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OREGON SECRETARY OF STATE

UCC LIEN NO. 94134095 CENTRAL OREGON MAGNE

UCC FINANCING STATEMENT

FOLLOW INSTRUCTIONS

A. NAME & PHONE OF CONTACT AT SUBMITTER (optional)
Name: Wolters Kluwer Lien Solutions Phone: 800-331-3282 Fax: 818-662-4141

B. E-MAIL CONTACT AT SUBMITTER (optional)
uccfilingreturn@wolterskluwer.com

C. SEND ACKNOWLEDGMENT TO: (Name and Address) 61912 - Summit Bank -

Lien Solutions
P.O. Box 29071
Glendale, CA 91209-9071

103381352
ORORR

File with: Secretary of State, OR

SEE BELOW FOR SECURED PARTY CONTACT INFORMATION

THE ABOVE SPACE IS FOR FILING OFFICE USE ONLY

1. DEBTOR'S NAME: Provide only one Debtor name (1a or 1b) (use exact, full name; do not omit, modify, or abbreviate any part of the Debtor's name); if any part of the Individual Debtor's name will not fit in line 1b, leave all of item 1 blank, check here ☐ and provide the Individual Debtor information in item 10 of the Financing Statement Addendum (Form UCC1Ad)

1a. ORGANIZATION'S NAME: CENTRAL OREGON MAGNETIC RESONANCE IMAGING, LLC					
OR 1b. INDIVIDUAL'S SURNAME	FIRST PERSONAL NAME	ADDITIONAL NAME(S)/INITIAL(S)		SUFFIX	
1c. MAILING ADDRESS	CITY	STATE	POSTAL CODE	COUNTRY	
1460 NE Medical Center Drive	Bend	OR	97701	USA	

2. DEBTOR'S NAME: Provide only one Debtor name (2a or 2b) (use exact, full name; do not omit, modify, or abbreviate any part of the Debtor's name); if any part of the Individual Debtor's name will not fit in line 2b, leave all of item 2 blank, check here ☐ and provide the Individual Debtor information in item 10 of the Financing Statement Addendum (Form UCC1Ad)

2a. ORGANIZATION'S NAME					
OR 2b. INDIVIDUAL'S SURNAME	FIRST PERSONAL NAME	ADDITIONAL NAME(S)/INITIAL(S)		SUFFIX	
2c. MAILING ADDRESS	CITY	STATE	POSTAL CODE	COUNTRY	

3. SECURED PARTY'S NAME (or NAME of ASSIGNEE of ASSIGNOR SECURED PARTY): Provide only one Secured Party name (3a or 3b)

3a. ORGANIZATION'S NAME: Summit Bank					
OR 3b. INDIVIDUAL'S SURNAME	FIRST PERSONAL NAME	ADDITIONAL NAME(S)/INITIAL(S)		SUFFIX	
3c. MAILING ADDRESS	CITY	STATE	POSTAL CODE	COUNTRY	
96 E Broadway	Eugene	OR	97401	USA	

4. COLLATERAL: This financing statement covers the following collateral:
Purchase Money Security Interest in Siemens MAGNETOM Aera - System Part No. 14430327. See Exhibit A

5. Check only if applicable and check only one box: Collateral is ☐ held in a Trust (see UCC1Ad, item 17 and Instructions) ☐ being administered by a Decedent's Personal Representative

6a. Check only if applicable and check only one box:
☐ Public-Finance Transaction ☐ Manufactured-Home Transaction ☐ A Debtor is a Transmitting Utility

6b. Check only if applicable and check only one box:
☐ Agricultural Lien ☐ Non-UCC Filing

7. ALTERNATIVE DESIGNATION (if applicable): ☐ Lessee/Lessor ☐ Consignee/Consignor ☐ Seller/Buyer ☐ Bailee/Bailor ☐ Licensee/Licensor

8. OPTIONAL FILER REFERENCE DATA:
103381352 3xx825

FILING OFFICE COPY — UCC FINANCING STATEMENT (Form UCC1) (Rev. 07/01/23)

Prepared by Lien Solutions, P.O. Box 29071, Glendale, CA 91209-9071 Tel (800) 331-3282

Exhibit A

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

SIEMENS Healthineers

SIEMENS REPRESENTATIVE
Dane Wright
dane.wright@siemens-healthineers.com

Detailed Technical Specifications

MAGNETOM Aera - System

Part No./Product	Description
14430327 **MAGNETOM Aera - System**	MAGNETOM Aera is designed to provide you the versatility you need to meet the increasing demands in healthcare. Maximize 1.5T with its core technologies Tim® 4G and Dot®, along with its comprehensive application portfolio and experience unique functionalities to increase patient comfort. Every case. Every day. System Design - Short and open appearance (145 cm system length and 70 cm Open Bore Design) to reduce patient *anxiety and claustrophobia* - Whole-body superconductive Zero Helium Boil-Off 1.5T magnet - Actively Shielded water-cooled Siemens gradient system for maximum performance - TrueForm Magnet and Gradient Design Tim 4G (Total imaging matrix in the 4th generation) for excellent image quality and speed - Siemens unique DirectRF™ technology enabling the all digital-in/ digital-out design - Dual-Density Signal Transfer Technology - Tim Coil Interface Dot (Day optimizing throughput) for higher consistency, flexibility and efficiency - Dot Display - Dot Control Centers - Brain Dot Engine Tim Application Suite allowing excellent head-to-toe imaging - Neuro Suite - Angio Suite - Cardiac Suite - Body Suite - Onco Suite - Breast Suite - Ortho Suite - Pediatric Suite - Scientific Suite Further included - High performance host computer - Patient communication: standard headphones and MagnaCoil™ In-Ear headset - Siemens unique TimCT FastView localizer and CAIPIRINHA - syngo MR software including - 1D/2D PACE - BLADE - iPAT² - Phoenix - Inline Diffusion - WARP - MDDW (Multiple Direction Diffusion Weighting)

Part No./Product	Description
	- CISS - DESS - TGSE The system (magnet, electronics and control room) can be installed in 30sqm space. For system cooling either the Eco Chiller options or the Separator is required. MAGNETOM Aera - the first 1.5T Tim+Dot system - integrates the next generation Tim (Total imaging matrix) - Tim 4G and the Siemens unique Dot (Day optimizing throughput) engines enabling workflow efficiency combined with higher diagnostic confidence due to consistent results. The system includes: **Tim 4G+Dot** Tim 4G provides increased patient comfort and optimized workflow efficiency. Only one patient setup, no repositioning, no changing of coils. Ultra-light-weighted coils with high density of coil elements for maximized patient comfort and increased SNR. Feet-first positioning for almost all examinations possible reduces claustrophobia. Tim 4G with its 4G flexibility, 4G accuracy and 4G speed brings image quality and acquisition speed to a new level. Dot offers a customizable framework for patient personalization, user guidance and exam automation. Optimized scan strategies are provided and can be selected based on patient condition, which allow for high quality exams even when conditions change. Integrated decision points allow the user to easily add or remove one or a group of protocols with one click. Step by step image and text guidance guides novice users even through the most complicated exams. Exam automation allows optimal timing for breathing, scanning, planning or contrast arrival. Dot can be easily customized to follow the individual standards of care. Dot is personalized, guided and automated and designed to improve workflow efficiency and image consistency. MAGNETOM Aera with its 70 cm Open Bore design and a system length of only 145 cm gives a patient friendly appearance that can significantly help patients with anxiety or claustrophobia. **Magnet:** - Ultra-short 137 cm long (145 cm with covers), whole-body superconductive 1.5T magnet with active shielding (AS) technology with counter coils - External Interference Shielding (E.I.S.) - Excellent homogeneity enabled by TrueForm magnet design which allows for a cylindrically optimized homogeneity volume resulting in higher image quality (50 × 50 × 45 cm^3 DEV, typ. 3.1 ppm based on the 24-plane plot method) - The magnet has a helium capacity of approximately 1,280 liters and a typical Helium boil-off rate of 0 l/yr during typical, undisturbed clinical operation depending on the sequences used and examination time, and provided the system is serviced in regular intervals. - It has an integrated magnet cooling system. **Gradient system :** - Actively shielded water-cooled world-class gradient system - True Form Gradient Design - All axes force compensated **DirectRF - RF Transmit/Receive System:**

Part No./Product	Description
	- Fully integrated Transmit and Receive path in the magnet housing including extremely compact water-cooled solid state amplifier with 26.1 kW peak power - High dynamic range - Immediate feedback loop for real-time sequence adaptation - Integrated no tune transmit/receive Body Coil - The revolutionary Tim 4G technology allows connecting 204 channels (coil elements) simultaneously enabling higher SNR and iPAT in all directions. No repositioning of patients is needed even for large Field of View examinations. - Dual-Density Signal Transfer enables ultra-high density coil design by integrating key RF components into the local coil. **Tim Table** - The maximum scan range of the Tim Table is 140 cm. A scan range of 205 cm can be achieved with the Tim Whole Body Suite (optional) - The maximum patient weight of 250 kg (550 lbs) is valid for horizontal and vertical movements, which ensures maximized patient comfort for obese patients. - The patient table can be lowered to a minimum height of 52 cm from the floor, for easier patient positioning and better accessibility for geriatric, pediatric or immobile patients. An infusion stand is integrated to ensure fast patient set up also for critical patients. - Multiple Tim4G coils can be connected at once for efficient and patient friendly examinations. - The Tim Table can be moved with two clicks into the isocenter - one click to the upmost position and one click into the isocenter. **Dot (Day Optimizing Throughput) engine** Dot multiplies the power of Tim resulting in greater image consistency and diagnostic confidence **Dot Control Centers and Dot Display** - The ergonomically designed Dot Control Centers are integrated left and right into the front covers for controlling table movement and interaction with the Dot Display. The Dot Control Centers are well illuminated for easy visual recognition. - Automated table move up to upmost position, to center position or Home position facilitate smooth patient preparation and will reduce table time - Variable (6 levels) ventilation and lighting inside the magnet bore or volume adjustments are possible for increased patient comfort - The Dot Display provides on board guidance for patient set up where it's needed - directly at the scanner. Information such as patient name or exam type or required patient position, guidance for ECG set up and immediate visualization of physiological curves will be provided for convenient operation. - Almost all table control functions, including ventilation and illumination of the magnet bore, can be also controlled from the operator console for convenient operation. **Dot Technology** Dot gives uniquely tailored, optimized scans configurable to patient condition or clinical question. Dot provides patient personalization, user guidance and exam automation and is of course configurable by the user to adapt to the different clinical needs and standards of care. **Brain Dot Engine** The Brain Dot Engine provides guided and automated workflows customizable to the site specific standards of care for general brain examinations. The Brain Dot Engine supports the user in achieving reproducible image quality with increased ease of use and time efficient exams. The brain workflow can be personalized to the individual patient condition and clinical need. Several

Part No./Product	Description
	predefined strategies are included, which can be easily selected with one click. They can be changed at any time during the brain workflow. Protocols tailored for use of contrast media are integrated. - Standard: Standard examination with 2D protocols - Resolution focus: Examination with 3D protocols (with e.g. SPACE) for detailed views - Speed focus: Examination with fast 2D protocols (with e.g. HASTE) for further speeding up the exam - Motion insensitive: Examination with *syngo* BLADE protocols - to minimize and correct for the effects of motion automatically Step-by-step user guidance is seamlessly integrated. Example images and guidance text are displayed for each individual step of the scanning workflow. Both - images and text - are easily configurable by the user. Easy positioning of the patient with AutoPosition. The patient is automatically placed at the isocenter without any laser marking required. AutoAlign Head provides automated, positioning and alignment of slice groups to the anatomy, relying on multiple anatomical landmarks. Besides basic brain positioning, AutoAlign Head computes reference position for several other brain structures such as the inner ear, the orbits and the optic nerve. Automatic real-time calculation of trace-weighted images and ADC maps with Inline Diffusion Technology. Easy rerun or repeat with functionality allows for reduced table time. Alternatively an exam can be repeated with a changed strategy. The Brain Dot Engine as all Dot engines can be modified by the user to their individual standard of care. **Tim Application Suite** The Tim Application Suite offers a complete range of clinically optimized sequences, protocols and workflow functionalities for all body regions. Excellent head-to-toe imaging can be accomplished with the sequences and features included in this application suite. To enable this comprehensive application range, ten dedicated application packages have been included. - *syngo* TimCT FastView - Neuro Suite - Angio Suite - Cardiac Suite - Body Suite - Onco Suite - Breast Suite - Ortho Suite - Pediatric Suite - Scientific Suite ***syngo* TimCT FastView** *syngo* TimCT FastView is a "one go" localizer for the whole body or large body regions such as the

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	whole spine or the whole abdomen. It acquires the complete extended Field of View in one volume with isotropic resolution. Transversal, coronal and sagittal reformats of the volume are calculated inline and displayed for planning subsequent exams. Moreover, while planning is underway, adjustments are acquired automatically for further time savings in subsequent measurements. *syngo* TimCT FastView runs without laser light positioning to further streamline the workflow for several indications. **Neuro Suite** Comprehensive head and spine examinations can be performed with dedicated programs. High-resolution protocols and fast protocols for uncooperative patients are provided. The Neuro Suite also includes protocols for diffusion imaging, perfusion imaging, and fMRI. It includes for example: - 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. 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. - Whole spine protocols acquire in multiple steps via software-controlled table movement in a single click. - 3D isotropic resolution volume imaging using T1 3D MPRAGE / 3D FLASH, SPACE DarkFluid, T2 SPACE and 3D TSE - T2-weighted high-resolution 3D Restore protocols optimized for inner ear examinations - Whole-spine protocols in multiple steps with software-controlled table movement - 2D and 3D MEDIC protocols for T2-weighted imaging, particularly for C-spine examinations in axial orientation where reproducibility is difficult due to CSF pulsations and blood flow artifacts - 3D Myelograms with 3D HASTE and 3D True-FISP for anatomical details - Dynamic sacro-iliac joint imaging after contrast administration using a fast T1-weighted FLASH 2D sequence - Spine diffusion protocols to differentiate osteoporosis versus tumor infiltration and post-radiotherapy changes versus residual tumor with PSIF sequence - Precision filter for high spatial accuracy e.g. for neuro intra-operative imaging and stereotactic planning - 3D CISS (Constructive Interference in Steady State) for excellent visualization of fine structures such as cranial nerves. High-resolution imaging of inner ear and spine - AutoAlign Head LS providing a fast, easy, standardized, and reproducible patient scanning supporting reading by delivering a higher and more standardized image quality **Angio Suite** Excellent MR Angiography can be performed to visualize arteries and veins with or without contrast agent. *Contrast-enhanced MRA* - 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. *Non-contrast-MRA and venography*

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	- 2D and 3D Time-of-Flight (ToF) protocols for MRA for the Circle of Willis, carotids, neck vessels, and breath-hold protocols for abdominal vessels - 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) *Image processing tools* - MPR, MIP, MinIP, and 3D SSD (Multiplanar Reconstruction, Maximum Intensity Projection, Minimum Intensity Projection, Shaded Surface Display) - 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 **Cardiac Suite** The cardiac suite covers comprehensive 2D routine cardiac applications, ranging from morphology and ventricular function to tissue characterization. Featuring *syngo* BEAT 2D in conjunction with iPAT and T-PAT techniques. *Cardiac views* - Fast acquisition of the basic cardiac orientations for further examination planning - Cardiac scouting provides users with a step-by-step procedure for the visualization and planning of typical cardiac views, e.g. based on TrueFISP or Dark Blood TurboFLASH: short axis, 4-chamber and 2-chamber views. *syngo BEAT* - Unique tool for fast and easy cardiovascular MR imaging - E.g. 1 click change from FLASH to TrueFISP for easy contrast optimization - 1-click to switch arrhythmia rejection on / off - 1-click change from Cartesian to radial sampling to increase effective image resolution (e.g. in pediatric patients) and avoid folding artifacts in large patients *Visualization of structural cardiovascular pathologies with CMR – syngo BEAT* - Breath-hold and free breathing techniques for strong contrast between the blood and vascular structures. Dark Blood TSE and HASTE imaging are available for the structural evaluation of the cardiothoracic anatomy, including vessels or heart valves. Cine techniques (FLASH & TrueFISP) for high-resolution valve evaluation - Multiple contrasts such as T1- and T2-weighted imaging for use in diseases such as myocarditis (inflammation / hyperaemia), ARVD (fibrous-fatty degeneration) or acute myocardial infarction (edema) - Dark-blood TSE with motion compensation for high-quality vessel wall imaging in small or large vessels *Tools for rapid evaluation of left or right ventricular function* - Acquisition of a stack of short-axis slices (standard segmented FLASH, or advanced segmented TrueFISP) - Automatic adjustment of the acquisition window to the current heart rate - Use of the Inline ECG for graphical ECG triggering setup - Retrospective gating with cine sequences (TrueFISP, FLASH) - Protocols for whole-heart coverage - iPAT integration for highest temporal and spatial resolution

Part No./Product	Description
	- Real-time imaging in case the patient is not able to hold his breath *Dynamic imaging and tissue characterization with syngo BEAT* - Protocols for high-contrast and high-resolution tissue characterization - Protocols for stress and rest imaging with TrueFISP or TurboFLASH contrast support the acquisition of multiple slices with high resolution and arbitrarily adjustable slice orientation for each slice - T-PAT with mSENSE and GRAPPA for advanced parallel imaging provides fast high-resolution dynamic imaging - Segmented IR TrueFISP / FLASH with TI scout for optimization of tissue contrast - Advanced tissue characterization with 2D phase-sensitive IR (PSIR) sequences TrueFISP and FLASH contrast. Magnitude and phase-sensitive images with one acquisition - Simple: no adjustment of inversion time (TI) necessary with PSIR technique - Ungated single-shot PSIR imaging for tissue characterization under difficult conditions: free-breathing technique that can be applied even in case of arrhythmia Physiological Measurement Unit (PMU) - Wireless Physio Control - Synchronizes the measurement with the physiological cycles (triggering to minimize motion artifacts caused by cardiac and respiratory movements) - Wireless Sensors - Wireless Vector ECG / respiration and pulse sensors for physiologically synchronized imaging, rechargeable battery-powered - for optimized patient handling - Physiological Signals Display - ECG (3 channels) - Pulse - Respiration - External Trigger Input Display ECG Triggering: - Acquisition of multiple slices, e.g. of the heart, at different phases of the cardiac cycle - Excellent image quality by synchronizing data acquisition with cardiac motion - Peripheral Pulse Triggering: Reduces flow artifacts caused by pulsatile blood flow - Excellent image quality by synchronizing data acquisition to the pulsatile blood flow - Respiratory Triggering: Excellent image quality by synchronizing data acquisition with the respiratory motion - External Triggering: Interface for trigger input from external sources (e.g. Patient Monitoring System) inside the examination room - Interface for trigger input from external sources (e.g. pulse generator, trigger sources for fMRI) outside the examination room - Optical trigger output for fMRI - Retrospective gating for ECG, peripheral pulse, and external trigger input **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 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:

Part No./Product	Description
	- 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 - 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 an adiabatic 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 - *syngo* REVEAL: diffusion imaging for breast exams - iPAT Extension allows bilateral 3D sagittal breast imaging with Fat Sat or Water excitation The Breast Suite also includes: ***syngo* VIEWS (Volume Imaging with Enhanced Water Signal)** - 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 - near-isotropic 3D measurement - the same voxel size in all three directions for reconstruction in any slice direction - submillimeter voxel - highest resolution for precise evaluation **Body Suite** 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: - 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 ***ABDOMEN:*** *2D:* - T1w (FLASH) breath-hold scans +/- Fat Sat (SPAIR, Q-FatSat, in-/opp-phase) - T2w (HASTE, TSE/BLADE, EPI) breath-hold scans +/- Fat Sat (SPAIR, FatSat, STIR) - T1w (TFL) triggered scans (2D PACE free breathing) in-/opp-phase - T2w (HASTE, TSE/BLADE, EPI) triggered scans (2D PACE free breathing) +/- Fat Sat (SPAIR,FatSat, STIR) as well as HASTE- and TSE-multi-echo - Optimized fast single shot HASTE protocols and high-resolution 3D RESTORE protocols based on SPACE and TSE for MRCP and MR urography examinations

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	3D: - Dixon (VIBE 2pt-Dixon) breath-hold scans, following contrasts can be obtained: in-phase, opposed phase, fat and water image. - Dynamic (VIBE + Q-FatSat) protocols for best visualization of focal lesions with high spatial and temporal resolution - Colonography bright lumen with T2-weighted TrueFISP and dark lumen with T1-weighted VIBE - CAIPIRINHA enables VIBE sequence with improved iPAT² algorithm to improved abdominal dynamic scans as well as SNR. Reduced patient stress can be achieved through reduced acquisition (and breath-hold) times. ***PELVIS:*** - High-resolution T1w, T2w pelvic imaging (prostate, cervix) - Isotropic T2w SPACE 3D protocols for tumor search in the pelvis - Dynamic volume examinations with 3D VIBE - *syngo* REVEAL: diffusion imaging for liver and whole body exams **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: - STIR TSE and HASTE, 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. - *syngo* REVEAL: diffusion imaging for liver and whole body exams Dedicated prostate protocols for detection, localization, and staging of tumors and recurrences - *syngo* REVEAL (diffusion-weighted imaging) - Protocols with high temporal resolution allow time course evaluation based on pharmacokinetic modeling **OrthoSuite** 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: - 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)

Part No./Product	Description
	- 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) - High-resolution 3D DESS (Double Echo Steady State): T2 / T1-weighted imaging for excellent fluid-cartilage differentiation *syngo WARP Susceptibility Artifact Reduction* - 2D TSE sequences with high bandwidth protocols tailored to reduce susceptibility artifacts. Available protocols include T1-weighted, T2-weighted, proton density and STIR contrast. **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. Protocols can be adapted for imaging infants. **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. - 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) - Advanced image computation methods such as T2 and T1 time calculation, addition, subtraction, multiplication, division, and integration of images The sequences, features and techniques for acquisition and reconstruction included in the Tim Application Suite are described in detail below. **Sequences** Spin Echo family of sequences: - Spin Echo (SE) - Single, Double, and Multi Echo (up to 32 echoes); Inversion Recovery (IR) - 2D / 3D Turbo Spin Echo (TSE) - Restore technique for shorter TR times while maintaining excellent T2 contrast; TurboIR: Inversion Recovery for STIR, DarkFluid T1 and T2, TrueIR; Echo Sharing for dual-contrast TSE - 2D / 3D HASTE (Half-Fourier Acquisition with Single Shot Turbo Spin Echo) - Inversion Recovery for STIR and DarkFluid contrast - SPACE for 3D imaging with high isotropic resolution with T1, T2, PD, and DarkFluid Contrast Gradient Echo family of sequences: - 2D / 3D FLASH (spoiled GRE) - dual echo for in- / opposed phase imaging 3D VIBE (Volume Interpolated Breath-hold Examination) - quick fat saturation; double echo for in-phase / opposed

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	phase 3D imaging; DynaVIBE: Inline 3D elastic motion correction for multi-phase data sets of the abdomen; Inline Breast Evaluation - 2D / 3D MEDIC (Multi Echo Data Image Combination) for high-resolution T2 weighted orthopedic imaging and excellent contrast - 2D / 3D TurboFLASH - 3D MPRAGE; single shot T1 weighted imaging e.g. for abdominal imaging during free breathing - 3D GRE for field mapping - 2D / 3D FISP (Fast Imaging with Steady State Precession) - 2D / 3D PSIF - PSIF Diffusion - Echo Planar Imaging (EPI) - diffusion-weighted; single shot SE and FID e.g. for BOLD imaging and Perfusion-weighted imaging; 2D / 3D Segmented EPI (SE and FID) - ce-MRA sequence with Inline subtraction and Inline MIP - 2D / 3D Time-of-Flight (ToF) Angiography - single slab and multi slab; triggered and segmented - 2D / 3D Phase Contrast Angiography - *syngo* BEAT Tool - TrueFISP segmented; 2D FLASH segmented; - Magnetization-prepared TrueFISP (IR, SR, FS); IR TI scout; Retrogating Standard Fat/Water Imaging - Fat and Water Saturation. Additional frequency selective RF pulses used to suppress bright signal from fatty tissue. Two selectable modes: weak, strong - Quick FatSat - SPAIR: robust fat suppression for body imaging using a frequency selective inversion pulse - Fat / Water Excitation. Spectral selective RF pulses for exclusive fat / water excitation - Dixon technique for fat and water separation - available both based on VIBE (2 point Dixon) Standard Techniques - True Inversion Recovery to obtain strong T1-weighted contrast - Dark Blood inversion recovery technique that nulls fluid blood signal - Saturation Recovery for 2D TurboFLASH, gradient echo, and T1-weighted 3D TurboFLASH with short scan time (e.g. MPRAGE) - 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 - MTC (Magnetization Transfer Contrast). Off-resonance RF pulses to suppress signal from certain tissues, thus enhancing the contrast. Used e.g. in MRA - Argus viewer for reviewing cine studies• - Report Viewer for DICOM structured reports including report editing - Dynamic Analysis for addition, subtraction, division, standard deviation, calculations of ADC maps, T1 and T2 values, TTP, t-Test, etc. - Image Filter - 3D post-processing MPR, MIP, MinIP, SSD - Flexible film formats and paper print - Data storage of images and cine AVI files on CD / DVD with DICOM viewer as the viewing tool for hand out to the patients or referrals - Selectable centric elliptical phase reordering via the user interface - Inversion Recovery to nullify the signal of fat, fluid or any other tissue - Multiple Direction Diffusion Weighting (MDDW) - perform diffusion tensor imaging with multiple diffusion weightings and up to 12 directions for generating data sets.

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	Standard techniques for Flow Artifact reductions - LOTA (Long-Term Data Averaging) technique to reduce motion and flow artifacts - Pre-saturation techniques using RF saturation pulses to suppress flow and motion artifacts - Tracking SAT bands maintain constant saturation of venous and/or arterial blood flow e.g. for 2D/3D sequential MRA - TONE (Tilted Optimized Non-saturating Excitation - variable excitation flip angle to compensate inflow saturation effects in 3D MRA - selectable on desired flow direction and speed - Gradient Motion rephasing permitting effective reduction of flow artifacts Standard Motion Correction - *syngo* Blade - improves image quality by minimizing and correcting for the effects of motion during an MR sequence acquisition. e.g. head, spine, orthopedic imaging and the abdomen - 1D PACE (Prospective Acquisition CorrEction) allows examination of patients with free breathing - 2D PACE (Precise Motion Correction) detects and corrects respiratory motion eg of the heart or liver MAGNETOM Aera runs *syngo* MR software. *syngo*® is the unique software platform for medical applications. Parallel working and one-click exams are efficiently supported and increase productivity. Parallel scanning and reconstruction are standard. 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 Aera system. Inline technologies, scan@center or AutoVoiceCommands speed up the workflow further. The context-sensitive "Online Help" function and *syngo* Scan Assistant offer support and propose solutions to MR-specific questions and parameter conflicts. 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) DICOM Modality Perform Procedure Step (MPPS), DICOM Structured Report (SR), DICOM Study Split. **Patient Communication** - The intercom system includes an ergonomically designed patient communication unit for desktop positioning on the *syngo* Acquisition Workplace and pneumatic headphones for the patient. - It controls emergency table stop, volume control of speaker and headphones in the examination room, volume control of speaker in the control room, response to the patient's activation of the assistance-call button and provides a connection to an external audio system (external audio system is not included in the basic unit) for music playback. **Computer system** The high performance measurement and reconstruction system and the high performance host computer are ideally suited for even the most demanding applications. The PC-based computer system uses the intuitive *syngo* MR user interface. The computer system includes the following components: High-performance host computer - Intel Xeon processor ≥ E5-1620 QuadCore - Clock rate 3.6 GHz, or comparable - Main Memory (RAM) ≥ 16 GB

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	- Three hard disks
	  - system SW ≥ 300 GB SAS
	  - data base ≥ 300 GB SAS
	  - images ≥ 300 GB SAS
	- DVD-R writer for CD-R (approx. 4000 images 256^2 DICOM Standard, ISO 9660) and DVD-R (approx. 25 000 images 256^2 DICOM Standard, ISO 9660) storage of DICOM data or other data like AVI files
	  - DVD-ROM drive
	  - Electronic mouse.
	- The combination of host computer and the measurement and reconstruction system offers a truly powerful imaging system designed for large image matrix sizes of up to 1024 x 1024. The unrestricted multitasking capability allows time-saving parallel scanning and reconstruction.
	- High-resolution 19" color LCD flatscreen monitor with 1280 x 1024 pixel display, integrated gamma correction for optimum display of radiographic grayscale images and automatic backlight control for long-term brightness stability.
	
	Installation:
	- The relatively lightweight design of the MAGNETOM Aera in most cases eliminates the need for structural building reinforcements and thus facilitates installation in upper floors.
	- The compact integrated design allows for short installation times and reduces the required space to less than 30 sqm (323 sq. ft.) for the entire installation. The minimum room height clearance is only 2.40 m (7' 10").
	- MAGNETOM Aera allows siting of the system without a dedicated computer room - no additional cooling or floor requirements.
	- MAGNETOM Aera 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.

14431420 **RS Cover #T+D**	Cover color and design are subject to availability.
14442780 **RS Quiet Suite #T+D**	Quiet Suite enables complete, quiet examinations for neurology and orthopedics with at least 70% reduction in sound pressure levels. Effective noise reduction is achieved through Quiet Suite by targeting the main source of MRI noise - rapid switching in the gradient coils. Quiet Suite consists of QuietX, an intelligent algorithm which effectively reduces noise through summation of gradients and reduction of slew rates while keeping timing parameters within the same range. QuietX has been enabled for TSE, SE and GRE sequences for T1, T2 and DarkFluid contrasts. Within the TSE-sequence, the parameter "Echo-spacing" allows the user to further lower the gradient slew-rates. QuietX has also been enabled for susceptibility and diffusion-weighted imaging and these sequences are available with the SWI and Advanced Diffusion licenses, respectively. The automated algorithm runs in parallel to normal protocol handling. All features and contrasts of the TSE, SE, and GRE sequences remain available. In addition, Quiet Suite contains PETRA, a 3D T1 UTE sequence. The PETRA sequence allows for even lower gradient switching. With its unique gradient trajectories, no acoustic noise associated with gradient switching is generated during a PETRA scan. Residual noise may arise due to radio frequency switching. With Quiet Suite, optimized quiet protocols for imaging the brain and large joints are also provided.
14430263 **MR General Engine**	syngo.MR General Engine extends Numaris/X by adding dedicated workflows and tools for routine and advanced reading of MR examinations.

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#BM	A generic MR Basic workflow is provided, as well as specific MR Neurology, MR Prostate Reading, MR Breast Reading, and MR Cardio-Vascular workflows.
	Main functionalities of *syngo*.MR General Engine:
	- MR Basic workflow with Easy Reading mode for easy, fast, and intuitive MR reading, based on single-click and drag&drop interactions:
	  - single-click interaction to navigate through the series
	  - intelligent layout adaptation to compare series together
	  - single-click fusion between different contrasts
	- MR Cardio-Vascular Workflows: Cardiac Reading, Angio Single Station, Angio Multi Station, Angio TimCT and Angio TWIST
	- MR Evaluation tools: Subtraction, MeanCurve, Image Filter, 2D/3D Distortion Correction. ADC and b-value tool (for extrapolated b-values), Multiplication, Division, Addition, Elastic Motion Correction. Workflow optimized report templates.
	
	Scope of delivery:
	syngo.MR General Engine software package with MR Radiology workflows, MR Cardio-Vascular workflows and MR Evaluation for a workstation-based server.

14430265 **Tim Planning Suite** **#BM**	With the Tim Planning Suite, multiple regions in the entire body can be examined in a minimum of time through measurement planning on a single FoV of any desired size. The dedicated Tim Planning Suite user interface has been optimized for these comprehensive measurement requirements. Set-n-Go protocols for entirely automated examinations in each body region in one work step are available. For example, for orthopedic, oncological or angiographic imaging. - 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 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. - It is highly recommendable to order application training!
14430264 **Inline Composing** **syngo**	Automatic anatomical or angiographic composing of multiple adjacent coronal or sagittal images for presentation and further evaluation. Composed images can be automatically loaded into Graphical Slice Positioning for scan planning purposes. **Inline Technology - Processing Instead of Post-processing** The Inline Composing option includes the following functions: - 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.

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	- 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.
14430260 **Brain Dot Engine** **#Am,Se,Vi,So,Lu,Al**	The Brain Dot Engine provides guided and automated workflows customizable to the site specific standards of care for general brain examinations. The Brain Dot Engine supports the user in achieving reproducible image quality with increased ease of use and time efficient exams. The brain workflow can be personalized to the individual patient condition and clinical need. Several predefined strategies are included, which can be easily selected with one click. They can be changed at any time during the brain workflow. Protocols tailored for use of contrast media are integrated. - Standard: Standard examination with 2D protocols - Resolution focus: Examination with 3D protocols (with e.g. SPACE) for detailed views - Speed focus: Examination with fast 2D protocols (with e.g. HASTE) for further speeding up the exam - Motion insensitive: Examination with *syngo* BLADE protocols - to minimize and correct for the effects of motion automatically Step-by-step user guidance is seamlessly integrated. Example images and guidance text are displayed for each individual step of the scanning workflow. Both - images and text - are easily configurable by the user. Easy positioning of the patient with AutoPosition. The patient is automatically placed at the isocenter without any laser marking required. AutoAlign Head provides automated, positioning and alignment of slice groups to the anatomy, relying on multiple anatomical landmarks. Besides basic brain positioning, AutoAlign Head computes reference position for several other brain structures such as the inner ear, the orbits and the optic nerve. Automatic real-time calculation of trace-weighted images and ADC maps with Inline Diffusion Technology. Easy rerun or repeat with functionality allows for reduced table time. Alternatively an exam can be repeated with a changed strategy. The Brain Dot Engine as all Dot engines can be modified by the user to their individual standard of care.
14430262 **Advanced Diffusion** **#NX**	QuietX DWI and RESOLVE together make up the Advanced Diffusion package. QuietX DWI enables quieter diffusion-weighted imaging of the brain with up to 70% reduction in sound pressure relative to conventional diffusion-weighted imaging. RESOLVE (Readout Segmentation Of Long Variable Echo-trains) is a multi-shot, readout segmented EPI sequence for high-resolution, low-distortion diffusion-weighted imaging (DWI). This technique is largely insensitive to susceptibility effects, providing anatomically accurate diffusion imaging for the brain, spine, breast and prostate. In combination with syngo.MR Tractography, RESOLVE enables excellent white-matter tract imaging even in regions of high susceptibility, such as the spine. RESOLVE is a diffusion-weighted, readout-segmented EPI sequence optimized towards high-resolution imaging with reduced distortions.

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	The sequence uses a very short echo-spacing compared to single-shot EPI, substantially reducing susceptibility effects. A 2D-navigator correction is applied to avoid artefacts due to motion-induced phase errors. This combination allows diffusion weighted imaging of the breast, prostate (SEEit sequence for prostate DWI), brain and spine with a high level of detail and spatial precision. Additionally, an automatic reacquisition of data with large phase errors can be used to ensure that diffusion-weighted images of the brain are not affected by CSF pulsation. QuietX DWI protocols for the brain utilize QuietX, an intelligent algorithm which effectively reduces noise through summation of gradients and reduction of slew rates while keeping timing parameters within the same range. All features and contrasts of DWI remain available, delivering image quality comparable to a conventional single shot diffusion sequence, while providing at least 70% sound pressure reduction for increased patient comfort.
14457399 **RS Standard Coil Package 48+ ch #Ae**	This package includes: - Head/Neck 20 DirectConnect - Spine 32 DirectConnect - Body 18 - Flex Large 4 - Flex Small 4 - Flex Coil interface **Tim 4G Coils:** The new Tim 4G coil technology with Dual-Density Signal Transfer, DirectConnect and SlideConnect technology combines key imaging benefits: Excellent image quality, high patient comfort, and unmatched flexibility. The Tim 4G coils are designed for highest image quality combined with easy handling. The high coil element density increases SNR and reduces examination times. DirectConnect and SlideConnect™ technology reduce patient set up time significantly. The coils are designed with the patient in mind. Light weighted coils and open design ensure highest patient comfort which results in better patient cooperation and image quality. No coil changing with multi-exam studies saves patient setup- and table time. AutoCoilSelect enables dynamic, automatic, or interactive selection of the coil elements within the Field of View and speeding the exam preparation at the host. All coils are time-saving "no-tune" coils. A comprehensive set of pads for comfortable and stable patient positioning together with safety straps are included. - Head/Neck 20 The 20-channel coil with its 20 integrated pre-amplifiers ensures excellent signal-to-noise ratio. The unique DirectConnect technology allows users connecting the 20 coil elements of the Head/Neck 20 without cables. The patient friendly open design allows for maximum patient comfort which is supported in addition by a look-out mirror for claustrophobic patients. The high channel coil is iPAT compatible in all directions. The open and light design of the upper coil part increases patient comfort and is removable for easy patient handling. The lower coil part may remain on the table for most of the examinations can be used without the upper part .The Head/Neck 20 and Spine 32 are smoothly integrated into the patient table, thus enabling high flexibility in imaging and fewer coil changes and easy handling when switching patients. The Head /Neck 20 coil is equipped with two removable cushioned head stabilizers for stable and comfortable patient positioning. The Head/ Neck 20 can be used for applications like head examinations, neck examinations, MR

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	Angiography, combined head/neck examinations or for imaging of the TMJ (temporomandibular joints). Typically combined with the Spine 32 and Body 18 or Peripheral Angio 36 but also other combinations eg with flexible coils like the Flex Large 4 are possible. - Body 18 The 18-channel coil with its 18 integrated pre-amplifiers ensures maximum signal-to-noise ratio. The 18 coil elements of the Body 18 with only one SlideConnect Plug allows for fast and easy patient preparation resulting in less table time. Fast acquisition times enabled by iPAT in all directions. The light-weighted coil ensures highest patient comfort. Body 18 operates in an integrated fashion with the Spine 32 as an 30 channel body coil Body 18 can be combined with further Body 18 coils for larger coverage and positioned in different orientations (0°, 90°, 180°, 270°) for patient specific adaptations The Body 18 is typically used in combination with the Spine 32 for examinations of the thorax, abdomen, pelvis or hip and operates as a 30 channel body coil (3 rings 10 elements).The Body 18 can also be used for cardiac or vascular applications. Through its perfect combinability with the Spine 32, further Body 18 (optional), the Peripheral Angio 36 (optional), but also the Head/Neck 20 and all flexible coils (e.g. Flex Large 4, Flex Small 4) it contributes for a broad range of indications up to whole-body imaging. - Spine 32 The 32-channel coil with its 32 integrated pre-amplifiers ensures maximum signal-to-noise ratio. The unique DirectConnect technology allows connecting the 32 coil elements of the Spine 32 without the need to plug in any cable. The patient friendly ergonomic design allows for maximum patient comfort. The high element coil is iPAT compatible in all directions. Smoothly integrated into the patient table the Spine 32 may remain on the patient table for nearly all exams. The Spine 32 is typically combined with Body 18, Head/Neck 20, Peripheral Angio 36 (optional) or Flex Large 4, Flex Small 4. - Flex Large 4/ Flex Small 4 Light-weighted, very flexible, iPAT compatible, 4-element no-tune receiver coils which are made of soft and smooth material. The coils can be wrapped around or used flat. Both coils can be connected via Flex Coil interface. One Flex Coil interface is already delivered as standard. The coils can be used for different examinations ranging from examinations of the extremities to abdominal examinations.
14478614 **RS syngo Expert-i XA30**	This software application enables remote access to the system (connected via local area network) for planning and processing. The option is integrated in the *syngo* user interface thus enables easy access to the user interface of the *syngo* Acquisition Workplace for planning and processing support purposes. The access is protected by appropriate security mechanisms (active enabling prior to every connection through the user present on site, password protection), in order to prevent unwanted connections.

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	The client software can be operated on any commercial PC with the following specification: - Operating system: Windows 7/8.1/10 - .NET Framework version 4.5 or higher
14435296 **RS Tx/Rx 15-channel Knee Coil DDST #Ae**	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 - SlideConnect Technology 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. The coil is positioned on a laterally movable support and therefore allows for comfortable patient positioning of both legs for off-center examinations. SlideConnect Technology allows for fast and easy patient preparation, resulting in less table time. Furthermore, the upper part can be removed for easier patient positioning. Additional cushions allow for optimum patient immobilization. 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).
14457411 **RS UPS system**	UPS system Liebert GXT5 3000IRT2UXLE for MAGNETOM Aera, Skyra, Prisma, ESSENZA, Amira, Sempra, Spectra, C! for safeguarding computers. Including Power Cable of 9 m for connecting the UPS. Power output: 3.0 kVA / 3 kW Bridge time: 3 min full load / 12 min half load Input voltage: 230 VAC Voltage range: 115 - 280 V Input frequency: 40 / 70 Hz Output voltage: 230 VAC Dimensions (H x D x W): UPS 430 x 540 x 85 mm incl. 9 m Power Cable Weight: approx. 30 kg
14435305 **RS Tim Table #Ae**	The new Tim Table is designed for maximized patient comfort and smooth patient preparation. The unique design of the Tim Table can support up to 250 kg (550 lbs) patients without restricting the vertical or horizontal movement. The new MAGNETOM Aera table with its light appealing design allows for a fast patient preparation and maximized patient comfort. It provides unobstructed foot space for attending staff and direct access to the patient. The patient table can be lowered to a minimum height of 52 cm from the floor, for easier patient positioning and better accessibility for geriatric, pediatric or immobile patients. The Tim Table can be moved with two clicks into the isocenter - one click to the upmost position and one click into the isocenter. The tabletop travels beyond the rear end of the system, enabling additional patient access. An infusion stand is integrated to allow for fast patient set up of critical patients. Multiple Tim4G coils can be connected at once for efficient and patient friendly examinations. The seamless integration of multiple Tim4G coils is possible via 4 SlideConnect and 4 DirectConnect connector slots, which are embedded in the table. This allows for comprehensive examinations without the need of repositioning.
14457402 **RS Tim [204x48] XQ Gradients #Ae**	Tim [204x48] XQ-gradients performance level Tim 4G with it's newly designed RF system and innovative coil architecture enables high resolution imaging and increased throughput.

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	The system provides a maximum number of 204 channels (coil elements) that can be connected simultaneously. Flexible parallel imaging is achieved by the 48 independent RF channels that can be used simultaneously in one single scan and in one single FOV, each generating an independent partial image. Maximum SNR is furthermore ensured through the new Tim 4G matrix coil technology. This option includes also Advanced High Order Shim. XQ - gradients The XQ- gradients are designed combining high performance and linearity to support clinical whole body imaging at 1.5T. The force compensated gradient system minimizes vibration levels and accoustic noise. The XQ gradients combine 45 mT/m peak amplitude with a slew rate of 200 T/m/s. High-performance measurement and reconstruction system **Tim [204x48] performance level** Tim 4G offers DirectRF a completely redesigned RF architecture. This all digital-in/ digital-out design integrates all RF transmit and receive components at the magnet, eliminating analog cables for true signal purity. This compact and efficient design enables feedback loop for unmatched RF stabilization. The innovative coil architecture packs more coil elements in a smaller space and the system provides a maximum number of 204 channels (coil elements) that can be connected simultaneously. The newly designed ultra-high density array is an essential part supplementing Tim 4G. Advanced iPAT capabilities and SNR are enabled by the 48 independent RF channels that can be used simultaneously in one single scan and in one single FOV, each generating an independent partial image. An additional benefit of multiple coil elements and receiver channels is improved performance in multi-directional, i.e. three dimensional, high-speed, high-resolution iPAT in the head-feet, anterior-posterior or left-right directions. This option includes also Advanced High Order Shim. **XQ gradients** Siemens XQ gradients provide actively shielded, water cooled world-class gradients. All axes are force-compensated. The XQ gradients have: - Maximum gradient amplitude of 45 mT/m, per axis, i.e. 78 mT/m vector summation gradient performance, - max. slew rate 200 T/m/s per axis, i.e. 346 T/m/s vector summation, - minimal rise time 225 µs, from 0 to 45 mT/m amplitude - Max. output voltage for each of the gradient axes 2250 V - Max. output current for each of the gradient axes 900 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 50 cm (up to 45 cm in z direction) for optimal coverage and highest spatial resolution in diagnostic. The minimum slice thickness in 2D and 3D is 0.1 mm and 0.05 mm, respectively. - Acquisition of sagittal, transverse, coronal, single 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.

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	High-performance measurement and reconstruction system - Two Intel Sixcore Processor ≥ E5-2620 - Clock rate of ≥ 2 × 2.0 GHz, or comparable - Main memory (RAM) of 48 GB - Hard disk for raw data ≥ 300 GB - Hard disk for system software ≥ 300 GB - Parallel Scanning and Reconstruction of up to 12 data sets - Reconstruction speed - 22,556 recons per second (256 x 256 FFT, full FoV)
14434721 **RS Separator 60kW**	The SEP (Separation cabinet) has to be used if a central hospital chilled water supply is available or if a chiller of any brand/type is already available. The SEP is the interface between the on-site water chiller (of any brand or type) or the interface to the central hospital cooling water supply. For the above-mentioned cases the SEP is mandatory! In these cases, the primary water specifications must fulfill the requirements (i.e. 63 kW heat dissipation; 100+-10l/min flow; 6 to 12°C water temperature; pH value 6 to 8, max. working pressure 6 bar). Dimensions: 1950mm x 650mm x 650mm (height x width x depth) Weight: approx. 340kg Function: - Interface between the on-site water chiller (of any brand/type) or - Interface to the central hospital chilled water supply. Delivery volume: - Separator - Two 3.0 m hoses (forward and return) for connecting the SEP to the local cooling water supply system - Separation cabinet - With the SEP configuration, the helium compressor is built into the SEP cabinet and connected internal - Regional specific adapter for connection to the hospital installation
14478625 **RS High-End Computing [204x48] #NX**	Hardware upgrade option, containing a new high performance measurement and reconstruction system. The specifications of the high-end image reconstruction computer can be found within the data sheet.
14478546 **RS PC Keyboard US English #NX**	Standard PC keyboard with 105 keys. 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.
14478613 **RS DotGO Routine Package #NX**	The DotGO Routine Package includes both: - Spine Dot Engine and - Large Joint Dot Engine. As a package they offer a comprehensive set of workflows with guidance and automation, for standardized image quality in Spine and MSK MR imaging. The Spine Dot Engine provides the functionality of Inline Composing and Tim Planning Suite for

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	streamlining workflows in all spine imaging. Tools, such as auto-positioning and vertebral recognition with AutoAlign Spine, AutoCoverage and Spine Labelling support and optimize reproducibility for your cervical, thoracic and lumbar spine imaging for all clinical indications. The Large Joint Dot Engine enhances standardization of the knee, hip and shoulder workflows and optimizes reproducible image quality by incorporating automation tools, such as anatomically based auto-positioning (AutoAlign). Dedicated imaging techniques, such as Advanced WARP, are included and can help to expand the access of diagnostic MRI to a broader range of patient types. **Spine Dot Engine:** The Spine Dot Engine provides optimized cervical, thoracic and lumbar spine imaging for patients of all conditions. Spine Dot Engine provides the functionality to simplify your spine workflow by providing tools to reduce examination times, achieve optimal image quality, and assist you during reading. - User guidance step-by-step - AutoPosition - AutoAlign Spine with intervertebral disc detection - AutoCoverage - AutoSatPosition - Initial and interactive snapping - AutoLabeling of vertebrae - Automatic curved multiplanar reconstructions of 3D datasets The Spine Dot Engine includes: - *syngo* WARP Susceptibility Artifact Reduction *syngo* WARP integrates different techniques tailored to reduce susceptibility artifacts caused by orthopedic MR-conditional metal implants. 2D TSE sequence combining optimized high-bandwidth protocols and View Angle Tilting (VAT) technique, tailored to reduce susceptibility artifacts caused by orthopedic MR-conditional metal implants. This helps in evaluation of soft tissue in proximity of the implant. Available protocols include T1- weighted, T2-weighted, proton density and STIR contrast. **Large Joint Dot Engine:** Large Joint Dot Engine optimizes image quality of knee, hip and shoulder scans by proposing the most appropriate protocols according to the examination strategy chosen for the specific patient. It ensures reproducible image quality and streamlines large joint examinations to the greatest extent. *Dot Exam Strategies* The workflow can be personalized to the individual patient condition and clinical need. The Large Joint Dot Engine comes with the following predefined strategies, which the user can select according to patient conditions or change at any time during the workflow, when conditions change: - Image quality: Achieve highest image quality in a reasonable scan time with 2D and 3D protocols. - Speed focus: Examine patients in the shortest possible time with protocols being accelerated to the maximal extent. - Motion artifact reduction: Compensate for the effects of motion, e.g. with motion insensitive *syngo* BLADE protocols. - Artifacts reduction: Reduce susceptibility artifacts, using *syngo* WARP. *AutoAlign* - Automated, localizer based positioning and alignment of slice groups to the anatomy, relying on anatomical landmarks. Providing fast, easy, and reproducible patient scanning and supporting the reading by consistently delivering high image quality with a standardized slice orientation.

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	Inline MPRs - Automatic multiplanar reconstruction for 3D datasets - The Multi Planar Reconstruction (MPR) tool uses the position information from the AutoAlign algorithm and can be easily configured to automatically generate any required 2D images from high-resolution 3D acquisitions. *Guidance View* - Step-by-step user guidance is seamlessly integrated. - Example images and guidance text are displayed for each individual step of the scanning workflow. - Both images and text are easily configurable by the user *syngo WARP - Susceptibility Artifact Reduction* - *syngo* WARP integrates different techniques tailored to reduce susceptibility artifacts caused by orthopedic MR-conditional metal implants. 2D TSE sequence combining optimized high-bandwidth protocols and View Angle Tilting (VAT) techniques. This helps in evaluation of soft tissue in proximity of the implant. Available protocols include T1- weighted, T2-weighted, proton density and STIR contrast. *Advanced WARP:* - Advanced WARP application consists of SEMAC, a technique to reduce gross metal artifacts (i.e. through-plane artifacts) caused by big orthopedic implants. The main clinical applications are in hip and knee joint replacements. Available protocols include T1-weighted, T2-weighted, proton density and STIR contrast. *Customization* The Large Joint Dot Engine can be modified by the user to their individual standard of care. - Add/remove protocol steps - Change guidance content (images and text) - Change or add Dot exam strategies - Add clinical decision points - Add/remove parameters in the parameter viewing card GOKnee3D - push-button 10-minute knee exam GOKnee3D is a 10-minute, push-button examination for diagnostic imaging of the knee developed and clinically validated by the US board certified MSK radiologists at Johns Hopkins University Hospital. GOKnee3D exam consists of AutoAlign localizer in the knee, PD weighted contrast and T2 weighted contrast with fat suppression. The AutoAlign technology provides a push-button functionality and provides consistency in imaging. The 3D protocols are high-resolution and isotropic, enabled by SPACE sequence with CAIPIRINHA technique.
14458089 **Turbo Suite Essential**	Turbo Suite Essential comprises established acceleration techniques to maximize productivity for all contrasts, orientations and all routine imaging applications from head-to-toe. Turbo Suite Essential contains: - iPAT and iPAT² parallel imaging capabilities for all contrasts, orientations and body regions - T-PAT (temporal iPAT) for advanced parallel imaging provides fast high-resolution dynamic imaging in cardiac exams by distributing reference scans over time - CAIPIRINHA for advanced iPAT² is a unique k-space reordering scheme that improves the g-factor significantly and therefore improves the SNR, which can be translated into higher imaging speed. - CAIPIRINHA SPACE – high-resolution, fast 3D imaging with isotropic, sub-millimeter resolution, all contrasts. Protocols optimized for joints are provided.

Part No./Product	Description
	- CAIPIRINHA VIBE – T1 weighted 3D imaging for high-resolution imaging throughout the body and significantly shortened breath-hold scans.
14478621 **RS Turbo Suite Excelerate Edition #NX**	Turbo Suite Excelerate comprises access to cutting edge acceleration techniques such as Simultaneous Multi-Slice and Compressed Sensing for static 2D and static 3D imaging applications in Neuro, MSK and Body MRI. Turbo Suite Excelerate contains: - Simultaneous Multi-Slice (SMS) acceleration - SMS DWI / DTI helps bringing advanced DWI applications into routine neuro, breast, liver and pelvic imaging. It can be seamlessly combined with iPAT to achieve total acceleration factors of up to 8. - SMS TSE for up to 46% faster routine MSK exams, supporting all TSE contrasts and orientations. It can be seamlessly combined with iPAT to achieve total acceleration factors of 4-6. - SMS RESOLVE enables high resolution distortion free DWI with up to 50% time savings. - SMS BOLD can enable increased temporal sampling of BOLD data acquisitions and/or improved slice coverage/resolution (prerequisite Inline BOLD license). - SMS TSE DIXON for faster routine MSK exams, supporting all TSE DIXON contrasts and orientations. It can be seamlessly combined with iPAT to achieve total acceleration factors of 4-6. - Compressed Sensing (CS) static imaging - CS TOF with incoherent subsampling is designed to accelerate Time-of-Flight imaging by up to 50% without compromising diagnostic quality. - CS SPACE with incoherent subsampling is designed to significantly accelerate SPACE imaging for neuro and body application. CS SPACE is designed to enable high-resolution 3D MRCP scans in one breath-hold and isotropic, high-resolution imaging of the brain, such as T1 DIR SPACE in 3 minutes. - CS SEMAC with incoherent subsampling is designed to significantly accelerate imaging of MR conditional implants with time savings up to 50%.
14478556 **RS Positioning Aids Shoulder&Ankle #NX**	This package contains additional positioning aids that can be used for the UltraFlex Large 18 and UltraFlex Small 18. This package contains a wedge shaped cushion that can be used together with the UltraFlex Large 18 or UltraFlex Small 18, e.g. for shoulder imaging and an L-shaped holder that can be used together with the coil holder of the UltraFlex Small 18 or UltraFlex Large 18 for ankle imaging to achieve a 90° angle of the patient's ankle.
14413869 **RS SWI #Tim**	Susceptibility Weighted Imaging is a high-resolution 3D imaging technique for the brain with ultra-high sensitivity for microscopic magnetic field inhomogeneities caused by deoxygenated blood, products of blood decomposition and microscopic iron deposits. Among other things, the method allows for the highly sensitive proof of cerebral hemorrhages and the high-resolution display of venous cerebral blood vessels. Despite a strong sensitivity for local magnetic field inhomogeneities Susceptibility Weighted Imaging (SWI) as a 3D technology keeps up the signal near large susceptibility leaps due to very thin slices and high resolution in the slice (high image quality e.g. in the area of the forebrain near the frontal sinus). 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 smallest 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).

Part No./Product	Description

	The Susceptibility Weighted Imaging package includes:
	- 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:
	  - calculation of susceptibility-weighted images
	  - venous angiography: MIP of a thin slice block
	SWI has been optimized for clinical use to support diagnostics with cerebrovascular diseases (e.g. cerebral insult), venous malformation, brain trauma and tumors.

14478550 **RS FREEZEit+ Package**	The FREEZEit+ Body Package contains three robust sequences for advanced imaging: TWIST, TWIST-VIBE and StarVIBE. - TWIST is a Siemens unique sequence for time-resolved (4D) MR angiographic and dynamic imaging in general with high spatial and temporal resolution. - TWIST-VIBE is a fast, high-resolution 4D imaging sequence, e.g. for multi-arterial liver imaging. - StarVIBE is a motion-insensitive VIBE sequence using a stack-of-stars trajectory. Main Features: TWIST is a sequence for time-resolved (4D) angiographic imaging with high spatial and temporal resolution, in particular for angiography. For fat suppression, water-selective excitation is used. TWIST-VIBE is a VIBE sequence with CAIPIRINHA capability providing high spatial resolution. The view-sharing mode provides temporal information to ensure the right contrast timing for different lesions. Dixon is used for fat-water separation. StarVIBE allows body imaging in free breathing mode, providing a solution for patients without breath-hold capabilities.
14478602 **RS ZOOMit PRO**	syngo ZOOMit provides EPI diffusion imaging of small, "zoomed" areas of interest while avoiding signal from surrounding tissue and minimizing artifacts from metal implants. Protocols for prostate imaging are provided. *syngo* ZOOMit confines the excited FOV to a given region of interest. This allows for shorter echo times and hence speeds up the acquisition and reduces image distortions. The method uses spatially selective RF pulses to only excite the tissue in the target region. *syngo* ZOOMit diffusion is used best for small organs such as e.g. the prostate. The zoomed FOV allows high resolution without infolding artifacts. Short echo times are key to acquire high b-values with sufficient SNR. In the vicinity of metal implants ZOOMit reduces artifacts and therefore increases the clinical value of the images.
14483256 **RS Flex -> UltraFlex Upgrade #1.5T**	This option exchanges the Flex Small & Large 4 coils incl. the Flex Coil Interface from the standard coil configuration for the superior UltraFlex Small & Large 18. These are two lightweight, iPAT compatible, 18-element no-tune receive coils made of highly flexible and soft material. UltraFlex Large 18 Ideal for examinations of larger extremities (e.g. medium to large shoulder, hip, knee, ankle and hand) and for abdominal examinations. Dedicated positioning aids for larger extremities are delivered with the coil. UltraFlex Small 18 Ideal for examinations of smaller extremities (e.g. small to medium shoulder, smaller ankle, elbow and hand) and for abdominal examinations. Dedicated positioning aids for smaller extremities are delivered with the coil. This option exchanges the Flex Small & Large 4 coils incl. the Flex Coil Interface from the standard coil configuration for the superior UltraFlex Small & Large 18.

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Part No./Product	Description
	UltraFlex Large 18 The UltraFlex Large 18 can be wrapped around or placed flat on top of the area of interest. This rectangular coil measures approx. 29 cm x 59 cm and connects with only one SlideConnect plug which allows for fast and easy patient preparation. The positioning aids that come with the coil enhance positioning flexibility and help minimize involuntary patient motion artifacts. **UltraFlex Small 18** The UltraFlex Small 18 can be wrapped around or placed flat on top of the area of interest. This rectangular coil measures approx. 19 cm x 41 cm and connects with only one SlideConnect plug which allows for fast and easy patient preparation. The positioning aids that come with the coil enhance positioning flexibility and help minimize involuntary patient motion artifacts.
14458314 **RS CS Cardiac Cine #NX**	This option enables the BEAT sequence to perform highly accelerated 2D Cardiac Cine examinations based on a Compressed Sensing technique. It allows higher temporal resolution imaging in real time or in segmented mode, without compromising on spatial resolution. Protocols are provided for full coverage of the heart within a single breath-hold for quantitative functional assessment. In real-time mode, it is robust against arrhythmia and breathing artifacts. Compressed Sensing Cardiac Cine is based on the BEAT TrueFISP sequence with excellent myocardium-blood contrast. The high acceleration is achieved by sparse, incoherent sampling of k-space. Cine images are created by iterative reconstruction on the GPU of the image reconstruction computer. With "Adaptive Triggering" the full heart cycle can be examined, even in late diastole. Compressed Sensing Cardiac Cine can be combined with Inline Ventricular Function evaluation for inline quantitative assessment of the heart function.
14458152 **RS Cardiac Dot Engine 48/64, USA #T+D**	Cardiac examinations used to be the most complex exams in MR. Now Cardiac Dot Engine supports the user in many ways. Using anatomical landmarks, standard views of the heart, such as dedicated long axis and short-axis views, are easily generated and can easily be reproduced using different scanning techniques. Scan parameters are adjusted to the patient's heart rate and automatic voice commands are given. All of this takes most of the complexity out of a cardiac exam and supports customized workflows that are easy to repeat. Every time. *Guidance View* - Step-by-step user guidance is seamlessly integrated. - Example images and guidance text are displayed for the individual steps of the scanning workflow. - Both images and text are easily configurable by the user *Patient View* - Within the Patient View the user can easily tailor the exam to each individual patient (e.g. patient with arrhythmia, breath hold capability). - Pre-defined Dot Exam Strategies are integrated. The user just selects the appropriate strategy with one click and the queue and the complete scan set-up are automatically updated *AutoFoV (automatic Field of View calculation)* - Based on the localizer images the optimal FoV is automatically estimated. - In case the patient moves during the examination, this step can be repeated at any time *Automated parameter adaptation* - Scan parameters are automatically adapted to the patient's condition (e.g. heart rate) *Novel heart localization method* - On-board guidance visually facilitates anatomic landmark settings which are used for calculation - Automated localization - Automated localization of short-axis views

Part No./Product	Description
	Guided slice positioning - Easy way to match slice positions (short-axis) between cine, dynamic imaging, tissue characterization *Cardiac Views* - Easy selection of cardiac views (e.g. 3 chamber view) during scan planning *Inline Ventricular Function Evaluation* *syngo* Inline VF performs volumetric evaluation of cardiac cine data fully automatically right after image reconstruction. - No user input necessary. If desired, inline calculated segmentation results can be loaded to 4D Ventricular Function Analysis for further review or processing *Inline Time Course Evaluation* - Automatic, real-time and motion corrected calculation of parametric maps with inline technology *Cardiac specific layout for the Exam task* - Automatically chosen layouts show the new physio display and are configured for every step of the exam - Automatic display of images in dedicated cardiac image orientations in contrast to standard DICOM orientations *Adaptive triggering* - Acquisition adapts in realtime to heart rate variations for non cine applications *Automated Naming* - Automated naming of series depending on cardiac views and contrast *Auto Voice Commands* - Auto Voice Commands are seamlessly integrated into the scanning workflow. The system plays them automatically at the right time point. This ensures optimal timing of scanning, breathing and contrast media. The user can monitor which breath-hold or pauses are actually played, and could add pauses between the automatic breath hold commands if necessary *Dot Exam Strategies* The workflow can be personalized to the individual patient condition and clinical need. The following predefined strategies are included. They can be changed at any time during the workflow: - Standard: Segmented acquisition techniques - Limited patient capabilities: switch to realtime and single shot imaging if breath-hold is not possible or arrhythmias occur *Ischemic Heart Disease (IHD) workflow* When used with a gadolinium-based contrast agent (GBCA) approved for cardiac MRI (CMRI), the Ischemic Heart Disease workflow supports the Cardiac Dot Engine by automating the acquisition and display of myocardial perfusion images (stress, rest) and late gadolinium enhancement (LGE) during post-contrast CMRI examinations in patients with known or suspected coronary artery disease. This enables reproducible and robust post-contrast CMRI examinations in patients with known or suspected CAD *Customization* Existing Dot engines can be modified by the user to their individual standard of care.

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Part No./Product	Description
	- Add/remove protocol steps - Change guidance content (images and text) - Change or add Dot Exam Strategies and Decision Points - Modify the Parameter View
14478603 **RS Advanced Cardiac incl. PSIR #NX**	This package contains special sequences and protocols for advanced cardiac imaging including 3D and 4D BEAT functionalities. It supports advanced techniques for ventricular function imaging, dynamic imaging, tissue characterization, coronary imaging, and more. Combining the unique advantages of Tim and BEAT with iPAT and powerful gradients, it allows performing cardiac MR examinations without compromise in image resolution or acquisition speed. BEAT is a unique tool for fast and easy cardiovascular MR imaging. It provides 1-click switch from cine imaging to tagging for wall motion evaluation and 1-click switch from 2D to 3D imaging. BEAT automatically adjusts all parameters associated with the changes. **Cardiac and Vessel Morphology** - 3D aortopathy imaging with free breathing (SPACE) **Global or Regional Wall Motion Analysis with BEAT** - 3D cine acquisition for full CT-like heart coverage - 2D segmented FLASH for visualization of the regional wall motion using various tagging techniques (grid or stripes) **Dynamic myocardial imaging with BEAT** - Ultra-fast, high-SNR sequence for dynamic imaging with GRE EPI contrast for stress and rest exams **Tissue characterization with BEAT** - Robust myocardial tissue characterization with 3D PSIR (phase-sensitive inversion recovery) - Fast and complete coverage of the myocardium with IR 3D FLASH and TrueFISP - Including PSIR HeartFreeze (motion correction) for free-breathing measurements **Coronary imaging with BEAT** - 3D Whole-Heart non-contrast Coronary MRA - 3D Whole-Heart MRA with advanced free-breathing navigator compensating diaphragm shifts during the acquisition (motion-adaptive respiratory gating)
14478617 **RS High bandwidth inversion recovery**	High bandwidth inversion recovery for reduction of susceptibility-induced artifacts. This option enables a high bandwidth inversion pulse in inversion recovery sequences for tissue characterization with the aim to reduce susceptibility artifacts.
14413778 **RS Flow Quantification #Tim**	Special sequences for quantitative assessment of flow including 4D Flow (from SW syngo MR XA30A on). Flow Quantification enables the acquisition of flow encoded images and the evaluation of blood as well as of cerebro-spinal fluid (CSF). Sequences include: - ECG triggered 2D phase contrast with iPAT support - Retrospective reconstruction algorithms for full R-R interval coverage - Maxwell Term Compensation - From SW *syngo* MR XA30A on: 4D Flow protocols including retrospective triggering and navigator based respiratory gating for free-breathing 4D Flow acquisitions.
ML12583 **Deluxe Foam Positioning Kit**	• 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 • 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"

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