

671-B30020 - 671-B30030 - XR-CATH LAB, WITH TURNKEY VAMC SAN ANTONIO, TX

Qty	Item Description
1	<b>Cardiothoracic surgery</b> X-ray angiography system with primary clinical use in cardiothoracic surgery, including application-specific accessories.
1	<b>Artis zeego (A)</b> Floor-mounted, multi-axis C-arm angiography system with very flexible positioning, variable isocenter height, and a high-resolution flat detector. The powerful 100 kW generator and MEGALIX Cat Plus X-ray tube with its new flat emitter technology are the prerequisites for excellent image quality. The CLEAR functionality to optimize the image impression, the CARE package to reduce radiation exposure, and DICOM standards are all included. The system has been prepared for Siemens Remote Service.
1	<b>Sys SW incl cardiac acquisition</b> Imaging system software including cardiac acquisition with frame rates of 7.5, 10, 15, and 30 f/s. Acquisition, display, and storage in 1k/12-bit matrix.
1	<b>DSA / DR (1)</b> Digital acquisition technology and digital subtraction angiography in matrix 1k.

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1	<b>IC Stent</b> IC Stent software for enhanced stent visibility. The IC Stent software can be operated directly at the patient table.
1	<b>Surgery</b> Radiographic system for medical applications with emphasis on surgical and diagnostic radiography, as well as keyhole vascular surgery of the chest.
1	<b>syngo intervent.Oncology Engine Pro</b> This engine bundles the comprehensive functionality for oncological interventions and transcatheter as well as ablative therapies. The package contains a syngo X Workplace and the software applications syngo InSpace 3D, syngo DynaCT, Inroom Control, syngo InSpace 3D/3D Fusion, syngo Embolization Guidance, iPilot (enhanced functionality), Angio Viewer (including syngo iFlow and Scene Compare), as well as syngo iGuide.
1	<b>Upgrade DynaCT Cardiac 30x40</b> Upgrade of a system with existing DynaCT functionality to DynaCT Cardiac for 30x40 FD. syngo DynaCT Cardiac for 30x40 FD uses the proven syngo DynaCT 3D reconstruction algorithms for 3D visualization of ventricles and vessels of the heart from projection images of a rotational angiography from an Artis zee/zeego system with flat detector.
1	<b>syngo iGuide Toolbox</b> syngo iGuide Toolbox contains the functions 'Linked Marker', 'Linked Pointer' and 'Linked Contours' that provide tools that take graphics drawn on the 3D volume and simultaneously display it on the live monitor. These graphical markers allow pretreatment planning on the syngo 3D workstation by marking spots or areas on the 3D volume. The graphics are linked in real time for display on the live image monitor.
1	<b>19in Color Flatscreen Display</b> LCD color flatscreen display with high luminance and extended field of view.
1	<b>19in Color Flatscreen Display</b> LCD color flatscreen display with high luminance and extended field of view.
1	<b>syngo 3D Basic SW-License</b> Basic 3D viewer platform for display of 3D series with Multiplanar Reconstruction (MPR), Surface Shaded Display (SSD) and Maximum Intensity Projection (MIP).
1	<b>syngo keyboard, USA</b> Keyboard with special syngo keys.
1	<b>Image Memory Extension R640 XWP</b> Option to expand image memory by 300 GB.
1	<b>VA kit for syngo XWP VB21</b> Second documentation set for deliveries to the Veterans' Affairs Administration Hospitals in the U.S.
1	<b>syngo Aortic ValveGuide</b> syngo Aortic ValveGuide is an application that supports TAVI procedures.
1	<b>3D / Dynavision</b> Native or subtracted (with DSA option only) rotational angiography with angle and ECG triggering, generating the image data required for 3D reconstruction.
1	<b>Detector30x40inclLaserCrossh.(MA)</b> High-resolution, dynamic flat detector for fully digital imaging chain, with integrated, removable grid and laser crosshairs as a positioning aid. CAREwatch measuring chamber for detection of the dose-area product. MEGALIX 3-focus high-performance X-ray tube assembly, rotatable angio collimator including CAREfilter, and integrated collision protection.
1	<b>Acquistion 2k</b> The 2k option enables acquisition and storage of single images and series with a resolution of up to 4.76 Mega pixel (2,480 pixel x 1,920 pixel) at up to 7.5 f/s.

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1	<b>Control Cabinet Artis Multi Axis</b>
1	<b>Table OR Version</b> Floor-mounted swivelling patient table with telescopic foot, floating and tiltable tabletop (in two axes); motor-driven stepping for digital peripheral angiography. Table control module, power-assisted.
1	<b>PERISTEPPING / PERIVISION</b> Peripheral digital angiography with stepping and online subtraction display.
1	<b>Table Top &amp; Mattress, Narrow</b> Carbon fiber tabletop in narrow design with head-end recess, including matching special foam material mattress. Mattress including cover.
1	<b>Foot Switch Monopl. (Cable)</b> For release of fluoroscopy, exposure and table brake as well as a configurable additional function. Cable connection.
1	<b>Connection Kit - 2nd Foot Switch</b> Connection kit for connecting a second tableside foot switch.
1	<b>Foot Switch Monopl.(Wireless)</b> For release of fluoroscopy, exposure and table brake as well as a configurable additional function. Wireless connection via radio communication.
1	<b>Large Display with DCS</b> 56" color flat screen display (including cables) for the examination room, installed on a ceiling-mounted, longitudinally mobile, swiveling, rotating, and height-adjustable display suspension system (DCS). Direct selection of display configurations (max. 12) via the tableside control module.
1	<b>LD Input Sensis</b> This connection kit is needed to display the video signal from a unit, for example the AXIOM Sensis cardiac catheter recording system, on a single display or on a large display in the display suspension system (DCS) in the examination room. Note the following conditions if image content from third-party provider video signals are to be displayed on the Artis displays: - The display of external video signals depends on the operational state of the Artis system. If the Artis system has a malfunction or is shut down, the display of external video signals is not available. For this reason, do not feed the video signal into the Artis system if lacking the external video signal could result in a hazardous situation. - A third-party provider's unit may be connected only if it corresponds to the specifications of the video interface (e.g., at the MDM). - The connection may only be established by a Siemens service technician. Note: The connection must be made with fiber-optic cables to ensure that the unit's galvanic isolation is maintained. The fiber-optic cables must be ordered separately. - A third-party provider's unit must be connected by a technician from the third-party provider or by a hospital technician responsible for the equipment. - It is strongly recommended that a test of image quality be performed by the third-party provider prior to start-up. This test ensures that the required image quality is achieved. - The system configurator is responsible for ensuring that applicable standards are maintained in the current version, e.g. 4 kV insulation. Siemens will not be held liable for the inclusion of third-party provider units with respect to image quality and their suitability for clinical diagnosis.
1	<b>LD Input MMWP / XWP</b> This connection kit is needed to display the video signal from a unit, for example the syngo X Workplace, on a single display or on a large display in the display suspension system (DCS) in the examination room. Note the following conditions if image content from third-party provider video signals are to be displayed on the Artis displays: - The display of external video signals depends on the operational state of the Artis system. If the Artis system has a malfunction or is shut down, the display of external video signals is not available. For this reason, do not feed the video signal into the Artis system if lacking the external video signal could result in a hazardous situation. - A third-party provider's unit may be connected only if it corresponds to the specifications of the video interface (e.g., at the MDM). - The connection may only be established by a Siemens service technician. Note: The connection must be made with fiber-optic cables to ensure that the unit's galvanic isolation is maintained. The fiber-optic cables must be ordered separately. - A third-party provider's unit must be connected by a technician from the third-party provider or by a hospital technician responsible for the equipment. - It is strongly recommended that image quality be tested by the third-party provider prior to start-up. This test ensures that the required image quality is achieved. - The system configurator is responsible for ensuring that applicable standards are maintained in the current version, e.g. 4 kV insulation. Siemens will not be held liable for the inclusion of third-party provider units with respect to image quality and their suitability for clinical diagnosis.

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3	<b>LD Input extern analog Kit</b> Analog input and connection kit for external analog video signals including cable and video splitter.
6	<b>LD Input external digital kit</b> Digital input and connection kit for an external digital DVI-D video signal including cable and DVI-D video splitter.
1	<b>LD input VGA ext. long (ECG)</b> Analog input for an analog VGA video signal, e.g. from the ECG.
1	<b>LD input VGA ext. (ultrasound)</b> Analog input for an analog VGA video signal, e.g. from the ultrasound.
1	<b>LD Bypass Display (rear)</b> Monochrome 19" replacement display incl. 36 m cable and transceiver for display installation on the rear of the DCS for the Large Display.
1	<b>ACE Cable Set in Equipm.Room</b> Image system interface to the displays in the control room if the image system is installed in the equipment room.
1	<b>C-Room DVI 1xBWD-19 (Live) -36m</b> One monochrome 19" flat-screen display with blue background color.
1	<b>Live+Ref Video Interface to OEM (1)</b> Video interface output for the video signals of Artis zee Live and Ref for connecting OEM products, with additional display of these signals in the control room or other rooms. Monoplane (1) design for 2 video signals. All signals are provided with video isolation.
1	<b>ECG Interface</b> Recording, storage and display of an ECG lead. Displayed together with the image information on a single monitor.
1	<b>Table support (ECG interf. box)</b> Holder for the ECG interface when using an OEM measurement system in the examination room.
1	<b>LV analysis</b> Analysis of the left ventricle with distance measurement and calibration.
1	<b>Vessel analysis</b> Vessel analysis with determination of degree of stenosis, distance measurement and calibration.
1	<b>Fluoro Loop (1)</b> Storage and review of dynamic fluoroscopic sequences (Fluoro Loop). The maximum storable fluoroscopic time depends on the selected pulse rate, e.g. 34 s at 30 p/s, 68 s at 15 p/s (VC21 software required). Note: With VC14 software, the values are 17 s at 30 p/s, 34 s at 15 p/s.
1	<b>Automap</b> Automatic stand positioning depending on the selected reference image and automatic reference image selection depending on the stand positioning.
1	<b>DICOM HIS / RIS</b> Import of patient/examination data from an external RIS/HIS patient management system with DICOM MWL (Modality Worklist).
1	<b>DICOM MPPS</b> Feedback of examination status via DICOM MPPS (Modality Performed Procedure Step) to an external RIS/HIS patient management system. Data such as the dose-area product can be transferred to the RIS.
1	<b>DICOM Print</b> Provision of DICOM Print service for connection to a laser camera or a network printer (postscript).

Qty	Item Description
1	<b>LB rad. protection w/ pivot arm</b> For shielding the lower body against scattered radiation within the examiner's moving range. Specially designed for avoiding collisions with the tube during oblique projections, therefore especially suited for cardiology.
1	<b>Interface for C-Room Operation(MA)</b> Interface for connecting the optional system control from the control room.
1	<b>C-Room Table Support Short</b> Rail profile for hanging control modules (e.g. the table module) in the control room.
1	<b>Control room emerg. stop module</b> Safety button for switching off all system functions from the control room.
1	<b>Hand switch manual</b> Additional hand switch for radiation release and additional control functions.
1	<b>Footswitch Single Plane</b> Additional footswitch for radiation release including configurable control function.
1	<b>Control Room Injector Interface</b> Interface for controlling the contrast medium injector from the control room.
1	<b>syngo Keyboard, English - US</b> Keyboard with special syngo keys.
1	<b>VOLCANO s5i Cable Set</b> Cable set for operating the s5i system.
1	<b>I.V. Pole</b> Stainless steel infusion bottle holder with handle bar and 4 retaining rings. For mounting to the accessory rail.
1	<b>Cable clips # KOORDINAT M (5)</b> Prestressed cable clips for fixing the ECG cables to the tabletop.
1	<b>Body module, narrow</b> Table insert with attached accessory rails for mounting control modules in the 'abdominal' part of the patient positioning tabletop.
1	<b>Arm Support</b> Carbon-fiber arm rest for cardiology and arm angiography to be placed under the mattress. The single-side arm rest is used for the Sones approach in cardiology and for arm angiography. It is made of radiolucent carbon-fiber material that is easy to clean. It includes additional support pads made of the same material as the mattress. The 1 m long arm rest is positioned under the mattress at the shoulder level on the right or left side and is stabilized by the weight of the patient. Max. weight capacity: 5 kg. Weight: 0.8 kg
1	<b>Armholder (pair)</b> Two arm holders for comfortable lateral arm positioning along the patient's body.
1	<b>VA kit Artis zee systems</b> Second set of documentation for deliveries to the Veterans' Affairs Administration Hospitals in the U.S.
1	<b>VoMo Artis zeego on concrete</b>
1	<b>Initial onsite training 32 hrs</b> 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.

Qty	Item Description
1	<b>Follow-up training 12 hrs</b> Up to (12) 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.
5	<b>Additional onsite training 24 hours</b> Up to (24) hours of on-site clinical education training, scheduled consecutively (Monday - Friday) during standard business hours for a maximum of (4) imaging professionals. Training will cover agenda items on the ASRT approved checklist if applicable. This educational offering must be completed (12) months from install end date. If training is not completed within the applicable time period, Siemens obligation to provide the training will expire without refund.
1	<b>INJECTOR, PROVIS, PEDESTAL SYSTEM, ODU</b>
1	<b>Eaton Powerware 9390 160 kVA UPS</b> Includes UPS, battery, maintenance bypass panel, and one year on-site parts and labor coverage (24x7) by Eaton Powerware. This product has been tested and verified for compatibility with the following Siemens' products: Artis Zee. Complete system backup without interruption. One UPS per lab.
1	<b>Blue anti-fatigue floor mat for hospital</b>
1	<b>RaySafe i2 Personal Dosimetry</b> The RaySafe i2 package enables continuous improvement of working procedures in X-ray environments by providing staff with personal, real-time information about scattered X-ray dose. The Real-Time Display enables immediate changes in working procedures in order to minimize dose. The Personal Dosimeters supply the Real-Time Display with information about each individual's personal dose. The Dose View software makes it easy to review radiation data. The optional Dose Manager software makes it easy to report, export and archive radiation data. The RaySafe i2 system includes: 1 x RaySafe i2 Real-Time Display 4 x RaySafe i2 Dosimeters 1 x Dose View software package 1 x RaySafe i2 Cradle 1 x RaySafe i2 Mounting Rack Installation and a one (1) year warranty provided by Unfors
4	<b>Additional RaySafe i2 Dosimeter</b> Additional RaySafe i2 Dosimeter
1	<b>Standard Rigging zeego</b>
1	<b>One complimentary biomedical tuition is included with the purchase of this system. This training must be completed before the end of the warranty period.</b>
1	<b>Airfare for Complimentary Biomed Training 5 round trip flights from SAT to RDU at roundtrip=</b>
1	<b>Lodging for Complimentary Biomed Training      night for 50 nights =</b>
1	<b>Offset Initial Training 32 hrs</b>

#### OPTIONS:

Qty	Item Description
1	<b>Tabletop, Wide</b> Carbon fiber patient positioning tabletop wide with straight design up to the head end for universal angiographic applications and maximum comfort even for obese patients. Including set of body straps with three Velcro straps for securing and compressing the patient.

Qty	Item Description
1	<b>Mattress for Tabletop, Wide</b> Matching, special-foam mattress, 8 cm, made of open-pore polyurethane material. Mattress including cover.
1	<b>Anesthetic arm, bendable</b> Fixture for shielding the head area against the abdominal area of the patient during anesthesia.
1	<b>Body module</b> Table insert with attached accessory rails for mounting control modules in the 'abdominal' part of the patient positioning tabletop.
1	<b>Table extension</b> Instrument holder for positioning at the foot end of the patient table.
1	<b>Upper Body Rad. Protection Artis-F</b> To protect the upper body against scattered radiation within the operating range of the examiner, e.g. during interventional procedures.
1	<b>3 Reflector OR Lamp, 115V</b> Ceiling-mounted OR lamp, 3 spots, with variable focusing of spot size for optimum illumination especially in deep lesions.

Part No. / Product	Description
Cardiothoracic surgery	<p>The accessories consist of:</p> <ul style="list-style-type: none"> <li>- ECG cable clips</li> </ul>
Artis zeego (A)	<p><b>System configuration</b> The highly flexible single-plane C-arm system for digital acquisition techniques is designed to meet the requirements of state-of-the-art angiography and interventional procedures.</p> <p>C-arm floor-mounted stand:</p> <ul style="list-style-type: none"> <li>- Innovative, compact C-arm, variable isocenter height.</li> <li>- Stand can travel in RAO/LAO, Cran/Caud, x-, y-, and z-axes.</li> <li>- 5 programmed work positions and additional 50 user-defined work positions as well as 3 direct positions.</li> <li>- Integrated, computer-aided collision monitoring ICP (Intelligent Collision Protection).</li> <li>- Stand rotation <math>\pm 90^\circ</math> minimum.</li> <li>- Double oblique projections: LAO/RAO <math>\pm 200^\circ</math> (maximum angulations vary depending on working position) and <math>+45^\circ</math> cranial up to max. <math>-65^\circ</math> caudal (maximum angulations vary depending on working position).</li> <li>- Variable C-arm speeds up to 25°/s.</li> <li>- Variable longitudinal speed up to 15 cm/s, maximum 28 cm/s in Perivision mode.</li> <li>- Maximum speed for rotational angiography 60°/s.</li> <li>- Variable source-to-detector distance between 90 cm and 120 cm.</li> <li>- Isocenter/floor distance adjustable between 103 and 147 cm.</li> <li>- Focus-isocenter distance 75 cm.</li> </ul> <p><b>Operation</b> An ideal workflow requires full user operation capabilities for the system including imaging system and generator under sterile conditions in the examination room. That way the user is able to operate the system by himself without the need of leaving the examination room. The intuitive tableside <i>syngo</i> operating elements allow for managing the whole process from preparation of the patient to image post-processing in a simple and time efficient way.</p> <p>In the examination room: Complete system operation through modular control elements directly at the patient table for controlling C-arm movements, patient table and multileaf collimator. Touchscreen features syngo-based operation using multi-functional joystick for operation of the imaging system, including post-processing and quantification as well as selection of the organ programs. The touchscreen is specifically configurable to individual clinical requirements.</p> <p>In the control room: Standard Siemens <i>syngo</i> control via keyboard and mouse for all imaging system functions such as image post-processing, archiving and configuring of organ programs.</p> <p><b>Displaying system data</b> Data regarding system and table geometry, dose data with CAREwatch, as well as system messages, are shown integrated on the display in the examination room.</p> <p><b>Imaging system</b> High-resolution digital imaging system with CLEAR technology, DICOM network connection and <i>syngo</i> user interface.</p> <p>In order to provide highest level system availability, the imaging system consists of two independent computer</p>



Part No. / Product	Description
<p>(Continued)</p> <p>Artis zeego (A)</p>	<p>systems that manage central tasks such as real-time image processing during fluoroscopy or acquisition as well as post-processing and networking functionality separately from one another. This ensures the system performance will always meet the highest possible demands.</p> <p><b>Image storage capacity</b> 25,000 images in 1k/12 bit image matrix (extendable).</p> <p><b>Operating modes</b></p> <ul style="list-style-type: none"> <li>- Digital pulsed fluoroscopy with pulse frequencies of 10 p/s, 15 p/s, and 30 p/s in 1k/12 bit matrix.</li> <li>- Overlay fade: On-line overlay of active fluoroscopy and reference image.</li> </ul> <p><b>CARE package</b> Siemens follows the ALARA principle: "As Low as Reasonably Achievable"; the CARE package (Combined Applications to Reduce Exposure) was developed based on this research and development principle to protect the examiner and the patient.</p> <p>Dose saving</p> <ul style="list-style-type: none"> <li>- CAREvision: Pulsed fluoroscopy with additional, reduced pulse rates of 7.5 p/s to 0.5 p/s. Adaptation of pulse rate to the current application requirements for significant reduction of radiation exposure, especially during interventional procedures.</li> <li>- CAREprofile: Radiation-free positioning of the primary and semi-transparent diaphragms by means of graphic display in the LIH (Last Image Hold). Collimator shutters and semi-transparent filters can be adjusted as a graphical overlay on the last-image-hold without any need for fluoroscopy.</li> <li>- CAREposition: Object repositioning without radiation through graphic display of the X-ray center beam and the image edges in the LIH (Last Image Hold). CAREposition makes possible the repositioning of an object under visual control without radiation. In case of table movements the current position of the center beam and the image edges are superimposed on the LIH image as orientation points.</li> <li>- CAREfilter is intelligent control software that helps minimize X-ray dose without negative impact on image quality. During fluoroscopy and acquisition special copper prefilters are inserted into the X-ray beam depending on current X-ray transparency calculated by CAREMATIC. The five-step adaptive Cu prefiltration is used to reduce the equivalent dose of the skin and improve radiation quality through dose saving of low-energy X-ray radiation: Filter steps: 0.1; 0.2; 0.3; 0.6; 0.9 mm Cu. Selection is automatic depending on absorption. This is necessary to ensure that the optimal prefilter value is always active. This automation makes work easier for the user because the given optimal filter setting need not be adjusted manually.</li> <li>- CAREwatch: Display of the measured dose-area product and the calculated patient air kerma reference on the flat screen display. Electronics unit with DIAMENTOR measurement chamber integrated in the collimator housing for dose acquisition. Configurable screens on the data display and imaging system monitor: During fluoroscopy: Air kerma reference rate. During fluoroscopy interval: Accumulated air kerma reference or dose-area product or percentage of the limit value for the air kerma reference (sum of fluoroscopy and acquisition). The critical air kerma reference to avoid X-ray-related skin injury is at about 2 Gy. CAREwatch consistently calculates and displays the actual accumulated air kerma reference. This helps the user to detect a potential patient hazard quickly and with certainty.</li> <li>- Low Dose Acquisition: enables dose savings of up to 60 % during the examination. The low dose acquisition protocol can be released directly with the footswitch.</li> </ul> <p>Dose monitoring</p> <ul style="list-style-type: none"> <li>- CAREguard: offers the possibility of establishing three limit values for the air kerma reference. If the accumulated air kerma reference exceeds the configured limit value, a warning appears on the live display and tableside on the touchscreen control. This provides ideal air kerma reference monitoring during the examination.</li> </ul> <p>Dose reporting</p> <ul style="list-style-type: none"> <li>- CAREreport: part of the DICOM Structured Report; displays the dose information in DICOM format after every examination. This creates an integrated DICOM data set consisting of images and dose information, which be sent together to a DICOM archive. The display of dose information in DICOM format permits the flexible</li> </ul>

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<p><i>(Continued)</i></p> <p><b>Artis zeego (A)</b></p>	<p>analysis and further processing via a DICOM-capable analysis software/database.</p> <p><b>CLEAR package</b> The CLEAR package enables optimized image quality through real-time processing of the image data without increasing the radiation dose.</p> <ul style="list-style-type: none"> <li>- CLEARcontrol: The new histogram analysis provides a more homogeneous image impression by harmonizing over- and underexposed areas of the image. This is done fully automatically, thus eliminating any further manual user corrections through windowing.</li> <li>- CLEARview: Dose-dependent filtering of the image data efficiently suppresses image noise, enabling clear, sharp images, even for low-dose acquisitions.</li> <li>- CLEARvessel: Every pixel is analyzed in real time, and vessel edges are shown in high contrast without adding noise to the image.</li> <li>- CLEARmotion: Fine moving structures, such as small vessels and guidewires, are detected in the image and motion artifacts are suppressed efficiently. The visibility of small moving vessels and guidewires is improved significantly during fluoroscopy.</li> </ul> <p><b>Image processing</b></p> <ul style="list-style-type: none"> <li>- Positive/negative image display, windowing, contrast/brightness, electronic display (shutter), image shift (roaming), vertical and horizontal image inversion, magnifying glass, and zoom functions.</li> <li>- Automatic and manual pixel shift, remask, peak opacification for iodine contrast (MaxOpac) and CO<sub>2</sub> contrast (MinOpac), adding of the anatomical background (landmark) from 0 to 100% (only in connection with DSA option).</li> <li>- Storing of single images as reference images also during fluoroscopy.</li> <li>- Quantification: angle/length measurement, automatic and/or manual calibration.</li> <li>- Text functions: user-definable image annotation, free annotation or by means of text components, comments line for the image, R/L display.</li> <li>- Fast and direct access to all series, single images, and photo file via MULTIMAP both in the examination and in the control room.</li> </ul> <p><b>DVD / CD burner (DICOM)</b> DVD drive for automatic digital image storage in the background on DVD-/CD-ROM for off-line data exchange in DICOM format.</p> <p><b>Networking</b> Network interface (1000 BaseT) with the following integrated DICOM services:</p> <ul style="list-style-type: none"> <li>- DICOM Send: sending of images into the DICOM network. The DICOM Send function enables fully automatic transfer of generated image data to a DICOM archive or a DICOM workstation. The user can perform his examinations without interruption, while the system is fully automatically transferring the images to the archive scene by scene. This is a background process, and thus does not interfere with the ongoing fluoroscopy or acquisition.</li> <li>- DICOM Storage Commitment (StC): feedback from the image archive. The DICOM StC function automatically gives feedback on whether the generated image data were successfully transferred. This provides the necessary certainty to the user before deleting the acquired images locally in the imaging system.</li> <li>- DICOM Query / Retrieve: Retrieval of archived images from a digital archive or from a workstation. Already archived image data from a previous examination can be fully retrieved and is then available for review and processing. The user can request CT or MR system images from the archive and display the data as a reference image in the examination room. There is no need for a separate workstation.</li> <li>- DICOM Structured Report: All the quantification results obtained on the system as well as all dose information on the individual radiation releases can be saved in DICOM SR (enhanced SR) format and transferred to a DICOM network.</li> </ul> <p><b>Note concerning DICOM interface(s)</b> The description in the DICOM Conformance Statement downloadable from the Internet is exclusively binding for the functionality of the DICOM interface(s).</p> <p>Functionalities across interfaces with/between partner systems require explicit validation, since the interpretation of</p>

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<p><i>(Continued)</i></p> <p><b>Artis zeego (A)</b></p>	<p>the interface by the partner/target system is not part of the product's responsibility.</p> <p>A modification of the interface that might be required is not included in the offer; e.g. for the rare case, that available configurations are not sufficient. With regard to expenses for interface configurations that might be required, the agreements on maintenance/service of the product apply.</p> <p><b>X-ray generator</b> Microprocessor-controlled high-frequency X-ray generator with automatic dose rate control.</p> <ul style="list-style-type: none"> <li>- 100 kW at 100 kV (DIN 6822), nominal power max. 80 kW (100 kV, 800 mA, 0.1 s) with Megalix tube and the newest flat emitter technology.</li> <li>- SID tracking (automatic tube current adaptation to source-to-image receptor distance).</li> <li>- CAREMATIC automatic X-ray control system for fully automatic calculation and optimization of exposure data based on fluoroscopic data.</li> <li>- Patient transparency monitoring.</li> <li>- Tube load monitoring with indication in the data display.</li> </ul> <p>The optimal X-ray parameters including appropriate kV-values depend on the transparency of the patient at the current angulation, measured during fluoroscopy. These parameters are continuously being calculated and updated. Test shots are no longer required. This achieves high image quality and minimum radiation exposure for physician and patient with every exposure release.</p> <p><b>Accessories included in the scope of delivery</b></p> <ul style="list-style-type: none"> <li>- Unilateral armrest</li> <li>- Infusion bottle holder</li> <li>- Additional hand switch for radiation release and additional control functions.</li> </ul> <p><b>Siemens Remote Service SRS™</b> Prepared for Siemens Remote Service SRS™ (during warranty, then with service contract):</p> <ul style="list-style-type: none"> <li>- Hardware and software remote diagnosis.</li> <li>- System remote configuration, e.g. adding of a DICOM node.</li> <li>- Early warning system ensuring system operation.</li> </ul> <p><b>syngo Evolve for Artis zee</b> syngo Evolve is a service feature that is offered as a separate sales option for all systems of the Artis zee family. It is a key component of our upgrade strategy and allows the customer to take advantage of technological advancements.</p> <p><b>Customer Care. Life - the customer care solution by Siemens Healthcare</b> From the moment you purchase your Siemens system you will benefit from many services that are offered by Customer Care. Life*, e.g.:</p> <ul style="list-style-type: none"> <li>- initial application training,</li> <li>- interactive e-learning for various applications,</li> <li>- free customer magazines,</li> <li>- arrangements for clinical training via a global network,</li> <li>- and free trial licenses</li> </ul> <p>You will find detailed information on our e-learning program and further details on general Customer Care. Life services on the internet.</p> <p>* Not all services of the Customer Care. Life offerings are necessarily available for all systems.</p>
<p><b>DSA / DR (1)</b></p>	<p>Digital acquisition technology with frame rates of 0.5 to 7.5 f/s in 1k/12 bit matrix and digital real-time filtration. Single image and serial acquisitions with time-controlled and manually variable frame rate.</p> <p>The 1k image matrix with a bit depth of 12 bits allows an excellent image contrast by using 4,096 shades of grey. Thus, the image quality meets highest expectations in angiography and fulfills all prerequisites for precise</p>

Part No. / Product	Description
<p><i>(Continued)</i></p> <p><b>DSA / DR (1)</b></p>	<p>diagnostics and safe interventions.</p> <p>Digital subtraction angiography with frame rates of 0.5 to 7.5 f/s, including pixel shift, remask, roadmap, peak opacification for iodine contrast (MaxOpac) and CO<sub>2</sub> contrast (MinOpac); adding of the anatomical background (landmark) from 0 to 100%.</p> <p>With software version VC21 and higher, the following additional functions are available with Roadmap:</p> <ul style="list-style-type: none"> <li>- DSA image can be selected as a mask for Roadmap</li> <li>- Zoom can be changed during Roadmap</li> <li>- Catheter and vascular contrast can be changed separately</li> </ul> <p>Unexpected patient movements in DSA acquisitions will deteriorate image quality. Although this can be corrected via manual pixel shift, it is still inconvenient and time consuming for the user. Auto Pixelshift solves this challenge easily maintaining optimal image alignment.</p>
<p><b>syngo intervent.Oncology Engine Pro</b></p>	<p>Contents:</p> <ul style="list-style-type: none"> <li>- syngo X Workplace with InSpace 3D Flash RT (including syngo iIdentify):</li> </ul> <p>The functionality of the syngo X Workplace can be extended with additional software functions to suit specific user or clinical needs in angiography, surgery, and cardiology. The use of the licensed software is limited exclusively to the specific syngo X Workplace included with this configuration.</p> <p>The base viewing system can be extended by adding a wide range of application options.</p> <p><b>syngo X Workplace PC</b> High-performance workstation based on Windows XP Professional with upgraded 6/12 GB RAM and hard drive with 147 GB/300 GB for image data. The workstation is equipped with an Open GL accelerator board to support 3D applications. To exchange medical images on DICOM-compatible CD-Rs and DVDs, the system is equipped with a CD/DVD burner.</p> <p>syngo X Workplace can be connected to an existing network via Gigabit/100 Mbit Ethernet.</p> <p><b>syngo X Workplace Basic User Software</b> The syngo X Workplace software features an intuitive and thus easy to learn user interface developed from prototypes tested in close cooperation with users.</p> <p>Standard functions such as filming or image review, and optional clinical application software, are performed in individual processes on dedicated task cards. A number of functions and input parameters, as well as the language used, can be selected according to individual requirements.</p> <p><b>Package comprising the following software licenses</b> Basic software with CD and dongle for the following functions:</p> <ul style="list-style-type: none"> <li>- Patient Browser</li> <li>- Filming</li> <li>- Viewer</li> <li>- System services</li> </ul> <p>Patient Browser:</p> <ul style="list-style-type: none"> <li>- Patient management.</li> <li>- DICOM communication with Send, Receive, Query/Retrieve, Print.</li> <li>- Reading of CDs/DVDs.</li> <li>- Module for writing DICOM CDs/DVDs for data exchange. Writing is in background mode.</li> </ul> <p>Filming: A virtual filmsheet shows a 1:1 display of the film sheets to be printed. This permits an effective preview of the filming job and the windowing of images, as well as providing a large number of evaluation functions.</p> <p>Image Review:</p>

Part No. / Product	Description
<p><i>(Continued)</i></p> <p><b>syngo intervent.Oncology Engine Pro</b></p>	<p>Image Review supports interactive 2D review, evaluation and documentation functions. Multiple studies from the same patient can be displayed side-by-side for comparison.</p> <ul style="list-style-type: none"> <li>- Image display: 1.024<sup>2</sup> screen matrix, configurable with up to 64 image segments.</li> <li>- CINE display: Automatic or interactive dynamic presentation technique for the visualization of time and volume series.</li> <li>- Synchronized viewing of multiple series.</li> <li>- Measurement and annotation: Text annotation; distance, angle, circle, ROI and pixel lens, depending on information available from the acquisition system.</li> </ul> <p>System services: Microsoft Office 2003 Word, Excel, PowerPoint plus Outlook are supported (not provided!).</p> <ul style="list-style-type: none"> <li>- Any user-selectable file, such as cardiac, DSA or InSpace AVI video sequences, can be burned to CD to prepare quality presentations and demos of pathologies.</li> <li>- Network module: For connection to a local Ethernet (Gigabit or 100 Mbit) for communication with networked archives, printers, diagnostic and therapy workstations, and teleradiology routers.</li> </ul> <p>Scope of functions</p> <ul style="list-style-type: none"> <li>- Network stations can be configured.</li> <li>- Unlimited selection of stations.</li> </ul> <p><i>syngo</i> InSpace 3D Flash RT  <i>syngo</i> InSpace 3D Flash RT facilitates the interactive 3D reconstruction and visualization in real time of a volume in volume rendering technique, MPR, and MIP. InSpace 3D is focused to support the interventional radiologist and neuroradiologist in the angio lab.  Based on dedicated acceleration hardware the primary reconstruction results are available in full diagnostic quality in the examination room within 18 seconds for high contrast images and less than one minute for soft tissue DynaCT images. Subsequent secondary reconstructions are available even faster.</p> <p>The application facilitates interactive volume rendering, accelerated by a high-end 3D graphics card. It offers support for large data records of up to 1,600 images (512 x 512 matrix).</p> <p><b><i>syngo</i> iIdentify (Dual Volume Visualization)</b>  Enables the differentiation between two high-contrast 3D objects that have virtually the same contrast density and allows the display of one low contrast and one high contrast volume in one view. <i>syngo</i> iIdentify enables clear differentiation between contrast-filled vessels, bones, stents and coils. Furthermore, visualization of the anatomical structure of tumors in combination with the feeding vessels becomes possible.</p> <p>Features:</p> <ul style="list-style-type: none"> <li>- Reconstruction protocols, for visualization of vessels, bones, clips and coils.</li> <li>- The result of the reconstruction can be native or subtracted.</li> <li>- Modification of reconstruction area to allow zoom via reconstruction.</li> <li>- Visualization with shading and light source for an improved three-dimensional impression.</li> <li>- Interventional volume measurement.</li> </ul> <p>Image data:</p> <ul style="list-style-type: none"> <li>- Volume data from AX, CT, MR, and PET modalities.</li> <li>- Loading of two volume data sets simultaneously.</li> <li>- Layouts: single (1on1), double (2 on1) and quadruple (4on1) for MPR display.</li> <li>- Two displays are supported for simultaneous display of two volumes side-by-side.</li> </ul> <p>Image display modes:</p> <ul style="list-style-type: none"> <li>- VRT, Color VRT, MIP, MinIP, and MPR rendering.</li> <li>- Thin slice renderings for VRT, MIP, and MinIP.</li> <li>- Variable light source.</li> <li>- Shading effects.</li> </ul>

Part No. / Product	Description
<p><i>(Continued)</i></p> <p><b>syngo intervent.Oncology Engine Pro</b></p>	<p>Volume editing:</p> <ul style="list-style-type: none"> <li>- Cut planes.</li> <li>- Editing of clip planes and control volumes.</li> <li>- ROI punching.</li> </ul> <p>Presets:</p> <ul style="list-style-type: none"> <li>- Series-specific bookmarks, to store and retrieve volume visualization parameters.</li> <li>- Global presets for series-unspecific application of volume visualization parameters.</li> </ul> <p>Output:</p> <ul style="list-style-type: none"> <li>- Radial ranges, including macro range definitions.</li> <li>- 2D and 3D measurements, measurement grid, distance measurement and annotations.</li> <li>- AVI format export with selectable compression format and compression ratio.</li> <li>- TIFF, PNG, BMP, JPEG image export.</li> <li>- Send to film sheet.</li> </ul> <p><b>Advantages and features of InSpace 3D Flash RT</b></p> <p>In angiography the three-dimensional information is used for diagnosis, planning of therapy and documentation in the field of endovascular and non-endovascular interventional procedures.</p> <p>Diagnosis and treatment can be performed in one session, thus providing a major advantage through the fully integrated workflow.</p> <ul style="list-style-type: none"> <li>- Transfer of the projection angle to the C-arm stand.</li> <li>- Indication whether the angulation can be achieved at the C-arm without collision with the patient or table.</li> <li>- Interventional volume measurement.</li> </ul> <p><b>InSpace 3D accessories</b></p> <p>Includes the accessories required for 3D reconstruction and visualization:</p> <ul style="list-style-type: none"> <li>- Plexiglas calibration phantoms</li> <li>- Line phantom for image quality control</li> <li>- Form filter</li> <li>- 3D data link</li> </ul> <p><b>syngo iPilot</b></p> <p>For any projection, zoom, SID and table position the physician can create an iPilot - view, which is superimposed on the live fluoro image. Via a fade with the joystick the degree of visibility can be determined. The physician can perform the procedure with more confidence. No extra contrast is needed to make the vessel tree visible.</p> <p>When the guidewire is visible on the live screen in the area the 3D reconstruction, the physician can press the "iPilot" button on the tableside control at any time.</p> <p>An image is automatically calculated and sent to the reference storage of the imaging system. Via the Overlay Fade functionality the physician can show the 3D and 2D live information in one image.</p> <p><b>DICOM</b></p> <p>Industrial standard for the transmission of information between DICOM-compatible equipment from different manufacturers. The scope of functions is described in detail in the DICOM Conformance Statement and in the standard version includes the Transmission/ Reception, Query/ Retrieve and Basic Print functions.</p> <p><b>Note concerning DICOM interface(s)</b></p> <p>For diagnostic purposes, only hardcopy cameras/laser printers explicitly approved for this system may be used.</p> <p>The description in the DICOM Conformance Statement downloadable from the Internet is exclusively binding for the functionality of the DICOM interface(s).</p> <p>Functionalities across interfaces with/between partner systems require explicit validation, since the interpretation of</p>

Part No. / Product	Description
<p><i>(Continued)</i></p> <p><b>syngo intervent.Oncology Engine Pro</b></p>	<p>the interface by the partner/target system is not part of the product's responsibility.</p> <p>A modification of the interface that might be required is not included in the offer; e.g. for the rare case that available configurations are not sufficient. With regard to expenses for interface configurations that might be required, the agreements on maintenance/service of the product apply.</p> <p><b>Note on software usage</b></p> <ul style="list-style-type: none"> <li>- <i>syngo</i> DynaCT: <i>syngo</i> DynaCT is especially suited to support radiologists and neuro-radiologists during interventional procedures in the angiography suite with both endovascular and non-endovascular procedures. <i>syngo</i> DynaCT provides enhanced decision making during oncology procedures such as chemoembolization and RF-ablations. In neuroradiology, <i>syngo</i> DynaCT allows the visualization of bleeds, the ventricular system of the brain and microstent placement.</li> </ul> <p>With <i>syngo</i> DynaCT it is possible to visualize a density difference of 10 HU (Hounsfield Units) of an object 5 mm in size, or 5 HU for an object 10 mm in size, in a Thick-MPR display (measured with a CATPHAN 16 CT phantom with the CTP 515 module).</p> <p>In software version VC21 and higher, DynaCT also offers:</p> <ul style="list-style-type: none"> <li>- a new reconstruction algorithm optimized for fan beam geometry</li> <li>- 20sDR-H 109 kV for native DynaCT e.g., for detecting bleeding</li> <li>- faster 3D acquisition in 4x4 Binning mode</li> </ul> <ul style="list-style-type: none"> <li>- <i>syngo</i> iGuide with InSpace 3D/3D Fusion: <i>syngo</i> iGuide provides a menu guided intuitive 3 step approach for consistent needle results:</li> </ul> <p>Step 1: Definition and check of the needle path on a DynaCT or an external CT dataset.</p> <p>Step 2: Check of automatically proposed progression views that will be used for monitoring the needle procedure.</p> <p>Step 3: Alignment and progression of the needle under fluoro control while the planned needle path is overlaid on the live image of the acquisition system. Easy switch between the defined progression views to control the real needle position and direction.</p> <p>Subsequently, a control scan can be performed using <i>syngo</i> InSpace 3D/3D Fusion. <i>syngo</i> DynaCT, CT, or MR images are accepted for the image fusion. Studies can be done with the same modality or with different modalities.</p> <p>Registration Algorithms:</p> <ul style="list-style-type: none"> <li>- easy-to-use visual alignment with 6 degrees of freedom (3x translation, 3x rotation)</li> <li>- landmark based registration with convenient landmark editor for point-based registration using anatomical landmarks</li> <li>- storage of transformation matrix with datasets after registration for later retrieval</li> </ul> <p>Visualization Techniques:</p> <ul style="list-style-type: none"> <li>- Side-by-side visualization of both datasets with correlated pointer and correlated scrolling with dog ears</li> <li>- 2D alpha-blending in monochrome or pseudo-color with adjustable balance between the two superimposed data sets.</li> </ul> <ul style="list-style-type: none"> <li>- In-room Control: The InRoom Control software extension allows for remote control of the <i>syngo</i> Workplace from the examination room via touchscreen and joystick. For this, another set of functions is offered on the Artis touchscreen for InSpace3D and <i>syngo</i> InSpace EP (if available). These are implemented for 3D navigation and allow the user to manipulate the 3D image displayed in the examination room.</li> </ul>

Part No. / Product	Description
<p><i>(Continued)</i></p> <p><b>syngo intervent.Oncology Engine Pro</b></p>	<ul style="list-style-type: none"> <li>- <i>syngo</i> Embolization Guidance: Based on a 3D acquisition, relevant vessels are marked and a vascular midline calculated. The ability to graphically overlay it with the current fluoroscopy image supports embolization of e.g. tumor-feeding vessels.</li> <li>- <i>syngo</i> iPilot (Enhanced Functionality) <i>syngo</i> iPilot (enhanced functionality) allows the overlay of the colored 3D volume with regular fluoro as well as with subtracted fluoro (Roadmap) and acquisition series on the display of the <i>syngo</i> Workplace. Therefore the iPilot information is available in parallel with the regular or subtracted fluoro or acquisition images on the live display of the acquisition system. <i>syngo</i> iPilot automatically updates all table, C-arm, zoom and SID changes. Even patient movement can be manually updated.</li> <li>- <i>syngo</i> Angio Package: The <i>syngo</i> Angio package enables dynamic review of DSA scenes (in subtracted or native display) and their postprocessing at the <i>syngo</i> Workplace, with functions such as: <ul style="list-style-type: none"> <li>- Remasking.</li> <li>- Pixelshift.</li> <li>- Anatomic background.</li> <li>- Opacification etc.</li> <li>- Review of DYNAVISION and PERIVISION scenes</li> </ul> </li> </ul> <p>The high-speed functionality increases the image review frequency, especially of biplane and single-plane cardiac scenes, depending on the frame rate and the <i>syngo</i> Workplace hardware used.</p> <p>With the current <i>syngo</i> Workplace hardware the following maximum image review frequencies of the scenes can be achieved:</p> <p>Biplane (native):</p> <ul style="list-style-type: none"> <li>- 6 f/s with a 1024<sup>2</sup> matrix</li> <li>- 15 f/s with a 512<sup>2</sup> matrix</li> </ul> <p>Monoplane (native):</p> <ul style="list-style-type: none"> <li>- 15 f/s with a 1024<sup>2</sup> matrix</li> <li>- 30 f/s with a 512<sup>2</sup> matrix</li> </ul> <ul style="list-style-type: none"> <li>- <i>syngo</i> iFlow: <i>syngo</i> iFlow allows the visualization and analysis of the flow and perfusion in the examined organs This information is based on the time-to-peak calculations from a routine DSA acquisition. The calculations can be shown as a color-map of the whole organ. It is also possible to analyze the flow and perfusion of regions of interest (ROIs) defined by the user and this information can be displayed with graphics, which might further help in understanding the flow dynamics of these ROIs.</li> <li>- <i>syngo</i> Scene Compare: Dual monitor support with biplane review functionality for the postprocessing of DSA scans. A monitor available separately supports the evaluation of bi-planar scans in synchronized mode and can also be used to compare scans to single images. This also enables the dynamic comparison of two scenes.</li> </ul>
<p><b>Upgrade DynaCT Cardiac 30x40</b></p>	<p>Upgrade of system with existing DynaCT functionality to DynaCT Cardiac for 30x40 FD.</p> <p><i>syngo</i> DynaCT Cardiac for 30x40 FD allows the use of proven <i>syngo</i> DynaCT 3D reconstruction for contrasted X-ray projection images of ventricles and vessels of the heart. <i>syngo</i> DynaCT Cardiac for 30x40 FD contains reconstruction algorithms for</p> <ul style="list-style-type: none"> <li>- ECG-triggered 3D acquisitions (multiple C-arm rotations, approx. 30 seconds exposure time)</li> </ul>



Part No. / Product	Description
<p><i>(Continued)</i></p> <p><b>Upgrade DynaCT Cardiac 30x40</b></p>	<p>as well as for</p> <ul style="list-style-type: none"> <li>- untriggered 3D acquisitions (one C-arm rotation, approx. 5 seconds exposure time).</li> </ul> <p>ECG-triggered acquisitions provide greater temporal resolution, which is helpful for imaging cardiac morphology with a lot of motion.</p> <p>Clinical applications currently supported by DynaCT Cardiac:</p> <p>Electrophysiology:</p> <ul style="list-style-type: none"> <li>- 3D visualization of the left atrium to support ablation of atrial fibrillation (segmentation of the left atrium using InSpace EP, must be ordered separately)</li> <li>- 3D visualization of the coronary venous tree to support biventricular pacemaker implantation</li> </ul> <p>Interventional Cardiology/Surgery:</p> <ul style="list-style-type: none"> <li>- Planning, support and follow-up before, during and after heart valve replacement through 3D visualization of the aortic valve and coronary ostia</li> </ul> <p>Pediatrics:</p> <ul style="list-style-type: none"> <li>- 3D visualization of the congenital heart defects before and after surgical interventions: There are low-dose organ programs especially developed for pediatric acquisitions available.</li> </ul> <p><i>syngo</i> DynaCT Cardiac is especially suited for the planning, performance and follow-up of interventions through display of current cardiac 3D morphology directly in the cath lab.</p> <p><i>syngo</i> iPilot (order as separate option) enables simultaneous overlay of the live fluoro image (display of components used during the intervention) with 3D image data (display of 3D morphology); no separate recording procedure is required.</p> <p>DynaCT Cardiac Volume can also serve as a basis for magnetic navigation systems (e.g., Niobe Navigant) or (in connection with <i>syngo</i> InSpace EP Segmentation, separate option) can be used by electroanatomical mapping systems (CARTO, Ensite NavX) for increased precision of electrophysiological mapping as well as time savings.</p>
<p><b>syngo iGuide Toolbox</b></p>	<p><b>Linked Marker</b></p> <p>'Linked Marker' is used to display a graphical reference overlaid to the live image marking an anatomical structure that is visible in the 3D volume or marking the pathway for a puncture to guide the needle.</p> <p>The 'Linked Marker' tool places points or lines onto the 3D data set. Placement can be performed either in the MPR view or directly in the VRT view. Either all or selected graphics may be overlaid on the current live image – Fluoro, Roadmap or Acquisition – in order to support the user during an intervention. Modifications such as e.g. moving, resizing, deleting any selected graphics are possible.</p> <p>'Linked Marker' graphics may be saved with the 3D data set. That means these points and lines can be archived for later review with the 3D data.</p> <p><b>Linked Pointer</b></p> <p>'Linked Pointer' displays the current mouse cursor position on the 3D volume and matches the corresponding position on the live monitor.</p> <p>With 'Linked Pointer' function selected, all cursor movements in the InSpace MPR view are simultaneously shown at the corresponding position in the 2D image on the live monitor.</p> <p><b>Linked Contours</b></p> <p>'Linked Contours' displays a graphical outline on the live monitor to indicate the shape or contour of the 3D volume displayed on the <i>syngo</i> Workplace. It may be used to give the user a hint of the 3D volume on the live monitor, e.g. a stent or a coiling basket.</p> <p>Selecting the function 'Linked Contour' will generate a graphical display of the outlines in the 3D volume and overlay it on to the image – Fluoro, Roadmap or Acquisition – on the live monitor.</p>

Part No. / Product	Description
<b>(Continued)</b>  <b>syngo iGuide Toolbox</b>	<p>The displayed contours are dependent on the current rendering settings (VOI, punching, windowing, transparency) of the displayed volume.</p> <p>Geometrical changes (stand angulation, zoom size, SID, table positions) will automatically result in an update of the displayed graphics on the live monitor.</p>
<b>19in Color Flatscreen Display</b>	<p>The Siemens 19" LCD flatscreen display features a very high contrast even under very bright ambient light conditions. The Gamma curve was precisely adapted to the CIE-/DICOM recommendation and is thus suited especially for gray scale display.</p> <p>LCD flatscreen display</p> <ul style="list-style-type: none"> <li>- 19" (48 cm) screen size</li> <li>- Resolution: 1,280 x 1,024 (pixel)</li> <li>- guaranteed brightness for the entire service life: 137 cd/m<sup>2</sup> at a contrast ratio of 300:1</li> <li>- Flicker-free and distortion-free image display</li> <li>- Anti-glare screen</li> </ul> <p>The controlled background lighting provides stable lighting throughout the entire product life cycle.</p>
<b>19in Color Flatscreen Display</b>	<p>The Siemens 19" LCD flatscreen display features a very high contrast even under very bright ambient light conditions. The Gamma curve was precisely adapted to the CIE-/DICOM recommendation and is thus suited especially for gray scale display.</p> <p>LCD flatscreen display</p> <ul style="list-style-type: none"> <li>- 19" (48 cm) screen size</li> <li>- Resolution: 1,280 x 1,024 (pixel)</li> <li>- guaranteed brightness for the entire service life: 137 cd/m<sup>2</sup> at a contrast ratio of 300:1</li> <li>- Flicker-free and distortion-free image display</li> <li>- Anti-glare screen</li> </ul> <p>The controlled background lighting provides stable lighting throughout the entire product life cycle.</p>
<b>syngo 3D Basic SW-License</b>	<p><b>Input check for data consistency:</b> 3D series list function with consistency check of 3D series that are suitable for 3D processing. Overlapping 3D series can be merged to a single consistent 3D series.</p> <p><b>Data set preparation:</b> The data to be displayed can be limited through the clip box or the function "irregular volume of interest", which filters out disturbing information.</p> <p><b>Image processing</b> Multi-Planar Reconstruction (MPR) for interactive movement through 3D volumes in any direction</p> <ul style="list-style-type: none"> <li>- Real-time reconstruction of secondary cuts in orthogonal, oblique or double oblique orientation with freely selectable slice thickness (MPR thick, MPR thin) and slice distance.</li> <li>- Calculation of curved cuts is possible. Automatic generation of parallel or radial areas.</li> <li>- Frequently used area settings can be stored.</li> <li>- Reference lines can be determined in the reference topogram or from a 3D surface reconstruction.</li> </ul> <p>Maximum Intensity Projection (MIP) for angiographic display:</p> <ul style="list-style-type: none"> <li>- Projection of the pixels with the highest intensity (vascular information) on any plane for display and diagnosis of e.g. aneurysms, plaques, stenoses, vascular anomalies or vascular exits.</li> <li>- Thin MIP function for the projection within a slab of the data set.</li> <li>- Automatic generation of radial areas. The resulting series can be viewed in three-dimensional display by means of the Movie function.</li> </ul>

Part No. / Product	Description
<b>(Continued)</b>  <b>syngo 3D Basic SW-License</b>	<p>Shaded Surface Display (SSD) for the surface display of complex anatomies:</p> <ul style="list-style-type: none"> <li>- Three-dimensional display of surfaces from a series of adjacent slices by means of an adjustable threshold value with quick preview and high image quality mode. It is used to display and analyze different anatomies, as for example the interior of the skull, pelvis, hips, etc. in order to plan surgical procedures.</li> <li>- The 3D objects can be tilted and rotated on the monitor in real-time by means of a virtual trackball.</li> <li>- Automatic generation of radial series of SSD displays.</li> </ul> <p>Since MPR, MIP or SSD are different visualization filters of the same data set, the user is free to switch between these modes and can also magnify the current display segment. Reconstructed images or areas can be stored or transferred to film sheets.</p>
<b>syngo keyboard, USA</b>	Keyboard for easy operation of syngo (browser, viewer, filming). There are special keys for windowing, scrolling, printing, marking and network communication.
<b>syngo Aortic ValveGuide</b>	Automatic segmentation of the aortic root takes place after intraoperative 3D acquisition. The anatomical markers included on the segmentation results enable determination of the optimum C-arm projection angle for improved orientation. The system automatically moves the C-arm so that it is aligned perpendicular to the aortic root. Various display options are available for the subsequent 3D overlay of the aortic root with the fluoro image.
<b>3D / Dynavision</b>	<p>Angle and ECG-triggered digital rotational angiography with corresponding image transfer to <i>asyngo</i> X Workplace and native or subtracted (with DSA option only) image display in 3D.</p> <ul style="list-style-type: none"> <li>- Rotation speed is up to 60°/s (Artis zee ceiling, Artis zeego) and 45°/s (Artis zee floor, Artis zee biplane).</li> <li>- Angle triggering allows a reduction in dose through a reduced acquisition frame rate while at the same time achieving better image quality.</li> <li>- All parameters required for the 3D reconstruction are included in the organ program. This enables optimized image quality and easy handling.</li> <li>- Acquisitions with frame rates in 1k matrix from 0.5 to 7.5, 10, 15, 30 f/s (standard) and 60 f/s with reduced spatial resolution can be selected,</li> </ul> <p>Includes DYNAVISON DR for native and DYNAVISON DSA for subtracted (with DSA option only) rotational angiography. Reconstruction at the <i>syngo</i> X Workplace is not possible with these operating modes.</p>
<b>Detector30x40incILaserCrossh.(MA)</b>	<p><b>Flat detector 30 x 40</b> The digital high-resolution dynamic flat detector with integrated removable grid is especially designed to fulfill the requirements of angiographic and interventional applications.</p> <p>154 µm pixel arrays provide highest spatial resolution (3.25 LP/mm) and excellent contrast. Fluoroscopy as well as image acquisition are always done in 14-bit gray scale resolution, allowing excellent detail visibility. Acquisition frame rates of up to 30 f/s are possible.</p> <p>Usable input formats:</p> <ul style="list-style-type: none"> <li>- Overview mode 30 cm x 38 cm.</li> <li>- Zoom 1: 30 cm x 30 cm; diagonal 42 cm.</li> <li>- Zoom 2: 22 cm x 22 cm; diagonal 32 cm.</li> <li>- Zoom 3: 16 cm x 16 cm; diagonal 22 cm.</li> <li>- Zoom 4: 11 cm x 11 cm; diagonal 16 cm.</li> <li>- Zoom 5: 8 cm x 8 cm; diagonal 11 cm.</li> </ul> <p>The very compact design with integrated collision protection provides maximum C-arm angulation range for excellent patient access.</p> <p>The flat detector is mounted on a motorized rotating turntable at the C-arm. It can be rotated by 90°, so that it can be adjusted to landscape format or portrait format. Any angle in between can be adjusted.</p>

Part No. / Product	Description
<p><i>(Continued)</i></p> <p><b>Detector30x40incILaserCrossh.(MA)</b></p>	<p>Motorized adjustment of the detector-patient distance.</p> <p>Digital data transfer from the detector to the imaging system is via a high-speed Gigalink fiber-optic cable.</p> <p>Removable grid: The grid can easily be removed, saving the user time in examinations not requiring a grid. For example in pediatrics, where dose reduction is especially important.</p> <p>Laser crosshairs: Laser crosshairs integrated in the cover of the flat detector and tableside operation for easier, quicker and dose-saving positioning of the patient.</p> <p><b>Tube assembly MEGALIX Cat Plus 125/20/40/80-122GW</b> 3-focus high-performance X-ray tube assembly with flat emitter technology, metal center tube with lubricated spiral groove bearing technology for permanent, noise-free rotation.</p> <ul style="list-style-type: none"> <li>- Maximum tube voltage 125 kV</li> <li>- Focus: 0.3/0.6 x 0.6*/1.0 (17/38/80 kW)</li> <li>- Anode angle 12°</li> <li>- Maximum anode heat storage capacity: 3,375,000 HU</li> <li>- Maximum tube current for fluoroscopy: 250 mA</li> </ul> <p>* Image quality improved</p> <p>High tube power provides brilliant image quality even with heavier patients. In addition there is no need for X-ray pauses even during lengthy cases. The X-ray tube is completely silent, which is an additional benefit for patient and user.</p> <p><b>Angio collimator</b> Compact multileaf collimator for DSA and cardiological applications with rectangular diaphragm, wedge-shaped filter diaphragms and finger-shaped graduated filter.</p> <ul style="list-style-type: none"> <li>- Automatic synchronous rotation of detector and collimator unit to compensate image rotation in the different working positions of the gantry.</li> <li>- Manual rotation of the detector and collimator unit using the control right on the detector housing.</li> <li>- Five-step adaptive Cu pre-filtration (CAREfilter) to reduce the equivalent skin dose and improve radiation quality through dose saving for the soft radiation parts. Filter steps: 0.1; 0.2; 0.3; 0.6; 0.9 mm Cu.</li> <li>- Independent rotation and shifting of filter diaphragms.</li> <li>- Electronics unit with DIAMENTOR measurement chamber integrated in the collimator housing, for acquisition of the dose-area product and the calculated patient entry dose (CAREwatch).</li> </ul>
<b>Table OR Version</b>	<p>Floor-mounted patient positioning table designed for angiographic examinations and interventions.</p> <ul style="list-style-type: none"> <li>- Direct patient access from all sides, both through the swiveling table and large tabletop cantilever.</li> <li>- ±15° head up/head down positioning.</li> <li>- ±15° lateral tilting range.</li> <li>- Iso-tilt functionality for maintaining the projection during table tilt along the patient axis.</li> <li>- Motorized, power-dependent table movement in longitudinal direction when the table is tilted (power-assisted control).</li> <li>- Electromechanical release of table swivel at the touch of a button at the table.</li> <li>- Telescopic foot with motor-driven height adjustment.</li> <li>- Max. patient weight 200 kg. Accessories weighing up to 40 kg can also be installed.</li> </ul>
<b>PERISTEPPING / PERIVISION</b>	<p>Excellent image quality from the abdomen to the feet is due to the fact that adjustable parameters such as acquisition framerate, measuring fields, position of collimator blades and semitransparent filters are stored specifically for each table position. That way the different X-ray transparencies for abdomen, legs and feet can be compensated and a consistent, contrasty image quality is provided.</p>

Part No. / Product	Description
<p><i>(Continued)</i></p> <p><b>PERISTEPPING / PERIVISION</b></p>	<p>Just one single injection of contrast media protects the health of the patient and gives the physician an instant, subtracted image display of the peripheral blood vessels.</p> <p><b>PERISTEPPING:</b> Peripheral digital stepping angiography with only a single contrast medium injection under visual control of the bolus flow. C-arm stepping with ceiling mounted systems, table stepping with floor mounted and biplane systems.</p> <ul style="list-style-type: none"> <li>- Position-dependent variable frame rates.</li> <li>- Fully automatic exposure control.</li> <li>- Automatic storage of the collimator settings for each step.</li> </ul> <p><b>PERIVISION:</b> Peripheral digital stepping angiography with online subtraction display in an examination procedure with only one single contrast medium injection under visual control of the bolus flow.</p> <ul style="list-style-type: none"> <li>- Only one single automatically acquired mask image for each individual position.</li> <li>- Position-dependent variable frame rates.</li> <li>- Fully automatic exposure control.</li> <li>- Automatic storage of the collimator setting for each step.</li> </ul>
<p><b>Table Top &amp; Mattress, Narrow</b></p>	<p>Carbon fiber tabletop in narrow design with head-end recess and matching special foam mattress, for example for cardiological applications. Tabletop tapered in the thorax area for maximum freedom of C-arm angulation.</p>
<p><b>Connection Kit - 2nd Foot Switch</b></p>	<p>As a result, two foot switches can be connected directly to the table. One foot switch is connected via cable, the other is wireless.</p>
<p><b>Large Display with DCS</b></p>	<p><b>Color flat display</b> The 56" display area represents a new dimension in medical image display. Using a fully integrated tableside control panel with 12 layout variants, all examination-relevant data are displayed on the same large area screen. The result is high levels of flexibility in displaying individual screen layouts.</p> <p>Data such as live, assist and reference images, syngo X Workplace, Sensis/recording systems, PACS, HIS/RIS, ultrasound, ECG, external video, endoscope, mapping systems, system and table geometry, system messages and dose information can be individually positioned and displayed on the Large Display, if connected.</p> <p>The extended Roadmap function is included, if DSA is available:</p> <ul style="list-style-type: none"> <li>- During fluoroscopy (FL), the native live FL image is displayed, otherwise the LIH image (Last Image Hold).</li> <li>- During Roadmap/subtracted fluoroscopy, the native live FL image is displayed, otherwise the LIH image (Last Image Hold).</li> <li>- During DSA acquisition, the native live image is displayed, otherwise the native max fill image.</li> </ul> <p>Contains the dual reference function:</p> <ul style="list-style-type: none"> <li>- An additional, static reference image for parallel display of two reference images on the Large Display.</li> </ul> <p>Important images for diagnostic purposes can be displayed to scale in their original size, less important non-diagnostic information can be displayed at a reduced size. The enlarged display can be selected individually via the display configurations.</p> <p>For the diagnostic color display in TFT technology, with high luminance and extended viewing angle, the gamma curve has been adapted particularly for gray scale display according to the CIE / DICOM recommendation.</p> <p>Technical specification for the display:</p> <ul style="list-style-type: none"> <li>- Display size (W x H) 124.4 x 70 cm.</li> <li>- Screen size 56" (142.2 cm).</li> <li>- Resolution: 3840 x 2160 (pixels); 8 megapixels at 4 x HD.</li> </ul>

Part No. / Product	Description
<p><i>(Continued)</i></p> <p><b>Large Display with DCS</b></p>	<ul style="list-style-type: none"> <li>- Color depth 16.7 10<sup>6</sup> colors.</li> <li>- Brightness: calibrated 300 cd/m<sup>2</sup>.</li> <li>- Brightness: minimum 400 cd/m<sup>2</sup>.</li> <li>- Brightness: typical 450 cd/m<sup>2</sup>.</li> <li>- Contrast ratio max. 1200:1.</li> <li>- Contrast ratio min. 900:1.</li> <li>- Flicker-free and distortion-free image display.</li> <li>- Ambient light sensor for optimum adaptation of the image display to the room brightness.</li> </ul> <p><b>Multi Display Manager</b> The Multi Display Manager (MDM) receives the different video signals and processes this information for visualization on the Large Display. Up to 21 external video sources can be connected (max. 21 DVI-D or 15 DVI-R plus max. 6 analog). Other digital/analog combinations are possible, but the sum must not exceed 21 channels.</p> <p><b>Display ceiling-mounted stand</b> The longitudinally mobile, swiveling, rotating, and height adjustable display ceiling suspension (DCS) with normal working range contains a large 56" color flat display. All cables are integrated into the universal mounted DCS.</p> <p>Technical specification for the display ceiling support:</p> <ul style="list-style-type: none"> <li>- Longitudinal travel range 217.5 cm with 300 cm rails.</li> <li>- Longitudinal travel range 337.5 cm with 425 cm rails.</li> <li>- Height adjustment range 85 cm.</li> <li>- Swivel range (max. system rotation) 300 degrees.</li> <li>- Display swivel range 330 degrees.</li> </ul> <p><b>Bypass concept</b> In case of error, such as controller failure, the Large Display switches automatically to bypass mode and emergency fluoroscopy is displayed on the Large Display.</p> <p><b>Backup concept</b> The Large Display has a backup concept to ensure against power supply failure (2 separate power supplies for the left and right sides of the Large Display).</p>
<p><b>LD Input Sensis</b></p>	<p>Using the connection kit, 2 DVI-D video outputs of a unit are connected to two DVI-D video inputs of the Siemens video signal distributor. Using fiber-optic cables ensures the galvanic isolation of the video source.</p> <p>It includes the following components:</p> <ul style="list-style-type: none"> <li>- Two DVI to fiber-optic cable adapters</li> <li>- Two fiber-optic cables (36 meters)</li> <li>- Two fiber-optic cable to DVI adapters</li> <li>- Two 5 volt power supplies for the adapters</li> </ul>
<p><b>LD Input MMWP / XWP</b></p>	<p>Using the connection kit, one DVI-D video signal of a unit is duplicated One of these is connected to one of the DVI-D video inputs of the Siemens video signal distributor. The second video signal is available for use by a display, for example in the control room. Using fiber-optic cables ensures the galvanic isolation of the video source.</p> <p>It includes the following components:</p> <ul style="list-style-type: none"> <li>- a video splitter</li> <li>- A DVI to fiber-optic cable adapter</li> <li>- A fiber-optic cable (36 meters)</li> <li>- A fiber-optic cable to DVI adapter</li> <li>- Two 5 volt power supplies for the adapters</li> </ul>

Part No. / Product	Description
<b>LD Input extern analog Kit</b>	<p>For analog video signals, VGA, BNC VGA, DVI-I, BAS, PAL, NTSC, consisting of</p> <ul style="list-style-type: none"> <li>- an analog VGA video splitter for the external monitor and the external video signal. The video splitter is needed if there is no second analog video output on the external device.</li> <li>- All required VGA cables, fiber-optic cables, a converter, power supplies, adapter and power plugs, and labels.</li> </ul> <p>* To display images from third-party video sources on the Large Display interfaces for external video signals, note the following requirements:</p> <ul style="list-style-type: none"> <li>- The connection of third-party devices is only permissible if they meet the specifications of the LD interface.</li> <li>- The connection of the LD interface to the LD controller must be performed by a Siemens service technician.</li> <li>- The connection to the third-party device must always be performed by the technician of the third-party company or by the responsible on-site hospital technician.</li> <li>- Siemens cannot assume any warranty for the connection of the third-party device with respect to the image quality and its suitability for diagnosis.</li> <li>- For this reason, it is strongly recommended that the image quality tests prescribed by the third-party manufacturer are performed again prior to use. These tests can ensure that the required image quality is achieved.</li> <li>- The system configurator is responsible for ensuring that the valid versions of the relevant standards are met.</li> </ul> <p>Should you have any questions, please call the LD hotline: +49 (9191) 18-8099. In the USA, please call the local LD hotline.</p>
<b>LD Input external digital kit</b>	<p>For digital video signals, DVI-D, HDMI, consisting of</p> <ul style="list-style-type: none"> <li>- a DVI-D video splitter for the external monitor and the external video signal. The video splitter is needed if there is no second analog video output on the external device.</li> <li>- All required DVI-D cables, fiber-optic cables, power supplies, adapters and power plugs, and labels.</li> </ul> <p>* To display images from third-party video sources on the Large Display interfaces for external video signals, note the following requirements:</p> <p>The connection of third-party devices is only permissible if they meet the specifications of the LD interface. The connection of the LD interface to the LD controller must be performed by a Siemens service technician. The connection to the third-party device must always be performed by the technician of the third-party company or by the responsible on-site hospital technician.</p> <p>Siemens cannot assume any warranty for the connection of the third-party device with respect to the image quality and its suitability for diagnosis.</p> <p>For this reason, it is strongly recommended that the image quality tests prescribed by the third-party manufacturer are performed again prior to use. These tests can ensure that the required image quality is achieved.</p> <p>The system configurator is responsible for ensuring that the valid versions of the relevant standards are met.</p> <p>Should you have any questions, please call the LD hotline: +49 (9191) 18-8099. In the USA, please call the local LD hotline.</p>
<b>LD input VGA ext. long (ECG)</b>	<p>Suitable for the analog VGA video signals, e.g. from the ECG, consisting of:</p> <ul style="list-style-type: none"> <li>- a video separator and OTV-VGA splitter for the analog video monitor signal, e.g. from the ECG</li> <li>- an HD 15 VGA cable, 40 m in length</li> <li>- a VGA adapter cable for 5 x BNC/HD 15, 1 m in length</li> <li>- an adapter DVI 12 + 5P ST – VGA 15 p BU</li> <li>- an MDM container slide-in tray for attaching the components in the container</li> <li>- labels</li> <li>- a DVI-D video splitter</li> </ul> <p>* To display images from third-party video sources on the Large Display interfaces for external video signals, note the following requirements:</p> <ul style="list-style-type: none"> <li>- The connection of third-party devices is only permissible if they meet the specifications of the LD interface.</li> <li>- The connection of the LD interface to the LD controller must be performed by a Siemens service technician.</li> <li>- The connection to the third-party device must always be performed by the technician of the third-party</li> </ul>

Part No. / Product	Description
<p><i>(Continued)</i></p> <p><b>LD input VGA ext. long (ECG)</b></p>	<p>company or by the responsible on-site hospital technician.</p> <ul style="list-style-type: none"> <li>- Siemens cannot assume any warranty for the connection of the third-party device with respect to the image quality and its suitability for diagnosis.</li> <li>- For this reason, it is strongly recommended that the image quality tests prescribed by the third-party manufacturer are performed again prior to use. These tests can ensure that the required image quality is achieved.</li> <li>- The system configurator is responsible for ensuring that the valid versions of the relevant standards are met.</li> </ul> <p>Should you have any questions, please call the LD hotline: +49 (9191) 18-8099. In the USA, please call the local LD hotline.</p>
<p><b>LD input VGA ext. (ultrasound)</b></p>	<p>For analog video signals with SXGA 1280 x 1024 or VGA 640 x 480 output (e.g. ultrasound), directly connectible at the examination table.</p> <p>Consisting of:</p> <ul style="list-style-type: none"> <li>- a video separator and OTV-VGA splitter for the external analog video monitor signal</li> <li>- two HD 15 VGA cables, one 40 m and one 5 m in length</li> <li>- a VGA adapter cable for 5 x BNC, 0.6 m and 1 m in length</li> <li>- an adapter</li> <li>- an MDM container slide-in tray for attaching the components in the container</li> </ul> <p>* To display images from third-party video sources on the Large Display interfaces for external video signals, note the following requirements:</p> <ul style="list-style-type: none"> <li>- The connection of third-party devices is only permissible if they meet the specifications of the LD interface.</li> <li>- The connection of the LD interface to the LD controller must be performed by a Siemens service technician.</li> <li>- The connection to the third-party device must always be performed by the technician of the third-party company or by the responsible on-site hospital technician.</li> <li>- Siemens cannot assume any warranty for the connection of the third-party device with respect to the image quality and its suitability for diagnosis.</li> <li>- For this reason, it is strongly recommended that the image quality tests prescribed by the third-party manufacturer are performed again prior to use. These tests can ensure that the required image quality is achieved.</li> <li>- The system configurator is responsible for ensuring that the valid versions of the relevant standards are met.</li> </ul> <p>Should you have any questions, please call the LD hotline: +49 (9191) 18-8099. In the USA, please call the local LD hotline.</p>
<p><b>LD Bypass Display (rear)</b></p>	<p>It is attached to the rear of the DCS Large Display. Mounting brackets are already available.</p> <p>Monochrome TFT technology flatscreen display with high luminance and extended viewing angle.</p> <ul style="list-style-type: none"> <li>- Screen size 19" (48 cm).</li> <li>- Resolution 1280 x 1024 (pixels).</li> <li>- Guaranteed brightness for the entire service life: 400 cd/m<sup>2</sup> at a contrast ratio of 500:1.</li> <li>- Viewing angle (horizontal and vertical) 170 degrees.</li> <li>- Flicker-free and distortion-free image display.</li> <li>- Ambient light sensor for optimum adaptation of the image display to the room brightness.</li> </ul>
<p><b>C-Room DVI 1xBWD-19 (Live) -36m</b></p>	<p>19" high-contrast b/w display for live image display, as well as syngo operation in the control room. Table design with black frame.</p> <p>Display in monochrome TFT technology with high luminance and extended viewing angle.</p> <ul style="list-style-type: none"> <li>- 19" (48 cm) monitor.</li> </ul>



Part No. / Product	Description
<b>(Continued)</b>  <b>C-Room DVI 1xBWD-19 (Live) -36m</b>	<ul style="list-style-type: none"> <li>- Resolution: 1,280 x 1,024 (pixel).</li> <li>- Guaranteed brightness for the entire service life: 400 cd/m<sup>2</sup> at a contrast ratio of 500:1.</li> <li>- Flicker-free and distortion-free image display.</li> <li>- Ambient light sensor for optimum adaptation to the room brightness.</li> </ul>
<b>LV analysis</b>	<p>Scientific measuring program integrated in the imaging system for evaluation of the functionality of the left ventricle.</p> <ul style="list-style-type: none"> <li>- Automated and manual contour detection.</li> <li>- Automatic end-diastole/end-systole detection.</li> <li>- Calculation of ejection fraction, volumes and indices (area, length and Simpson methods).</li> <li>- Centerline, radial and regional wall movement analyses</li> <li>- Automatic and manual calibration methods.</li> <li>- Distance and angle measurement.</li> </ul>
<b>Vessel analysis</b>	<p>Measuring program integrated in the imaging system for objective, precise and reproducible evaluation of vessels.</p> <ul style="list-style-type: none"> <li>- Automated contour detection.</li> <li>- Determination of degree of stenosis.</li> <li>- Automatic and manual reference diameter determination.</li> <li>- Automatic and manual calibration methods.</li> <li>- Distance and angle measurement.</li> </ul> <p>The vascular analysis allows precise quantification under sterile conditions, direct at table side with the touchscreen control. This speeds up the intervention and makes the procedure safer for the patient. The reports can be easily stored in the patient folder for documentation and to show the correct analysis of dilatations etc. Especially to be used for vessel sizes between 3mm and 42mm.</p>
<b>Automap</b>	<p>Optimized procedure workflow, especially during interventions is the result of the automap-function. A selected reference image displaying the needed medical information (e.g. before dilatation) is used as the basis for moving the system to the correlated position automatically. The intervention can be continued immediately without manually repositioning the patient. Vice versa, an already stored reference image for a dedicated system position is automatically displayed when automap is selected, making it easy to switch from one angulation to another with instantly available image information.</p>
<b>DICOM HIS / RIS</b>	<p><b>DICOM MWL (Modality Worklist):</b> Import of patient/examination data from an external RIS/HIS patient management system.</p> <p><b>Note concerning DICOM interface(s)</b> For diagnostic purposes, only hardcopy cameras/laser printers explicitly approved for this system may be used.</p> <p>The description in the DICOM Conformance Statement downloadable from the Internet is exclusively binding for the functionality of the DICOM interface(s).</p> <p>Functionalities across system borders with/between partner systems require explicit validation, since the interpretation of the interface by the partner/target system is not part of the product's responsibility.</p> <p>A modification of the interface that might be required is not included in the offer; e.g. for the rare case, that available configurations are not sufficient.</p> <p>With regard to expenses for interface configurations that might be required, the agreements on maintenance/service of the product apply.</p>
<b>DICOM MPPS</b>	<p><b>DICOM MPPS (Modality Performed Procedure Step)</b> Sending of dose data, patient data, and examination data to an external RIS/HIS patient management system. Sent in MPPS:</p>

Part No. / Product	Description
<p><i>(Continued)</i></p> <p><b>DICOM MPPS</b></p>	<ul style="list-style-type: none"> <li>- <b>Total dose-area product</b></li> <li>- <b>Number of exposures</b></li> <li>- <b>kV</b> per image (DICOM Exposure Dose Sequence)</li> <li>- <b>ms</b> per image</li> <li>- <b>mA</b> per image</li> </ul> <p><b>Note concerning DICOM interface(s)</b> For diagnostic purposes, only hardcopy cameras/laser printers explicitly approved for this system may be used.</p> <p>The description in the DICOM Conformance Statement downloadable from the Internet is exclusively binding for the functionality of the DICOM interface(s).</p> <p>Functionalities across system borders with/between partner systems require explicit validation, since the interpretation of the interface by the partner/target system is not part of the product's responsibility.</p> <p>A modification of the interface that might be required is not included in the offer; e.g. for the rare case, that available configurations are not sufficient. With regard to expenses for interface configurations that might be required, the agreements on maintenance/service of the product apply.</p>
<b>DICOM Print</b>	<p>DICOM Print: printing of images by means of a virtual filmsheet on a DICOM laser camera. Selecting "Auto-Print" automatically forwards the images stored in the virtual filmsheet to the laser camera. This optimizes the workflow, eliminating the need for user interaction. In addition, a specific layout can be configured on the virtual filmsheet, which the user can review and edit on the monitor at any time. As a result, printing is only required after the layout has been optimized on the monitor, saving time and costs.</p> <p><b>Note concerning DICOM interface(s)</b> For diagnostic purposes, only hardcopy cameras/laser printers explicitly approved for this system may be used.</p> <p>The description in the DICOM Conformance Statement downloadable from the Internet is exclusively binding for the functionality of the DICOM interface(s).</p> <p>Functionalities across system borders with/between partner systems require explicit validation, since the interpretation of the interface by the partner/target system is not part of the product's responsibility.</p> <p>A modification of the interface that might be required is not included in the offer; e.g. for the rare case, that available configurations are not sufficient. With regard to expenses for interface configurations that might be required, the agreements on maintenance/service of the product apply.</p>
<b>LB rad. protection w/ pivot arm</b>	<p>The lower body radiation protection can be attached to the accessory rails either on the right or on the left side of the patient positioning table. It consists of the following independent shielding units:</p> <ul style="list-style-type: none"> <li>- A basic unit shielding the area between accessory rails and the floor. It is flexible and can be adapted to the examiner's preferences.</li> <li>- One LB radiation protection pivot swivel element that can move out of the way during collisions with the tube and still retain its protective function.</li> <li>- Two clip-on units pointing upwards from the upper edge of the basic unit with a length of 57 cm and 27 cm.</li> </ul> <p>The scattered radiation shielding units can be attached to the basic unit in an overlapping and fan-shaped way to allow closed, adapted scattered radiation protection even in the lower thorax area. The maximum load of the accessory rails is 40 kg, the weight of the attached scattered radiation protection is 8 kg.</p>
<b>C-Room Table Support Short</b>	<p>Rail profile:</p> <ul style="list-style-type: none"> <li>- Weight: 1.4 kg</li> <li>- Rail length: 12 cm</li> </ul>

<b>Part No. / Product</b>	<b>Description</b>
<b>(Continued)</b>  <b>C-Room Table Support Short</b>	<ul style="list-style-type: none"> <li>- Width: 20 cm</li> <li>- Height: 14.5 cm</li> </ul>
<b>syngo Keyboard, English - US</b>	Keyboard for easy operation of syngo (browser, viewer, filming). There are special keys for windows, sheets, printing, marking and network communication.
<b>VOLCANO s5i Cable Set</b>	<p>This cable set contains all cables for connecting the components at the patient table and the s5i imaging system in the control room.</p> <p>The following parts are included:</p> <ul style="list-style-type: none"> <li>- PIM and PIMr cable</li> <li>- CAT5 Ethernet cable</li> <li>- ECG cable</li> <li>- FFR cable</li> <li>- Hauling cable for the installation</li> </ul>
<b>I.V. Pole</b>	<p>The infusion bottle holder serves for attaching a maximum of 4 infusion bottles directly at the accessory rail of the patient positioning table.</p> <ul style="list-style-type: none"> <li>- No obstruction due to additional stands in the room.</li> <li>- Safe administration of infusions even with the table moving or tilting.</li> </ul>
<b>Cable clips # KOORDINAT M (5)</b>	<p>The ECG cable is locked directly onto the patient positioning tabletop by means of the cable clips made of easy-to-clean plastic material.</p> <p>That means, the cables follow the tabletop movements and do not interfere with the C-arm angulations during an examination.</p>
<b>Body module, narrow</b>	<p>The insert with accessory rails attached to the right and left slides over the outer edges of the patient positioning tabletop.</p> <p>It is locked in place through two locking bolts on either side. The part to be inserted underneath the tabletop consists of radiolucent carbon fibre material, which avoids disturbing edges in the image.</p> <ul style="list-style-type: none"> <li>- load capacity of the accessory rails: 40 kg max.</li> <li>- length of the accessory rails: 47 cm.</li> </ul>
<b>Armholder (pair)</b>	<p>For Artis tabletops, the two arm holders help to laterally position the arms comfortably along the patient's body. They are slid laterally underneath the mattress, level with arms, and fixed by the patient's body weight.</p> <p>The patient's arms can be immobilized with commercially available fixing straps. Two pairs of arm holders of different length and height (matching the mattress height) are supplied, that are suitable both for thick and thin mattresses.</p>
<b>INJECTOR, PROVIS, PEDESTAL SYSTEM, ODU</b>	<p>M2PPD22060507SM7 – Mark V ProVis Pedestal</p> <p>The Mark V ProVis Pedestal contrast medium injector is an integrated mobile injector platform that can be positioned anywhere at the patient positioning table for direct operation of all functions in the examination room.</p> <p>The injector system includes:</p> <ul style="list-style-type: none"> <li>- An injector head with automatic mechanical stop (protection against over-volume injection), manual control knob, and syringe-release lever</li> <li>- An articulating support arm</li> <li>- An integrated user control console with large, segmented display field and monitor</li> <li>- A mobile foot stand with integrated electronics unit</li> <li>- A contrast medium heat maintainer</li> <li>- A manual release handswitch</li> </ul>

Part No. / Product	Description
<p><b>(Continued)</b>  <b>M2PPD22060507SM7</b>  <b>INJECTOR, PROVIS,</b>  <b>PEDESTAL SYSTEM,</b>  <b>ODU</b></p>	<p>Functions (for 150 ml syringes)</p> <p>Pressure Limitation:</p> <ul style="list-style-type: none"> <li>- 6 to 82 bar, corresponds to 100 to 1200 psi</li> <li>- Display can also be configured in kpa and kg/cm<sup>2</sup></li> </ul> <p>Flow Rates:</p> <ul style="list-style-type: none"> <li>- 0.3 to 50 ml/s</li> <li>- Increments of 0.1 ml/s up to 10 ml/s and 1 ml/s up to 50 ml/s</li> <li>- 0.3 to 59 ml/min</li> <li>- Increments of 0.1 ml/min up to 10 ml/min and 1 ml/min up to 59 ml/min</li> <li>- 0.3 to 59 ml/hr</li> <li>- Increments of 0.1 ml/hr up to 10 ml/hr and 1 ml/hr up to 59 ml/hr</li> </ul> <p>Flow Rate Rise/Fall:</p> <ul style="list-style-type: none"> <li>- 0 to 9.9 s in 0.1 seconds increments</li> </ul> <p>Release Delay for Injection or Radiation:</p> <ul style="list-style-type: none"> <li>- 0 to 99.9 s in 0.1 seconds increments</li> </ul> <p>Adjustable Volume:</p> <ul style="list-style-type: none"> <li>- 1 ml to the max. syringe capacity in 0.1 ml increments.</li> </ul> <p>Filling Rate:</p> <ul style="list-style-type: none"> <li>- Variable syringe filling speed up to 7 seconds or as long as required.</li> </ul> <p>Programming:</p> <ul style="list-style-type: none"> <li>- Up to 49 single-phase or 33 multi-phase injection programs possible.</li> <li>- Up to 4 steps (i.e. all parameters) per injection.</li> </ul> <p>Display Parameters:</p> <ul style="list-style-type: none"> <li>- Injection speed</li> <li>- Injection volume</li> <li>- Remaining volume</li> <li>- Injection duration</li> <li>- Applied pressure</li> </ul> <p>Contrast Medium Heating:</p> <ul style="list-style-type: none"> <li>- Nominal 37°C (98°F)</li> </ul> <p>Included in the scope of delivery</p> <ul style="list-style-type: none"> <li>- Standard syringe configuration with 150 ml/150 ml dual turret</li> <li>- Two pcs. 150 ml pressure jackets</li> <li>- Two pcs. 150 ml disposable syringes</li> <li>- SIEMENS interface cable</li> <li>- User manual (German, English, French and other languages available)</li> <li>- Service manual (English)</li> </ul> <p>Power supply</p>

Part No. / Product	Description
<b>(Continued)</b>  <b>INJECTOR, PROVIS, PEDESTAL SYSTEM, ODU</b>	<ul style="list-style-type: none"> <li>- Standard: 210-240 V, 60 Hz</li> <li>- Special order:</li> <li>- 95-105 V, 105-120 V, 120-125 V, 190-210 V, 210-240 V, 240-250 V</li> <li>- 50 Hz, 60 Hz</li> </ul>
<b>Eaton Powerware 9390 160 kVA UPS</b>	<p>Complete system backup without interruption. One UPS per lab.</p> <p>The Artis system will be supplied by the UPS with full power to all functions in case of power failure. The operation is not restricted to emergency fluoroscopy.</p> <p><b>Operation:</b></p> <ul style="list-style-type: none"> <li>- In case of power failure, the complete Artis system is backed up without interruption to the system or any imaging functionality.</li> <li>- Full system operation including fluoroscopy and acquisition are possible without interruption. There will be no interruption even in the case of a power failure in the middle of an acquisition.</li> <li>- No interruption to workflow</li> <li>- No re-boots required.</li> <li>- Additional advantage of an on-line power conditioner for complete system.</li> <li>- Includes UPS, battery, maintenance bypass panel, and one year on-site parts and labor coverage (24x7) by Eaton Powerware.</li> </ul> <p>Battery power is supplied for a 10 minute backup at continuous full power. This should allow the lab to continue operation for at least 45 to 90 minutes in normal operation.</p> <p><b>This product has been tested and verified for compatibility with the following Siemens' products: Artis Zee. Compatibility with other products cannot be assured and may void service contracts and/or system warranties.</b></p>
<b>Blue anti-fatigue floor mat for hospital</b>	<p><b>NT60010835 Interstate Mat Corporation Anti-fatigue Mat</b></p> <p>Industrial-grade anti-fatigue floor mat that provides comfort and durability. As a high-quality product designed to fight fatigue, it provides support for tired, aching feet, legs and back. Beveled edges for safety. Size 3'x5'.</p>
<b>AS_ RaySafe i2 Personal Dosimetry</b>	<p>The RaySafe i2 package enables continuous improvement of working procedures in X-ray environments by providing staff with personal, real-time information about scattered X-ray dose.</p> <ul style="list-style-type: none"> <li>- The Real-Time Display enables immediate changes in working procedures in order to minimize dose</li> <li>- The Personal Dosimeters supply the Real-Time Display with information about each individual's personal dose</li> <li>- The Dose View software makes it easy to review radiation data.</li> <li>- The optional Dose Manager software makes it easy to report, export and archive radiation data.</li> </ul> <p>The RaySafe i2 system includes:</p> <ul style="list-style-type: none"> <li>- 1 x RaySafe i2 Real-Time Display</li> <li>- 4 x RaySafe i2 Dosimeters</li> <li>- 1 x Dose View software package</li> <li>- 1 x RaySafe i2 Cradle</li> <li>- 1 x RaySafe i2 Mounting Rack</li> <li>- Installation and a one (1) year warranty provided by Unfors</li> </ul> <p><b>Optional Accessories</b> Additional RaySafe i2 Dosimeter Order No. <b>AS10655940</b></p>

Part No. / Product	Description
<b>(Continued)</b> <b>AS_</b> <b>RaySafe i2 Personal</b> <b>Dosimetry</b>	<p>RaySafe Dose Manager software package Order No. <b>AS10655941</b></p> <p><b>Technical specifications :</b></p> <p><b>Dosimeter</b>  Weight 30 g (1.06 ounces)  Operational quantity Hp(10)  X-ray dose range 1 µSv – 10 µSv  X-ray dose resolution 1 µSv  X-ray dose uncertainty 5% or 1 µSv  X-ray dose rate range and linearity +/- 10% 40 µSv/h – 150 mSv/h +/- 20% 150 mSv/h – 300 mSv/h  Energy dependence X-, γ-rays N40 – N100 (33keV – 84keV)  N100 – N120 (84keV – 101keV)</p> <p>Average battery life 3 – 5 years, depending on daily use</p> <p><b>Real-Time Display</b>  Dimensions 30 x 25 x 6 cm (w x h x d) / 11.8 x 9.8 x 2.4 inch  Weight 1.45 kg (51.15 ounces)  Display 10.4 " touch screen  Resolution 640 x 480 pixels  Storage All X-ray dose rate/s and accumulated dose/h that are received from dosimeters in range. The memory size accommodates f.i250 dosimeters with 50 h X-ray dose rate history each.</p> <p>Communication Wireless radio communication with dosimeters  Ethernet 10/100 Mbit/s port for the Dose Manager connection</p> <p><b>Dose Manager PC requirements</b>  Operation System Windows XP or Vista  System memory At least 2 GB  Hard disk 40 GB with at least 15 GB available space  USB 2.0 port</p> <p><b>Dose View PC requirements</b>  Operation System Windows XP or Vista  System memory At least 1 GB  USB 2.0 port</p>
<b>Mattress for Tabletop, Wide (Optional)</b>	This visco-elastic comfort mattress for tabletop wide, reacting to temperature, has the special property of adapting to the individual body shape under the influence of body weight and heat.
<b>Anesthetic arm, bendable (Optional)</b>	<p>The flexible, curved anesthesia screen holder serves as a holder for sterile cloths (anesthesia screen) between head and abdominal area of the patient. With its two brackets it is attached to the accessory rails of the accessory rail module, which slides over the outer edges of the table top.</p> <p>The weight of the anesthesia screen holder is 1 kg.</p>
<b>Body module (Optional)</b>	<p>The insert with accessory rails attached to the right and left slides over the outer edges of the patient positioning tabletop.</p> <p>It is locked in place through two locking bolts on either side. The part to be inserted underneath the tabletop consists of radiolucent carbon fibre material, which avoids disturbing edges in the image.</p> <ul style="list-style-type: none"> <li>- load capacity of the accessory rails: 40 kg max.</li> <li>- length of the accessory rails: 45 cm.</li> </ul>
<b>Table extension (Optional)</b>	<p>The stainless steel instrument holder is attached to the accessory rail at the foot end at the same height as the patient positioning tabletop.</p> <ul style="list-style-type: none"> <li>- Dimensions 53 cm x 65 cm (w x l).</li> <li>- Max. load 5 kg.</li> </ul>

## PRELIMINARY PROPOSAL

Part No. / Product	Description
<b>Upper Body Rad. Protection Artis-F (Optional)</b>	<p>Radiation protection attached via a ceiling-mounted, mobile stand for protection against scattered radiation; inc. 4 m ceiling rail.</p> <ul style="list-style-type: none"> <li>- Swivable and rotatable around the fixing point, range of rotation 360°.</li> <li>- Counter-balanced, height-adjustable support arm.</li> <li>- Acrylic glass with Pb equivalent of 0.5 eq (w x h: 61 cm x 76 cm).</li> </ul>
<b>3 Reflector OR Lamp, 115V (Optional)</b>	<p>The 3-spot OR lamp is additionally attached to the ceiling-mounted stand of the mobile radiation protection and is thus fully integrated in the ceiling-mounted radiation protection system of the AXIOM Artis family. The extremely high luminance is of special advantage for illuminating deep lesions, whereas the luminance would not be sufficient with a single-spot OR lamp.</p> <ul style="list-style-type: none"> <li>- Luminance: 100 000 Lux (9,300 fc) for 100 cm distance</li> <li>- working distance: 70 to 140 cm</li> <li>- color rendering index Ra (gen.): 96</li> <li>- color temperature: 4,300 Kelvin</li> <li>- focusable spot size: 17 to 28 cm</li> <li>- 3 halogen lamps: 22.8 V/50 W</li> </ul> <p>Power connection OR lamp 115 V.</p>

### **Scope of Work**

The following Scope of Work detailed in DCS Proposal No.13-59-1190 dated April 17, 2013 defines the construction to facilitate the installation of a Siemens Medical Solutions Artis Zeego located in the Hybrid OR Room at VA San Antonio and is based on Siemens typical drawing# 08008 dated January 30, 2013, Siemens preliminary drawing project# 1300864RB dated April 10, 2013, and a site visit on March 9, 2013.

Architectural and engineering design for a new Hybrid OR Room with sliding glass door enclosed Equipment Room, new Control Room and Storage Room. A radiation shielding design will be provided prior to construction and a final radiation test report will be completed once all lead shielding materials are installed.

A hazardous material survey will be conducted prior to construction and reported to the VA representatives. A allowance has been included for a hazardous material survey. Hazardous material abatement is not included.

Complete demo of nuclear Med Clinic, Multipurpose Room, Office, Processor Room and a Restroom. Including demo of walls, ceiling, doors, frames, Hardware, millwork, flooring, handrail, crash rail floor plates, plumbing, HVAC, Electrical, Nurse Call, Code Blue, and data. A dumpster will be placed on site and recyclables will be monitored.

Concrete coring for conduits per plan and cutting of floor to provide access for structural steel with concrete patch back. Demo of the exterior Masonry wall to supply access into the interstitial area for structural and mechanical work. Placement of structural steel supports as designed for the Artis Zeego equipment and Owner required equipment boom, anesthesia boom, video integration, LED surgical lights with flat panel arms and wall LCD's.

New 8' solid surface counter top in the OR room, solid surface counter top in the Control room and new metal or plastic laminate shelves in the Storage room. Fire caulking as required at all wall and floor penetrations. Sound insulation in new walls and moisture protection where required.

Provide three (3) 3070 lead lined wood doors and lead lined hollow metal frames: one pair (2) doors entering the OR Room from corridor with badge reader and push button automatic door opener and one (1) single door from the OR room to the Control room with passage lockset and standard hardware. Provide two (2) single 3070 wood doors with hollow metal frames: one (1) entering the Control Room from the corridor with a badge reader and one (1) entering the Storage room from Control room with a classroom lock and standard hardware.

A new sliding glass door wall system will provide access to the Equipment room. New walls will consist of 3<sup>5/8</sup>" 20 gauge metal studs at 16" on center with 5/8" sheetrock. Sheetrock framed ceiling with 3 access panels will be provided in the OR Room. Control and Storage Rooms will have a 2x2 acoustical ceiling grid with washable tile. All walls and ceilings will be taped, floated



and painted to match building standard. Armstrong Medintech seamless vinyl flooring with 6" integral flash cove base will be installed in the OR (including equipment room) and Control rooms with a basic grade Armstrong VCT in the Storage room with 4" rubber base. Provide stainless steel corner guards, plastic laminate wall guard, and handrail in the corner.

Provide up to  $\frac{1}{16}$ <sup>th</sup> lead sheetrock up to 7' on the OR room walls, one (1) 18"x 30" and one (1) 36" x 30" lead view windows at the scrub sink wall and a 6' x 4' lead view window at the Control room viewing into the OR room. Relocating the existing fire suppression piping as required for the new room layout with all new quick respond flush heads. Add one new surgical scrub sink in the corridor.

Medical gas including 2 - Oxygen, 1 - Nitrogen, 1- Nitrous Oxide, 1-Medical Air and 1-Vacuum to an anesthesia boom in the ceiling and one set of wall outlets on the corridor wall to include 1 - Oxygen, 1 - Nitrogen, 1- Nitrous Oxide, 1-Medical Air and 1-Vacuum. HVAC will consist of a hepa filter laminar air flow system with a smoke evacuation system. Electrical will include a new 400 lineal feet 400 amp 277/280 volt feeder of normal power to the Siemens Artis Zeego Equipment, critical isolation power panel, equipment and data conduits, critical power for lights and outlets.

This proposal is based on the understanding that the new UPS will be located in the basement. Communication will include network, telephone, nurse call, and code blue. Audio visuals and smoke detectors devices will be provided and tied into the existing main system. Upgrade of the existing fire alarm system panel is not included.

#### **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. Maintain "as-built" field drawings depicting red lined field changes.
  - 1.4. Provide three (3) sets of final construction (non bid) documents.
2. Preliminary Design and Construction Duration
  - 2.1. Design - 6 weeks
  - 2.2. Drawing Approval - 3 weeks (estimated)
  - 2.3. Construction - 26-30 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 7:00 a.m. to 4:00 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.
17. Payment and performance bonds are included.
18. Taxes are excluded.
19. Close out documents will be presented at project completion upon receipt of owner signed substantial completion form.
20. 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.

1. Nuclear Med Clinic #K201, Multipurpose Room #K201.4, Office K201.4B, Processor Room #K201.4A and restroom #K201.3 demolition will include removal of structural concrete floor for access to install supplemental structural steel equipment supports, millwork, doors, frames, hardware, walls, ceiling, floors, corner guards, plumbing, HVAC supply and returns, make safe for electrical, lights, receptacles, speakers, smoke detectors, fire alarm and data.
2. All items that are intended to be salvaged by the Owner will be so noted and removed by the Owner prior to the start of the demolition work.
3. This scope of work does not include the removal of any materials deemed hazardous by local authorities, the EPA, OSHA, or any other authority having jurisdiction over the work. If such materials are discovered at any time that the work is proceeding, the work will immediately cease, the Owner will be notified, and the work will again proceed after the Owner has removed all of the hazardous material from the job site.
4. Providing an Allowance of \_\_\_\_\_ for hazardous material survey.

**Division 3: Concrete**

1. Core drill as required for new electrical, plumbing and HVAC work.
2. Patch structural concrete floor of OR room.

**Division 4: Masonry**

1. Remove exterior masonry wall for HVAC make up air and exhaust air grills.
2. Remove and replace exterior masonry wall for installation of supplemental structural steel and replacement of structural concrete floor.

**Division 5: Metals**

1. Provide metal blocking in walls for millwork.
2. Structural support for equipment boom, anesthesia boom, video boom, surgical lights and wall LCD's.
3. Structural support for the Siemens Artis Zeego.
4. Structural support for HVAC system.
5. Structural support for UPS.
6. Structural re-design and construction of existing structural supports.
7. Seismic anchoring is excluded.
8. Structural metals other than those specifically stated in this proposal are excluded.

**Division 6: Wood and Plastics**

1. Provide 8' Corian solid surface countertop in the OR room.
2. Provide 12' Corian solid surface L shaped counter top in the Control room.
3. Rough Carpentry as required.
4. Modifications to existing (if any) or additional millwork is excluded.

**Division 7: Thermal and Moisture Protection**

1. All new interior and exterior penetrations shall have the required moisture, smoke and fire caulking.
2. Sealing of existing penetrations are not included.

**Division 8: Doors, Frames, Hardware and Windows**

1. Provide seven (7) 3070 glass-sliding-door-leafs wall at the Equipment room.
2. Provide access panels in hard deck ceiling as required.
3. Provide three (3) wood doors and hollow metal frames.
4. Provide 5 sets of door hardware to match existing.
5. Provide one (1) automatic door opener with two (2) push buttons at OR doors.

**Division 9: Finishes**

1. Provide new wall with 3 5/8" metal studs, 16" on center with one layer of 5/8" sheetrock on each side to height of 11'.
2. Provided additional support studs in existing wall that will have lead sheetrock.
3. Provide suspended metal framing ceiling system with sheetrock in all three rooms.

**Division 9: Finishes (continued)**

4. All existing drywall disturbed by work in the area will be patched, repaired and replaced with like materials and construction type compatible with existing construction.
5. Patch and repair removed portions of the existing suspended acoustical ceiling grid and panels as required.
6. All walls will be taped, floated and painted to match building standard.
7. Wall coverings are excluded.
8. All doors and window frames shall be stained / painted to match existing.
9. Provide Armstrong Medintech vinyl flooring with 6" integral flash cove base in the OR (including Equipment room) and Control rooms.
10. Provide Armstrong standard 12"x12" VCT in the Storage room.
11. Patch and repair existing VCT and base in corridors on both sides of the OR room as required.
12. Provide 4" rubber cove base to match building standard in the Storage room.
13. All areas disturbed by the work shall be patched, repaired and replaced as required with materials and construction type compatible with existing construction.
14. The service of a professional interior designer are not included, nor are there any furnishings, furniture, art work, window treatments, miscellaneous accessories, etc.
15. Wall coverings are excluded.

**Division 10: Specialties**

1. Provide handrail and crash rail repair at new double door entry.
2. Provide one new stainless steel corner guard at new scrub sink.
3. Provide signage as required for the new rooms.

**Division 11: Equipment**      NA**Division 12: Furnishings**      NA**Division 13: Special Construction**

1. Provide  $\frac{1}{16}$ " lead sheetrock for the OR room wall up to 7'.
2. Provide three (3) 3070 lead lined wood doors and lead lined hollow metal frames: one pair (2) doors entering the OR Room from corridor with badge reader and push button automatic door opener and one (1) single door from the OR room to the Control room with passage lockset and standard hardware.
3. Provide 3 lead lined windows and hollow metal frames: One (1) Control room view window 48"x 72" and two (2) Scrub sink view windows one (1) 30"x36" and one (1) 36" x 30".

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

1. Fire Protection system will be reworked to facilitate the new floor plan.
2. Provide 14 new quick response sprinkler heads.
3. Provide one Hydrostatic test and one visual.
4. Relocation of mains or lines is not included at this time.

**Division 22: Plumbing**

1. Demolition of plumbing, in areas K201.3, K201.4A, and K201.4.
2. Provide one (1) Scrub Sink and all applicable piping.
3. Provided CHW, HHW and steam pipe, fittings and valves and all applicable accessories for new AHU.
4. Furnish and install supply, return, exhaust and makeup air duct for new equipment.
5. Provide six (6) medical gases (O2, MA, Med Vac, N2, N2O and Medical EVAC) from area between OR-2 and OR-8 to two (2) new anesthesia boom and one (1) set of wall outlets.
6. Provide one (1) zone valve alarm system.
7. Provide two (2) Certifications.

**Division 23: Heat, Ventilating, and Air Conditioning**

1. Demolition of duct and air devices in areas K201, K201.3, K201.4A, K201.4B and K201.4.
2. Furnish and install 2 Loren Cook fans (1- exhaust 1- MUA), 1 Climate Custom AHU with dual cooling coil, 3 VFD's (1 @ each fan and 1 @ AHU, 1 HEPA filter plenum with filters, air devices and 2 outside air louvers.
3. Balance air of new system only.
4. Modifications, additions, servicing, repairs, rebalancing or warranty of existing HVAC systems except for those specifically stated in this proposal are excluded.
5. Work associated with existing energy management controls (if any) is excluded.

**Division 26: Electrical**

1. Demo existing lighting in work area.
2. Demo existing receptacles in work area.
3. Demo existing data/phone outlet back boxes and conduits in work area (wiring by others).
4. Demo existing AirPhone back boxes and conduits in work area.
5. Demo existing fire alarm devices in walls being removed.
6. Provide temporary lighting.
7. Provide and install 400 amp, 480 volt, 2 sets of 5 wire (3 - #4/0 AWG hots, 1 - #4/0 AWG neutral, 1 - #2 AWG ground) in 3" conduits feeder from Basement Distribution Panel to 2nd floor room for UPS.
8. Provide and install 400 amp, 480 volt breaker for Distribution Panel in Basement .
9. Connect UPS in location TBD on 2nd floor as close as possible to the Artis Zeego Room (UPS delivered and set by others).
10. Provide and install 400 amp, 480 volt disconnect at UPS location.
11. Provide and install 200 amp (150 amp fused), 480 volt disconnect at load side of UPS to connect to room equipment panel.
12. Provide and install 150 amp, 480 volt room equipment Panel MP with 1 – 100 amp, 3 pole breaker and 1 – 50 amp, 3 pole breaker.
13. Provide and install 150 amp, 480 volt, 5 wire (3 - #3/0 AWG hots, 1 - #3/0 AWG neutral, 1 - #2 AWG ground) feeder in 2 ½" conduit from UPS load side disconnect to room equipment Panel MP.
14. Provide and install 100 amp, 480 volt feeder from Panel MP to PU1.

**Division 26: Electrical (continued)**

15. Provide and install 50 amp, 480 volt feeder from Panel MP to SC1.
16. Connect electrical sensors at scrub sink.
17. Provide power to automatic door operators.
18. Provide power for med gas zone alarm.
19. Provide critical power for 20 ton A/C system.
20. Connect 2 exhaust fans.
21. Provide power for 1 anesthesia boom.
22. Provide power for 1 equipment/anesthesia boom.
23. Provide power for 2 surgical light booms.
24. Provide power for 1 perfusion boom.
25. Provide power for 1 large monitor boom.
26. Install conduits and back boxes for owner furnished camera system.
27. Install conduits and back boxes for ORIS system.
28. Provide and install 2 EPO pushbuttons.
29. Provide and install 2 X-Ray warning lights.
30. Provide and install conduit run numbers 1-18 per Siemens plans dated 2/28/13.
31. Provide and install j-boxes B10, CRB, CU1, IS2, PU1, R1, RC, SC1, SC2, SC3, SU, and T1.
32. Provide and install ceiling duct CD1.
33. Provide and install horizontal duct HD1.
34. Provide and install vertical duct VD1, VD2, and VD3.
35. Provide grommetted openings CC, CR1, CR2, D1, IS, and P1.
36. Provide DS if required by owner.
37. Provide and install 16 new 2x4 fluorescent, surgical lay-in light fixtures.
38. Provide and install 2 – 3 way switches for fluorescent lights in scan room.
39. Provide plugs throughout control room, scan room, and equipment room as required.
40. Provide and install 7.5 KVA ISO Panel for room and feed from Critical Power source.
41. Provide and install data/phone back boxes and conduit stub ups as required .
42. Provide and install Fire Alarm device back boxes and conduit stub ups as required.
43. Provide and install Nurse Call device back boxes and conduit stub ups as required.
44. Provide and install 2x4 fluorescent light in storage closet.
45. Provide and install wall occupancy sensor for switch control of storage closet light.
46. Provide and install 4 – 2x4 dimmable, fluorescent lights in control room.
47. Provide and install fluorescent dimming switch for fluorescent lights in control room.
48. An in depth analysis of the quality, capacity or availability of existing building power and grounding, is excluded.
49. Existing building power or grounding upgrade is excluded.
50. 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.
51. Work associated with installing power conditioning or surge suppression equipment is excluded.

**Division 27: Communications**

1. Reinstall one (1) existing speaker in the Control Room.
2. Provide one (1) new speaker in the OR room.
3. Provide six (6) network boxes with conduit stub up with 21 network/phone connections to the Owners existing system: providing One (1) new network box and network drop in the Siemens Equipment room; and five (5) other network boxes to be located by Owner.
4. Final network/telephone tie-in to Owners existing system is not included.
5. Work associated with intercom, PA or CCTV systems is excluded.

**Division 28: Electronic Safety and Security**

1. Provide one (1) nurse call/code blue dome light in ceiling outside of OR room.
2. Provide two (2) nurse call/code blue stations: one in OR room and one in Control room.
3. Provide one (1) HC-duty staff station in the OR room.
4. Provide two (2) fire A/V alarms: one in Control Room and one in Equipment Room.
5. Provide four (4) smoke detectors: one in each room.
6. Provide wiring for one smoke evacuation system.
7. All programming, testing and certification included.
8. Nurse call and fire alarm panel expansion is not included, existing space must be available.
9. Work associated with security or alarm systems is excluded.

**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.