

VA HEALTHCARE CTR
VA Health Care Center
5001 N PIEDRAS

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EL PASO, TX 79930
P. O. : 756- B35002

EL PASO, TX 79930
PO#: 756-B30001

All items listed below are included for this system: *(See Detailed Technical Specifications at end of Proposal.)*

Qty	Item Description
1	MAGNETOM Espree - System The Siemens 1.5T MAGNETOM Espree, a Tim system, is the first Open Bore MR scanner. It uniquely supports revolutionary patient care through: - Revolutionary, CT-like bore design 70 cm patient diameter, 125 cm long system (cover to cover) for head out of the magnet in 60% of the anatomy scanned. - Tim (Total imaging matrix) technology, the tremendous innovative RF system and matrix coil technology, which provides up to 100% more SNR, streamlines positioning and opens the door to whole body imaging. - syngo(r), the Siemens unique multi modality software providing innovative applications and workflow automation features. The system including magnet, electronics and control room can be installed in 30 sqm (325 sq. ft). The basic system includes: - Unique ultra-short 120 cm long, whole-body superconductive 1.5T magnet with Zero Helium Boil-Off technology - Siemens exclusive Actively Shielded water-cooled gradient system - Digital RF Transmit and Receive System - RF Coils (Head, Neck, Spine and Body Matrix Coil, 4-channel Flex Coils large/ small) - Wireless physiological measuring unit (PMU) - High performance new host computer and image processor - syngo(r) MR SW incl. Inline technology, 1D/2D PACE, iPAT, iPAT Extensions, syngo BLADE, CISS/DESS and Phoenix - Tim Application Suite including nine dedicated Suites: Neuro Suite, Angio Suite, Cardiac Suite, Body Suite, Onco Suite, Breast Suite, Ortho Suite, Pediatric Suite and Scientific Suite. For system cooling either the predefined chiller option or the Separator is required.
1	I-class #Tim I-class is the new generation of Tim-based MRI scanners, which enables innovative applications and workflow efficiency. The I-class package comprises: - 3D Distortion Correction - MPPS - ImageFilter SW - PhoenixZIP - DICOM Study Split
1	Tim [76x18] Z-engine #Es Tim [76x18] Z-engine performance level Tim [76x18] is Total imaging matrix with 76 seamlessly integrated coil elements, combinable to 18 RF channels. It is for demanding high-end applications and optimized throughput. Tim [76x18] has flexibility in Parallel Imaging. PAT factors up to 4 (one direction) or 12 (in two directions, optional) help speed acquisitions. Maximum SNR is ensured through the new matrix coil technology. Z-engine Gradient System The Z-engine is designed combining high performance while minimizing acoustic noise.
1	Label Tim [76x18] #Es Label on the front cover displaying the Tim level of the system.

Qty	Item Description
1	PC Keyboard US english #Tim Standard PC keyboard with 101 keys.
1	Cover Satin White #Es The color of the main face plate cover with integrated control panel and table display is Translucent Teal. The table elevator cover and adjoining upper left cover are presented in an optically appealing Satin White design.
1	Remov. Matrix Table w.Trolley #Es The patient table is mounted directly to the magnet assembly. The table can support up to 200 kg (440 lbs) patients with unrestricted vertical and horizontal movement. The removable table allows docking of the table top with a trolley for preparing patients outside the scan room for maximum flexibility and speed.
1	PMU Display Satin White #Es LCD monitor arm-mounted on the magnet cover for display of physiologic (ECG, pulse, respiration) signals in the examination room. Adjustable for optimal visualization while positioning physiological monitoring devices (e.g. ECG electrodes). Including front cover with outlet for the LCD display in Satin White cover design.
1	Advanced Cardiac #Tim This package contains BEAT, special sequences and scan protocols for advanced MR examinations of the heart. It enables comprehensive cardiac MR examinations covering morphology, function, tissue characterization, coronary imaging and plaque characterization.
1	Flow Quantification #Tim Special sequences for quantitative assessment of flow.
1	Argus Flow
1	Argus 4D Ventr.Function syngo #Tim syngo Argus 4D Ventricular Function software processes MR cine images of the heart and generates quantitative results for physicians in the diagnostic process.
1	Native syngo #Tim 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.
1	Composing syngo #Tim This application provides dedicated evaluation software for creation of full-format images from overlapping MR volume data sets and MIPs (starting from syngo MR B13) acquired at multiple stages.
1	Inline Composing syngo #Tim Automatic anatomical or angiographic composing of multiple adjacent coronal or sagittal images for presentation and further evaluation. Composed images can be automatically loaded into Graphical Slice Positioning for scan planning purposes.
1	Tim Planning Suite 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	SWI #Tim Susceptibility Weighted Imaging is a high-resolution 3D imaging technique for the brain with ultra-high sensitivity for microscopic magnetic field inhomogeneities caused by deoxygenated blood, products of blood decomposition and microscopic iron deposits. Among other things, the method allows for the highly sensitive proof of cerebral hemorrhages and the high-resolution display of venous cerebral blood vessels.

Qty	Item Description
1	<p>Neuro Perfusion Evaluation syngo</p> <p>Neuro Perfusion Evaluation syngo provides a task card for detailed post-processing of brain perfusion data sets. Color display of the relative Mean Transit Time (relMTT), relative Cerebral Blood Volume (relCBV), and relative Cerebral Blood Flow (relCBF) is supported. Flexible selection of the Arterial Input Function (AIF) for more reliable analysis taking into account the dynamics over time of the contrast agent enhancement. The detailed evaluation of brain perfusion data sets generates parameter maps for TTP and PBP and for the hemodynamic parameters relMTT, relCBV, and relCBF. These may show perfusion deficits and assist in the diagnosis and grading of e.g. vascular deficiencies and brain tumors. Creation of RGB Color Maps for storage on a PACS is not available on Non-Tim Systems until VA35.</p>
1	<p>Inline Diffusion #Tim</p> <p>Automatic real-time calculation of trace-weighted images and ADC maps with Inline technology. Compatible to single-shot diffusion-weighted EPI.</p>
1	<p>DTI Package #Tim</p> <p>The following SW components are already included in the DTI Package: - Diffusion Tensor Imaging - DTI Tractography - DTI Evaluation</p>
1	<p>syngo Security Package</p>
1	<p>Body Matrix Coil #Tim</p> <p>The new multi-element Matrix coil technology is an essential part supplementing the most innovative Total imaging matrix. Matrix coils have multiple receive coil elements that can be clustered in groups. Each receive coil element is equipped with a low noise preamplifier to maximize signal-to-noise ratio. The Body Matrix Coil features: - 6-element design with 6 integrated preamplifiers, with 2 clusters of 3 elements each - Operated depending on the Matrix Coil Mode as a 2-channel coil (CP Mode), 4-channel coil (Dual Mode) or 6-channel coil (Triple Mode) - Operates in an integrated fashion with the Spine Matrix coil (2 rings of 6 elements each = 12-element design) - Can be combined with further Body Matrix coils for larger coverage - No coil tuning - iPAT-compatible Applications: - Thorax (incl. heart) - Abdomen - Pelvis - Hip Can be combined with: - Head Matrix coil - Neck Matrix coil - Spine Matrix coil - Additional Body Matrix coils (typically 2-3 in total) for additional anatomical coverage - PA Matrix coil (Peripheral Angio Matrix; optional) - All flexible coils (e.g. CP Flex coil, small, CP Flex coil, large) - CP Head Array coil - Endorectal coils</p>
1	<p>PA Matrix Coil #Tim</p> <p>The new multi-element Matrix coil technology is an essential part supplementing the most innovative Total imaging matrix. Matrix coils have multiple receive coil elements that can be clustered in groups. Each receive coil element is equipped with a low noise preamplifier to maximize signal-to-noise ratio. The PA Matrix Coil features: - 16-element design with 16 integrated preamplifiers, in 8 CP pairs, i. e. 4 levels with 2 CP elements each - Operates in an integrated fashion with the Body Matrix Coils and Spine Matrix Coil and for Whole-Body examinations also with the Head and Neck Matrix Coil (for Whole-Body examinations the optional Tim Whole Body Suite is required) - Can be utilized Head and Feet First - Both legs are independently covered with coil elements, maximizing the coil filling factor and the signal-to-noise ratio - No coil tuning - Includes special non-ferromagnetic coil cart for safe, user-friendly storage - iPAT-compatible Applications: - High-resolution angiography of both legs incl. pelvis with highest signal-to-noise ratio - Visualization of the iliac arteries and aorta Can be combined with: - Head Matrix Coil - Neck Matrix Coil - Spine Matrix Coil - Body Matrix Coils (up to 3) - All flexible coils (e.g. CP Flex coil, small, CP Flex coil, large)</p>
1	<p>Shoulder Array Coil #Es</p> <p>This iPAT compatible coil for examinations of the left or right shoulder consists of a base plate and two receive array coil attachments available in different sizes, these will be attached and can be relocated on the basis plate.</p>
1	<p>8-channel Foot/ Ankle Coil #Es</p> <p>The 8-channel foot-ankle coil is an iPAT-compatible "no-tune" receiver coil for the examination of the foot and the ankle joint.</p>
1	<p>8-channel Wrist Coil Tim</p> <p>The 8-channel wrist coil is an iPAT-compatible "no-tune" receiver coil for the examination of the wrist.</p>

Qty	Item Description
1	Tx/Rx 15-channel Knee Coil #Tim New 15-channel transmitter/receiver coil for joint examinations in the area of the lower extremities. Main features : - 15-element design (3x5 coil elements) with 15 integrated preamplifiers, - iPAT-compatible
1	Patient Supervision TV #Es Special video camera for observing the patient during an MR examination, conveniently mounted on the wall.
1	Patient TV wall support Wall mount for the patient monitor.
1	MR Workplace Table 1.2m Table suited for syngo Acquisition Workplace and syngo MR Workplace based on syngo Hardware.
1	MR Workplace Container, 50cm 50 cm wide extra case for the syngo host computer with sliding front door to allow change of storage media (CD/DVD/USB).
1	Cable Set syngo 11/9 #Es Cable length inside the cabin 11 m, cable length outside the cabin 9 m. Inclusive Ethernet Twisted Pair Adapter and 10 m cable.
1	Venting Kit #Av,Es Overpressure valve as a transport safety device for cold delivery of the magnet by air and sea freight. Designed for: - atmospheric pressure conditions at sea level during land and sea transport, as well as - low pressure during air transport.
1	Helium Fill 30/70 #S,Tim
1	Chiller, 60 Hz #Av, Es
1	UPS Cable #Tim Power cable for connecting the UPS Powerware PW 9130-3000i (14413662) to the ACC of MAGNETOM Tim and MAGNETOM Tim+Dot systems for backing up the computer. Standard cable length: 9 m.
1	UPS Powerware PW9130G-3000T-XLEU UPS system Eaton PW9130G-3000T-XLEU for MAGNETOM Tim, MAGNETOM Tim+Dot and MAGNETOM Symphony systems for safeguarding computers. Power output: 3.0 kVA / 2.7 kW Bridge time: 5 min full load / 14 min half load Input voltage: 230 VAC
1	UPS Battery module UPS battery module Eaton PW 9130N-3000T-EBM for all MAGNETOM Tim, MAGNETOM Tim+Dot and MAGNETOM Symphony systems for safeguarding computers. Extension for: PW9130i-3000T Battery type: Closed, maintenance-free Extension of the bridge time to: 24 minutes with a module Dimensions (H x W x D): Battery module: 346 x 214 x 412 mm incl. bracket set Weight: approx. 50 kg
1	Additional Set of Manuals Additional set of manuals for the above selected MR system.
1	MR_GOV_RIG_INSTL
1	Standard Cryogenics
1	Armrest #MR

Qty	Item Description
1	<p>MR Project Management</p> <p>A Siemens Project Manager (PM) will be the single point of contact for the implementation of your Siemen's equipment. The assigned PM will work with the customer's facilities management, architect or building contractor to assist you in ensuring that your site is ready for installation. Your PM will provide initial and final drawings and will coordinate the scheduling of the equipment, installation, and rigging, as well as the initiation of on-site clinical education.</p>
1	<p>Initial onsite training 32 hrs</p> <p>Up to (32) hours of on-site clinical education training, scheduled consecutively (Monday - Friday) during standard business hours for a maximum of (4) imaging professionals. Training will cover agenda items on the ASRT approved checklist. Uptime Clinical Education phone support is provided during the warranty period for specified posted hours. This educational offering must be completed (12) months from install end date. If training is not completed within the applicable time period, Siemens obligation to provide the training will expire without refund.</p>
1	<p>Follow-up training 24 hrs</p> <p>Up to (24) hours of follow-up on-site clinical education training, scheduled consecutively (Monday - Friday) during standard business hours for a maximum of (4) imaging professionals. Uptime Clinical Education phone support is provided during the warranty period for specified posted hours. This educational offering must be completed (12) months from install end date. If training is not completed within the applicable time period, Siemens obligation to provide the training will expire without refund.</p>
1	<p>Training Class T&L not included</p> <p>Tuition for (1) imaging professional to attend a classroom course of choice at one of the Siemens training centers. This educational offering must be completed (12) months from date of purchase order. If training is not completed within the applicable time period, Siemens obligation to provide the training will expire without refund.</p>
1	<p>Additional onsite training 32 hours</p> <p>Up to (32) hours of on-site clinical education training, scheduled consecutively (Monday - Friday) during standard business hours for a maximum of (4) imaging professionals. Training will cover agenda items on the ASRT approved checklist if applicable. This educational offering must be completed (12) months from install end date. If training is not completed within the applicable time period, Siemens obligation to provide the training will expire without refund.</p>
3	<p>Physician 3T Workshop Siemens Train Ctr</p> <p>This 3T Workshop is for (1) Physician to attend at Siemens Training Center. This workshop includes didactic lectures on patient selection and preparation, scanning and protocols, post processing data sets, and interpretations. Includes economy airfare and lodging for (1) attendee. All arrangements must be arranged through Siemens designated travel agency. This educational offering must be completed by the later of (12) months from purchase or install end date. If training is not completed within the applicable time period, Siemens obligation to provide the training will expire without refund.</p>
1	<p>Chiller Start-up and Warranty for TIM</p>

Qty	Item Description
1	Spectris Solaris EP Injector iCBC Includes Spectris Solaris EP injector and Integrated Continuous Battery Charger (ICBC). - Optimized color touch screen with few keystrokes. - Six user-programmable phases for added flexibility. - Independent Keep Vein Open (KVO) allows more time to focus on patient. - Large 115 mL saline syringe allows for longer KVO and multiple flushes. - Design of low pressure tubing eliminates dead space in the "T" connection that can waste contrast. - The clear barrel design with molded FluidDots help detect the presence of air in a syringe. - Pressure Limit Setting control software enables user to select from one to six preset maximum pressure limits, ranging from 100-300 psi, and to view current pressure during injection next to the pre-selected maximum value on the Solaris display. Installation, applications and one year warranty provided by Medrad. Not for mobile use, refer to Siemens part number M3SSMR300EPM for the Solaris injector used in a mobile environment. This product has been tested and verified for compatibility with the following Siemens' products: MAGNETOM Trio, Espree, Essenza, Verio, Avanto, Symphony, Aera, Skyra and Biograph mMR. Compatibility with other products cannot be guaranteed and use with any other products may void service contracts and/or system warranties.
1	Deluxe Foam Positioning Kit
1	MR Wall sign -English
1	MR Wall sign - Spanish
	One complimentary biomedical tuition is included with the purchase of this system. This training must be completed before the end of the warranty period.
1	Offset Additional Set of Manuals
1	Additional Rigging MR Out of Scope Inbound
1	Offset for Initial onsite train 32 hrs
1	Offset Follow-up training 24 hrs
	Airfare for Complimentary Biomed Education ELP to RDU
1	
1	Lodging for Complimentary Biomed
	XX2SYNGO-SYNGO incl. Multimodality Workstation (5 days)
1	
	MR2AVANTO- MAGNETOM Avanto and Espree System (15 Days)
1	
	Airfare for Additional Biomed from ELP to RDU
1	
1	Lodging for Additional Biomed
	Airfare for Imaging professional ELP to RDU
1	
	Lodging for Imaging Professional
1	

MR Warranty Information

<u>Product</u>	<u>Period of Warranty¹</u>	<u>Coverage</u>
(New Systems and "Proven Excellence" Refurbished Systems Only)		
MR System (not including consumables)	12 month	Full Warranty (parts & labor)

Post Warranty (after expiration of system warranty) – Replacement parts only!

Magnet	12 month	Parts only
Spare Parts	6 month	Parts only
Consumables	Not Covered	

Note: Optional extended warranty coverage can be obtained by purchase of a service agreement.

¹ Period of warranty commences from the date of first use or completion of installation, whichever occurs first. In the event the completion of installation is delayed for reasons beyond Siemens' control, the stated warranty period shall commence 60 days after delivery of equipment.

Detailed Technical Specifications

MAGNETOM Espree

. / Product	Description
MAGNETOM Espree - System	<p>The MAGNETOM Espree features the Tim Application Suite. The Tim Application Suite provides a complete range of clinically optimized sequences, protocols and workflow functionalities for virtually all clinical questions. There are nine dedicated application packages:</p> <ul style="list-style-type: none"> - Neuro Suite - Angio Suite - Cardiac Suite - Body Suite - Onco Suite - Breast Suite - Ortho Suite - Pediatric Suite - Scientific Suite <p>The high performance host computer and image processor are ideally suited for even the most demanding applications. The system including magnet, electronics and control room can be installed in 30 m² (325 ft²) space.</p> <p>The system includes:</p> <p>Magnet: The world's shortest, whole-body superconductive 1.5T magnet with</p> <ul style="list-style-type: none"> - 120 cm length - 6th generation active shielding (AS) technology with counter running coil technology - External Interference Shielding (E.I.S.) - High homogeneity (typ. 2.8 ppm, based on 24 plane plot, 45x45x30 cm³ volume) - Helium capacity of 980 liters - Zero Helium Boil-Off rate of 0 l/h during typical, undisturbed clinical operation depending on the sequences used and examination time, and provided the system is serviced in regular intervals. - Integrated magnet cooling system. <p>Gradient System:</p> <ul style="list-style-type: none"> - Actively Shielded water-cooled gradient system - Minimized acoustic noise <p>RF Transmit and Receive System:</p> <ul style="list-style-type: none"> - Compact water cooled solid state RF amplifier - Integrated electronics cabinet water cooling - Integrated circularly polarized Body Coil, which can be used as transmitter with local receive coils or as transmitter and receiver, for example in the case of bariatric patients - Revolutionary Total imaging matrix allows a huge number of coil elements to be seamlessly integrated into one examination together with a large number of RF channels, optimizes coil positioning and virtually eliminates coil changing times. <p>RF Coils:</p> <ul style="list-style-type: none"> - Head Matrix coil <ul style="list-style-type: none"> - 12-element design with 12 integrated preamplifiers, two rings of 6 elements each (i.e. 4 clusters of 3 elements each) - Operated depending on the Matrix Coil Mode as a 4-channel coil (CP Mode), 8-channel coil (Dual Mode)

/ Product	Description
MAGNETOM Espree - System	<ul style="list-style-type: none"> or 12-channel coil (Triple Mode). - For applications like Brain examinations, MR Angiography, combined head/neck examinations, TMJ (temporo mandibular joints) - Neck Matrix coil <ul style="list-style-type: none"> - 4-element design with 4 integrated preamplifiers, 2 clusters of 2 elements each - Operated depending on the Matrix Coil Mode as a 2-channel coil (CP Mode) or 4-channel coil (Dual Mode, Triple Mode). - For applications like Cervical Spine, Neck, Larynx/Esophagus, MR Angiography, Mediastinum, combined head/ neck examinations - Spine Matrix coil <ul style="list-style-type: none"> - 24-element design with 24 integrated preamplifiers, 8 clusters of 3 elements each - Operated depending on the Matrix Coil Mode as a 8-channel coil (CP Mode), 16-channel coil (Dual Mode) or 24-channel coil (Triple Mode). - For applications like high resolution imaging of the whole spine, but also for various applications in combination with additional coils - Body Matrix coil <ul style="list-style-type: none"> - 6-element design with 6 integrated preamplifiers, 2 clusters of 3 elements each - Depending on the matrix coil mode, operated as a 2-channel coil (CP Mode), a 4-channel coil (Dual Mode) or 6-channel coil (Triple Mode) - For thorax, abdomen, pelvis and hip applications as well as various other applications in combination with additional coils - 4-channel Flex coil package <ul style="list-style-type: none"> - The 4-channel Flex kit offers a set consisting of the 4-channel Flex coil interface with 4 integrated preamplifiers as well as the 4-channel Flex coil, small, and the 4-channel Flex coil, large. For a wide range of applications such as imaging of the shoulders and hip through to small areas such as the wrist. <p>Workflow and Patient Handling</p> <ul style="list-style-type: none"> - Tim – Total imaging matrix <ul style="list-style-type: none"> - Tim provides increased patient comfort and optimized workflow efficiency. Only one patient setup, no repositioning, no changing of coils - Ultra-light weight coils - Imaging with optimized surface coil quality - Software controlled remote table move - Feet-first positioning for almost all examinations - Patient table <ul style="list-style-type: none"> - Free floating table with max. scan range of 154 cm (5' 1"). The tabletop travels approx. 80 cm (2'7"), respectively 132 cm (4'4"). with the optional Time Whole Body Suite – beyond the rear end of the system, for additional patient access. - Patient weight limit of 250 kg (550 lbs) in both vertical and horizontal movement (support begins with software version syngo MR B13). - Tables lowers down to 47 cm (1' 6") for easy access for all patients (e.g disabled, geriatric and bariatric). - Two Tableside Control Units integrated into the front cover ergonomically designed and positioned (left and right). - Appealing CT-like design with 70 cm opening enhances comfort for more patients and enables scanning of bariatric patients. The system is only 125 cm long giving a short and open appearance that can significantly help patients with claustrophobia or anxiety about the MR examination. - The cantilevered design gives the system a light and unimposing appearance while providing unobstructed foot space for attending staff and better access to the patient. - Patient Positioning Aids <ul style="list-style-type: none"> - Comprehensive set of cushions for comfortable and stable patient positioning together with safety

. / Product	Description
<p><i>(Continued)</i></p> <p>MAGNETOM Espree - System</p>	<p>straps.</p> <ul style="list-style-type: none"> - Patient Comfort facilities, Patient Communication <ul style="list-style-type: none"> - Ergonomically designed patient intercom - Variable (3 levels) ventilation and lighting inside the magnet bore - Wireless physiological measuring unit <ul style="list-style-type: none"> - synchronizes the measurement with the physiological cycles of cardiac and/or respiratory motion. - Wireless technology for all sensors allows fast and easy patient setup, high patient comfort and robust cardiac or respiratory signal transmission as it eliminates the need to attach cables to the patient. - The Wireless Physio Control unit contains wireless VCG, respiration and pulse sensors and a charging station as all sensors are powered by rechargeable batteries. <p>Application packages:</p> <p>Tim Application Suite: MR Imaging - par excellence The Tim Application Suite has a complete range of clinically optimized examinations for all regions. Excellent head-to-toe imaging can be accomplished with the sequences and features included in this application suite. To enable comprehensive head-to-toe MR imaging, nine dedicated application packages Neuro Suite, Angio Suite, Cardiac Suite, Body Suite, Onco Suite, Breast Suite, Ortho Suite, Pediatric Suite and Scientific Suite have been included as standard applications.</p> <p>Neuro Suite Neuro Suite is part of the Tim Application Suite. Comprehensive head and spine examinations can be performed with dedicated programs that are optimized for clinical examinations. High-resolution protocols and fast protocols for uncooperative patients are provided. Neuro Suite also includes protocols for diffusion imaging, perfusion imaging, and fMRI. It includes for example:</p> <ul style="list-style-type: none"> - EPI sequences and protocols for diffusion, perfusion and fMRI for advanced neurological applications. Diffusion weighted imaging is possible with up to 16 b-values in the orthogonal directions as well as multiple direction diffusion weighting in 6 or 12 directions to generate data sets for diffusion tensor imaging. - Dynamic Analysis software (included in standard configuration) enables calculation of: - ADC maps - t-test maps from the EPI images for fMRI - Time-to-Peak maps for perfusion analysis. - 3D isotropic resolution volume imaging using T1 3D MPRAGE / 3D FLASH, SPACE DarkFluid, T2 SPACE and 3D TSE. - Whole spine protocols acquire in multiple steps via software controlled table movement in a single click. - T2-weighted high-resolution 3D Restore protocols optimized for inner ear examinations. - 2D and 3D MEDIC protocols for T2-weighted imaging particularly in C-spine transverse where reproducibility can be difficult due to CSF pulsations and blood flow. - 3D Myelo with 3D HASTE and 3D TrueFISP sequence for anatomical details - Dynamic sacro-iliac joint imaging using fast T1-weighted FLASH 2D sequence - Spine diffusion protocols with PSIF sequence. <p>Angio Suite Excellent MR Angiography can be performed to visualize arteries and veins with or without contrast agent. <i>Contrast-enhanced MRA</i></p> <ul style="list-style-type: none"> - 3D contrast-enhanced MRA protocols for e.g. single step, dynamic, peripheral, whole body MRA with the shortest TR and TE. The strong gradients make it possible to separate the arterial phase from the venous phase. - TestBolus workflow for optimized bolus timing and superb image quality. - CareBolus functionality for accurate determination of the bolus arrival time and the "Stop and Continue" of the 3D ce-MRA protocol after the 2D bolus control scan. - Dynamic ce-MRA for 3D imaging over time. <p><i>Non-contrast-MRA and venography</i></p> <ul style="list-style-type: none"> - 2D and 3D Time-of-Flight (ToF) protocols for MRA for the Circle of Willis, carotids, neck vessels, and

/ Product	Description
<p><i>(Continued)</i></p> <p>MAGNETOM Espree - System</p>	<p>breath-hold protocols for abdominal vessels</p> <ul style="list-style-type: none"> - Triggered 2D ToF sequences for non-contrast MRA, particularly of the abdomen and the extremities - 2D/3D Phase-Contrast - MR venography with 2D/3D Time-of-Flight (ToF) and Phase-Contrast - TONE (Tilted Optimized Non-saturation Excitation) and MTC (Magnetization Transfer Contrast) techniques for improved Contrast-to-Noise Ratio (CNR) <p><i>Image processing tools</i></p> <ul style="list-style-type: none"> - MPR, MIP, MinIP, and 3D SSD - Inline MIP for immediate results - Inline subtraction of pre- and post-contrast measurements - Inline standard deviation maps of Phase-Contrast measurements for delineation of arteries and veins <p>Cardiac Suite</p> <p>The Cardiac Suite covers the complete application range from morphology, ventricular and valvular function to tissue characterization. It features the new BEAT tool. Triggering requires the PMU Wireless Physio Control which is included in the scope of supply of the MAGNETOM Espree. This package includes:</p> <p><i>Cardiac view creation with BEAT</i></p> <ul style="list-style-type: none"> - Cardiac scouting provides a step-by-step procedure for the visualization and planning of typical cardiac views (short axis, 4 chamber and 2 chamber views), based on e.g. TrueFISP or dark blood TurboFLASH. - Disease-oriented protocols are provided. <p><i>Morphology – Heart and Vessel structure with BEAT</i></p> <ul style="list-style-type: none"> - Various breath-hold techniques for strong contrast between the blood and vascular structures. Dark Blood TSE and HASTE imaging are available for the structural evaluation of the cardio-thoracic anatomy, including vessels.. <p><i>Ventricular Function, Valve Function and Wall Motion with BEAT</i></p> <ul style="list-style-type: none"> - Tools for rapid evaluation of left or right ventricular function. - Automatic adjustment of parameters to the current heart rate. - Use of the Physio Display for graphical triggering setup. - Retrogated Cine Imaging with TrueFISP or FLASH contrast. - iPAT integration for high temporal/spatial resolution. - Standard cine techniques for dynamic display can be used to visualize function of the heart valves (FLASH or TrueFISP). <p><i>Tissue characterization with BEAT</i></p> <ul style="list-style-type: none"> - Fast techniques for dynamic imaging with iPAT capabilities for the assessment of coronary heart disease. These protocols allow the acquisition of multiple slices with high resolution, under stress and rest, with arbitrary slice orientation for each slice (e.g. 3 short axis slices and 1 long axis slice). - TI scout for the optimization of contrast between tissues. - High contrast and high resolution tissue characterization. - Single Shot or segmented IR TrueFISP/TurboFLASH for tissue characterization with free breathing. - Robust and reproducible contrast between tissues with 2D phase-sensitive inversion recovery, eliminating the need of TI adjustment (TrueFISP, TurboFLASH). <p>Body Suite</p> <p>Body Suite covers your needs for clinical body applications. Ultrafast high-resolution 2D and 3D protocols are provided for abdomen, pelvis, MR Colonography, MRCP, dynamic kidney, and MR Urography applications. Siemens unique 2D PACE technique makes body imaging easy allowing for multi-breath-hold examinations as well as free breathing during the scans. Motion artifacts are greatly reduced with 2D PACE Inline technology. This package includes:</p> <ul style="list-style-type: none"> - Free breathing 2D PACE applications with 2D/3D HASTE (RESTORE) and 2D/3D TSE (RESTORE) - Optimized fast single shot HASTE protocols and high-resolution 3D RESTORE protocols based on SPACE and TSE for MRCP and MR Urography examinations - Dedicated fat suppression protocols with Quick FatSat, STIR, SPAIR, FLASH and HASTE in-phase and opposed-phase protocols as well as multi-echo TSE. DIXON - 2 point Dixon with 3D VIBE, the following contrasts can be obtained: in-phase, opposed phase, fat and water image.

/ Product	Description
<p><i>(Continued)</i></p> <p>MAGNETOM Espree - System</p>	<ul style="list-style-type: none"> - Dynamic 3D VIBE protocols for best visualization of focal lesions with high spatial and temporal resolution - High-resolution pelvic imaging (prostate, cervix) - Isotropic T2 SPACE 3D protocols for tumor search in the pelvis - Colonography bright lumen with T2-weighted TrueFISP and dark lumen with T1-weighted VIBE - Dynamic volume examinations with 3D VIBE - <i>syngo</i> REVEAL (prerequisite: "Inline Diffusion" option) <p>Onco Suite MR imaging has an excellent advantage of soft tissue contrast, multi-planar capabilities and the possibility of selectively suppressing specific tissue e.g. fat or water. This helps visualize pathologies, particularly metastases. The Onco Suite features a collection of sequences as well as protocols and evaluation tools that guide through a detailed screening of clinical indications, such as in hepatic neoplasms. This package includes:</p> <ul style="list-style-type: none"> - STIR TSE and FLASH in-phase and opposed-phase protocols with a high sensitivity to metastases visualization - Dynamic imaging protocols for assessment of the kinetic behavior for lesion visualization and characterization - Quantitative evaluation and fast analysis of the data with colorized Wash-in, Wash-out, Time-To-Peak, Positive-Enhancement-Integral, MIPtime and combination maps with Inline technology or for offline calculation - Display and analysis of the temporal behavior in selected regions of interest with the included MeanCurve postprocessing application. This includes the capability of using additional datasets as a guide for defining regions of interest even faster and easier than before. - <i>syngo</i> REVEAL (prerequisite: "Inline Diffusion" option) <p>Breast Suite MR imaging has proven a very high sensitivity for breast lesions and is the gold standard for the examination of silicone implants. Extremely high spatial and temporal resolution can be achieved in very short measuring times (e.g. 1 min) by using iPAT with GRAPPA. Excellent soft tissue differentiation, customized protocols (e.g. with fat saturation or water excitation or silicone excitation), as well as flexible multiplanar visualization allow for fast, simple and reproducible evaluation of MR breast examinations. This package includes:</p> <ul style="list-style-type: none"> - High-resolution 2D protocols for morphology evaluation. - High-resolution 3D protocols covering both breasts simultaneously. - Protocols to support interventions (fine needle and vacuum biopsies, wire localization). - Protocols for evaluating breasts with silicone implants. - Automatic and manual frequency adjustment, taking into account the silicone signal. - 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. - SPAIR – robust fat sat (robust fat suppression using a frequency selective inversion pulse) - 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. - Inline subtraction and MIP display. - Offline subtraction, MPR and MIP display. - <i>syngo</i> REVEAL (prerequisite: "Inline Diffusion" option). <p>The Breast Suite also includes: VIEWS (Volume Imaging with Enhanced Water Signal)</p> <ul style="list-style-type: none"> - bilateral – both breasts are examined simultaneously - axial – the milk ducts are directly displayed - fat-saturated or water-excited – fat complicates clinical evaluation and is suppressed - isotropic 3D measurement – the same voxel size in all three directions for reconstruction in any slice

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<p><i>(Continued)</i></p> <p>MAGNETOM Espree - System</p>	<ul style="list-style-type: none"> direction submillimeter voxel – highest resolution for precise evaluation <p>Ortho Suite Ortho Suite is a comprehensive collection of protocols for joint and spine imaging. MR imaging is especially suitable for avascular necrosis and internal derangements. The protocols included in this Suite can also be applied for imaging of tumors and infections. This package includes:</p> <ul style="list-style-type: none"> 2D TSE protocols for PD, T1 and T2-weighted contrast with high in-plane resolution and thin slices 3D MEDIC, 3D TrueFISP protocols with water excitation for T2-weighted imaging with high in-plane resolution and thin slices High resolution 3D VIBE protocol for MR arthrography (knee, shoulder and hip) 3D MEDIC, 3D TrueFISP, 3D VIBE protocols with water excitation having high isotropic resolution, optimized for 3D post-processing PD SPACE with fat saturation and T2 SPACE with high isotropic resolution optimized for 3D post-processing Whole spine single-step or multi-step protocols Excellent fat suppression in off-center positions, e.g. in the shoulder due to high magnet homogeneity Dynamic TMJ and ilio-sacral joint protocol Susceptibility-insensitive protocols for imaging in the presence of a prosthesis Multi-Echo SE sequence with up to 32 echoes for the calculation of T2 time maps (calculation included in the Scientific Suite) <p>Pediatric Suite The parameters for pediatric imaging vary significantly in comparison to the parameters for adults. The reasons are developing tissues, body size, faster heart rates and restricted compliance with breath-hold commands. This suite provides dedicated protocols for pediatric imaging by age groups, for example, protocols for imaging tumors, malformations and epilepsy in the brain, cardiac morphology as well as functional imaging and contrast enhanced MR Angiography. This package includes:</p> <p><i>Neuro</i></p> <ul style="list-style-type: none"> Brain protocols divided according to age groups and providing best contrast-to-noise ratio with optimized parameters, for example, protocols for under 6 months old infants, protocols for infants between 6 months and one year, protocols for toddlers between one and two years of age. Excellent T1-weighted contrast with optimized TR, TE and flip angles Protocols with MTC pulse for post-contrast T1-weighted imaging that provides excellent contrast-to-noise ratio resulting in improved conspicuity of lesions/pathologies <p><i>Cardiovascular</i></p> <ul style="list-style-type: none"> Cardiac morphology protocols according to age groups and optimized for a small FoV and faster heart rates in congenital heart diseases (CHD) Imaging protocols for ventricular function as well as valvular and septal defects ce-MRA as an adjuvant in the assessment of congenital heart disease and vasculature <p>Scientific Suite Scientific Suite supports the scientifically oriented user with an easy access to application-specific data for further processing and advanced image computation methods.</p> <ul style="list-style-type: none"> Support of USB memory sticks Access to the file system by means of a secure and convenient browser Anonymization of patient data Easy generation of AVIs and screenshots for integration into presentations and training videos Export function for tables, statistics and signal-time-courses in a communal format (MeanCurve, Spectroscopy, DTI evaluation) <p>Advanced image computation methods such as T2 and T1 time calculation, addition, subtraction, multiplication, division, and integration of images</p> <p>syngo BLADE Motion and flow insensitive multi-shot Turbo Spin Echo (TSE) sequence for all body regions with optional</p>

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<p>)</p> <p>MAGNETOM Espree - System</p>	<p>inter-shot motion correction. BLADE supports T2-weighted, dark fluid and STIR contrast imaging as well as inversion recovery T1-weighted imaging. BLADE uses an acquisition scheme which is less sensitive to motion and flow than the scheme used by conventional TSE. In the head additionally a 2D (in-plane) motion correction can be used to further reduce artifacts resulting from patient motion during the scan.</p> <p>Complete protocols for brain studies in uncooperative patients, including all orientations and T2-weighted, dark fluid and STIR contrasts, as well as dedicated protocols for soft tissue/breast imaging are provided.</p> <p>SPACE SPACE is a variable 3D TSE sequence method with very long echo trains (>200). Tissue contrast is optimized through a flip angle amplitude modulation over the course of the echo train adapted to the specific application. This also substantially reduces SAR. T2, T1, PD contrast as well as DarkFluid and Bright Fluid contrasts are possible. Due to the extremely high signal efficiency of 3D technology, protocols with isotropic submillimeter resolution can be created (resolution within the slice = slice thickness <1mm). The SPACE package includes 3D protocols for any body region (head, cervical spine, thoracic spine, lumbar spine, pelvis, abdomen, MRCP, hip, knee) and for any contrast.</p> <p>iPAT Extensions iPAT² allows iPAT in 2 directions simultaneously (phase encoding direction and 3D direction for 3D sequences). By applying PAT in 2 directions simultaneously, the effective PAT factor can be maximized, and PAT applications are extended. Typical clinical applications are MR Angiography or ultrafast isotropic T1-weighted 3D imaging of the head.</p> <p>CISS & DESS 3D DESS for high-resolution 3D studies of joints with excellent T1 and T2 contrast. DESS is a double echo gradient sequence in which a FISP (transversally rephased gradient echo) and a PSIF (RF-refocused gradient echo) echo are simultaneously acquired and added, resulting in an increased signal-to-noise ratio.</p> <p>3D CISS for excellent very high resolution studies, especially useful in inner-ear examinations.</p> <p>The Advanced 3D data sets provide very thin contiguous slices with high signal-to-noise ratio which are also well suited to MPR post-processing along straight (oblique and double oblique) or curved lines. In some cases such as MR myelography or inner ear work, the MIP algorithm also provides very useful information.</p> <p>The sequences, features and techniques for acquisition and reconstruction included in the Tim Application Suite are described in detail below.</p> <p>Sequences</p> <ul style="list-style-type: none"> - Spin Echo (SE): Single, Double and Multi Echo (up to 32 echoes) - Inversion Recovery (IR) - 2D/3D FLASH (spoiled GRE) - 2D/3D FISP - 2D/3D PSIF - PSIF Diffusion - 2D/3D TrueFISP - Shared Phases Real-time TrueFISP - 2D/3D MEDIC (Multi Echo Data Image Combination) - 2D/3D TurboFLASH (MPRAGE) - 3D VIBE (Volume Interpolated Breath-hold Examination) with interpolation and quick fat saturation - 2D/3D TSE - Echo Sharing technique for dual-contrast TSE enhancing speed by using acquired echoes in both proton density and T2 images simultaneously. - Speeds up dual-contrast TSE by almost a factor of 2 - 2D/3D RESTORE TSE - SPACE for 3D imaging with high isotropic resolution with T1, T2, PD, and dark fluid contrast - 2D/3D TurboIR (TrueIR, STIR, dark-fluid T1 and T2) - 2D/3D HASTE (Half-Fourier Acquisition with Single Shot Turbo Spin Echo) - 2D/3D HASTE IR for fat or fluid suppression

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MAGNETOM Espree - System	<ul style="list-style-type: none"> - 2D/3D Single Shot TSE for heavy T2 weighting - 2D/3D Time-of-Flight (ToF) Angiography, single and multi-slab - 2D/3D Time-of Flight (ToF), triggered and segmented - 2D/3D Phase Contrast and multi-venic Phase Contrast Angiography - 2D/3D Phase Contrast triggered - ce-MRA sequences - BEAT Tool - TrueFISP segmented - 2D/3D FLASH segmented - Magnetization-prepared TrueFISP (IR, SR, FS) - IR T1 scout - Retrogating - Single Shot EPI (SE and FID) - 2D/3D Segmented EPI (SE and FID) - 3D GRE fieldmapping <p>Tim Application Suite: Acquisition and Reconstruction Techniques</p> <ul style="list-style-type: none"> - Diffusion-weighted imaging - Perfusion imaging - fMRI BOLD imaging - 1D/2D PACE (Prospective Acquisition CorrEction) - Whisper Mode for scanning with reduced noise; beneficial for children, non-cooperative, or anxious patients - LOTA (Long Term Data Averaging) technique for motion and flow artifact reduction without increasing scan time - Elliptical scanning reduces scan time for 3D imaging - Selectable centric elliptical phase reordering in the user interface for special applications - Inversion Recovery to null the fat or fluid signal and to obtain high T1-weighted image contrast - Dark-blood inversion recovery technique that suppresses blood signal - Saturation Recovery for 2D TurboFLASH, gradient echo, and T1-weighted 3D Turbo-FLASH with short scan time (e.g. MPRAGE) - Presaturation Technique. RF saturation pulses to suppress flow and motion artifacts. Up to six saturation bands may be positioned in any orientation - Tracking SAT Bands maintain constant saturation of venous and/or arterial blood flow, e.g. for 2D/3D sequential MRA - Fat Saturation. Additional frequency selective RF pulses, used to suppress bright signal from fatty tissue. Two selectable modes: weak, strong - Water Saturation. All sequences used for fat saturation can be used to suppress the water signal - Quick FatSat, for time-efficient fat saturation - SPAIR – robust fat sat (robust fat suppression using a frequency selective inversion pulse) - DIXON - 2 point Dixon with 3D VIBE, the following contrasts can be obtained: in-phase, opposed phase, fat and water image. - Fat Excitation. Spectral selective RF pulses for exclusive fat excitation - Water Excitation. Spectral selective RF pulses for exclusive water excitation - Silicone detection for breast examinations - MTC (Magnetization Transfer Contrast). Off-resonance RF pulses to suppress signal from certain tissues, thus enhancing the contrast used e.g. in MRA - TONE (Tilted Optimized Nonsaturating Excitation). Variable excitation flip angle to compensate inflow saturation effects in 3D MRA. TONE pulse are selectable depending on the desired direction of flow sensitivity - GMR (Gradient Motion Rephasing). Sequences with additional bipolar gradient pulses, permitting effective reduction of flow artifacts

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<p><i>(Continued)</i></p> <p>MAGNETOM Espree - System</p>	<ul style="list-style-type: none"> - Freely adjustable receiver bandwidth, permitting studies with increased signal-to-noise ratio - Freely adjustable flip angle. Optimized RF pulses for image contrast enhancement and increased signal-to-noise ratio - Half-fourier technique to further reduce the scan time (by approximately half), while maintaining the same spatial resolution - Rectangular FoV capability from 10% to 100% in steps of 1%, enables reduction in scan time by reducing the number of phase encoding steps while maintaining the same in-plane resolution - Multi-Slice-Multi-Angle: Scans in different planes can be acquired simultaneously in a single sequence, such as for the acquisition of superimposed orthogonal survey images (Scout) or studies in the spinal region, in order to image several vertebral disks exactly in their transverse orientation - The "Optimized EC protocols" (External Compound) license provides protocols for reducing disturbances in images caused by foreign material. <p>Installation:</p> <ul style="list-style-type: none"> - The relatively lightweight design of the MAGNETOM Espree eliminates the need for structural building reinforcements in most cases often allowing upper floor installation. - The compact design reduces the required space to only 30 sqm (325 sq. ft.) for the entire installation - Room height clearance is only 2.42 m (8'), - The MAGNETOM Espree allows siting of the system without a dedicated computer room. - The MAGNETOM Espree combines state-of-the-art performance with peace of mind. High system availability is ensured by the expert, highly trained Siemens MR service engineers; - 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. <p>The MAGNETOM Espree Magnet:</p> <ul style="list-style-type: none"> - The 1.5 T MAGNETOM Espree magnet utilizes a Stainless-Steel cryostat due to its proven structural reliability and excellent behavior in minimizing artifact-inducing eddy currents - Magnet Length is only 120 cm while the homogeneity allows for up to 45x45x30 cm³ FoV imaging. This is unique for such a short magnet and provides excellent image quality over a wide range of applications - Homogeneity: Guaranteed < 4 ppm Vrms (typ.: < 2.8 ppm Vrms, Vrms = Volume root-mean-square) in a elliptical volume up to 45x45x30 cm³ using the most accurate 24 plane method with 20 sampling points per plane. The 24 plane plot method measures the largest number of sampling points in the industry and provides accurate values that are not subject to aliasing (which may occur with other plotting methods; the Vrms technique is more representative than the older peak-peak methods). - The MAGNETOM Espree magnet has the 6th generation of active shielding technology with counter running coil technology, enabling the extreme reduction in magnet length. The magnet has patented External Interference Shielding (E.I.S.). E.I.S. protects against moving external interferences caused by ferromagnetic objects (e.g. elevators, cars) and works continuously (especially also during scanning when you need it most) to maintain premium image quality - The magnetic 0.5 mT fringe field is 2.5 m (8'2") in the radial direction (x, y) and 4.0 m (13'1") in the axial direction (z) for easy siting most often without additional shielding - The system is equipped with "Zero Helium Boil-Off" technology. During typical, undisturbed clinical operation the boil off rate is 0.0 l/h depending on the sequences used and examination time, and provided the system is serviced in regular intervals. The helium capacity is about 980 liters. - Low Magnet Weight of: 3800 kg (8377 lbs), which, in many cases, allows siting on upper floors or older rooms without special floor reinforcement. - Hybrid Shim System: Active including linear terms (with 3 electric linear shim channels) and second-order (with 5 second-order electric and superconductive shim channels) for precise additional fine-tuning of homogeneity once the patient is inside the system - and Passive shims for maintaining very high homogeneity and excellent image quality over a wide range of applications. Online shimming is performed using 3D shim, a patient and coil specific technique which optimizes the homogeneity for each patient in normally less than 20 seconds.

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<p><i>(Continued)</i></p> <p>MAGNETOM Espree - System</p>	<p>MAGNETOM Espree Digital Radio Frequency System:</p> <ul style="list-style-type: none"> - The digital signal processing system operates at 63 MHz resonance frequency and utilizes digital filtering, digital quadrature demodulation as well as digital controls for RF amplitude stabilization for superior resolution and image quality - The RF transmitter incorporates a compact maintenance-free high-performance solid state amplifier with integrated water cooling. - The receiver operates over a very large 1 MHz bandwidth for outstanding sampling speed and high signal-to-noise ratio. The high bandwidth enables fast imaging techniques including Single Shot EPI. - The transmit amplitude digitization resolution is 50 ns and the receive amplitude digitization resolution is 100 ns - Dynamic gain control eliminates the need for receiver adjustments, thus saving up to 30 seconds for every study - The system has built-in bandwidth flexibility which compensates for natural magnetic field drift for up to a 5 year period, without the need for adjustments <p>MAGNETOM Espree - Table and System controls</p> <p>Two ergonomically designed tableside control units (one on each side of the front magnet cover) are located at a comfortable level, and control a number of patient table and system functions.</p> <p>Illuminated control buttons for:</p> <ul style="list-style-type: none"> - "Table up/in" and "table out/down" buttons. Horizontal speed can be accelerated with an additional "Speed" button. One button sequentially transitions from the "table up" to the "table in" motion, while the other sequentially transitions from the "table out" to the "table down" motion - "Table Stop" button - "Localizer" button activates and deactivates the laser for exact patient positioning light localizer for accurate patient positioning - "Auto-Center" button. If the laser localizer has been used, the system places the selected location in isocenter. If the laser localizer has not been used, the system centers to the center of the Head matrix coil - "Home Position" button drives the table all the way out, but not down. Useful for repositioning the patient or at the end of an examination - "Fan" button controls the ventilation within the patient opening. The fan has 4 settings: off, low, medium, high - "Light" button controls the brightness within the magnet aperture. The light has 4 settings: off, low, medium, high - "Scan Start" button starts a pre-loaded scan. Useful, e.g. for breath-hold, when an operator is inside the examination room - Display of connected coils, fan and lighting levels <p>MAGNETOM Espree standard surface coils:</p> <p>Head Matrix Coil</p> <p>The Head Matrix Coil is a fully iPAT-compatible no-tune coil. It has a 12-element design with 12 integrated preamplifiers that are arranged in 4 clusters of 3 coil elements each. The Head Matrix Coil can be operated depending on the Matrix Coil Mode as a 4-channel coil (CP Mode), 8-channel coil (Dual Mode) or 12-channel coil (Triple Mode).</p> <p>The upper coil part is removable for easy patient handling. The lower coil part which may remain on the table for most of the examinations can be used without the upper part. The Head Matrix, Neck Matrix and Spine Matrix coils are smoothly integrated into the patient table, thus enabling high flexibility in imaging and facilitating fewer coil changes and easy handling when switching patients.</p> <p>The Head Matrix Coil is equipped with two removable cushioned head stabilizers for stable and comfortable patient positioning. A detachable double mirror for increased patient comfort and reduced claustrophobic feeling is included. It attaches to the upper part of the Head Matrix Coil and enables the patient to look outside even when his head is in the center of the magnet. This double mirror design shows all objects in their correct up/down and left/right orientation. It might also be used for visual fMRI studies.</p> <p>The Head Matrix Coil can be used for applications like head examinations, MR Angiography, combined head/neck</p>

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<p><i>(Continued)</i></p> <p>MAGNETOM Espree - System</p>	<p>examinations (in combination with the Neck Matrix Coil) or for imaging of the TMJ (temporo mandibular joints).</p> <p>A combination with the Neck Matrix and Spine Matrix Coil and the optional Body Matrix coils (up to 4) and PA (Peripheral Angio) Matrix Coil is possible. Additionally, the combination of flexible coils like the CP Flex coils is possible.</p> <p>The dimensions of the Head Matrix Coil are 300 mm x 300 mm x 280 mm (L x W x H), its weight is about 5 kg (11 lbs).</p> <p>Neck Matrix Coil The Neck Matrix Coil is a fully iPAT-compatible no-tune coil. It has a 4-element design with 4 integrated preamplifiers that are arranged in 2 clusters of 2 coil elements each, and can thus be operated as a 2-channel (CP Mode) or 4-channel (Dual Mode, Triple Mode) coil.</p> <p>The upper coil part is removable for easy patient handling. The lower coil part may remain on the table for most of the examinations. The Head Matrix, Neck Matrix and Spine Matrix coils are smoothly integrated into the patient table, thus enabling high flexibility in imaging and facilitating less coil changes and easy handling when switching patients.</p> <p>The Neck Matrix Coil through its easy combinability with the Head Matrix and Spine Matrix Coil can be used for applications like neck or cervical spine examinations, imaging of the Larynx/Esophagus and Mediastinum MR Angiography, combined head/neck examinations and thus takes the place of a Neurovascular coil.</p> <p>Besides the typical combination with the Head Matrix and Spine Matrix Coil also the optional Body Matrix coils (up to 4) and PA (Peripheral Angio) Matrix Coil can be combined for whole body imaging. Additionally, the combination of flexible coils like the CP Flex coils is possible.</p> <p>The dimensions of the Neck Matrix Coil are 190 mm x 330 mm x 332 mm (L x W x H), its weight is about 2.6 kg (5.7 lbs).</p> <p>Spine Matrix Coil The Spine Matrix Coil is a fully iPAT-compatible no-tune coil. It has a 24-element design with 24 integrated preamplifiers that are arranged in 8 clusters of 3 coil elements each, and is operated as a 8-channel coil (CP Mode), 16-channel coil (Dual Mode) or 24-channel coil (Triple Mode).</p> <p>The Spine Matrix Coil may remain on the table for almost all examinations. The Head Matrix, Neck Matrix and Spine Matrix coils are smoothly integrated into the patient table, thus enabling high flexibility in imaging and facilitating less coil changes and easy handling when switching patients.</p> <p>The Spine Matrix Coil can be used for high resolution imaging of the whole spine as well as for various other applications through its perfect combinability with the Head Matrix and Neck Matrix Coil and also the optional Body Matrix coils (up to 4) as well as the PA Matrix Coil (Peripheral Angio Matrix) and all flexible coils (e.g. CP Flex coils).</p> <p>The dimensions of the Spine Matrix Coil are 1185 mm x 485 mm x 33 mm (L x W x H), its weight is about 11 kg (24 lbs).</p> <p>Body Matrix coil The Body Matrix coil is a fully iPAT-compatible no-tune coil. It has a 6-element design with 6 integrated preamplifiers that are arranged in 2 clusters of 3 coil elements each, and is operated as a 2-channel coil (CP Mode), a 4-channel coil (Dual Mode) or 6-channel coil (Triple Mode). No tuning of the fully iPAT-compatible Body Matrix coil is necessary.</p> <p>The Body Matrix coil is typically used in combination with the Spine Matrix coil for examinations of the thorax, abdomen, pelvis or hip. The Body Matrix coil can also be used for cardiac applications. Through its perfect combinability with the Spine Matrix coil, further Body Matrix coils, the optional PA Matrix coil (Peripheral Angio Matrix), but also the Head Matrix and Neck Matrix coil as well as all flexible coils (e.g. 4-channel Flex coils, endorectal coils), it contributes for all large-Field-of-View applications including whole-body imaging.</p> <p>The dimensions of the Body Matrix coil are 322 mm x 520 mm x 40 mm (L x W x H). Its weight is about 2 kg, whereas the patient feels as little weight as approx. 950 g.</p> <p>4-channel Flex coil package The package contains an interface with 4 integrated low-noise preamplifiers and two fully iPAT-compatible 4-channel Flex coils. The interface is not permanently mounted and therefore allows free positioning of the flexible</p>

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MAGNETOM Espree - System	<p>coils as required by the examination procedure. The no-tune coils are wrap-around coils made of soft and flexible material.</p> <p>The large Flex coil is used for examinations of the extremities, e.g. medium to large shoulder, hip or knee and abdomen. The rectangular coil measures approx. 21 cm x 52 cm and weighs 550 g.</p> <p>The small Flex coil is used for examinations of the extremities, e.g. medium to small shoulder, elbow, wrist or ankle. The rectangular coil measures approx. 17 cm x 36 cm and weighs 450 g.</p> <p>MAGNETOM Espree Physiological Measuring Unit The physiological signals are displayed on the monitor of the <i>syngo</i> Acquisition Workplace. They can also be shown on a display in the examination room.</p> <ul style="list-style-type: none"> - Wireless signal transmission allows robust triggering and high patient comfort especially in cardiac imaging. - Wireless VCG acquires ECG signal from two projection directions, for easy identification of the R-wave with superior gradient interference suppression via digital signal processing. - 30 disposable ECG electrodes are provided. - Wireless red-light pulse sensor for peripheral pulse signal - Wireless pneumatic cushion to be placed on the chest or abdomen (for respiratory triggering) - Signals can be transmitted to an external MRI compatible patient monitoring system (option) - Wireless physiological signal display <ul style="list-style-type: none"> - EKG (2 channels I and/or aVF) - Pulse - Respiration - External trigger input display <p>MAGNETOM Espree Computer and Intercom system:</p> <p>The PC based computer system uses the intuitive <i>syngo</i> MR user interface. The computer and intercom system includes:</p> <ul style="list-style-type: none"> - High-performance image processor with Intel Xeon Quad Core CPU with 3.1 GHz clock-pulse rate, >= 16 GB RAM, one hard disk (500 GB) for system software and >= 2 hard discs for raw data storage (each 500 GB), one CD/DVD-ROM drive - >= 8511 recons per second for online Fast Fourier Transformation (FFT) of a 256² matrix full FoV or 27776 recons per second (256² FFT, 25% recFoV), - High-performance host computer with 1 x Intel Xeon Quad Core CPU with 2.66 GHz clock-pulse rate, 6 GB RAM, one 300 GB system hard disk, one 300 GB hard disk for the image database, one 300 GB hard disk for about 110,000 images (256² or 512² matrix, non-compressed), one CD-R writer for non-compressed image storage (CD approx. 4,000 images 256², DVD approx. 25,000 images 256²) on CD/DVD-R in DICOM standard (ISO 9660 Level 1) or storage of other data like avi files, CD-ROM or DVD-R drive and Floppy disk drive and electronic mouse. The combination of host computer and image processor offers a truly powerful imaging system designed for large matrix sizes of up to 1024 x 1024. The unrestricted multi-tasking capability allows time-saving parallel scanning and reconstruction. - High resolution color LCD flat screen monitor 19" with 1280 x 1024 pixel display, integrated gamma correction for optimum display of radiographic grayscale and automatic backlight control for longterm brightness stability, - The intercom system includes an ergonomically designed patient communication unit for desktop positioning on the <i>syngo</i> Acquisition Workplace control board and pneumatic headphones for the patient during examination; the intercom unit controls emergency table stop, volume control of speaker and headphones in examination room, volume control of speaker in 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. <p>MAGNETOM Espree <i>syngo</i> MR Software:</p> <p>MAGNETOM Espree runs the <i>syngo</i> MR software. <i>syngo</i>, the unique software platform for medical applications and integrates all patient related information, physiological and imaging data across the entire clinical workflow. In every workplace <i>syngo</i>'s innovative user interface allows the operator to know intuitively what to do. It's intelligent automated features accelerate your examination, enabling smooth, efficient workflow, across modalities, departments and people. Siemens brought intelligence to MR. With Inline technology, Phoenix, Intelligent Coil</p>

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<p><i>(Continued)</i></p> <p>MAGNETOM Espree - System</p>	<p>Control and a variety of other features the system is geared for optimal high throughput, high resolution scans with excellent image quality.</p> <ul style="list-style-type: none"> - <i>syngo</i> based, graphical user interface offers optimized clinical workflow. Parallel working and one-click exams are supported efficiently. - Parallel scanning and reconstruction are standard. Images can be loaded and used for graphical slice planning during reconstruction - Task card approach enables structured workflow with multiple patients by easy image exchange between tasks, - In addition to the three segments of graphical slice positioning the interface shows small reference views from other series. The drag&drop functionality is fully supported. As soon as images are reconstructed they can be used for slice positioning. Images can be automatically loaded into the User Interface and displayed in Movie mode (Inline Movie) - Prepared exam-oriented scan programs can be customized to fit clinical requirement in daily routine, and stored in a hierarchical structure - The unique Phoenix technique is the easiest way to exchange protocol data. It supports intelligent extraction of sequence parameters from images acquired on a MAGNETOM Espree system - Software-controlled patient table movement by soft buttons or automatically within the scan protocols. Almost all table control functions, including ventilation and illumination of the magnet bore can be controlled from the operator console. - With scan@center the table automatically moves into the magnet's isocenter for measurement. This allows for excellent image quality, especially with fat saturation. - Automatic voice commands, e.g. for breath-hold examinations - The context-sensitive "Online Help" function and the <i>syngo</i> Scan Assistant offer support and propose solutions to MR specific questions and parameter conflicts, - Intelligent Coil Control supports and automates the use and administration of receiving coils: - detection of position of the fixed-position and flexible-position receiving coils - graphic display of the receiving coil position within the images that are used for slice planning. - graphic selection of receiving coils directly from the <i>syngo</i> user interface - Automatic Coil Select: coils in the field of view are selected automatically. - Processing instead of post-processing by the Siemens-unique Inline Technology. Image data is processed on-the-fly, e.g. for calculation of subtraction, MIP, standard deviation, wash-in and wash-out maps etc. - 1D/2D PACE (Prospective Acquisition CorrEction) – the motion correction for breath-hold examinations and free breathing. - iPAT (integrated Parallel Acquisition Techniques) further increase the acquisition speed compared with conventional standard scan techniques. iPAT is fully compatible with the MAGNETOM Espree surface coils. Due to the Matrix coil technology iPAT gives highest flexibility even for large scan ranges. The Tim Assistant helps to make Parallel Imaging easier by automatically recommending the appropriate PAT factor for the selected application. Tim Assistant always knows the selected coil elements and the MR protocol, ensuring the optimal iPAT configuration for each application. The required calibration data are gained in a time-saving way during measurement (Auto Calibration). For PAT averagings to suppress motion artifacts, self-calibration is used without loss of time. The iPAT image reconstruction is performed by high-performance computer hardware and the optimized GRAPPA algorithm in extremely short time. - The Image Viewing Card allows simultaneous management, viewing and processing of up to three patients or comparisons of different studies or patients. - Dynamic Analysis evaluation software allows the calculation of functions such as addition/subtraction, division/multiplication, ADC maps, T1 and T2, z-Score (t-Test), Time-to-Peak maps (TTP) and standard deviation. - Mean Curve can be used to evaluate dynamic examinations, e.g. employing contrast media. - The 3D Post-Processing Card includes the basic functionalities for manual MPR, MIP, MinIP and SSD image reconstructions (Multiplanar Reconstruction, Maximum Intensity Projection, Minimum Intensity Projection and Shaded Surface Display). - Efficient filming is possible directly from the different Task Cards and can be controlled by minimum user interaction. There is a wide range of different film layouts with regular and irregular formats. The Mother and Child function allows to display the position of the measured slice in a scout showing a small image in the upper right-hand or the lower left-hand corner of the larger image (image within an image). - With the Patient Browser the images can be freely positioned on the film via drag&drop. Pan&zoom and

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<p><i>(Continued)</i></p> <p>MAGNETOM Espree - System</p>	<p>windowing of images on the film sheet is also possible. (Camera is not included. Verify if existing camera is compatible or order separately.)</p> <ul style="list-style-type: none"> - Supports storing of a viewing tool (DICOM Viewer) together with images on a DICOM CD to be handed out to the patient. - Argus viewer can be used to display cine studies. The Argus Viewer allows users to load a large list of dynamic data sets and view it comfortably. This is a feature that greatly reduces the reading and review time for cardiac MR studies. - Additionally, integrated 8on1 movie provides efficient review of data. - AVI creation of movie loops (up to 4on1) is possible. - Studies can be easily networked and managed using the standard DICOM 3.0 protocol for efficient support of workflow. The following standard functions are supported: send/receive, query/retrieve, basic print for DICOM-compatible laser cameras (Camera is not included in the basic unit. Verify if existing camera is compatible or order separately.), DICOM Worklist, DICOM Storage Commitment (SC); as a separate option the DICOM MPPS (Modality Performed Procedure Steps) functionality is offered for efficient organization of workflow within HIS/RIS systems.
<p>I-class #Tim</p>	<p>I-class with the new <i>syngo</i> 64 bit SW architecture allows running new and faster applications. With I-class you can access a broad variety of new applications covering all your needs, from clinical routine to high end. I-class systems support your workflow at the MR scanner. With intelligent functionalities that allows the communication of information from the MR to RIS systems.</p> <p>The I-class package consists in detail of the following components:</p> <ul style="list-style-type: none"> - 3D distortion correction filter (inline and offline) for high spatial accuracy e.g. for neuro intra-operative imaging, stereotactic planning or radio therapy planning. - DICOM MPPS (Modality Performed Procedure Steps) for efficient organization of workflow within HIS/RIS systems. MPPS allows to communicate examination data from the MR system to an information system (e.g. RIS system) and to provide data for billing, documentation and planning purposes to the information system. - Image filter software for adaptive filtration of MR images. The image filter has three levels that can be changed individually using the smoothing and edge enhancement parameters. The images can be filtered inline or offline, as a result of the inline filtration the filtered and unfiltered image will be displayed directly after measurement. With offline filtration, individual or multiple images or series can be filtered. Filtration will be performed in the background. - PhoenixZIP enables easy transfer of complete scan programs. Apart from protocol data of the measured protocols, PhoenixZIP also includes their links to each other. So with PhoenixZIP it is possible to precisely reproduce programs measured once and repeated examinations are efficiently facilitated. - DICOM Study Split enables the distribution of an examination to different studies directly at the MR scanner. With this functionality, different requirements e.g. for different anatomies, can be measured time-efficiently in one examination and then stored in different studies for reporting.
<p>Tim [76x18] Z-engine #Es</p>	<p>Tim [76x18] performance level has</p> <ul style="list-style-type: none"> - Up to 76 simultaneously connected coil elements which can be seamlessly integrated into one examination - 18 independent RF channels (Analog/Digital Converters, ADCs) <p>Combinations of receiving coils with up to 76 coil elements in total can be connected simultaneously. They can be seamlessly integrated into the examination without repositioning the patient or even changing a single coil. Up to 18 coil elements can be used simultaneously within one scan.</p> <p>The multi-element Matrix coil technology is an essential part supplementing Total imaging matrix. The numerous Matrix Coil elements enable advanced iPAT capabilities. Full iPAT applied throughout the large FoV without patient repositioning or changing the coil setup improves throughput. Multi-directional, i.e. three dimensional, high-speed, high-resolution iPAT in the head-feet, anterior-posterior or left-right directions benefit from the multiple coils and Matrix Coil modes. The user selectable Matrix Coil Modes (CP, Dual and Triple Mode) enable a flexible operation of the Matrix Coils depending on the application profile. iPAT with acceleration factors up to 4 (one direction) or 12 (in two directions with iPAT², optional) help to speed up acquisitions. The easy-to-use Tim Assistant provides optimized iPAT settings.</p> <p>Z-engine Gradient System</p> <p>Siemens Z-engine are actively shielded, water cooled world-class gradients. The design incorporates acoustic noise reduction measures without compromising gradient performance.</p>

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<p><i>(Continued)</i></p> <p>Tim [76x18] Z-engine #Es</p>	<p>The Z-engine gradients have</p> <ul style="list-style-type: none"> - Maximum gradient amplitude of 33 mT/m, per axis, i.e. 57 mT/m vector summation gradient performance, - Max. slew rate 100 T/m/s per axis, i.e. 173 T/m/s vector summation, - Minimal rise time 330 µs, from 0 to 33 mT/m amplitude - Max. output voltage for each of the gradient axes 1200 V - Max. output current for each of the gradient axes 625 A - Separate cooling channels that simultaneously cool primary and secondary coils allow the application of extremely gradient intensive techniques in a new class of performance. - 100% duty cycle for fast and demanding techniques such as ultra-short TE MRA in continuous operation, thin slice single breath-hold liver studies and EPI imaging techniques (all optional in appropriate clinical packages). - Variable Field-of-View selection from 0.5 cm to 45 cm for optimum coverage and highest resolution in diagnostics. The minimum slice thickness in 2D and 3D is 0.1 mm and 0.05 mm, respectively. - Acquisition of sagittal, transverse, coronal, oblique and double oblique slices with highest resolution. - 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.
<p>Label Tim [76x18] #Es</p>	<p>The label displays: MAGNETOM Espree Tim [76x18]</p>
<p>PC Keyboard US english #Tim</p>	<p>The keys of the numerical key panel are assigned to syngo-specific functions and labeled with the corresponding syngo icons. The keyboard supports the country specific special characters.</p>
<p>Cover Satin White #Es</p>	<p>This unique color selection enhances the visual appeal of the new system design from MAGNETOM Espree, thereby creating an enticing, patient-friendly impression. The control panel and table display have been neatly integrated into this main face plate. These aesthetically pleasing controls are also well illuminated for easy visual recognition. In particular, the table elevator cover and the adjoining asymmetric upper left cover have also been designed to promote a modern visual appearance. This combination of ingenuity and practical design as presented in Satin White color simply makes MAGNETOM Espree an overall visually appealing system.</p>
<p>Remov. Matrix Table w.Trolley #Es</p>	<p>The cantilevered table design gives the system a light and unimposing appearance while providing unobstructed foot space for attending staff and better access to the patient. The patient table can be lowered to a minimum height of 47 cm (18.5") from the floor, for easier patient positioning and better access for geriatric or pediatric patients. The tabletop travels beyond the rear end of the system, enabling additional patient access. For a seamless integration of multiple surface coils 10 coil connector slots are embedded in the table.</p> <p>The trolley docking mechanism is located at the side of the table and can be installed either on the right or the left side, depending on the room layout and most convenient approach. The precision docking mechanism features an automatic electronics interlock. The trolley is adjustable for height and has integrated controls for the table movement of the system.</p>
<p>Advanced Cardiac #Tim</p>	<p>Combining the unique advantages of Tim and BEAT with iPAT and powerful gradients, allows performing cardiac MR examinations without compromise in image resolution or acquisition speed.</p> <p>Morphology – Heart and Vessel Structure with BEAT</p> <ul style="list-style-type: none"> - Dark-blood imaging with free breathing for high resolution morphological imaging. <p>Ventricular Function, Valve Function and Wall Motion with BEAT</p> <ul style="list-style-type: none"> - 3D cine TrueFISP imaging for ventricular function assessment . - Arrhythmia rejection for VCG-triggered retrograded cine imaging with TrueFISP, supporting iPAT - no compromise in image quality for patients with arrhythmia. - Radial imaging - no compromise in high spatial and temporal resolution.

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Advanced Cardiac #Tim	<ul style="list-style-type: none"> - Real-time radial imaging cine studies, e.g. for stress examinations. - Cine TrueFISP radial imaging. - Real-time cine TrueFISP imaging for triggered or non-triggered free breathing acquisitions, supporting iPAT. - Visualization of myocardial contractility using tagging techniques. - T-PAT (temporal iPAT) to shorten the measurement time. <p>Tissue characterization with BEAT</p> <ul style="list-style-type: none"> - 3D tissue characterization - Highly sensitive dynamic imaging with GRE-EPI in conjunction with T-PAT (temporal iPAT). <p>Coronary Imaging with BEAT</p> <ul style="list-style-type: none"> - Dedicated sequences for high resolution 3D coronary artery imaging, providing free breathing navigator (1D PACE) and breath-hold techniques - Whole-heart coronary imaging with CT-like results in only one measurement. <p>Plaque characterization</p> <ul style="list-style-type: none"> - High resolution techniques for plaque characterization
Flow Quantification #Tim	<p>Flow Quantification enables the acquisition of flow encoded images and the evaluation of blood as well as of cerebro-spinal fluid (CSF).</p> <p>Sequences include:</p> <ul style="list-style-type: none"> - ECG triggered 2D phase contrast with iPAT support - Retrospective reconstruction algorithms for full R-R interval coverage - Maxwell Term Compensation
Argus Flow	<p>The combination of automated contouring and easy-to-use editing tools, provides users with a rapid way to quantify flow parameters.</p> <p>Argus Flow includes:</p> <ul style="list-style-type: none"> - Calculation of flow and velocity parameters(e.g. mean and max velocity, mean, cumulative, prograde, retrograde flow) for large and small vessels. - Semi-automatic detection of regions of interest over time - Color-coded display of velocity values - Calculation of flow and velocity parameters (e.g. peak velocity, average velocity, flow, integral flow) - Graphical and tabular display of the results (e.g. flow-time curves) - Integration of the results in Argus structured report and storage in DICOM format for documentation.
Argus 4D Ventr.Function syngo #Tim	<p>This package includes Argus Function as well as Argus 4D Ventricular Function.</p> <p>Argus Function:</p> <ul style="list-style-type: none"> - Automatic, semi-automatic, or manual segmentation of the left and semi-automatic or manual segmentation of the right ventricle. - Volumetric analysis and wall thickness analysis. - Output of parametric results, volume-time curves and bull's-eye plots. - DICOM Structured Reporting. <p>Argus 4D Ventricular Function:</p> <ul style="list-style-type: none"> - Calculation of volumetric cardiac data of a given patient very quickly and easily. - Parametric results and volume-time curves are calculated upon automatic creation and adaptation of a 4D model of the left ventricle. - The resulting 4D model of the patient's heart can be visualized superimposed to anatomical images as a reference.

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Native syngo #Tim	<p><i>syngo</i> NATIVE offers:</p> <ul style="list-style-type: none"> - Non-contrast enhanced MRA - Separate imaging of arteries and veins - Visualization of - e.g. - renal arteries or peripheral vessels <p>The <i>syngo</i> NATIVE package comprises:</p> <ul style="list-style-type: none"> - <i>syngo</i> NATIVE TrueFISP - <i>syngo</i> NATIVE SPACE
Composing syngo #Tim	<p>The option features:</p> <ul style="list-style-type: none"> - Display and storage of full-format images, e.g. of the spine, the central nervous system or the vessel tree (starting from <i>syngo</i> MR B13), combined from multiple overlapping stages. - Dedicated composing algorithms, optimized for the generation of anatomical or angiographic (starting from <i>syngo</i> MR B13) full-format images. - Data sets with different FoV, resolution, matrix and slice thickness can be combined (starting from <i>syngo</i> MR B13). - Generation of full-format images from inline MIPs (starting from <i>syngo</i> MR B13). - Original, detail and reconstructed images can be displayed in different layouts. - Comparison of two reconstructed images for evaluation and diagnosis is thus made possible. - Filming in different layouts is supported. - Measurements of basic functions via reconstructed images is then possible. - Measurements of extended orthopedic functions: scoliotic angle, kyphotic angle, vertical distance measurement and differences in width of the intervertebral spaces. <p><i>Prerequisite: SW syngo MR B13.</i></p>
Inline Composing syngo #Tim	<p>The Inline Composing option includes the following functions:</p> <ul style="list-style-type: none"> - Inline calculation of full-format images of the spine, the central nervous system or the vessel tree, for example, combined from multiple overlapping steps. - Dedicated composing algorithms, optimized for the generation of anatomical or angiographic full-format images. - Data sets with different FoV, resolution, matrix and slice thickness can be combined. - Generation of full-format images from inline-computed MIPs. - 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. - Full-format acquisitions from Inline Composing are ideal for further measurement planning on large FoV, e.g. with the Tim Planning Suite (optional, urgently recommended). <p><i>Prerequisite: Software syngo MR B13.</i></p>
Tim Planning Suite	<ul style="list-style-type: none"> - Easy planning on a FoV of any desired size (up to 205 cm). - Planning of multiple steps simultaneously, e.g. on a whole-body image, with only one Set-n-Go protocol - which includes several steps. - Tim Planning Suite UI: Dedicated user interface and exclusive tools for effective and smooth working on a large FoV. - Multiple slice groups with their overlap are displayed together and can be easily arranged. - All steps can have independent sets of parameters. - All steps are displayed together with a single mouse click. - Easy positioning of all steps, for example, through Align FoV. - Full support of . - Full support of Phoenix, thus maximum reproducibility, for example, for follow-up studies, multi-centric studies or exchange of experiences across different institutions. - Dedicated protocols are provided for the Tim Planning Suite, for example, for orthopedic, oncological or angiographic indications. - Inline Composing for optimized workflow for the generation of full-format images of anatomic or angiographic data sets is a prerequisite. Efficient measurement planning on these full-format images with Tim Planning Suite. - It is highly recommendable to order application training! <p><i>Prerequisite: Software syngo MR B13</i></p>
SWI #Tim	Despite a strong sensitivity for local magnetic field inhomogeneities Susceptibility Weighted Imaging (SWI) as a 3D

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<p><i>(Continued)</i></p> <p>SWI #Tim</p>	<p>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). 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. 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. 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"> – SWI measuring sequence, iPAT compatible – optimized measuring protocols for the head - inline-postprocessing for automatic calculation of relevant images within the scope of image reconstruction: <ul style="list-style-type: none"> - calculation of susceptibility-weighted images - venous angiography: MIP of a thin slice block <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> <p>-</p>
<p>Neuro Perfusion Evaluation syngo</p>	<p>PLEASE READ - Creation of RGB Color Maps For Storage on a PACS is not available on Non-Tim Systems until VA35</p> <p>Post-processing features:</p> <ul style="list-style-type: none"> - Flexible selection of the Arterial Input Function (AIF) by the user. - Pixelwise calculation of the hemodynamic parameters relative Mean Transit Time (relMTT), relative Cerebral Blood Volume (relCBV), relative Cerebral Blood Flow (relCBF), and Blood Flow (relCBF) for compensation of blood brain barrier leakage. - Pixelwise calculation of maximum signal loss due to contrast agent enhancement (Percentage of Baseline at Peak, PBP) and of the time to the maximum signal loss (Time-To-Peak, TTP). - Display of the global signal time course (averaged over all slices) to assess the quality of the exam. - Predefined post-processing protocols available, user definable post-processing protocol are possible. <p>Visualization features:</p> <ul style="list-style-type: none"> - Colored display of relMTT-, relCBV-, relCBF-, PBP- and TTP-maps. - Zoom, pan, annotate. - Colored images can be saved as DICOM images.
<p>Inline Diffusion #Tim</p>	<p>Inline Technology – Processing Instead of Post-processing. Inline Technology helps to streamline the clinical workflow by automating post-processing steps before image viewing. This facilitates getting clinical results immediately. This package integrates Inline technology with diffusion imaging. Automatic real-time calculation of trace-weighted images and ADC maps with Inline technology is possible. An optimized EPI sequence for diffusion imaging is included in the standard Tim Application Suite. In this package there are additionally special 1- and 3-scan Trace EPI with strong diffusion weighting and short echo times with integrated post-processing for an ADC-Map and trace-weighted images.</p> <p>Prostate Imaging: TSE, 3D SPACE and VIBE for morphological imaging and VIBE and syngo REVEAL for functional imaging are all included in the basic package. In order to overlay the morphological information with the functional information, it is recommended to use the Inline Diffusion and Image Fusion.</p> <p>In addition this technology can be applied for diffusion imaging of other body regions such as abdomen, pelvis,</p>

. / Product	Description
(Continued) 4 Inline Diffusion #Tim	lung and breast.
DTI Package #Tim	<p>Diffusion Tensor Imaging Diffusion Tensor Imaging allows for a complete description of the diffusion properties of the brain within the scope of the tensor diffusion model, both for anisotropic and isotropic diffusion. Efficient diffusion direction schemes are pre-defined to allow for optimal diffusion directional resolution. Schemes with up to 256 directions can be selected. Inline technology enables automatic and immediate calculation of the diffusion tensor, including grey-scale and colored "fractional anisotropy" (FA) map derived from it.</p> <p>Details:</p> <ul style="list-style-type: none"> - Measurements with up to 256 different directions and with up to 16 different b-values - Inline calculation of tensor, grey-scale and colored FA map, ADC map and trace-weighted image - Support of parallel imaging (iPAT) - Clinical protocols with full head coverage, incl. inline calculation of tensor, FA, ADC and trace-weighted images in 4 minutes. <p>DTI Tractography syngo syngo DTI Tractography is optimized for the clinical use by providing advanced 3D visualization of white matter tracts in the context of 2D or 3D anatomical datasets and DTI datasets. DTI data sets can be explored fast and intuitively using the interactive QuickTracking. QuickTracking instantaneously displays the tract originating from the mouse pointer position while moving over the DTI data set. This also allows identifying qualified regions to place seeding ROIs. Seed points can be set to assess connectivity by tracking with single ROI and with multiple ROIs. Furthermore they can be placed in fused views displaying the anatomical reference and e.g. the colored FA map simultaneously.</p> <p>Texture Diffusion, a highly versatile in-plane visualization of white matter tracts, allows to display and read DTI Tractography results on PACS reading stations and in the OR.</p> <p>At the same time the package provides the scientific user with the flexibility to configure the tracking algorithm and to change display settings for the tracts. Tract and seeding ROI statistics are included to support publications (e.g. mean/max FA value, min/mean/max ADC value).</p> <p>All views can be exported as DICOM images or bitmaps. Tract and seeding ROI statistics can be exported as html files.</p> <p>DTI Evaluation Clinical applications are supported by a dedicated DTI evaluation mode to support diagnostics of white matter diseases (e.g. multiple sclerosis and brain maturation disorders). Based on the tensor, in addition to the already inline-calculated parameter maps, further maps characterizing the anisotropy of diffusion properties can be calculated and stored. Multiple diffusion parameter maps (e.g. Fractional Anisotropy, ADC, b=0) and an anatomical image are displayed next to each other in the same slice position for comparison. The images can be evaluated together based on ROIs and the results can be documented in a table. The display options include 2D and 3D tensor graphics, colour-coded images and overlay images on the anatomical images.</p> <p>In addition, the package offers the scientific user full flexibility of 2- and 3-dimensional visualization of the diffusion tensor with measures of isotropic and anisotropic (fractional and relative) diffusion, Eigen vectors (E1, E2, E3) of the diffusion tensor and shape-descriptive measures of the diffusion tensor (linear, planar, spherical).</p>
syngo Security Package	<p>Software option for general regulatory security rules, providing enhanced security features including user management and audit trail functionality. This package supports customers in their achieving compliance with the HIPAA "Privacy" rule.</p> <p>Included Features: User authentication to prohibit unauthorized access Privileges to define user/role based functionality Permissions to control data access Audit trails to log system and data access</p> <p><i>MAGNETOM Harmony, Symphony, Sonata, Concerto, Trio, Allegra systems require Software version syngo MR 2004A!</i></p>
Body Matrix Coil #Tim	The Body Matrix Coil has a 6-element design with 6 integrated preamplifiers that are arranged in 2 clusters of 3 coil elements each. Depending on the user selectable Matrix Coil Mode it is operated as a 2-channel coil (CP

. / Product	Description
<p><i>(Continued)</i></p> <p>Body Matrix Coil #Tim</p>	<p>Mode), 4-channel coil (Dual Mode) or 6-channel coil (Triple Mode). The Body Matrix Coil will be typically used together with the Spine Matrix Coil with which it operates in an integrated fashion as 12-element design, creating 2 rings of 6 elements each.</p> <p>No tuning of the fully iPAT-compatible Body Matrix Coil is necessary.</p> <p>For examinations where larger anatomical coverage is required, several Body Matrix Coils can be used simultaneously. Up to 4 Body Matrix Coils can be used simultaneously, typically 2-3 will be used for coverage of the entire abdomen or in the case of large patients.</p> <p>The Body Matrix Coil is typically used in combination with the Spine Matrix Coil for examinations of the thorax, abdomen, pelvis or hip. The Body Matrix Coil can also be used for cardiac applications. Through its perfect combinability with the Spine Matrix Coil, further Body Matrix Coils, the optional PA Matrix Coil (Peripheral Angio Matrix), but also the Head Matrix and Neck Matrix Coil as well as all flexible coils (e.g. CP Flex coils, Endorectal coils) it contributes for all large-Field-of-View applications including whole-body imaging.</p> <p>The dimensions of the Body Matrix Coil are 322 mm x 520 mm x 40 mm (L x W x H). Its weight is about 2 kg (4.5 lbs), whereas the patient feels as little weight as 950 g (2 lbs).</p>
<p>PA Matrix Coil #Tim</p>	<p>The PA Matrix Coil has a 16-element design with 16 integrated preamplifiers that are arranged in 8 CP pairs, i.e. 4 levels with 2 CP elements each, and is operated as a 8-channel coil.</p> <p>A uniquely designed non-ferromagnetic coil cart for safe coil storage is included. The PA Matrix Coil is also shipped with a set of positioning cushions for proper handling.</p> <p>No tuning of the fully iPAT-compatible PA Matrix Coil is necessary.</p> <p>With a length of about 1m both legs are covered from the iliac artery level down to the foot arch vessels using multiple, flexible wings. For the visualization of the abdominal aorta and the iliac bifurcation it can be combined with the Body Matrix Coil.</p> <p>Besides the typical combination with the Body Matrix and Spine Matrix Coil, but also the Head Matrix and Neck Matrix Coil as well as all flexible coils (e.g. CP Flex coils, Endorectal coils) it contributes for all large-Field-of-View applications including whole-body imaging. For peripheral Angiography the PA Matrix coil will be typically used in feet-first position, but also head-first positioning for whole-body examinations is possible (optional Tim Whole Body Suite required).</p> <p>The dimensions of the PA Matrix Coil are 970 mm x 300-600 mm x 270 mm (L x W x H), its weight is about 5.75 kg (13 lbs).</p>
<p>Shoulder Array Coil #Es</p>	<p>The iPAT compatible receive shoulder array coil is adapted to the shape of the shoulder. To obtain maximum image quality for different body shapes two different sized coil tops are included.</p> <ul style="list-style-type: none"> - 165 mm (6.5 in) diameter for small and medium sized shoulders - 200 mm (7.9 in) diameter for large shoulders <p>The coil top can be used either for left or right shoulders. It features slidable attachment to the base plate and can easily be adjusted for comfortable positioning. The coil excels in highest resolution imaging with exceptional signal/noise ratio.</p>
<p>Tx/Rx 15-channel Knee Coil #Tim</p>	<p>Thanks to its 15-channel design this coil is perfectly suited for high-resolution images with excellent SNR. With the arrangement of the antennas in three rings of 5 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. 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>

. / Product	Description
Patient Supervision TV #Es	<p>Special video camera for observing the patient during an MR examination. Upon evaluation of site, the camera may be mounted either at the patient or at the service end of the MR system, enabling a flexible supervision from either end of the MR system.</p> <p>Includes a color 640 x 480 pixel LCD monitor that may be positioned at the <i>syngo</i> Acquisition Workplace or at a convenient wall location in the control room (wall support not included in scope of delivery).</p>
MR Workplace Table 1.2m	<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> <ul style="list-style-type: none"> - Width 120 cm - Depth 80 cm - Height 72 cm
1 MR Workplace Container, 50cm	<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"> - Width 50 cm - Depth 80 cm - Height 72 cm <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>
Chiller, 60 Hz #Av, Es	<p>Chiller KKT KSC 215</p> <p>Function: Delivering dedicated primary chilled water in cases where no chilled water supply is available on site. Air-cooled version, for outdoor installation up to a maximum distance of 25m for connection to the IFP/ACC.</p> <p>The cooling capacity of the chiller is 60 kW, the chilled water temperature is 20°C, the water flow is 130 l/min. The soft start option has to be ordered if the chiller is used in combination with an UPS system.</p> <p>Ambient operation temperature: -20 degrees C through +48 degrees C</p> <p>Connection value: 48 kVA</p> <p>Voltage: 480 V / 60 Hz</p> <p>Fuse rate: 63 A</p> <p>Power consumption: 58.5 A</p> <p>Dimension: 1830 mm x 3060 mm x 960 mm (height x width x depth).</p> <p>Weight: 1150 kg</p> <p>Noise level in 10.0 m distance at outside temperatures of: 21°C 50 dB(A) 32°C 55 dB(A) 48°C 61 dB(A)</p> <p>IFP (Interface Panel)</p> <p>Main functions of the IFP: Interface function between the KKT chiller and the ACC cabinet. Water supply for the cold head compressor, which is connected directly to the IFP. Additional devices like built in flow meters, pressure gages and a strainer are to guarantee a precise function of the cooling water circuit, especially for the cold head compressor. The connection has to be established locally with 2" pipes. Two 5m hoses (forward and return) to connect the IFP to the ACC are part of the delivery volume.</p> <p>Dimension: 800 mm x 1050 mm x 200 mm (height x width x depth). Weight: 40 kg</p> <p>Purchase price does not include the piping and installation of the waterchiller; this is responsibility of the customer. The Warranty Service Provider will perform the waterchiller start up, on behalf of the manufacturer KKT Kraus,</p>

. / Product	Description
Chiller, 60 Hz #Av, Es	upon completion of the initial waterchiller piping and installation by the customer.
UPS Cable #Tim	<p>Power cable to connect the 3 KVA Powerware 9125 small UPS system (pn PWR9125H3000) to the ACC cabinet of the MAGNETOM Avanto/ Espree/ Tim Trio for backing up the host computer and imager.</p> <p>Configuration includes connection box.</p> <p>The standard cable length is 9 m.</p>
UPS Powerware PW9130G-3000T-XLEU	<p>Voltage range: 180 - 276 V Input frequency: 50 / 60 Hz Output voltage: 230 VAC Dimensions (H x W x D): UPS 346 x 214 x 412 mm incl. UPS bracket set Weight: approx. 36 kg</p>
Armrest #MR	<p>An MR-compatible arm rest that supports the patient's arm on the magnet patient table when starting intravenous lines. The board is removed after the IV is inserted.</p> <p>This product has been tested and verified for compatibility with the following Siemens' products: MAGNETOM Trio, Verio, Espree, Essenza, Avanto, Symphony, Aera Skyra and Biograph mMR. Compatibility with other products cannot be assured and may void service contracts and/or system warranties.</p>
CHILINST_AVT Chiller Start-up and Warranty for TIM	<p>Start up and initial set up service performed by the chiller manufacturer or designated service representative. This service does not include the piping and other prerequisite siting, of the waterchiller, which are the responsibility of the customer.</p> <p>12 months warranty and performed by the chiller manufacturer.</p>
M3SSMREPICBC Spectris Solaris EP Injector iCBC	<p>Includes Spectris Solaris EP injector and Integrated Continuous Battery Charger (ICBC).</p> <ul style="list-style-type: none"> - Optimized color touch screen with few keystrokes. - Six user-programmable phases for added flexibility. - Independent Keep Vein Open (KVO) allows more time to focus on patient. - Large 115 mL saline syringe allows for longer KVO and multiple flushes. - Design of low pressure tubing eliminates dead space in the "T" connection that can waste contrast. - The clear barrel design with molded FluidDots help detect the presence of air in a syringe. - Pressure Limit Setting control software enables user to select from one to six preset maximum pressure limits, ranging from 100-300 psi, and to view current pressure during injection next to the pre-selected maximum value on the Solaris display. <p>Installation, applications and one year warranty provided by Medrad.</p> <p>Not for mobile use, refer to Siemens part number M3SSMR300EPM for the Solaris injector used in a mobile environment.</p> <p>This product has been tested and verified for compatibility with the following Siemens' products: MAGNETOM Trio, Espree, Essenza, Verio, Avanto, Symphony, Aera, Skyra and Biograph mMR. Compatibility with other products cannot be guaranteed and use with any other products may void service contracts and/or system warranties.</p>
MRFP01 Deluxe Foam Positioning Kit	<ul style="list-style-type: none"> • Set of 2, 18.75° Wedges. 3" H x 4" W x 7"L • 45° Wedge. 6.6" H x 6.75" W x 7.25"L • Circular Disc. 1.5"H x 7" Diameter • Set of 2, 12° Wedges. 2.25" H x 9.5" W x 7.25"L • Rectangle .5" x 4" x 6" • Rectangle 4"H x 18"W x 24"H

Part No. / Product	Description
(Continued) 1 Deluxe Foam Positioning Kit	<ul style="list-style-type: none"> • 2 Cylinders, 4.25"D x 12"L • Set of 2 Thin Mats, .25"H x 18"W x 24"L • Standard vinyl table pad 1" x 24" x 72"
MR Wall sign - English	Highly durable 1mm PVC wall signs with high-tack, double-back tape. Sticks to most any surface. English. 12" x 18".
MR Wall sign - Spanish	Highly durable 1mm PVC wall signs with high-tack, double-back tape. Sticks to most any surface. Spanish. 12" x 18".

Scope of Work

The following Scope of Work detailed in DCS Proposal No.

Division 0: Special Sections

1. Architectural and Engineering Design
 - 1.1. Architectural, structural, M.E.P. engineering fees are included.
 - 1.2. Permit fees are excluded.
 - 1.3. Provide up to three (3) design modifications to meet customer approval.
 - 1.4. Maintain “as-built” field drawings depicting red lined field changes.
 - 1.5. Provide three (3) sets of final construction (non bid) documents.
2. Preliminary Design and Construction Duration
 - 2.1. Design - 8 weeks
 - 2.2. Drawing Approval - 2 weeks (estimated)
 - 2.3. Construction - 13 weeks

Division 1: General Requirements

1. The summary of work includes all general trade work, mechanical work, and project management needed for the renovation of the medical equipment suite.
2. Provide full time construction superintendent.
3. Provide general liability insurance. Builders’ All-Risk insurance is excluded.
4. Provide transportation, handling, storage and protection for all contractor provided construction materials and equipment.
5. All construction is to be performed in one phase during normal working hours from 8 a.m. to 5 p.m. Off hours premium time is included for noise abatement and utility shutdowns only. Weekend work or overtime is excluded.
6. Any item(s) to be salvaged by the owner are to be removed by the owner from the site before construction begins.
7. The owner is to provide clear, unrestricted access from the loading dock to the construction site for contractor material deliveries.
8. The use of owner’s facilities and utilities shall be permitted during construction.
9. Provide for daily broom cleaning of the job site and debris removal and appropriate disposal.
10. Provide dumpsters for disposal of construction debris and materials.
11. Final construction cleaning is included. Final clinical cleaning or waxing of floors is excluded.
12. Infectious control standards shall comply with owner’s standards.
13. Comply with utility interruption policies.
14. Comply with orientation and clearance programs.
15. Comply with OSHA requirements.
16. Maintain an up to date copy of construction documents with redlined as built conditions.

Division 1: General Requirements (continued)

17. Payment and performance bonds are included.
18. Close out documents will be presented at project completion upon receipt of owner signed substantial completion form.
19. All warranty claims for the Project will be directed to the contractor awarded the work for the Project. Siemens offers no specific warranties for work performed other than specific warranties agreed to by the contractor and subcontractors who perform the work, and warranties with respect to the Medical Equipment manufactured by Siemens. Siemens agrees to provide the Client with names and telephone number of contact person for all such claims. Standard manufacture warranty is one year on workmanship and materials.

Division 2: Site Work

1. We intend on using “walk-off” mats and a negative air unit with HEPA filtration for infection control.
2. All demolition debris is to be covered when it is removed from the building.
3. Removal of the set of hallway, double doors and frames are included on overtime for the MRI delivery.
4. Removal of the 3 hallway, single doors and frames is included on overtime for the MRI delivery.
5. Removal of the sheetrock headers is included on overtime for the MRI delivery.
6. Removal of the glass entry doors is included on overtime for the MRI delivery.
7. Mechanical, electrical and plumbing demolition is included as necessary to facilitate the changes to rooms D269A, D271 and D272.

Division 3: Concrete NA

Division 4: Masonry NA

Division 5: Metals

1. We have included an allowance of for structural reinforcement below the new MRI location.
2. We have included an allowance of for structural reinforcement for the new Siemens furnished chiller.
3. We have included an allowance of for temporary shoring along the MRI delivery path for delivery of the new MRI. We have not included permanent structural enforcement along the MRI delivery path.
4. Seismic anchoring is excluded.
5. Structural metals other than those specifically stated in this proposal are excluded.
6. It is understood that MRI delivery path will be through the double glass doors on the East side of the building at the atrium. The MRI will have to pass through 1 set of glass double doors, a set of double hallway doors and 3 single hallway/entry doors. This Scope of Work is based on the understanding that there are not any more restrictions other than the doors, frames and headers.

Division 6: Wood and Plastics

1. We have included a new 13'0" long, 3'0" deep, plastic laminate counter top with supports in the control room.
2. We have included two 2'x 2' shelves for the Siemens equipment.
3. We have included a new penetration panel cover for the MRI scan room.
4. We have included a new 6'0" long, 6'0" high, coil storage cabinet.
5. Modifications to existing (if any) or additional millwork is excluded.

Division 7: Thermal and Moisture Protection

1. We have included an allowance of _____ for roofing.

Division 8: Doors, Frames, Hardware and Windows

1. We have included removal and reinstallation of 1 set of hallway, double doors and frames on overtime for the MRI delivery.
2. We have included removal and reinstallation of 3 hallway, single doors and frames on overtime for the MRI delivery.
3. We have included removal and reinstallation of 1 set of double glass entry doors and frame on overtime for the MRI delivery.
4. We have included 2 new 4'0" doors and frames as per the preliminary drawing. Includes full mortise locksets, hinges, stops and closers.

Division 9: Finishes

1. We have included new walls as per the preliminary drawing. The MRI scan room will be wood stud framing.
2. We have included a new 2'x 2' acoustic tile ceiling with aluminum grid in the scan room.
3. We have included patching all affected ceilings in the project area as required.
4. We have included patching all ceilings and headers along the MRI path as required.
5. We have included opening and closing the ceiling to accommodate the temporary shoring along the MRI delivery path.
6. We have included patching of the existing ceiling to accommodate the copper piping for the medical gas and chiller.
7. All new walls in the project area will be textured and painted.
8. All affected existing walls and frames in the project area will be patched and painted as required.
9. We have included new standard Armstrong VCT flooring with rubber base in the MRI control, scan and equipment rooms.
10. Wall coverings are excluded.

Division 10: Specialties NA

Division 11: Equipment NA

Division 12: Furnishings NA

Division 13: Special Construction

1. The new RF shielding is included and will be a Lindgren, copper, modular RF enclosure to meet the Siemens requirements. The enclosure will be approximately 21'9" long by 12'2" wide and 11'0" in height.
2. The view window will be 4'0"x 4'0".
3. We have included two standard RF doors for the project, a 4'0"x 7'0" and a 3'0"x7'0" door.
4. We have included a Ferroguard metal detector for the 4'0"x 7'0" RF door.
5. Two RF tests are included. The first test will be performed after completion of the RF shielding. The second test will be performed after the magnet has been installed and the RF screens reinstalled.
6. We have included an allowance of for magnetic shielding.

Division 14: Conveying Systems NA**Division 21: Fire Suppression**

1. We include reworking the existing fire protection system in the new MRI area as required.
2. We include reworking the fire protection system in the MRI scan room to meet Siemens specifications and will consist of copper fire protection lines and brass heads.

Division 22: Plumbing

1. We have included demolition of the existing restroom's plumbing (# D272) as required to accommodate the new floor plan.
2. We have included a new ½" water line and RPZ for the new Liebert unit.
3. We have included an allowance of for Medical Gas work.

Division 23: Heat, Ventilating, and Air Conditioning

1. The HVAC scope of work is as follows:
 - 1.1. MRI control room
 - 1.1.1. (1) Re-use the existing 10" VAV box that the as-built drawings show in this area. Modify ductwork as required. This Scope of Work is based on the understanding that the existing HVAC meets or exceeds Siemens humidity/temperature specifications.
 - 1.1.2. (1) Air balance.
 - 1.1.3. (1) Relocate Thermostat.
 - 1.2. MRI scan room
 - 1.2.1. (1) Re-use existing 10" VAV that the as-built drawings show in this area. Furnish and install new ductwork and grilles as required. Add remote temperature and humidity sensors. This Scope of Work is based on the understanding that the existing HVAC meets or exceeds Siemens humidity/temperature specifications.
 - 1.2.2. (1) Furnish and install new cryogen vent assembly with discharge cap (50' in total).
 - 1.2.3. (1) Furnish and install a new 1/2hp in-line.

Division 23: Heat, Ventilating, and Air Conditioning (continued)

- 1.3. MRI equipment room
 - 1.3.1. (1) Furnish and install a new Liebert, MMD40C, 3-ton, chilled water fan-coil unit with humidification and electric reheat. Also includes ceiling supply/return grille package and stand alone controls.
 - 1.3.2. (1) Furnish and install one lot of new 1 ¼" copper chilled water piping to serve the new Liebert unit (assumes 240 total feet).
 - 1.3.3. (1) Furnish and install one lot of new 2 ½" copper chilled water piping from the Siemens furnished chiller to the Siemens furnished IFP panel (assumes 280' total feet).
- 1.4. Note - the as-built drawings did not show chilled water locations or the closest location to vent the cryogen vent so we have assumed that chilled water is within 120'.
2. Modifications, additions, servicing, repairs, rebalancing or warranty of existing HVAC systems except for those specifically stated in this proposal are excluded.
3. Work associated with existing energy management controls (if any) is excluded.

Division 26: Electrical

1. The Electrical scope of work is as follows:
 - 1.1. (1) Demo/ R&R existing circuits as necessary.
 - 1.2. (1) Cable tray per Siemens "typical" Espre plans.
 - 1.3. (1) Wall duct per Siemens "typical" Espre plans.
 - 1.4. (1) Conduit and J boxes per Siemens "typical" Espre plans.
 - 1.5. (3) EPO switches.
 - 1.6. (1) 125amp; 480 volt; 3 phase; 5 wire feeder; equipment room shunt trip circuit breaker (assumes 380' total feet).
 - 1.7. (4) 120 volt duplex convenience outlets in the scan room.
 - 1.8. (7) 120 volt duplex convenience outlets.
 - 1.9. (2) 150 watt recessed incandescent down lights in the control room.
 - 1.10. (10) 100 watt LED down lights in the exam room.
 - 1.11. (8) 2x4 fluorescent lay-in fixtures with electronic ballasts.
 - 1.12. (2) 2x2 fluorescent lay-in fixtures with electronic ballasts.
 - 1.13. (5) Wall occupancy sensors.
 - 1.14. (1) Power connection for Ferroguard metal detector.
 - 1.15. (3) Single pole switches.
 - 1.16. (1) 600 watt dimmer.
 - 1.17. (2) Two pole D.C. switches.
 - 1.18. (1) Momentary contact switch for variable control of the exam room lighting.
 - 1.19. (1) Furnish and install a dimmable D.C. power supply.
 - 1.20. (1) Power connection for Siemens furnished chiller.
 - 1.21. (2) 3 ton chilled water air handler power connections.
 - 1.22. (1) 1.5kw duct heater power connection.
 - 1.23. (1) Exhaust fan power connection.
2. We have included removing and reinstalling the exit sign along the MRI delivery path.

Division 26: Electrical (continued)

3. Additional dedicated circuits and outlets not shown on the plans are excluded.
4. An in depth analysis of the quality, capacity or availability of existing building power and grounding, is excluded.
5. Existing building power or grounding upgrade is excluded.
6. The remaining existing lighting, switching, dimming, convenience outlets, etc. are deemed to be adequate and will be left in their present location and current condition.
7. Work associated with installing power conditioning/surge suppression equipment is excluded.

Division 27: Communications

1. We have included an allowance of _____ for nurse call and code Blue work.
2. Work associated with network, telephone, intercom, PA or CCTV systems is excluded.

Division 28: Electronic Safety and Security

1. We have included an allowance of _____ for Fire Alarm work.
2. We have included an allowance of _____ for removal and reinstallation of the existing security cameras along the MRI path.

Division 31: Earthwork NA

Division 32: Exterior Improvements NA

Division 33: Utilities NA

Division 34: Transportation NA

Exclusions:

The following items are specifically excluded from our Proposal:

1. Work in an environment where there is possible contamination by the presence, removal, or encapsulation of hazardous material(s).
2. Mold, asbestos or hazardous material survey(s), removal or abatement of any kind.
3. Work associated with the removal or relocation of concealed or hidden installations and/or any effects to the project schedule.
4. Upgrades associated with ADA or code requirements (if any) outside this construction area are excluded.
5. Any other item(s) not specifically mentioned or otherwise included in this Proposal.