p>
1	14475310	<p><b>myExam Large Joint Assist</b></p> <p>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.</p>
1	14482834	<p><b>myExam Brain Autopilot</b></p> <p>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, 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. myExam Brain Autopilot is customizable to the site-specific standards of care.</p>
1	14482835	<p><b>myExam Knee Autopilot</b></p>



**PRELIMINARY PROPOSAL**

Qty	Part No.	Item Description
		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.
		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.
		myExam Knee Autopilot is customizable to the site-specific standards of care.
1	14483029	<b>myExam Implant Suite</b> 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	14441748	<b>Quiet Suite #T+D</b> Quiet Suite enables complete, quiet examinations for neurology and orthopedics with at least 70% reduction in sound pressure levels.
1	14460162	<b>Tim Whole Body Suite #Vi</b> 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. For faster exams and greater diagnostic confidence.
1	14460227	<b>Tim Planning Suite #Vi</b> 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	14456329	<b>syngo TimCT FastView #Vi</b> 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 the volume are calculated Inline and displayed for planning subsequent exams. - Inline reconstruction of the localizer images during the scan. - Localizing images in three planes over the maximum Field of View available for subsequent planning in all orientations. - TimCT FastView runs without laser light positioning to further streamline the workflow for several indications.
1	14460160	<b>Advanced Diffusion #Vi</b> QuietX DWI and RESOLVE together make up the Advanced Diffusion package.  QuietX DWI enables quieter diffusion-weighted imaging of the brain with up to 70% reduction in sound pressure relative to conventional diffusion-weighted imaging. 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	14456327	<b>WARP &amp; Advanced WARP #Vi</b> WARP and Advanced WARP (SEMAC) integrates different techniques tailored to reduce susceptibility artifacts caused by orthopedic MR-conditional metal implants.
1	14456323	<b>Inline Composing syngo #Se</b>

**PRELIMINARY PROPOSAL**

Qty	Part No.	Item Description
1	14482913	<p>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.</p> <p><b>syngo Expert-i XA60/XA61</b> This software application enables remote access to the system (connected via local area network) for planning and processing.</p>
1	14461701	<p><b>Tim [180x32] XJ-Gradient #AI</b> Tim [180x32] XJ-gradients performance level Tim 4G's RF system and innovative coil architecture enables high resolution imaging and increased throughput. The system provides a maximum number of 180 channels (coil elements) that can be connected simultaneously. Flexible parallel imaging is achieved by the standard 32 independent RF channels that can be used simultaneously in one single scan and in one single FOV, each generating an independent partial image.</p> <p>XJ - gradients Max. amplitude: 57 mT/m (Actual 33 mT/m for every gradient axis) Max. slew rate: 216 T/m/s (Actual 125 T/m/s for every gradient axis) Min. rise time from 0 to 57 mT/m: 264 μs</p> <p>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.</p> <p>The XJ gradients are designed for high performance and linearity to support clinical whole body imaging at 1.5T. The force compensated gradient system minimizes vibration levels and acoustic noise.</p> <p>High-performance measurement and reconstruction system.</p>
1	14468980	<p><b>Coil Package Tim [180x32] #1.5T</b> This package includes (if not exchanged with different variants via respective quote items):</p> <ul style="list-style-type: none"> <li>- Head/Neck 16 DirectConnect</li> <li>- BioMatrix Spine 24</li> <li>- BioMatrix Body 12</li> <li>- Flex Large 4</li> <li>- Flex Small 4</li> <li>- Flex Coil Interface</li> </ul>
1	14468946	<p><b>BioMatrix Technology #AI,Lu</b> The new and unique BioMatrix technology addresses different aspects of patient bio-variability.</p>
1	14470794	<p><b>BioMatrix SliceAdjust #BM</b> BioMatrix SliceAdjust helps to avoid station boundaries and apparent broken spine artifacts as well as to preserve the SNR for whole-body diffusion.</p>
1	14470796	<p><b>BioMatrix Select &amp; GO #AI,Lu</b> Select&amp;GO The Select&amp;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. The ergonomically designed Select&amp;GO touch panel is integrated into the front cover on the left-hand side of the patient tunnel for controlling table movement, guidance for patient setup and comfort features. The Select&amp;GO panel is well illuminated for easy visual recognition.</p> <p>The BioMatrix Select&amp;GO interface enables fast and easy single-touch patient positioning.</p>

**PRELIMINARY PROPOSAL**

Qty	Part No.	Item Description
		The interface is integrated left-hand side of the patient into the front covers. Correct positioning saves unnecessary wasted time for repositioning and additional adjustments, therefore shortening the total room time.
1	14461706	<b>Pure White Design #Al</b> MAGNETOM Altea is available in a light and appealing design which perfectly integrate into different environments. The Pure White Design comprises a brilliant white front design ring with integrated unique Select&GO panels. The table cover is presented also in the same color and material selection.
1	14456270	<b>PC Keyboard US English #Vi</b> Standard PC keyboard with 105 keys.
1	14456238	<b>Peripheral Pulse Unit #Vi</b> Peripheral Pulse Unit for Pulse Triggering
1	14482959	<b>SW syngo MR XA61A</b> 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.  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	14470739	<b>Turbo Suite Excelerate (ELEVATE)</b> Turbo Suite Excelerate comprises access to cutting edge acceleration techniques such as Simultaneous Multi-Slice, and Compressed Sensing for static 2D and static 3D imaging applications in Neuro, MSK and Body MRI
1	14482972	<b>Deep Resolve Pro Package (ELEVATE)</b> 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	14483015	<b>High-End Computing (ELEVATE)</b> This upgrade brings a high-end image reconstruction computer to the Tim configuration for highly intensive computational calculations.
1	14461619	<b>Turbo Suite Essential #BM</b> Turbo Suite Essential comprises established acceleration techniques to maximize productivity for all contrasts, orientations and all routine imaging applications from head-to-toe.
1	14405328	<b>TWIST syngo #Tim</b> This package contains a Siemens unique sequence and protocols for time-resolved (4D) MR angiographic and dynamic imaging in general with high spatial and temporal resolution. syngo TWIST supports comprehensive dynamic MR angio exams in all body regions. It offers temporal information of vessel filling in addition to conventional static MR angiography, which can be beneficial in detecting or evaluating malformations such as shunts. In case of general dynamic imaging, for example an increase in spatial resolution by a factor of up to 2 at 60 seconds temporal resolution (compared to conventional dynamic imaging) is possible due to intelligent k-space sampling strategies. Alternatively, increased temporal resolution at constant spatial resolution is possible.
1	14460315	<b>Shoulder Shape 16 #So</b>

**PRELIMINARY PROPOSAL**

Qty	Part No.	Item Description
1	14416961	<p>The Shoulder Shape 16 combines the known benefits of Tim 4G coil technology with new highly flexible materials, resulting in unmatched image quality, high patient comfort and easy handling. The Shoulder Shape 16 for examinations of the left or right shoulder consists of an iPAT-compatible 16-channel shoulder coil in a flexible shoulder cup that can be shaped around small and large shoulders. An L-shaped cushion for easy positioning of the patient is included. The 16-element coil with 16 integrated pre-amplifiers ensures maximum signal-to-noise ratio. Shoulder Shape 16 will be connected via a SlideConnect plug for fast and easy coil set-up and patient preparation.</p> <p><b>Hand/Wrist 16 #Ae</b></p> <p>The new Tim 4G coil technology with Dual Density Signal Transfer and SlideConnect Technology combines key imaging benefits: excellent image quality, high patient comfort, and unmatched flexibility.</p> <p>Hand/Wrist 16 for examinations of the left or right hand and wrist region consists of a base plate and an iPAT compatible 16-channel coil and allows high-resolution imaging of the wrist and the hand within one examination. Hand/Wrist 16 will be connected via a SlideConnect plug for fast and easy patient preparation.</p>
1	14460423	<p><b>Tx/Rx Knee 18 #So</b></p> <p>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.</p> <p>Main features :</p> <ul style="list-style-type: none"> <li>- 18-element design (3x6 coil elements) with 18 integrated preamplifiers</li> <li>- iPAT-compatible</li> <li>- SlideConnect Technology</li> </ul>
1	14416962	<p><b>Foot/Ankle 16 #Ae</b></p> <p>The new Tim 4G coil technology with Dual Density Signal Transfer and DirectConnect Technology combines key imaging benefits: excellent image quality, high patient comfort, and unmatched flexibility.</p> <p>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.</p>
1	14470761	<p><b>2nd Select&amp;GO (ELEVATE)</b></p> <p>The 2nd Select&amp;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.</p>
1	14409198	<p><b>Native syngo #Tim</b></p> <p>Integrated software package with sequences and protocols for non-contrast-enhanced 3D MRA with high spatial resolution. syngo NATIVE particularly enables imaging of abdominal and peripheral vessels and is an alternative to MR angiography techniques with contrast medium, especially for patients with severe renal insufficiency.</p>
1	14456241	<p><b>Separator 60kW/75kW #Vi</b></p> <p>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. 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. For the above-mentioned cases the SEP is mandatory!</p> <p>In these cases, the primary water specifications must fulfill the requirements: XJ: 45kW; water temperature: 6 - 14°C XQ: 60kW; water temperature: 6 - 14°C XT: 75kW; water temperature: 6 - 12°C</p> <p>For all gradient systems:</p>

**PRELIMINARY PROPOSAL**

Qty	Part No.	Item Description
		Flow: 100+-10l/min; pH value 6-8; max working pressure 6 bar.
		Dimensions: 1950mm x 650mm x 650mm (height x width x depth) Weight: approx. 350kg
1	14460249	<b>UPS system #Vi</b> UPS system Liebert GXT5 3000IRT2UXLE for MAGNETOM NumX systems for safeguarding computers. Including Power Cable of 9 m for connecting the UPS. Power output: 3.0 kVA / 3 kW Bridge time: 3 min full load / 12 min half load Input voltage: 230 VAC
1	14456316	<b>UPS Battery module (Libert GXT4 BATT)</b> UPS battery module Liebert GXT5 72VBATTE for MAGNETOM Aera, Skyra, Prisma, ESSENZA, Amira, Spectra, C! for safeguarding computers. Extension for: Liebert GXT5 3000IRT2UXLE (14456315) Battery type: Closed, maintenance-free Extension of the bridge time to: 21 minutes full load / 48 min half load with one module Dimensions (H x D x W): Battery module: 430 x 540 x 85 mm  Weight: approx. 30 kg
1	14456228	<b>System Start Timer #Vi</b> 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	14461702	<b>BioMatrix Table #AI</b> The 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	MR_STD_RIG_I NST	<b>MR Standard Rigging and Installation</b> MR Standard Rigging and Installation  This quotation includes standard rigging and installation of your new MAGNETOM system  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.) It remains the responsibility of the Customer to prepare the room in accordance with the SIEMENS planning documents 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. 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.
1	MR_BTL_INSTALL	<b>MR Standard Rigging &amp; Install</b>
1	MR_CRYO	<b>Standard Cryogens</b>
1	MR_PM	<b>MR Project Management</b> A Siemens Project Manager (PM) will be the single point of contact for the implementation of your Siemens 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.

**PRELIMINARY PROPOSAL**

Qty	Part No.	Item Description
1	HASKRISFG23041	<p><b>Haskris OPC24 Chiller- 63kW</b> 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.</p> <p>The Haskris chiller must be used in combination with a Siemens SEP cabinet.</p> <p>The Haskris chiller is suitable for use in all siting conditions: normal, coastal, low-ambient, and/or OSHPD-compliant locations.</p> <p>Specifications Cooling Capacity: 63kW Fluid Supply Temp: 43°F (6°C) to 59°F (15°C) Pump Capacity: 32 GPM (120 LPM) Condenser: Air-cooled (heat dissipated into ambient air) Outdoor ambient air temperature: -40°F (-40°C) to 122°F (50°C) Electrical: 460V-3Ø-60Hz Dimensions: 77"W x 40"D x 74"H (196cm x 102cm x 188cm)</p> <p>Siemens' Pricing Also Includes: Delivery Chiller Start-Up (Post Installation) 1x Preventative Maintenance Service Visit Remote Monitoring Panel with 1-Year Cellular Connectivity and Cloud Service</p> <p>Installation: Customer is responsible for the rigging and installation of the chiller. 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.</p> <p>Warranty: 12 months from date of Start-Up</p>
1	HASKRIS_STAR TUP	<p><b>Haskris Chiller Start-Up</b> Chiller start-up by Haskris vendor after installation of chiller and completion of paperwork.</p>
1	MR_GOBRAIN	<p><b>GOBrain</b> 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.</p>
1	MR_GREEN_PKG	<p><b>MR Green Package</b> MRI Green Package Enhances environmental sustainability of equipment by reducing emissions.</p> <p>Eco Power Mode reduces power consumption by up to 12% with Eco Power Mode alone.</p> <p>Eco Gradient Mode reduces scope 2 emissions by up to 7%.</p> <p>System Start-Up Timer reduces scope 2 emissions in non-productive times.</p> <p>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.</p> <p>Environmental Product Declaration provides environmental relevant information of</p>

**PRELIMINARY PROPOSAL**

Qty	Part No.	Item Description
		product and packaging material, operating, cleaning and disposal data as well as life cycle impact information.
		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	<b>MRI Armboard w/ Pad</b>
1	NC149030	<b>NeoCoil Breast Coil, 1.5T</b> 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.  Coil Coverage: 36cm R/L, 20cm A/P, 24cm S/I Kit Includes: Medial Array, Lateral Array Left, Lateral Array Right, Baseplate Assy including system cable, Pad Kit, Accessories Kit Installation: Installation quoted separately Warranty: 1-year warranty through NeoCoil
1	NC_INSTALL_A PPS	<b>NeoCoil Breast Coil Install, Basic Apps</b> 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.
1	MR_BUDG_AD DL_RIG	<b>Budgetary Add'l/Out of Scope Rigging</b>
1	MR_TRADE_IN_ ALLOW	<b>MR Trade-in-Allowance HEHDxt, Project 2024-1992, Deinstallation/Expiration 12/31.2024 (\$57,380)</b>
1	MR14460428	<b>ACR Phantom Holder (USA)</b> 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_GOKNEE3 D	<b>GOKnee3D</b> 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 technique. Examination 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_PREINST_F IXED	<b>T+D Preinstall kit for fixed table</b>
1	MR_EP1_28	<b>Essential Training PH 1 (Onsite-28) MR</b>





**PRELIMINARY PROPOSAL**

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**OPTIONS on Quote Nr : CPQ-1236756 Rev. 0**

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**OPTIONS for MAGNETOM Altea - 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
1	14407259	<b>MR Workplace Table, height adjust.</b> The table is suitable for the syngo Acquisition Workplace and the syngo MR Workplace based on syngo hardware. This 110V version has motorized table height adjustment.	<b>+ \$ 1,664</b>
1	14407261	<b>MR Workplace Container, 50cm</b> 50 cm wide extra case for the syngo host computer with sliding front door to allow change of storage media (CD/DVD/USB).	<b>+ \$ 1,331</b>
1	MRISMNS0001	<b>MRI Patient Audio System</b> 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:  <ul style="list-style-type: none"> <li>• Create custom, commercial-free radio stations based on artist, song or genre preferences</li> <li>• Avoid any AM/FM tuning issues that may occur in RF-shielded rooms</li> <li>• Compatible with all popular audio apps</li> </ul> <p>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.</p> <p>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.</p> <p>The audio system is not MR safe and is only intended for use outside the MRI suite.</p> <p>Installation is not included unless purchased with the Siemens system.</p> <p>Includes 3 year limited liability warranty on all system components through MRI Med.</p>	<b>+ \$ 2,704</b>
1	14402527	<b>SWI #Tim</b> 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.	<b>+ \$ 16,640</b>
1	14456232	<b>DTI Package #Vi</b> This package combines Diffusion Tensor Imaging and syngo.MR Tractography.	<b>+ \$ 41,267</b>
1	14475452	<b>myExam LiverLab Assist</b> myExam LiverLab Assist is a system guided workflow to examine the hepatic fat and iron status.	<b>+ \$ 20,480</b>
1	14469229	<b>Flex -&gt; UltraFlex Upgrade #1.5T</b>	<b>+ \$ 43,264</b>

**PRELIMINARY PROPOSAL**

Qty	Part No.	Item Description	Extended Price
1	14456282	<p>This option exchanges the Flex Small &amp; Large 4 coils incl. the Flex Coil Interface from the standard coil configuration for the superior UltraFlex Small &amp; Large 18. These are two lightweight, iPAT compatible, 18-element no-tune receive coils made of highly flexible and soft material.</p> <p>UltraFlex Large 18            Ideal for examinations of larger extremities (e.g. medium to large shoulder, hip, knee, ankle and hand) and for abdominal examinations. Dedicated positioning aids for larger extremities are delivered with the coil.</p> <p>UltraFlex Small 18            Ideal for examinations of smaller extremities (e.g. small to medium shoulder, smaller ankle, elbow and hand) and for abdominal examinations. Dedicated positioning aids for smaller extremities are delivered with the coil.</p> <p><b>Positioning Aids Shoulder&amp;Ankle #Vi</b>            This package contains additional positioning aids that can be used for the UltraFlex Large 18 and UltraFlex Small 18.</p>	<b>+ \$ 1,560</b>

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**FINANCING:** The equipment listed above may be financed through one of our financing partners. 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.

Siemens Healthineers is pleased to submit this Preliminary Pricing Proposal. A Preliminary Pricing Proposal is provided for planning purposes only; it is not contractually binding. To receive a contractually binding proposal for the Products listed above, inclusive of Terms, Conditions, and Warranty coverage, please contact your Siemens Healthineers Sales Representative.

Siemens Healthineers  
Tyler Chambers NL

tchambers@deltamed.net

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

**SIEMENS**  
**Healthineers**   
**SIEMENS REPRESENTATIVE**  
Tyler Chambers NL  
tchambers@deltamed.net

**PRELIMINARY PROPOSAL**

## **Detailed Technical Specifications**

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

**SIEMENS**  
**Healthineers**   
**SIEMENS REPRESENTATIVE**  
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**PRELIMINARY PROPOSAL**

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**MAGNETOM Altea - System**

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**PRELIMINARY PROPOSAL**

Part No./Product	Description
<p><b>14461700</b>  <b>MAGNETOM Altea - System</b></p>	<p>MAGNETOM Altea is the new 1.5T Open Bore system that gives you full confidence to deliver the productivity, reproducibility, and patient satisfaction that you demand in MRI. Powered by our premium MR technology, MAGNETOM Altea combines our unique BioMatrix technology with the new syngo MR XA software platform and our exclusive Turbo Suite to fundamentally transform care delivery for the better.</p> <p>System Design</p> <ul style="list-style-type: none"> <li>- Short and open appearance (157 cm total system length cover-to-cover and 70 cm Open Bore Design) to reduce patient anxiety and claustrophobia</li> <li>- Whole-body superconductive Zero Helium Boil-Off 1.5T magnet</li> <li>- Weight-optimized magnet technology based on high performance 3T and 7T magnet design</li> <li>- Actively Shielded water-cooled Siemens gradient system for maximum performance</li> </ul> <p>Tim 4G (Total imaging matrix in the 4th generation) for excellent image quality and speed with Siemens unique DirectRX technology enabling all digital-in/digital-out design and Dual-Density Signal Transfer Technology</p> <p>Push-button exams with GO technologies</p> <p>Select&amp;GO          DotGO/ myExam Companion          Recon&amp;GO          MR View&amp;GO</p> <p>Tim Application Suite allowing excellent head-to-toe imaging for</p> <ul style="list-style-type: none"> <li>- Neuro</li> <li>- Angio</li> <li>- Cardiac</li> <li>- Body</li> <li>- Onco</li> <li>- Breast</li> <li>- Ortho</li> <li>- Pediatric</li> <li>- Scientific</li> </ul> <p>Further included</p> <ul style="list-style-type: none"> <li>- High performance host computer and measurement and reconstruction system</li> <li>- Patient communication including headphones</li> <li>- syngo MR software including</li> <li>- Turbo Suite Essential</li> <li>- 1D/2D PACE</li> <li>- BLADE</li> <li>- Phoenix</li> <li>- Inline Diffusion</li> <li>- MDDW (Multiple Direction Diffusion Weighting)</li> <li>- CISS</li> <li>- DESS</li> <li>- TGSE</li> <li>- Offline Composing</li> </ul> <p>MAGNETOM Altea is the new 1.5T Open Bore system that gives you full confidence to deliver the productivity, reproducibility, and patient satisfaction that you demand in MRI. Powered by our premium MR technology, MAGNETOM Altea combines our unique BioMatrix technology with the new syngo MR XA software platform and our exclusive Turbo Suite to fundamentally transform care delivery for the better.</p>

**PRELIMINARY PROPOSAL**

Part No./Product	Description
	<p>The system includes:</p> <p><b>BioMatrix Technology</b>            In order to meet the requirements of the changing healthcare market, Tim® is now further enhanced with the ability to address patient biovariability: Evolving from Total imaging matrix, BioMatrix® technology addresses the intrinsic biovariability in humans.</p> <p>BioMatrix can adapt to all patients and their anatomic individuality, to make MRI more predictable and consistent for all patients, even the 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.</p> <p>BioMatrix anticipates, adapts and accelerates to embrace human nature.</p> <p><b>Tim 4G</b>            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.            Tim 4G with its 4G flexibility, 4G accuracy and 4G speed brings image quality and acquisition speed to a new level.</p> <p><b>Magnet:</b></p> <ul style="list-style-type: none"> <li>- Short 145 cm long (157 cm with covers), whole-body superconductive 1.5T magnet with active shielding (AS) technology with counter coils</li> <li>- External Interference Shielding (E.I.S.)</li> <li>- Excellent homogeneity enabled magnet design which allows for a cylindrically optimized homogeneity volume resulting in higher image quality (50 × 50 × 45 cm<sup>3</sup> DEV, typ. 2,8 ppm based on the 24-plane plot method)</li> <li>- Temperature sensors with real time correction algorithm for unmatched long-term stability at 70 cm</li> <li>- 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.</li> <li>- It has an integrated magnet cooling system.</li> <li>- The combination of standard active shim with 3 linear channels (1<sup>st</sup> order) and passive shim allows for maximized magnetic field homogeneity and consistent high image quality for a wide range of applications</li> <li>- Integrated Eco-Power technology to save around 30% of energy during standby of the system.</li> </ul> <p><b>Gradient system:</b></p> <ul style="list-style-type: none"> <li>- Actively shielded water-cooled world-class gradient system</li> <li>- All axes force compensated for lowest vibrations and acoustic performance</li> </ul> <p><b>DirectRF - RF Transmit/Receive System:</b></p> <ul style="list-style-type: none"> <li>- Fully integrated Transmit- and Receive path in the magnet housing including extremely compact water-cooled solid state amplifier with 26.1 kW peak power</li> <li>- High dynamic range</li> <li>- Immediate feedback loop for real-time sequence adaptation</li> <li>- Integrated no tune transmit/receive Body Coil</li> </ul>

**PRELIMINARY PROPOSAL**

Part No./Product	Description
	<ul style="list-style-type: none"> <li>- The revolutionary Tim 4G technology allows connecting 180 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.</li> </ul> <p><b>Select&amp;GO</b>          The Select&amp;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.</p> <ul style="list-style-type: none"> <li>- The ergonomically designed Select&amp;GO touch panel is integrated into the front cover on the left-hand side of the patient tunnel for controlling table movement, guidance for patient setup and comfort features. The Select&amp;GO panel is well illuminated for easy visual recognition.</li> <li>- Automated table move to upmost position, to center position or Home position facilitate smooth patient preparation and will reduce table time</li> <li>- Variable (6 levels) ventilation and lighting inside the magnet bore or volume adjustments are possible for increased patient comfort The Select&amp;GO touch panel 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.</li> <li>- Almost all table control functions, including ventilation and illumination of the magnet bore, can be also controlled from the operator console for convenient operation.</li> </ul> <p><b>DotGO (≤ SW syngo MR XA31)</b>          Go for consistent results, efficiently with Dot Engines.          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.          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.          Dot is personalized, guided and automated and designed to improve workflow efficiency and image consistency.</p> <p><b>Dot Cockpit</b>          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.</p> <p><b>myExam Companion (≥ SW syngo MR XA51)</b>          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.</p> <p><i>myExam Autopilot</i>          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.</p> <p><i>myExam Assists</i></p>



**PRELIMINARY PROPOSAL**

Part No./Product	Description
	<p>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.</p> <p><i>myExam Cockpit</i>  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.</p> <p><b>Recon&amp;GO</b>  The Recon&amp;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.</p> <p><b>MR View&amp;GO</b>  MR View&amp;GO is MAGNETOM Altea'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.  Beyond that, MR View&amp;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.</p> <p><b>Tim Application Suite</b>  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 Altea.</p> <ul style="list-style-type: none"> <li>- Neuro Suite</li> <li>- Angio Suite</li> <li>- Cardiac Suite</li> <li>- Body Suite</li> <li>- Onco Suite</li> <li>- Breast Suite</li> <li>- Ortho Suite</li> <li>- Pediatric Suite</li> <li>- Scientific Suite</li> </ul> <p><b>Neuro Suite</b></p>

**PRELIMINARY PROPOSAL**

Part No./Product	Description
	<p>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.</p> <p>It includes for example:</p> <ul style="list-style-type: none"> <li>- Fast 2D imaging with SE, TSE, GRE pulse sequences for high-resolution imaging</li> <li>- BLADE for motion-insensitive TSE imaging</li> <li>- 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.</li> <li>- 3D TOF for non-contrast-enhanced angiography</li> <li>- 3D isotropic resolution volume imaging using T1 3D MPRAGE / 3D</li> <li>- FLASH, SPACE DarkFluid, T1 SPACE and T2 SPACE pulse sequences</li> <li>- High-resolution T2 SPACE pulse sequence optimized for inner ear examinations</li> <li>- 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</li> <li>- 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.</li> <li>- Whole-spine pulse sequences in multiple steps with software-controlled table movement</li> <li>- 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</li> <li>- RESOLVE (Readout Segmentation Of Long Variable Echo-trains) delivers high-resolution, low-distortion diffusion-weighted imaging (DWI) for accurate depiction of lesions.</li> <li>- BioMatrix's CoilShim helps to reduce patient induced strongly localized B0 inhomogeneities as may arise, e.g., in the neck region.</li> <li>- 3D Myelo with 3D HASTE for anatomical details</li> <li>- 3D CISS (Constructive Interference in Steady State) for excellent visualization of fine structures such as cranial nerves. High-resolution imaging of inner ear</li> <li>- TGSE sequence used primarily for T2-weighted imaging for shorter measurement time, decreased RF power deposition, and high-resolution imaging of the brain</li> <li>- AutoAlign Head LS providing a fast, easy, standardized, and reproducible patient scanning supporting reading by delivering a higher and more standardized image quality.</li> </ul> <p><b>Angio Suite</b>            Excellent MR Angiography can be performed to visualize arteries and veins with or without contrast agent.</p> <ul style="list-style-type: none"> <li>- 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.</li> <li>- Dynamic MRA for 3D imaging over time Signal from Respiratory Sensor can be selected to actively trigger MR image acquisition, e.g. with NATIVE*.</li> </ul> <p><i>Contrast-enhanced MRA</i>            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</p>

**PRELIMINARY PROPOSAL**

Part No./Product	Description
	<ul style="list-style-type: none"> <li>- TestBolus workflow for optimal bolus timing and excellent image quality</li> <li>- 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</li> <li>- Dynamic ce-MRA for 3D imaging over time</li> </ul> <p><i>Non-contrast-MRA and venography</i></p> <ul style="list-style-type: none"> <li>- 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</li> <li>- Triggered 2D ToF sequences for non-contrast-MRA in the legs</li> <li>- MR venography and arteriography with Phase-Contrast</li> <li>- TONE (Tilted optimized non-saturating excitation) techniques for improved</li> <li>- Contrast-to-Noise Ratio (CNR)</li> </ul> <p><i>Image processing tools</i></p> <ul style="list-style-type: none"> <li>- Inline MIP for immediate results</li> <li>- Inline subtraction of pre- and post-contrast measurements</li> <li>- Inline standard deviation maps of Phase-Contrast measurements for delineation of arteries and veins</li> </ul> <p><b>Cardiac Suite</b> 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.</p> <p><i>Cardiac views</i></p> <ul style="list-style-type: none"> <li>- Fast acquisition of the basic cardiac orientations for further examination planning</li> <li>- 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.</li> </ul> <p><b>BEAT</b></p> <ul style="list-style-type: none"> <li>- Unique tool for fast and easy cardiovascular MR imaging</li> <li>- E.g. 1 click change from FLASH to TrueFISP for easy contrast optimization</li> <li>- 1-click to switch arrhythmia rejection on / off</li> <li>- 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</li> </ul> <p><i>Visualization of structural cardiovascular pathologies with CMRBEAT</i></p> <ul style="list-style-type: none"> <li>- 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 &amp; TrueFISP) for high-resolution valve evaluation.</li> <li>- 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)</li> <li>- Dark-blood TSE with motion compensation for high-quality vessel wall imaging in small or large vessels</li> </ul> <p><i>Tools for rapid evaluation of left or right ventricular function</i></p> <ul style="list-style-type: none"> <li>- Acquisition of a stack of short-axis slices (standard: advanced segmented TrueFISP)</li> <li>- Automatic adjustment of the acquisition window to the current heart rate</li> <li>- Use of the Inline ECG for graphical ECG triggering setup</li> <li>- Retrospective gating with cine sequences (TrueFISP, FLASH)</li> </ul>

**PRELIMINARY PROPOSAL**

Part No./Product	Description
	<ul style="list-style-type: none"> <li>- Pulse sequences for whole-heart coverage</li> <li>- Real-time imaging in case the patient is not able to hold his breath</li> </ul> <p><i>4D imaging and tissue characterization with BEAT; pulse sequences for high-contrast and high-resolution tissue characterization</i></p> <ul style="list-style-type: none"> <li>- 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</li> <li>- Segmented IR TrueFISP / FLASH with TI scout for optimization of tissue contrast</li> <li>- Advanced tissue characterization with 2D phase-sensitive IR (PSIR) pulse sequences with TrueFISP and FLASH contrast. Magnitude and phase-sensitive images with one acquisition.</li> <li>- Simple: no adjustment of inversion time (TI) necessary with PSIR technique</li> <li>- Motion correction/averaging of multiple measurements with iPAT or tPAT accelerated single-shot TrueFISP or GRE images of the heart, for free-breathing acquisition.</li> </ul> <p>Physiological Measurement Unit (PMU) - Wireless Physio Control</p> <ul style="list-style-type: none"> <li>- Synchronizes the measurement with the physiological cycles (triggering to minimize motion artifacts caused by cardiac and respiratory movements)</li> <li>- Wireless Sensors</li> <li>- Wireless Vector ECG / respiration for physiologically synchronized imaging, rechargeable battery-powered - for optimized patient handling</li> <li>- Physiological Signals Display</li> <li>- ECG (3 channels)</li> <li>- Respiration</li> <li>- External Trigger Input Display</li> </ul> <p>ECG Triggering:</p> <ul style="list-style-type: none"> <li>- Acquisition of multiple slices, e.g. of the heart, at different phases of the cardiac cycle</li> <li>- Excellent image quality by synchronizing data acquisition with cardiac motion</li> <li>- Respiratory Triggering: Excellent image quality by synchronizing data acquisition with the respiratory motion</li> <li>- External Triggering: Interface for trigger input from external sources (e.g. Patient Monitoring System) inside the examination room</li> <li>- Interface for trigger input from external sources (e.g. pulse generator, trigger sources for fMRI) outside the examination room</li> <li>- Optical trigger output for fMRI</li> <li>- Retrospective gating for ECG, peripheral pulse, and external trigger input</li> </ul> <p><b>Breast Suite</b></p> <p>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.</p> <p>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.</p> <p>This package includes:</p> <ul style="list-style-type: none"> <li>- High-resolution 2D pulse sequences for morphology evaluation</li> <li>- High-resolution 3D pulse sequences covering both breasts simultaneously</li> <li>- Pulse sequences to support interventions (fine needle and vacuum biopsies, wire localization)</li> </ul>

**PRELIMINARY PROPOSAL**

Part No./Product	Description
	<ul style="list-style-type: none"> <li>- Pulse sequences for evaluating breasts with silicone implants</li> <li>- Automatic and manual frequency adjustment, taking into account the silicone signal</li> <li>- 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</li> <li>- SPAIR - robust fat sat (robust fat suppression using an adiabatic frequency selective inversion pulse)</li> <li>- 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</li> <li>- iPAT<sup>2</sup> 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</li> <li>- Inline subtraction and MIP display</li> <li>- Offline subtraction, MPR and MIP display</li> <li>- REVEAL: diffusion imaging for breast exams. In pulse sequences with multiple b-values individual numbers of averages may be specified per b-value.</li> <li>- RESOLVE: Diffusion-weighted, readout-segmented (multi shot) EPI sequence for high-resolution susceptibility-insensitive DWI of the breast</li> <li>- RADIANT: Ultrasound-like reconstruction around the nipple</li> </ul> <p>The Breast Suite also includes:</p> <p><b>syngo VIEWS (Volume Imaging with Enhanced Water Signal)</b></p> <ul style="list-style-type: none"> <li>- Bilateral - both breasts are examined simultaneously</li> <li>- Axial - the milk ducts are directly displayed</li> <li>- fat-saturated or water-excited - fat complicates clinical evaluation and is suppressed</li> <li>- Near-isotropic 3D measurement - the same voxel size in all three directions for reconstruction in any slice direction</li> <li>- Submillimeter voxel - highest resolution for precise evaluation</li> </ul> <p><b>Body Suite</b></p> <p>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.</p> <p>2D PACE technique makes body imaging easy, allowing for multi-breath- hold examinations as well as free breathing during the scans.</p> <p>Motion artifacts are greatly reduced with 2D PACE Inline technology.</p> <p>This package includes:</p> <ul style="list-style-type: none"> <li>- 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.</li> <li>- Optimized fast single shot HASTE pulse sequences and high-resolution</li> <li>- 3D pulse sequences based on SPACE and TSE for MRCP and MR Urography examinations</li> <li>- REVEAL: diffusion imaging for abdomen and whole body exams.</li> <li>- 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.</li> <li>- 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/mm<sup>2</sup>) is possible.</li> <li>- Signal from Respiratory Sensor can be selected to actively trigger MR image acquisition.</li> </ul>

**PRELIMINARY PROPOSAL**

Part No./Product	Description
	<p><b>ABDOMEN:</b> 2D:</p> <ul style="list-style-type: none"> <li>- T1 (FLASH) breath-hold scans with and without FatSat (SPAIR, Quick FatSat, in- / opp-phase)</li> <li>- T2 (HASTE, TSE / BLADE, EPI) breath-hold scans with and without FatSat (SPAIR, FatSat, STIR)</li> <li>- 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</li> <li>- Optimized fast single-shot HASTE pulse sequences and high-resolution pulse sequences based on SPACE and TSE for MRCP and MR urography examinations</li> </ul> <p>3D:</p> <ul style="list-style-type: none"> <li>- Dixon (VIBE 2pt-Dixon) breath-hold scans, following contrasts can be obtained: in-phase, opposed phase, fat and water image</li> <li>- Dynamic (VIBE and Quick-FatSat) pulse sequences with Inline motion correction for visualization of focal lesions with high spatial and temporal resolution</li> <li>- Colonography dark lumen with T1-weighted VIBE</li> <li>- REVEAL: Diffusion-weighted imaging of the prostate, cervix, rectum and other organs with multiple b-values. Inline calculation of</li> <li>- 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/mm<sup>2</sup>) is possible.</li> </ul> <p><b>PELVIS:</b></p> <ul style="list-style-type: none"> <li>- High-resolution T1, T2 pelvic imaging</li> <li>- Isotropic T2 SPACE 3D pulse sequences</li> <li>- Dynamic volume examinations with 3D VIBE</li> </ul> <p><b>THORAX:</b></p> <ul style="list-style-type: none"> <li>- High-resolution T1, T2 thorax imaging</li> <li>- Motion-insensitive pulse sequences (BLADE, HASTE)</li> <li>- TrueFISP pulse sequences for imaging of respiratory mechanics</li> <li>- Dynamic imaging with TWIST (optional), TWIST-VIBE (optional)</li> <li>- Non-contrast-enhanced vessel visualization with SPACE pulse sequences</li> <li>- STIR pulse sequences for the evaluation of lymph nodes</li> <li>- Diffusion-weighted imaging with REVEAL</li> </ul> <p><b>Onco Suite</b> 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.</p> <p>General features:</p> <ul style="list-style-type: none"> <li>- STIR TSE, HASTE, and FLASH in-phase and opposed-phase pulse sequences for highly sensitive visualization of focal lesions</li> <li>- Dynamic imaging pulse sequences for assessment of the kinetic behavior of tissue</li> <li>- 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</li> <li>- Display and analysis of the temporal behavior in selected regions of interest with the included MeanCurve postprocessing application.</li> </ul>

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	<ul style="list-style-type: none"> <li>- This includes the capability of using additional datasets as a guide for defining regions of interest even faster and easier than before.</li> <li>- 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 <math>b = 5000 \text{ s / mm}^2</math>) is possible. For reduced distortions and homogeneous signal intensity even in the presence of challenging susceptibility interfaces and at station boundaries,</li> <li>- SliceAdjust (slice-by-slice adjustments) can be selected.</li> <li>- 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 <math>b=5000 \text{ s / mm}^2</math>) is possible.</li> </ul> <p>Prostate:</p> <ul style="list-style-type: none"> <li>- Dedicated prostate pulse sequences for a variety of clinical scenarios</li> <li>- T1-weighted 3D VIBE pulse sequences with high temporal resolution (VIBE, TWIST (optional) and TWIST-VIBE (optional)) allow time course evaluation</li> <li>- Prostate spectroscopy (3D CSI (optional) volume scan) with up to 8 sat bands (suppression of water and fat signal)</li> </ul> <p>Whole-body imaging:</p> <ul style="list-style-type: none"> <li>- TSE STIR pulse sequences for head-to-toe and head-to-pelvis imaging</li> <li>- Dedicated pulse sequences for focus regions head, neck, thorax, abdomen and pelvis</li> <li>- Diffusion-weighted imaging with REVEAL including SliceAdjust</li> </ul> <p><b>Ortho Suite</b>        Ortho Suite is a comprehensive collection of pulse sequences for joint and spine imaging.</p> <p>This package includes:</p> <ul style="list-style-type: none"> <li>- 2D TSE pulse sequences for PD, T1, and T2-weighted contrast with high in-plane resolution and thin slices</li> <li>- 3D MEDIC, 3D TrueFISP pulse sequences with water excitation for T2-weighted imaging with high in-plane resolution and thin slices</li> <li>- High-resolution 3D VIBE pulse sequences for MR Arthrography (knee, shoulder, and hip)</li> <li>- 3D MEDIC, 3D TrueFISP, 3D VIBE pulse sequences with Water Excitation having high isotropic resolution optimized for 3D postprocessing</li> <li>- T1 and PD SPACE 3D imaging with high isotropic resolution, optimized for post-processing Single-step, and multi-step pulse sequences</li> <li>- Excellent fat suppression in off-center positions, e.g. in the shoulder due to high magnet homogeneity</li> <li>- Dynamic TMJ pulse sequence (different joint positions)</li> <li>- Multi Echo SE sequence with up to 32 echoes for T2 mapping</li> <li>- High-resolution 3D DESS (Double Echo Steady State): T2 / T1- weighted imaging for excellent fluid-cartilage differentiation</li> <li>- 2-point Dixon technique for fat and water separation - Turbo Spin Echo sequence</li> </ul>

**PRELIMINARY PROPOSAL**

Part No./Product	Description
	<ul style="list-style-type: none"> <li>- 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.</li> <li>- 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.</li> <li>- Available pulse sequences include T1-weighted, proton density and T2 TSE STIR contrast.</li> </ul> <p><b>Pediatric Suite</b>  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.</p> <p><b>Scientific Suite</b>  The Scientific Suite supports scientific users by providing easy access to application-specific data for further processing and advanced image calculus.</p> <ul style="list-style-type: none"> <li>- Support of USB Memory sticks</li> <li>- Anonymization of patient data</li> <li>- Easy creation of AVIs and screen snapshots to include in presentations or teaching videos</li> <li>- Export of tables, statistics and signal time courses to communal exchange formats like e.g. tabulated text files (MeanCurve, Spectroscopy evaluation, DTI evaluation)</li> <li>- Advanced image calculus including, addition, subtraction, multiplication, and division of images</li> </ul> <p>This <i>syngo</i> software version provides security settings to protect the scanner against known security threats.</p> <ul style="list-style-type: none"> <li>- User management with authentication to prohibit unauthorized access</li> <li>- Privileges to grant rights and define functionality based on user/role Hardened operating system and restricted network communication</li> <li>- Whitelisting (Embedded Control) against manipulation of scanner software</li> <li>- Security Delivery process to frequently distribute security updates Option to protect customer pulse sequences trees against unauthorized modifications</li> <li>- Audit trail to log system and data access by the defined users and service</li> <li>- Support of customers to implement their security policy including compliance with HIPAA (Health Insurance and Accountability Act)</li> </ul> <p>The sequences, features and techniques for acquisition and reconstruction included in the Tim Application Suite are described in detail below.</p> <p><b>Sequences</b>  Spin Echo family of sequences:</p> <ul style="list-style-type: none"> <li>- Spin Echo (SE) - Single, Double, and Multi Echo (up to 32 echoes); Inversion Recovery (IR)</li> <li>- 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</li> <li>- 2D TSE with multiple average - it is possible to acquire T2-weighted TSE images during shallow breathing, in a time efficient manner</li> <li>- 2D / 3D HASTE (Half-Fourier Acquisition with Single-Shot Turbo Spin Echo) - Inversion Recovery for STIR and DarkFluid contrast</li> </ul>



**PRELIMINARY PROPOSAL**

Part No./Product	Description
	<ul style="list-style-type: none"> <li>- SPACE for 3D imaging with high isotropic resolution with T1, T2, PD, and DarkFluid Contrast</li> <li>- 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.</li> </ul> <p>Gradient Echo family of sequences:</p> <ul style="list-style-type: none"> <li>- 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</li> <li>- 2D / 3D MEDIC (Multi Echo Data Image Combination) for high-resolution T2 weighted orthopedic imaging and excellent contrast</li> <li>- 2D / 3D TurboFLASH - 3D MPRAGE; single shot T1 weighted imaging e.g. for abdominal imaging during free breathing</li> <li>- 3D GRE for field mapping</li> <li>- 2D / 3D FISP (Fast Imaging with Steady State Precession)</li> <li>- 2D / 3D PSIF - PSIF Diffusion</li> <li>- 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)</li> <li>- RESOLVE (Readout Segmentation Of Long Variable Echo-trains) delivers high-resolution, low-distortion diffusion-weighted imaging (DWI) for accurate depiction of lesions.</li> <li>- ce-MRA sequence with Inline subtraction and Inline MIP</li> <li>- 2D / 3D Time-of-Flight (ToF) Angiography - single slab and multi slab; triggered and segmented</li> <li>- 2D / 3D Phase Contrast Angiography</li> <li>- BEAT Tool - TrueFISP segmented; 2D FLASH segmented; Magnetization-prepared TrueFISP (IR, SR, FS); IR TI scout; Retrogating</li> </ul> <p>Standard Fat/Water Imaging</p> <ul style="list-style-type: none"> <li>- Fat and Water Saturation. Additional frequency selective RF pulses used to suppress bright signal from fatty tissue. Two selectable modes: weak, strong</li> <li>- Quick FatSat</li> <li>- SPAIR: robust fat suppression for body imaging using a frequency selective inversion pulse</li> <li>- Fat / Water Excitation. Spectral selective RF pulses for exclusive fat / water excitation</li> <li>- Dixon technique for fat and water separation - available both based on VIBE (2 point Dixon)</li> </ul> <p>Standard Techniques</p> <ul style="list-style-type: none"> <li>- True Inversion Recovery to obtain strong T1-weighted contrast</li> <li>- Dark Blood inversion recovery technique that nulls fluid blood signal</li> <li>- Saturation Recovery for 2D TurboFLASH, gradient echo, and T1- weighted 3D TurboFLASH with short scan time (e.g. MPRAGE)</li> <li>- Freely adjustable receiver bandwidth, permitting studies with increased signal-to-noise ratio</li> <li>- Freely adjustable flip angle. Optimized RF pulses for image contrast enhancement and increased signal-to-noise ratio</li> <li>- MTC (Magnetization Transfer Contrast). Off-resonance RF pulses to suppress signal from certain tissues, thus enhancing the contrast. Used e.g. in MRA</li> <li>- Analysis Tools for addition, subtraction, division, multiplication, calculations of ADC maps and b-value images</li> <li>- Image Filter</li> <li>- 3D post-processing MPR, MIP, MinIP, VRT</li> <li>- Data storage of images on CD / DVD with DICOM viewer (external CD/DVD burner required)</li> </ul>

**PRELIMINARY PROPOSAL**

Part No./Product	Description
	<ul style="list-style-type: none"> <li>- Export of cine AVI files on external media</li> <li>- Selectable centric elliptical phase reordering via the user interface</li> <li>- Inversion Recovery to nullify the signal of fat, fluid or any other tissue</li> <li>- 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.</li> <li>- 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.</li> <li>- 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.</li> </ul> <p>Standard techniques for Flow Artifact reductions</p> <ul style="list-style-type: none"> <li>- LOTA (Long-Term Data Averaging) technique to reduce motion and flow artifacts</li> <li>- Pre-saturation techniques using RF saturation pulses to suppress flow and motion artifacts</li> <li>- Tracking SAT bands maintain constant saturation of venous and/or arterial blood flow e.g. for 2D/3D sequential MRA</li> <li>- 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</li> <li>- GMR (Gradient Motion Rephasing). Sequences with additional bipolar gradient pulses, permitting effective reduction of flow artifacts</li> </ul> <p>Standard Motion Correction</p> <ul style="list-style-type: none"> <li>- 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</li> <li>- 1D PACE (Prospective Acquisition CorrEction) allows examination of patients with free breathing</li> <li>- 2D PACE (Precise Motion Correction) detects and corrects respiratory motion e.g. of the heart or liver</li> </ul> <p>MAGNETOM Altea runs on <i>syngo</i> MR XA software that offers an acquisition workplace with a large 16:10 24" monitors, one keyboard and one mouse.        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&amp;GO for viewing, basic postprocessing, and data distribution and up to three post-processing applications in parallel.        For faster data transfer and reduced storage demand <i>syngo</i> MR XA uses the DICOM Enhanced MR Image format for its scanning result.        Features like Online Help, DICOM MPPS autocomplete, inline technologies, and scan@center additionally support the workflow.</p> <p><b>Patient Communication</b></p> <ul style="list-style-type: none"> <li>- The intercom system includes an ergonomically designed patient communication unit for desktop positioning on the <i>syngo</i> Acquisition Workplace and pneumatic headphones for the patient.</li> <li>- 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.</li> </ul>

**PRELIMINARY PROPOSAL**

Part No./Product	Description
	<p><b>Computer System</b>            The PC-based computer system uses the intuitive <i>syngo</i> MR user interface and allows the usage of up to 3 advanced <i>syngo</i>.via applications at the scanner workplace.            High-performance host computer:</p> <ul style="list-style-type: none"> <li>- Intel Xeon processor ≥ E5-1650 (6 core)</li> <li>- Clock rate ≥ 3.5 GHz</li> <li>- Main Memory (RAM) ≥ 64 GB</li> <li>- SSD ≥ 480GB</li> <li>- Electronic mouse</li> <li>- 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.</li> </ul> <p><b>Installation</b></p> <ul style="list-style-type: none"> <li>- The relatively light-weight design of MAGNETOM Altea eliminates in most cases the need for structural building reinforcements and also facilitates installation in upper floors.</li> <li>- 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").</li> <li>- MAGNETOM Altea allows siting of the system without a dedicated computer room - no additional cooling or floor requirements.</li> <li>- MAGNETOM Altea combines state-of-the-art performance with peace of mind. High system availability is ensured by the expert - highly trained Siemens MR service engineers</li> <li>- 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.</li> </ul>
<p><b>14460161            MR General Engine            #Vi</b></p>	<p><i>syngo</i>.MR General Engine extends Numaris/X by adding dedicated workflows and tools for routine and advanced reading of MR examinations.            A generic MR Basic workflow is provided, as well as specific MR Neurology, MR Prostate Reading, MR Breast Reading, and MR Cardio-Vascular workflows.            Main functionalities of <i>syngo</i>.MR General Engine:</p> <ul style="list-style-type: none"> <li>- MR Basic workflow with <u>Easy Reading mode</u> for easy, fast, and intuitive MR reading, based on single-click and drag&amp;drop interactions:               <ul style="list-style-type: none"> <li>- single-click interaction to navigate through the series</li> <li>- intelligent layout adaptation to compare series together</li> <li>- single-click fusion between different contrasts</li> </ul> </li> <li>- <u>MR Cardio-Vascular Workflows</u>: Cardiac Reading, Angio Single Station, Angio Multi Station, Angio TimCT and Angio TWIST</li> <li>- <u>MR Evaluation tools</u>: 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.</li> </ul> <p>Scope of delivery:  <i>syngo</i>.MR General Engine software package with MR Radiology workflows, MR Cardio-Vascular workflows and MR Evaluation for a workstation-based server.</p>

**PRELIMINARY PROPOSAL**

Part No./Product	Description
<p><b>14475308</b> <b>myExam Brain Assist</b></p>	<p>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.</p> <p>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.</p> <p>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.</p> <p>AutoAlign Head can also automatically position and align for other structures within the head, such as the inner ear, orbits and optic nerve.</p> <p>Inline Diffusion automatically calculates trace-weighted images and ADC maps in real time.</p>
<p><b>14475309</b> <b>myExam Spine Assist</b></p>	<p>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.</p> <p>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.</p> <p>AutoAlign Spine, with intervertebral disc detection, 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.</p> <p>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.</p>
<p><b>14475310</b> <b>myExam Large Joint Assist</b></p>	<p>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.</p> <p>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.</p> <p>AutoAlign uses AI 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.</p>

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Part No./Product	Description
	<p>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.</p>
<p><b>14482834</b>  <b>myExam Brain</b>  <b>Autopilot</b></p>	<p>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, 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. myExam Brain Autopilot is customizable to the site-specific standards of care.</p> <p>myExam Brain Autopilot uses AutoAlign Head 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.</p> <p>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.</p> <p>Users can switch to myExam Assist at any time to personalize the exam to the individual patient.</p>
<p><b>14482835</b>  <b>myExam Knee</b>  <b>Autopilot</b></p>	<p>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.</p> <p>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.</p> <p>myExam Knee Autopilot is customizable to the site-specific standards of care.</p> <p>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.</p> <p>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.</p> <p>Users can switch to myExam Assist at any time to further personalize the exam to the individual patient.</p>
<p><b>14483029</b>  <b>myExam Implant</b>  <b>Suite</b></p>	<p>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.</p> <p>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.</p> <p>The myExam Implant Suite comes with the following features:</p> <ul style="list-style-type: none"> <li>- 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.</li> </ul>

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Part No./Product	Description
	<ul style="list-style-type: none"> <li>- 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.</li> <li>- Additionally the user may enter a maximum scan time. The system will show a warning dialogue before the maximum scan time is expired.</li> <li>- During the MR examination the selected limits may be reviewed any time.</li> <li>- The system will make sure that only coils supported for implant scanning are plugged if an implant patient is registered.</li> </ul>
<p><b>14441748</b> <b>Quiet Suite #T+D</b></p>	<p>Quiet Suite enables complete, quiet examinations for neurology and orthopedics with at least 70% reduction in sound pressure levels.</p> <p>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 (not available for MAGNETOM ESSENZA), respectively. The automated algorithm runs in parallel to normal protocol handling. All features and contrasts of the TSE, SE, and GRE sequences remain available.</p> <p>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.</p> <p>With Quiet Suite, optimized quiet protocols for imaging the brain and large joints are also provided.</p>
<p><b>14460162</b> <b>Tim Whole Body Suite #Vi</b></p>	<p>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.</p> <p>For faster exams and greater diagnostic confidence.</p> <p>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.</p> <p>The Tim Whole Body Suite features:</p> <ul style="list-style-type: none"> <li>- 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.</li> <li>- Table movement to its full extent can be remotely controlled from the operator console either by the operator or by sequence protocols.</li> <li>- Protocols and programs for whole body MR angiography and morphology e.g. for metastasis visualization and preventive care examinations.</li> <li>- 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.</li> <li>- The large FoV of 205 cm supports the assessment of metastases distribution in the body with sequences such as TIRM (Turbo Inversion Recovery).</li> </ul>

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Part No./Product	Description
<p><b>14460227</b>  <b>Tim Planning Suite</b>  <b>#Vi</b></p>	<p>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. 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.</p> <ul style="list-style-type: none"> <li>- Easy planning on a FoV of any desired size (up to 205 cm, depending on system scan range).</li> <li>- Planning of multiple steps simultaneously, e.g. on a whole-body image, with only one Set-n-Go protocol - which includes several steps.</li> <li>- Tim Planning Suite UI: Dedicated user interface and exclusive tools for effective and smooth working on a large FoV.</li> <li>- Multiple slice groups with their overlap are displayed together and can be easily arranged.</li> <li>- All steps can have independent sets of parameters.</li> <li>- All steps are displayed together with a single mouse click.</li> <li>- Easy positioning of all steps, for example, through Align FoV.</li> <li>- Full support of Phoenix, thus maximum reproducibility, for example, for follow-up studies, multi-centric studies or exchange of experiences across different institutions.</li> <li>- Dedicated protocols are provided for the Tim Planning Suite, for example, for orthopedic, oncological or angiographic indications.</li> <li>- It is highly recommendable to order application training!</li> </ul>
<p><b>14460160</b>  <b>Advanced Diffusion</b>  <b>#Vi</b></p>	<p>QuietX DWI and RESOLVE together make up the Advanced Diffusion package.</p> <p>QuietX DWI enables quieter diffusion-weighted imaging of the brain with up to 70% reduction in sound pressure relative to conventional diffusion-weighted imaging.</p> <p>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.</p> <p>RESOLVE is a diffusion-weighted, readout-segmented EPI sequence optimized towards high-resolution imaging with reduced distortions.</p> <p>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.</p> <p>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.</p> <p>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.</p>

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Part No./Product	Description
<p><b>14456327</b> <b>WARP &amp; Advanced WARP #Vi</b></p>	<p>WARP and Advanced WARP (SEMAC) integrates different techniques tailored to reduce susceptibility artifacts caused by orthopedic MR-conditional metal implants. 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.</p> <p>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.</p> <p>Main Features:</p> <ul style="list-style-type: none"> <li>- Can be switched on in the standard TSE sequences</li> <li>- For each slice, additional phase encoding is performed to better characterize the distortion</li> <li>- Distorted signals are corrected by dedicated inline processing</li> </ul>
<p><b>14456323</b> <b>Inline Composing syngo #Se</b></p>	<p>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.</p> <p><b>Inline Technology - Processing Instead of Post-processing</b></p> <p>The Inline Composing option includes the following functions:</p> <ul style="list-style-type: none"> <li>- Inline calculation of full-format images of the spine, the central nervous system or the vessel tree, for example, combined from multiple overlapping steps.</li> <li>- Dedicated composing algorithms, optimized for the generation of anatomical or angiographic full-format images.</li> <li>- Data sets with different FoV, resolution, matrix and slice thickness can be combined.</li> <li>- Generation of full-format images from inline-computed MIPs.</li> </ul> <p>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.</p> <p>Full-format acquisitions from Inline Composing are ideal for further measurement planning on large FoV, e.g. with the Tim Planning Suite.</p>
<p><b>14482913</b> <b>syngo Expert-i XA60/XA61</b></p>	<p>This software application enables remote access to the system (connected via local area network) for planning and processing.</p> <p>The option is integrated in the <i>syngo</i> user interface thus enables easy access to the user interface of the <i>syngo</i> Acquisition Workplace for planning and processing support purposes.</p> <p>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.</p> <p>The client software can be operated on any commercial PC with the following specification:</p> <ul style="list-style-type: none"> <li>- Operating system: Windows 7/8.1/10</li> <li>- .NET Framework version 4.5 or higher</li> </ul>



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Part No./Product	Description
<p><b>14461701</b>  <b>Tim [180x32] XJ-Gradient #AI</b></p>	<p>Tim [180x32] XJ-gradients performance level          Tim 4G's RF system and innovative coil architecture enables high resolution imaging and increased throughput.          The system provides a maximum number of 180 channels (coil elements) that can be connected simultaneously. Flexible parallel imaging is achieved by the standard 32 independent RF channels that can be used simultaneously in one single scan and in one single FOV, each generating an independent partial image.</p> <p>XJ - gradients          Max. amplitude: 57 mT/m (Actual 33 mT/m for every gradient axis)          Max. slew rate: 216 T/m/s (Actual 125 T/m/s for every gradient axis)          Min. rise time from 0 to 57 mT/m: 264 <math>\mu</math>s</p> <p>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.</p> <p>The XJ gradients are designed for high performance and linearity to support clinical whole body imaging at 1.5T.          The force compensated gradient system minimizes vibration levels and acoustic noise.</p> <p>High-performance measurement and reconstruction system.  <b>Tim [180x32] performance level</b>          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. The innovative architecture packs more coil elements in a smaller space and the system provides a maximum number of 180 channels (coil elements) that can be connected simultaneously.          Advanced iPAT capabilities and SNR are enabled by the 32 independent RF channels that can be used simultaneously in one single scan and in one single FOV, each generating an independent partial image.          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.</p> <p><b>XJ gradients</b>          Siemens XJ gradients provide actively shielded, water cooled world-class gradients. All axes are force-compensated.</p> <p>The XJ gradients have:</p> <ul style="list-style-type: none"> <li>- Max. amplitude: 57 mT/m (Actual 33 mT/m for every gradient axis)</li> <li>- Max. slew rate: 216 T/m/s (Actual 125 T/m/s for every gradient axis)</li> <li>- Min. rise time from 0 to 57 mT/m: 264 <math>\mu</math>s</li> <li>- 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.</li> <li>- Maximum output voltage for each of the gradient axes 2000 V</li> <li>- Maximum output current for each of the gradient axes 625 A</li> <li>- Separate cooling channels that simultaneously cool primary and secondary coils allow the application of extremely gradient intensive techniques in a new class of performance.</li> </ul>

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	<ul style="list-style-type: none"> <li>- 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).</li> <li>- 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.</li> <li>- Acquisition of sagittal, transverse, coronal, single oblique and double oblique slices with highest resolution.</li> <li>- 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.</li> </ul> <p><b>Computer system</b> The specifications of the high-performance measurement and reconstruction computer can be found within the data sheet.</p> <p>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.</p>
<p><b>14468980</b> <b>Coil Package Tim</b> <b>[180x32] #1.5T</b></p>	<p>This package includes (if not exchanged with different variants via respective quote items):</p> <ul style="list-style-type: none"> <li>- Head/Neck 16 DirectConnect</li> <li>- BioMatrix Spine 24</li> <li>- BioMatrix Body 12</li> <li>- Flex Large 4</li> <li>- Flex Small 4</li> <li>- Flex Coil Interface</li> </ul> <p><b>Tim 4G &amp; BioMatrix Coils</b> The coils in the standard coil package combine the new BioMatrix functionalities with the Tim 4G coil technology with Dual-Density Signal Transfer, DirectConnect and SlideConnect technology. The result are key imaging benefits: Excellent image quality, high patient comfort, and unmatched flexibility.</p> <p>The Tim 4G &amp; BioMatrix coils are designed for highest image quality combined with easy handling. The high coil element density increases SNR and reduces examination times. DirectConnect and SlideConnect™ technology reduce patient set up time significantly. 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. AutoCoilSelect for dynamic, automatic, or interactive selection of the coil elements within the Field of View fastens the exam preparation at the host. All coils are time-saving “no-tune” coils. A comprehensive set of pads for comfortable and stable patient positioning together with safety straps are included.</p> <p><b>Head/Neck 16 Direct Connect</b> The 16-channel coil with its 16 integrated pre-amplifiers ensures excellent signal-to-noise ratio. The unique DirectConnect technology allows users connecting the 16 coil elements of the Head/Neck 16 without cables. 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.</p>

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	<p>The open and light design of the upper coil part increases patient comfort and is removable for easy patient handling. The lower coil part may remain on the table for most of the examinations and can be used without the upper part. The Head/Neck 16 and Spine 24 are smoothly integrated into the patient table, thus enabling high flexibility in imaging and fewer coil changes and easy handling when switching patients. The Head /Neck 16 coil is equipped with two removable cushioned head stabilizers for stable and comfortable patient positioning.</p> <p>The Head/ Neck 16 can be used for applications like head examinations, neck examinations, MR Angiography, combined head/neck examinations or for imaging of the TMJ (temporomandibular joints).</p> <p>Typically combined with the Spine 24 and Body 6 or Peripheral Angio 36 but also other combinations e.g. with flexible coils like the Flex Large 4 are possible.</p> <p><b>BioMatrix Spine 24</b>          The 24-channel coil with its 24 integrated pre-amplifiers ensures maximum signal-to-noise ratio. The DirectConnect technology allows connecting the 24 coil elements of the BioMatrix Spine 24 without the need to plug in any cable. The patient friendly ergonomical design allows for maximum patient comfort. The high element coil is iPAT compatible in all directions. Smoothly integrated into the patient table the BioMatrix Spine 24 can remain on the patient table for nearly all exams.</p> <p>The BioMatrix Spine 24 is typically combined with BioMatrix Body 12, Head/Neck 16, BioMatrix Head/Neck 20 (optional), Peripheral Angio 16 (optional) or Flex Large 4, Flex Small 4.</p> <p><b>BioMatrix Body 12</b>          The 12-channel coil with its 12 integrated pre-amplifiers ensures maximum signal-to-noise ratio. The 12 coil elements of the BioMatrix Body 12 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.</p> <p>The BioMatrix Body 12 operates in an integrated fashion with the BioMatrix Spine 24 resulting in a 21 channel body imaging setup.</p> <p>The BioMatrix Body 12 can be combined with further BioMatrix Body 12 coils for larger coverage and can be positioned in different orientations (0°, 90°, 180°, 270°) for patient specific adaptations. The BioMatrix Body 12 is typically used in combination with the BioMatrix Spine 24 for examinations of the thorax, abdomen, pelvis or hip and operates as a 21 channel body coil (3 rings 10 elements). The BioMatrix Body 12 can also be used for cardiac or vascular applications.</p> <p>Through the perfect combinability of the BioMatrix Spine 24, further BioMatrix Body 12 (optional), the Peripheral Angio 16 (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.</p> <p><b>Flex Large 4/ Flex Small 4</b>          Light-weight, very flexible, iPAT compatible, 4-element no-tune receiver coils which are made of soft and smooth material.</p> <p>The coils can be wrapped around or used flat.</p> <p>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.</p>
<p><b>14468946</b>  <b>BioMatrix</b>  <b>Technology #AI,Lu</b></p>	<p>The new and unique BioMatrix technology addresses different aspects of patient bio-variability.</p> <p><b>BioMatrix Sensors anticipate challenges before they happen.</b></p> <p>Respiratory sensors (optional) 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 (optional).</p>

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	<p><b>BioMatrix Tuners – adapt to all patients, even critical ones.</b>            BioMatrix Tuners are comprised of CoilShim (optional) and SliceAdjust. 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 are integrated into the global shim algorithm.            BioMatrix Head/Neck 20 tiltable with CoilShim (optional) has local shim elements integrated into the posterior part, addressing patient induced B0 distortions in the neck region.            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.</p> <p><b>BioMatrix Interfaces – accelerate workflow without compromising quality of care</b>            The BioMatrix body model, leveraged by the Select&amp;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.</p>
<p><b>14470794</b>  <b>BioMatrix</b>  <b>SliceAdjust #BM</b></p>	<p>BioMatrix SliceAdjust helps to avoid station boundaries and apparent broken spine artifacts as well as to preserve the SNR for whole-body diffusion.            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.</p>
<p><b>14470796</b>  <b>BioMatrix Select &amp;</b>  <b>GO #AI,Lu</b></p>	<p>Select&amp;GO            The Select&amp;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.            The ergonomically designed Select&amp;GO touch panel is integrated into the front cover on the left-hand side of the patient tunnel for controlling table movement, guidance for patient setup and comfort features. The Select&amp;GO panel is well illuminated for easy visual recognition.</p> <p>The BioMatrix Select&amp;GO interface enables fast and easy single-touch patient positioning. The interface is integrated left-hand side of the patient into the front covers. Correct positioning saves unnecessary wasted time for repositioning and additional adjustments, therefore shortening the total room time.            The BioMatrix Select&amp;GO interface enables fast and easy single-touch patient positioning. The interface is integrated left-hand side of the patient into the front covers. Correct positioning saves unnecessary wasted time for repositioning and additional adjustments, therefore shortening the total room time.</p> <ul style="list-style-type: none"> <li>- The ergonomically designed Select&amp;GO touch panel is integrated into the front cover on the left-hand side of the patient tunnel for controlling table movement, guidance for patient setup and comfort features. It is well illuminated for easy visual recognition.</li> <li>- Automated table move to upmost position, to center position or Home position facilitate smooth patient preparation and will reduce table time</li> <li>- Variable (6 levels) ventilation and lighting inside the magnet bore or volume adjustments are possible for increased patient comfort The Select&amp;GO touch panel provides 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.</li> <li>- Almost all table control functions, including ventilation and illumination of the magnet bore, can be also controlled from the operator console for convenient operation</li> </ul>

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Part No./Product	Description
<p><b>14461706</b> <b>Pure White Design</b> <b>#AI</b></p>	<p>MAGNETOM Altea is available in a light and appealing design which perfectly integrate into different environments. The Pure White Design comprises a brilliant white front design ring with integrated unique Select&amp;GO panels.</p> <p>The table cover is presented also in the same color and material selection.</p> <p>The unique color and material selection enhances the visual appeal of the new system design, thereby creating an enticing, patient friendly impression.</p> <p>The unique Select&amp;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.</p> <p>In particular, the table cover and the smoothly embracing colored system cover parts have been designed to promote a modern visual appearance.</p> <p>This combination of ingenuity and practical design as presented with the "Pure &amp; White" design with its brilliant white makes MAGNETOM Altea an overall visually appealing system and creates a patient-friendly environment.</p>
<p><b>14456270</b> <b>PC Keyboard US</b> <b>English #Vi</b></p>	<p>Standard PC keyboard with 105 keys.</p> <p>The keys of the numerical key panel are assigned to <i>syngo</i>-specific functions and labeled with the corresponding <i>syngo</i> icons. The keyboard supports the country specific special characters.</p>
<p><b>14456238</b> <b>Peripheral Pulse Unit</b> <b>#Vi</b></p>	<p>Peripheral Pulse Unit for Pulse Triggering</p> <p>Peripheral Pulse Unit for Pulse Triggering:</p> <ul style="list-style-type: none"> <li>- Reduces flow artifacts caused by pulsatile blood flow.</li> <li>- Excellent image quality by synchronizing data acquisition to the pulsatile blood flow.</li> </ul>
<p><b>14482959</b> <b>SW syngo MR</b> <b>XA61A</b></p>	<p>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&amp;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.</p> <p>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.</p> <p>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.</p> <p>For scanning, myExam Companion provides tailored assistance enabling consistent image quality regardless of the operator's experience:</p> <ul style="list-style-type: none"> <li>- <b>myExam Autopilot</b> 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).</li> <li>- <b>myExam Assist</b> provides guided and flexible workflows. Optimized scan strategies are provided and can be selected or flexibly adapted based on the patient's condition.</li> <li>- <b>myExam Cockpit</b> 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.</li> <li>- <b>myExam Implant Suite</b> supports in examinations of patients with a wide range of active or passive MR Conditional implants.</li> </ul>

**PRELIMINARY PROPOSAL**

Part No./Product	Description
<p><b>14470739 Turbo Suite Accelerate (ELEVATE)</b></p>	<p>Turbo Suite Accelerate comprises access to cutting edge acceleration techniques such as Simultaneous Multi-Slice, and Compressed Sensing for static 2D and static 3D imaging applications in Neuro, MSK and Body MRI</p> <p><b>Turbo Suite Accelerate contains:</b></p> <ul style="list-style-type: none"> <li>- Simultaneous Multi-Slice (SMS) acceleration           <ul style="list-style-type: none"> <li>- SMS DWI / DTI helps bringing advanced DWI applications into routine neuro, breast, liver and pelvic imaging. It can be seamlessly combined with iPAT to achieve total acceleration factors of up to 8.</li> <li>- SMS TSE for up to 4637% faster routine MSK exams, supporting all TSE contrasts and orientations. It can be seamlessly combined with iPAT to achieve total acceleration factors of 4-6.</li> <li>- SMS RESOLVE enables high-resolution distortion free DWI with up to 50% time savings. SMS RESOLVE is currently available for XA11B and higher and with XA10B (Vida); XA20 (Sola, Altea, Lumina, Sola Fit, Vida Fit).</li> <li>- SMS RESOLVE enabled high resolution distortion free DWI with up to 50% time savings.</li> <li>- SMS BOLD can enable increased temporal sampling of BOLD data acquisitions and/or improved slice coverage/ resolution (prerequisite Inline BOLD license).</li> <li>- SMS TSE DIXON for faster routine MSK exams, supporting all TSE DIXON contrasts and orientations. It can be seamlessly combined with iPAT to achieve total acceleration factors of 4-6. SMS TSE DIXON is currently planned for XA20 (Vida, Sola, Altea, Lumina, Sola Fit, Vida Fit)</li> </ul> </li> <li>- Compressed Sensing (CS) static imaging           <ul style="list-style-type: none"> <li>- CS TOF with incoherent subsampling is designed to accelerate Time-of-Flight imaging without compromising diagnostic quality. CS TOF is currently planned for XA11B (Vida); XA12M (Amira, Sempra), XA20 (Sola, Altea, Lumina, Sola Fit, Vida Fit).</li> <li>- CS SPACE with incoherent subsampling is designed to significantly accelerate SPACE imaging for neuro and body application. CS SPACE is designed to enable high-resolution 3D MRCP scans in one breath-hold and isotropic. CS SPACE is currently planned available for with XA11B and higher and with XA10B (Vida); XA12M (Amira, Sempra), XA20 (Sola, Altea, Lumina, Sola Fit, Vida Fit).</li> <li>- CS SEMAC with incoherent subsampling is designed to significantly accelerate imaging of MR conditional implants with time savings up to 50%. CS SEMAC is currently planned available for with XA11B and higher and with XA10B (Vida); XA12M (Amira, Sempra), XA20 (Sola, Altea, Lumina, Sola Fit, Vida Fit).</li> </ul> </li> <li>- Wave-CAIPI acceleration (available with XA31A for Vida, Sola, Altea, Lumina): Wave-CAIPI SWI is a new sequence technique that improves head imaging with SWI contrast. With the Wave-technique, the sequence plays out sinusoidal gradients during readout. Applying these Wave readout gradients results in corkscrew k-space trajectories. This strategy combined with already existing parallel imaging acceleration technique CAIPIRINHA allows optimizing g-factor penalty during reconstruction which allows for higher acceleration factors and more homogeneous noise distribution. Wave-CAIPI SWI is currently available with XA31A (Vida, Sola, Lumina, Altea). Prerequisite for Wave-CAIPI SWI is the SWI license.</li> </ul> <p>Future security: Software upgrade to software version required to support included sequences (if applicable) will be provided at no additional cost. Installation may happen at a later point in time, depending on country registrations and system availability.</p>

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Part No./Product	Description
<p><b>14482972</b> <b>Deep Resolve Pro Package (ELEVATE)</b></p>	<p>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. With the Deep Resolve Pro Package you get access to our advanced image reconstruction environment which features deep learning methods.</p> <p>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: - TSE, TSE DIXON, SE</p> <p>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 and is available for following sequences: - TSE</p> <p>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: - TSE, TSE DIXON, SE</p> <p>The functionalities contained in Deep Resolve Pro Package may be enhanced in future to include recent developments. Enhancements will be made available with system software updates.</p>
<p><b>14483015</b> <b>High-End Computing (ELEVATE)</b></p>	<p>This upgrade brings a high-end image reconstruction computer to the Tim configuration for highly intensive computational calculations. The high-end computing option brings high-end image reconstruction performance to MAGNETOM system. 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.</p> <p>The specifications of the high-end image reconstruction computer can be found within the data sheet.</p>
<p><b>14461619</b> <b>Turbo Suite Essential #BM</b></p>	<p>Turbo Suite Essential comprises established acceleration techniques to maximize productivity for all contrasts, orientations and all routine imaging applications from head-to-toe. Turbo Suite Essential contains:</p> <ul style="list-style-type: none"> <li>- iPAT and iPAT<sup>2</sup> parallel imaging capabilities for all contrasts, orientations and body regions</li> <li>- T-PAT (temporal iPAT) for advanced parallel imaging provides fast high-resolution dynamic imaging in cardiac exams by distributing reference scans over time</li> </ul>

**PRELIMINARY PROPOSAL**

Part No./Product	Description
	<ul style="list-style-type: none"> <li>- CAIPIRINHA for advanced iPAT<sup>2</sup> 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.</li> <li>- CAIPIRINHA SPACE – high-resolution, fast 3D imaging with isotropic, sub-millimeter resolution, all contrasts. Protocols optimized for joints are provided.</li> <li>- CAIPIRINHA VIBE – T1 weighted 3D imaging for high-resolution imaging throughout the body and significantly shortened breath-hold scans.</li> </ul>
<p><b>14405328</b>  <b>TWIST syngo #Tim</b></p>	<p>This package contains a Siemens unique sequence and protocols for time-resolved (4D) MR angiographic and dynamic imaging in general with high spatial and temporal resolution. syngo TWIST supports comprehensive dynamic MR angio exams in all body regions. It offers temporal information of vessel filling in addition to conventional static MR angiography, which can be beneficial in detecting or evaluating malformations such as shunts. In case of general dynamic imaging, for example an increase in spatial resolution by a factor of up to 2 at 60 seconds temporal resolution (compared to conventional dynamic imaging) is possible due to intelligent k-space sampling strategies. Alternatively, increased temporal resolution at constant spatial resolution is possible.</p> <p>syngo TWIST provides:</p> <ul style="list-style-type: none"> <li>- Visualization of contrast agent dynamics in the vessel system of interest with maximum flexibility.</li> <li>- Needs only a low amount of contrast agent.</li> <li>- Imaging in all body regions, e.g. carotids, pulmonary and peripheral vessels with brilliant spatial and temporal resolution.</li> <li>- Clear separation of the arterial and venous phase.</li> <li>- High speed acquisition by intelligent k-space strategies and use of iPAT, powered by Tim.</li> <li>- syngo TWIST provides fat suppression using water selective excitation.</li> <li>- Inline technologies, such as subtraction and MIP are provided for optimal workflow.</li> <li>- In case of very high spatial resolution syngo TWIST may even replace conventional static MR angio. Moreover, syngo TWIST does not require any bolus timing - just inject and go.</li> </ul>
<p><b>14460315</b>  <b>Shoulder Shape 16</b>  <b>#So</b></p>	<p>The Shoulder Shape 16 combines the known benefits of Tim 4G coil technology with new highly flexible materials, resulting in unmatched image quality, high patient comfort and easy handling. The Shoulder Shape 16 for examinations of the left or right shoulder consists of an iPAT-compatible 16-channel shoulder coil in a flexible shoulder cup that can be shaped around small and large shoulders. An L-shaped cushion for easy positioning of the patient is included. The 16-element coil with 16 integrated pre-amplifiers ensures maximum signal-to-noise ratio. Shoulder Shape 16 will be connected via a SlideConnect plug for fast and easy coil set-up and patient preparation. The iPAT compatible Shoulder Shape 16 is ergonomically designed and adapted to the shape of the shoulder.</p> <p>The flexibility in size obtains maximum image quality for different body sizes. The opening of the coil can be adjusted between 16 cm - 27 cm to cover small, medium and large shoulders. The coil can be used either for left or right shoulders. It features an L-shaped cushion than can easily be placed for comfortable positioning. The coil excels in highest resolution imaging with exceptional signal-to-noise ratio.</p>



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Part No./Product	Description
<p><b>14416961</b> <b>Hand/Wrist 16 #Ae</b></p>	<p>The new Tim 4G coil technology with Dual Density Signal Transfer and SlideConnect Technology combines key imaging benefits: excellent image quality, high patient comfort, and unmatched flexibility.</p> <p>Hand/Wrist 16 for examinations of the left or right hand and wrist region consists of a base plate and an iPAT compatible 16-channel coil and allows high-resolution imaging of the wrist and the hand within one examination. Hand/Wrist 16 will be connected via a SlideConnect plug for fast and easy patient preparation.</p> <p>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.</p> <p>Hand/Wrist 16 is ergonomically designed and adapted to the shape of the hand/wrist region. The coil features a hinged design of the upper part and slidable attachment to the base plate. Together with the included stabilization pads the coil allows easy, fast and comfortable patient positioning.</p>
<p><b>14460423</b> <b>Tx/Rx Knee 18 #So</b></p>	<p>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.</p> <p>Main features :</p> <ul style="list-style-type: none"> <li>- 18-element design (3x6 coil elements) with 18 integrated preamplifiers</li> <li>- iPAT-compatible</li> <li>- SlideConnect Technology</li> </ul> <p>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.</p> <p>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.</p> <p>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).</p> <p>The housing of this coil has a flared opening towards the patient's thigh, as well as an easy coil sliding and opening mechanism.</p>
<p><b>14416962</b> <b>Foot/Ankle 16 #Ae</b></p>	<p>The new Tim 4G coil technology with Dual Density Signal Transfer and DirectConnect Technology combines key imaging benefits: excellent image quality, high patient comfort, and unmatched flexibility.</p> <p>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.</p> <p>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.</p> <p>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.</p>
<p><b>14470761</b> <b>2nd Select&amp;GO</b> <b>(ELEVATE)</b></p>	<p>The 2nd Select&amp;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.</p> <p>Select&amp;GO</p>

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Part No./Product	Description
	<p>The 2<sup>nd</sup> Select&amp;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.</p> <ul style="list-style-type: none"> <li>- The ergonomically designed Select&amp;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.</li> <li>- Automated table move to upmost position, to center position or Home position facilitate smooth patient preparation and will reduce table time</li> <li>- Variable (6 levels) ventilation and lighting inside the magnet bore or volume adjustments are possible for increased patient comfort The Select&amp;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.</li> <li>- Almost all table control functions, including ventilation and illumination of the magnet bore, can be also controlled from the operator console for convenient operation.</li> </ul>
<p><b>14409198</b>  <b>Native syngo #Tim</b></p>	<p>Integrated software package with sequences and protocols for non-contrast-enhanced 3D MRA with high spatial resolution. syngo NATIVE particularly enables imaging of abdominal and peripheral vessels and is an alternative to MR angiography techniques with contrast medium, especially for patients with severe renal insufficiency.</p> <p>syngo NATIVE offers:</p> <ul style="list-style-type: none"> <li>- Non-contrast-enhanced MRA</li> <li>- Separate imaging of arteries and veins</li> <li>- Visualization of - e.g. - renal arteries or peripheral vessels</li> </ul> <p>The syngo NATIVE package comprises:</p> <ul style="list-style-type: none"> <li>- syngo NATIVE TrueFISP</li> <li>- syngo NATIVE SPACE</li> </ul>
<p><b>14456241</b>  <b>Separator</b>  <b>60kW/75kW #Vi</b></p>	<p>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.</p> <p>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.</p> <p>For the above-mentioned cases the SEP is mandatory!</p> <p>In these cases, the primary water specifications must fulfill the requirements:        XJ: 45kW; water temperature: 6 - 14°C        XQ: 60kW; water temperature: 6 - 14°C        XT: 75kW; water temperature: 6 - 12°C</p> <p>For all gradient systems:        Flow: 100+-10l/min; pH value 6-8; max working pressure 6 bar.</p> <p>Dimensions: 1950mm x 650mm x 650mm (height x width x depth)        Weight: approx. 350kg        Function:</p> <ul style="list-style-type: none"> <li>- Interface between the on-site water chiller (of any brand/type) or</li> <li>- Interface to the central hospital chilled water supply.</li> </ul> <p>Delivery volume:</p> <ul style="list-style-type: none"> <li>- Separator</li> </ul>

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Part No./Product	Description
	<ul style="list-style-type: none"> <li>- Two 3.0 m hoses (forward and return) for connecting the SEP to the local cooling water supply system</li> <li>- Separation cabinet</li> <li>- With the SEP configuration, the helium compressor is built into the SEP cabinet and connected internally</li> <li>- Regional specific adapter for connection to the hospital installation</li> </ul>
<p><b>14460249</b> <b>UPS system #Vi</b></p>	<p>UPS system Liebert GXT5 3000IRT2UXLE for MAGNETOM NumX systems for safeguarding computers. Including Power Cable of 9 m for connecting the UPS. Power output: 3.0 kVA / 3 kW Bridge time: 3 min full load / 12 min half load Input voltage: 230 VAC Voltage range: 115 - 280 V Input frequency: 40 / 70 Hz Output voltage: 230 VAC Dimensions (H x D x W): UPS 430 x 540 x 85 mm incl. 9 m Power Cable Weight: approx. 30 kg</p>
<p><b>14456228</b> <b>System Start Timer #Vi</b></p>	<p>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. 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.</p>
<p><b>14461702</b> <b>BioMatrix Table #AI</b></p>	<p>The 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. The MAGNETOM Altea BioMatrix table with its appealing design allows for a fast patient preparation and maximized patient comfort. 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. 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. 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 3 SlideConnect and 4 DirectConnect connector slots, which are embedded in the table. This allows for comprehensive examinations without the need of repositioning.</p>
<p><b>14407259</b> <b>MR Workplace Table, height adjust. (Optional)</b></p>	<p>The table is suitable for the syngo Acquisition Workplace and the syngo MR Workplace based on syngo hardware. This 110V version has motorized table height adjustment. The table design matches the MED-wide uniform design with silver-finished rim, use of friendly colors for MAGNETOM and SOMATOM. This table can electrically be adjusted to the ergonomically most suitable height via buttons at the front.</p> <ul style="list-style-type: none"> <li>- Width 138 cm</li> <li>- Depth 80 cm</li> <li>- Height electrically adjustable between 71 cm and 110 cm</li> </ul>

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Part No./Product	Description
<b>14407261</b> <b>MR Workplace</b> <b>Container, 50cm</b> <b>(Optional)</b>	<p>50 cm wide extra case for the syngo host computer with sliding front door to allow change of storage media (CD/DVD/USB).</p> <p>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.</p> <p>Table height 72 cm, matching the <i>syngo</i> Acquisition Workplace and <i>syngo</i> MR Workplace console table, for installation in the operator room either directly to the left or right of the <i>syngo</i> Acquisition Workplace or <i>syngo</i> MR Workplace console table or separately.</p> <ul style="list-style-type: none"> <li>- Width 50 cm</li> <li>- Depth 80 cm</li> <li>- Height 72 cm</li> </ul> <p>Alternatively this casing is also suited for the Recon image processor (except for the MR systems with the Tim generation: there the Recon image processor is always placed inside the electronics cabinet).</p>
<b>14402527</b> <b>SWI #Tim</b> <b>(Optional)</b>	<p>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.</p> <p>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).</p> <p>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.</p> <p>This allows even small amounts of deoxygenated hemoglobin (e.g. in cerebral veins) or from products of hemoglobin decomposition (e.g. from hemorrhages) to be displayed.</p> <p>Interesting measuring times for the ultra-high-resolution 3D protocols are achieved through parallel imaging with iPAT (GRAPPA).</p> <p>The Susceptibility Weighted Imaging package includes:</p> <ul style="list-style-type: none"> <li>- SWI measuring sequence, iPAT compatible</li> <li>- optimized measuring protocols for the head</li> <li>- inline-postprocessing for automatic calculation of relevant images within the scope of image reconstruction:             <ul style="list-style-type: none"> <li>- calculation of susceptibility-weighted images</li> <li>- venous angiography: MIP of a thin slice block</li> </ul> </li> </ul> <p>SWI has been optimized for clinical use to support diagnostics with cerebrovascular diseases (e.g. cerebral insult), venous malformation, brain trauma and tumors.</p> <p><i>Prerequisite: Software syngo MR B13</i></p>
<b>14456232</b> <b>DTI Package #Vi</b> <b>(Optional)</b>	<p>This package combines Diffusion Tensor Imaging and syngo.MR Tractography.</p> <p><b>Diffusion Tensor Imaging</b></p> <p>Diffusion Tensor Imaging provides a Single Shot EPI sequence for measuring diffusion-weighted data sets with up to 256 directions of diffusion weighting. Based on these data sets, the diffusion tensor itself and parametric maps derived from it (e.g. fractional anisotropy) are calculated automatically and in real-time. The package supports both clinical applications regarding diseases of the white matter (e.g. multiple sclerosis, brain maturation disorders, or displacement of nerve fiber tracts through masses) and advanced research applications.</p>

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Part No./Product	Description
	<p>Diffusion spectrum imaging (DSI), an extension of diffusion tensor imaging, is included in this package. DSI expands on the DTI acquisition capabilities by providing the ability to resolve white matter fiber crossings.</p> <p><b>syngo.MR Tractography</b>  <i>syngo.MR</i> Tractography enables the representation of diffusion paths of the human brain based on diffusion tensor imaging. <i>syngo.MR</i> Tractography supports surgery planning and is suitable for neurophysiological research in relation to cortical networking and pathologies of the white matter.</p>
<p><b>14475452</b>  <b>myExam LiverLab Assist</b>  <b>(Optional)</b></p>	<p>myExam LiverLab Assist is a system guided workflow to examine the hepatic fat and iron status. Main Features:</p> <ul style="list-style-type: none"> <li>- The inline screening Dixon sequence gives the user a first overview of possible fat and/or iron overload in the whole liver.</li> <li>- Based on the result images, liver segmentation runs without user interaction.</li> <li>- If further evaluation is needed, the user can choose from two methods:             <ol style="list-style-type: none"> <li>1. HISTO is a pushbutton single breath-hold single voxel spectroscopy method to calculate fat fraction as well as water R2.</li> <li>2. Multi-echo Dixon is an image based method to calculate maps such as water, fat, fat signal percentage, and R2*.</li> </ol> </li> </ul>
<p><b>14469229</b>  <b>Flex -&gt; UltraFlex Upgrade #1.5T</b>  <b>(Optional)</b></p>	<p>This option exchanges the Flex Small &amp; Large 4 coils incl. the Flex Coil Interface from the standard coil configuration for the superior UltraFlex Small &amp; Large 18. These are two lightweight, iPAT compatible, 18-element no-tune receive coils made of highly flexible and soft material.</p> <p><b>UltraFlex Large 18</b>          Ideal for examinations of larger extremities (e.g. medium to large shoulder, hip, knee, ankle and hand) and for abdominal examinations. Dedicated positioning aids for larger extremities are delivered with the coil.</p> <p><b>UltraFlex Small 18</b>          Ideal for examinations of smaller extremities (e.g. small to medium shoulder, smaller ankle, elbow and hand) and for abdominal examinations. Dedicated positioning aids for smaller extremities are delivered with the coil.</p> <p>This option exchanges the Flex Small &amp; Large 4 coils incl. the Flex Coil Interface from the standard coil configuration for the superior UltraFlex Small &amp; Large 18.</p> <p><b>UltraFlex Large 18</b>          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.</p> <p><b>UltraFlex Small 18</b>          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.</p>
<p><b>14456282</b>  <b>Positioning Aids Shoulder&amp;Ankle #Vi</b>  <b>(Optional)</b></p>	<p>This package contains additional positioning aids that can be used for the UltraFlex Large 18 and UltraFlex Small 18.</p> <p>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.</p>

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

**SIEMENS**  
**Healthineers**   
**SIEMENS REPRESENTATIVE**  
Tyler Chambers NL  
tchambers@deltamed.net

**PRELIMINARY PROPOSAL**



# *UNIVERSAL SHIELDING CORP.*

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20 W. Jefryn Boulevard  
Deer Park, N.Y. 11729-5769  
631-667-7900  
Fax: 631-667-7912  
info@universalshielding.com  
www.universalshielding.com

22<sup>nd</sup> November 2024

RAYUS Radiology  
5775 Wayzata Blvd., Ste. 400  
St. Louis Park, MN 55416

Attention: Mr. Brian Harrison  
Sr. Construction Project Manager

Our Ref: MRI-24-435 **Rev. A**  
Your Ref: Rayus St. Luke's O'Fallon  
5551 Winghamen Blvd., Suite 60  
O'Fallon, MO 63368  
Siemens Magnetom Aera 1.5T

Dear Brian:

Pursuant to the above reference, we offer the following proposal. Thank you for your interest in Universal Shielding Corporation's products and services.

Universal Shielding Corp. proposes to provide, install, and test its **USC-26** Radio Frequency Shielded Enclosure which consists of rigid modular wall, floor and ceiling panels in an integral framing system designed to provide a sound mechanical structure and low impedance RF joints.

Our shielded room can be completely disassembled and relocated and still maintain its shielding characteristics.

The proposed system will provide an attenuation of 100 dB to electric fields and plane waves from 15 MHz to 128 MHz and 100 dB to magnetic fields from 1 MHz to 30 MHz when tested in accordance with MIL-STD-285.

The RF shielded panels consist of 26 gauge galvanized steel laminated to a wood core on both sides. The interconnecting framing members consist of electro-zinc plated channel. The RF walls are self-supporting and require no parent host structure.

This proposal is for one (1) shielded enclosure with nominal dimensions of 24 ft. x 18 ft. x 11 ft. high, including the following:

- One (1) RF shielded personnel door with clear opening 4 ft. x 7 ft., Type RCM-154 Flush Sill (FS) with door switch and key cylinder door lock
- Polyvinyl and masonite underlayment and masonite isolation layer
- 1/8" vinyl filler tile
- RF waveguide air vents for HVAC
- One (1) 24" x 24" Pressure Equalization waveguide
- One (1) RF emergency pressure release door (24" x 24") – Siemens requirement for in-swinging door
- One (1) brass ground stud (3/8" Ø) with two (2) brass ground bus bars
- Four (4) dual (2-wire) 30 ampere power filters
- One (1) dual (2-wire) 1 amp signal filter for low voltage
- One (1) RF filter for Siemens EPO system
- One (1) 4" Ø x 16" long RF waveguide pipe penetration for cryogen exhaust system
- One (1) RF pipe penetration for sprinkler
- One (1) RF waveguide for injector
- One (1) RF view window (5'-0" wide x 4'-0" high)
- Five (5) RF exterior windows to align with parent building windows at left side wall and rear wall.
- Framed opening to accommodate Siemens filter panel
- Framed opening to accommodate magnet entry at rear wall
- One (1) recessed RF floor panel to accommodate Siemens patient table baseplate. USC to install Siemens provided baseplate during shield installation.
- Isolated ceiling hangers to support RF ceiling from parent structure above



- Ceiling eyebolts installed on 4 ft. grid for installation of drop ceiling
- One (1) Ground isolation monitor to be connected by USC and monitored by General Contractor during remaining construction. RF shield to maintain a minimum of 1,000 ohms resistance to ground.
- Engineering drawings, Bill of Materials, and Installation drawings will be furnished
- Installation by a USC non-union crew
- Preliminary RF attenuation test performed at completion of the basic RF enclosure
- Final RF acceptance test performed after the installation of MRI system and completion of RF enclosure magnet entry. A test will be performed in accordance with MRI vendor specification and a test report issued.
- **Warranty:** USC guarantees that the basic RF shielded enclosure provided is free from defective materials and workmanship and will retain the specified RF shielding characteristics for a period of five (5) years from date of acceptance test. Excluded from the above are doors, filters, and waveguides which shall have a one (1) year warranty.
- Shipping costs included

**TOTAL INSTALLED PRICE:.....\$78,822.00**  
**SALES TAX IF APPLICABLE:.....\$ 1,569.00**  
**TOTAL:.....\$80,391.00**

**Notes:**

1. MRI vendor equipment drawings were not provided with bid documents.
2. Quotation does not include magnetic shielding.
3. Quotation is valid through 4/01/2025.

**FOB:** Destination

**Delivery:** Drawings: 7-10 days after receipt of order  
Materials: 6 weeks after drawing approval  
Installation: 10-12 days

**Payment Terms:** Progress Billing

Please visit our Web page at [www.universalshielding.com](http://www.universalshielding.com) to view our product line.

We appreciate the opportunity of providing you this proposal. If you desire any additional information, please contact the undersigned.

Very truly yours,  
UNIVERSAL SHIELDING CORP.

*Michael Newman*

Michael Newman  
Vice President

**ACCEPTED BY:** \_\_\_\_\_ **DATE:** \_\_\_\_\_

November 22, 2024

Mr. Brian Harrison  
Rayus  
5775 Wayzata Blvd., Suite 540  
St. Louis Park, Minnesota 55416

RE: St. Luke's / RAYUS MRI Replacement  
5551 Winghaven Blvd.  
O'Fallon, MO 63366

Dear Brian:

Per my walk through and the existing drawings from Archimages, we propose to furnish the necessary labor, materials, and equipment to complete the following sections of work on the above referenced project. Quotation is valid until 4/1/2025.

Demolition...	\$ 27,749.00
Carpentry...	\$ 15,684.00
Drywall...	\$ 26,252.00
Concrete...	\$ 50,191.00
Casework...	\$ 10,254.00
Doors, Frames & Hardware...	\$ 3,806.00
Glass & Glazing...	\$ 9,664.00
Floorcovering...	\$ 12,013.00
Acoustical Ceilings...	\$ 8,415.00
Painting...	\$ 3,824.00
Window Treatments...	\$ 2,329.00
Sprinklers...	\$ 13,330.00
HVAC...	\$ 178,929.00
Electrical...	\$ 118,285.00
General Conditions...	\$ <u>90,081.00</u>
<b>Total...</b>	<b>\$ 570,806.00</b>

Thank you for the opportunity to bid this project. Should you have any questions, please feel free to call.

Sincerely,

Michael G. Zavaglia  
Senior Vice President

MGZ:llb

Accepted by: \_\_\_\_\_

Date: \_\_\_\_\_



**From:** [Hill, Richard W.](#)  
**To:** [Fick, Mackinzey](#)  
**Subject:** RE: CON 6166 Review  
**Date:** Tuesday, December 3, 2024 9:06:43 AM  
**Attachments:** [image001.png](#)

---

Mackinzey:

Existing unit was acquired in 2013.

Rich

RICHARD W. HILL  
Attorney at Law  
DIRECT: 314 436.8317  
CELL: 314 749 2396  
[rhill@lashlybaer.com](mailto:rhill@lashlybaer.com)  
Licensed in Missouri

**LASHLY & BAER, P.C.**

*Attorneys at Law*

714 Locust Street St. Louis, MO 63101-1699 TEL: 314 621.2939  
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FAX: 314 621.6844 [www.lashlybaer.com](http://www.lashlybaer.com)

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**From:** Fick, Mackinzey <Mackinzey.Fick@health.mo.gov>  
**Sent:** Tuesday, November 26, 2024 4:16 PM  
**To:** Hill, Richard W. <RHill@lashlybaer.com>  
**Subject:** RE: CON 6166 Review  
**Importance:** High

Rich,

Thank you for this information! Only additional item needed is below.

- When was the existing unit acquired?

**This information is needed by Wednesday, December 4<sup>th</sup>, 2024.**

*Mackinzey Fick*

Assistant Program Coordinator, Certificate of Need  
Department of Health and Senior Services  
920 Wildwood Drive, P.O. Box 570