VAMC DECATUR, GA
PO# 508-4B5015

Artis zee ceiling - latest version

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

Qty	Item Description
1	**Universal interventional radiology** X-ray angiography system with primary clinical use in interventional radiology, including application-specific accessories.
1	**Artis zee ceiling** Universal ceiling-mounted C-arm angiography system with 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	**Sys SW incl DSA/DR (1)** Imaging system software including digital subtraction angiography and digital acquisition technology in 1k/12-bit matrix.
1	**Radiology** Radiographic system for medical applications with emphasis on interventional radiology.
1	**XWP w. InSpace 3D FlashRT zee/zeego** syngo X Workplace high-end post processing workstation, comprising Windows XP PC with syngo-based user software and network modules, equipped with the required HW and SW modules for real-time 3D reconstruction to virtually eliminate the time between the acquisition of a rotational angiographic examination and the display of the corresponding 3D reconstructed volume in the InSpace task card of the syngo Workplace: syngo X Workplace, syngo InSpace 3D Flash RT (incl. syngo iDentify), InSpace 3D accessories as well as syngo iPilot to overlay calculated 3D reconstructions with live 2D fluoroscopy images.
1	**DynaCT Package** syngo DynaCT offers excellent soft tissue image quality (512 matrix) through rotational angiography, for neuro and general interventional angiography. Abdominal soft-tissue images are reconstructed within 30 seconds, and neuro soft-tissue images in less than one minute.
1	**syngo Embolization Guidance** syngo Embolization Guidance is an application for planning and performing embolizations.

Qty	Item Description
1	**iPilot functionality for XWP**
	syngo 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 syngo Workplace. Thus the iPilot information is available in parallel to the regular or subtracted fluoro or acquisition images on the live display of the acquisition system. syngo iPilot automatically updates all table, c-arm, zoom and SID changes. Even patient movement can be manually updated.
1	**syngo iGuide w/ InSpace 3D3D Fusion**
	syngo iGuide provides live and integrated needle guidance for interventional procedures such as vertebroplasties, kyphoplasties, biopsies, drainages or radiofrequency ablations. syngo iGuide takes advantage of the very good patient access on a C-arm-based angio system. This enables easy planning and monitoring of complex needle procedures requiring a double oblique needle path. syngo InSpace 3D/3D Fusion package for spatial alignment and visualization of image data of a patient where image data has been generated at different points in time by different modalities. Support of optimal diagnosis (fusion of morphological and functional information) and therapy planning.
1	**syngo iGuide Toolbox**
	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	**19in Color Flatscreen Display**
	LCD color flatscreen display with high luminance and extended field of view.
1	**Inroom Control SW-License**
	Software extension for InSpace 3D and InSpace EP for remote control of the syngo Workplace from the examination room via touch panel and joystick.
1	**InSpace 3D Stenosis Measuremt**
	InSpace 3D Stenosis measurement to determine the degree of stenosis in subtracted image volumes.
1	**syngo Angio Package**
	Software package consisting of DSA Angio Viewer as well as High-Speed Review for real-time display of native and subtracted angiography images.
1	**syngo iFlow**
	syngo 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.
1	**syngo Scene Compare incl. Biplane**
	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.
1	**19in Color Flatscreen Display**
	LCD color flatscreen display with high luminance and extended field of view.
1	**syngo Dicom SR Viewer #X**
	syngo DICOM SR Viewer allows to display DICOM Structured Reports on a syngo Workplace.
1	**syngo Angio-Leg Composing SW-Lic.**
	Module for creating native full-format images of the peripheral vascular tree.

Qty	Item Description

1   **syngo keyboard, USA**
Keyboard with special syngo keys.

1   **Customer documentation, English**

1   **VA kit for syngo XWP VB21**
Second documentation set for deliveries to the Veterans' Affairs Administration Hospitals in the U.S.

1   **syngo Expert-i**
Expert-i enables the physician to interact with the syngo Workplace from virtually anywhere in the hospital.

1   **DICOM Attribute Converter**
Individual solution via software-/XML-files, to solve compatibility problems.

1   **3D Acqu. incl. DYNAVISION DSA/DR**
Native or subtracted (with DSA option only) rotational angiography with angle triggering, generating the image data required for 3D reconstruction.

1   **Detector 30x40 incl LaserCrossh.(T)**
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, integrated collision protection and StraightView.

1   **PERISTEPPING / PERIVISION**
Peripheral digital angiography with stepping and online subtraction display.

1   **Table with Tilt**
Floor-mounted swivelling patient table with telescopic foot, floating and tiltable tabletop; motor-driven stepping for digital peripheral angiography. Table control module, power-assisted.

1   **table top (narrow) / mattress (thin)**
Carbon fiber patient positioning tabletop narrow including special-foam mattress. Mattress including cover.

1   **Foot Switch Monopl.(Wireless)**
For release of fluoroscopy, exposure and table brake as well as a configurable additional function. Wireless connection via radio communication.

1   **Large Display with DCS**
60" or 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). A video controller (MDM) that can process up to 21 video input signals. Direct selection of display configurations (max. 12) via the tableside control module.

1   **LD MDM-Controller High 24 Inputs**
The Large Display Multi Display Manager Controller High is one of three different video controller sizes and can be equipped with up to 24 video input channels. Of those up to 21 video input channels can be shown simultaneously on the Large Display (LD).

1   **LD Downscaler Quad HD to Full HD**
The quad HD video signal (resolution 3840x2160) of the Large Display is converted to the common full HD video standard (resolution 1920x1080) in this video standard converter. This signal then can be used for all common full HD video components. Optical video isolation is part of the downscaler.

Qty	Item Description

1   **XWP/MMWP video cabling**

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.

1   **LD Input external IR/CARD/NEURO kit**

Contains all required connection kits to connect the external analog and external digital video signals for the Large Display in IR / CARDIAC / NEURO applications.

1   **MMV - XWP/MMWP joystick/mouse**

Additional, dedicated joystick in the examination room for precise and fast control of a syngo Workplace parallel to mouse operation in the control room.

1   **ACE Cable Set in Equipm.Room**

Image system interface to the displays in the control room if the image system is installed in the equipment room.

1   **C-Room DVI 1xBWD-19 (Live) -36m**

One monochrome 19" flat-screen display with blue background color.

1   **Live+Ref Video Interface to OEM (1)**

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   **Vessel analysis**

Vessel analysis with determination of degree of stenosis, distance measurement and calibration.

1   **Fluoro Loop (1)**

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   **Automap**

Automatic stand positioning depending on the selected reference image and automatic reference image selection depending on the stand positioning.

1   **DICOM HIS / RIS**

Import of patient/examination data from an external RIS/HIS patient management system with DICOM MWL (Modality Worklist).

1   **DICOM Print**

Provision of DICOM Print service for connection to a laser camera or a network printer (postscript).

Qty	Item Description
1	**LB rad. protection w/ pivot arm** 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	**Upper Body Rad. Prot. Artis-T** To protect the upper body against scattered radiation within the operating range of the examiner, e.g. during interventional procedures.
1	**LED Exam Light** Ceiling-mounted, flexibly positionable examination light for diagnostic interventional applications.
1	**Interface for C-Room Operation(MA)** Interface for connecting the optional system control from the control room.
1	**Control room emerg. stop module** Safety button for switching off all system functions from the control room.
1	**Hand switch manual** Additional hand switch for radiation release and additional control functions.
1	**syngo Keyboard, English - US** Keyboard with special syngo keys.
1	**Intercom - Comfort** Communication / intercom system for communication between examination room and control room.
1	**Safety screen for Large Display** Non-reflecting protective glass that protects the LCD panel of the 56" Large Display from mechanical damage. The protective glass can be attached to and removed from the housing.
1	**Tabletop, Wide** 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.
1	**Mattress thin f. tabletop wide** Matching the tabletop, special-foam mattress, 4 cm, made of open-pore polyurethane material. Mattress including cover.
1	**Connector Panel** Connector panel for installation in the Artis table base for plug connection of country-specific type (USA/Canada).
1	**Armholder (pair)** Two arm holders for comfortable lateral arm positioning along the patient's body.
1	**VA kit Artis zee systems** Second set of documentation for deliveries to the Veterans' Affairs Administration Hospitals in the U.S.
1	**Customer documentation, English**
1	**Pre-install. Artis-T (Mono)**
1	**Pre-install Artis table, std**

Qty	Item Description

Qty   **Item Description**

1

Initial onsite training 32 hrs

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.

1

Follow-up training 32 hrs

Up to (32) 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.

1

Follow-up training 12 hrs

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.

10

Additional onsite training 32 hours

Up to (32) hours of on-site clinical education training, scheduled consecutively (Monday - Friday) during standard business hours for a maximum of (4) imaging professionals. Training will cover agenda items on the ASRT approved checklist if applicable. This educational offering must be completed (12) months from install end date. If training is not completed within the applicable time period, Siemens obligation to provide the training will expire without refund.

10

GOVT Training Class (T & L not included)

Tuition for (1) government attendee to attend a classroom course of choice at one of the Siemens training centers. 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

Eaton Powerware 9355 15 kVA UPS

Includes UPS, battery, maintenance bypass panel, and one year on-site parts and labor coverage (24x7) by Eaton Powerware. This UPS is recommended when protection and uninterruptible power is required for the Artis' C-arm and table. Emergency fluoroscopy is not available with this UPS. If emergency fluoroscopy is required, the 9390 - 160 kVA UPS is recommended for the full system. One UPS per lab. Additional seismic brackets are required to make this system OSHPD approved.

1

Grey anti-fatigue floor mat for hospital

1

Standard Rigging zee SP

Qty	Item Description
1	**Mark 7 Arterion, Table Mount Injector**

The Arterion Mark 7 Table contrast medium injector allows for the remote installation of the system power supply and installation of the injector head onto a table bracket. The injector system includes: Power supply and injector head with corresponding cabling An adjustable height table bracket for the injector head A desk mounted user control console with large touch screen Functions Pressure limitation: for 150 ml syringes 689 to 8273 kPa, corresponds to 100 to 1200 psi. . Flow rates for 150 ml syringes: 0.1 to 45 ml/s in increments of 0.1 ml/s 0.1 to 59.9 ml/min in increments of 0.1 ml/min rise/fall: 0 to 9.9 s in increments of 0.1 seconds   Release delay for injection or radiation: 0 to 99.9 s in increments of 0.1 s. Adjustable volume for 150 ml syringes: 1 ml to the max. syringe capacity in increments of 1 ml. Fill rate: Variable syringe filling speed 1-20ml/s. Injection protocols: Up to 40 injection protocols possible. Parameters currently displayed on the touch screen display and on the head display: Injection speed Injection volume Remaining volume Injection duration Applied pressure Contrast medium heating: Nominal 35°C (95°F)+-5°C (9°F) Injection data memory Up to 50 injection data items stored   Included in the scope of delivery Injector standard configuration 150 ml SIEMENS interface cable Operator Manual Service manual (English). Power supply 200 V to 250 V; 50/60 Hz.

Qty	Item Description
1	**PEDESTAL FOR INJECTOR HEAD,MARK V PROVIS**
1	**Offset Initial Training 32 hrs**
1	**Control Room Injector Interface**

Interface for controlling the contrast medium injector from the control room.

Incidental Services Associated with this Quotation:

One complimentary biomedical tuition is included with the purchase of this system. This training must be completed before the end of the warranty period.
XP1XPESBAS – Service Essentials for AX/XP Basic – (5 days)

XP1XPESADV – Service Essentials for AX/XP Advanced (10 days)

Airfare for Additional Biomedical Training for one engineer from ATL - RDU for 2 roundtrips
Lodging for Additional Biomedical Training for one engineer for 17 nights

Airfare for Complimentary Biomedical Training for one engineer from ATL - RDU
Lodging for Complimentary Biomedical Training for one engineer for 34 nights

Net Total of Incidental Services:

Net total of fixed priced parts:

Net total of Quote including Incidental Services:

Detailed Technical Specifications

Artis zee ceiling - latest version

/ Product	Description
Universal interventional radiology	The accessories include the following components: - Arm cradles (pair) - Instrument tray
Artis zee ceiling	**System Configuration** The monoplane C-arm system for digital acquisition techniques is designed to meet the requirements of state-of-the-art angiography and interventional procedures. C-arm ceiling-mounted stand: System cable outlet at the ceiling carriage, on the patient's left side. - Up to 5 programmed work positions and additional 50 user-defined work positions. - One single joystick for patient angle oriented operation of C-arm and flat detector movements. - Integrated, computer-aided collision monitoring ICP (Intelligent Collision Protection). - C-arm positioning 0° to the head end and variable up to 135° to the left and right side along the patient longitudinal axis. - Double oblique projections of ±100° in orbital movements and up to 330° (+180°/-150°) in rotational movements (depending on gantry positioning and patient size). - Variable C-arm speeds up to 25°/s. - Variable source-to-detector distance between 90 cm and 120 cm. - Isocenter-floor distance 108 cm. Integrated Multispace T: With motorized gantry rotation (± 135°) for free positioning of system and table, for optimum patient access. - Orthogonal system control, along patient longitudinal axis. - InFocus function to maintain projection during C-arm gantry rotation. InFocus saves time and dose because the ceiling-mounted support can be positioned in a flexible way without any impact on the image display. - Iso-tilt function to maintain projection during table tilt in the longitudinal direction (depending on table type). **Operation** 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 to leave the examination room. The intuitive *syngo* operating elements allow for managing the whole process from preparation of the patient to image post processing in a safe, reliable, and time efficient way. 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 with multi-functional joystick for operation of the imaging system, including post-processing and quantification as well as selection of the organ programs. It is based on syngo operation. The touchscreen is specifically configurable to individual clinical requirements. Data regarding system and table geometry, dose data with CAREwatch, as well as system messages, are shown in the live display In the control room: Standard Siemens *syngo* control via keyboard and mouse for all imaging system functions such as image post-processing, archiving and configuring of organ programs. **Display of system data** 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. **imaging system**

/ Product	Description

(Continued)
 	
Artis zee ceiling
	High-resolution digital imaging system with CLEAR technology, DICOM network connection and *syngo* user interface.
	
	In order to provide highest level system availability, the imaging system consists of two independent computer 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.
	
	Image storage capacity
	25,000 images in 1k²/12-bit image matrix (extendable).
	
	Operating modes
	- Digital pulsed fluoroscopy with pulse frequencies of 10 p/s, 15 p/s, and 30 p/s in 1k/12 bit matrix.
	- Overlay fade: On-line overlay of active fluoroscopy and reference image.
	
	CARE package
	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.
	
	Dose saving
	- 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.
	- 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.
	- CAREposition: Object repositioning without radiation through graphic display of the X-ray central beam and the image edges in the LIH (Last Image Hold).
	  CAREposition enables the repositioning of an object under visual control without radiation. In case of table movements the current position of the central beam and the image edges are superimposed on the LIH image as orientation points.
	- 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.
	- 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 dose limit value (sum of fluoroscopy and acquisition).
	- 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.
	
	Dose monitoring
	- 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.
	- CAREmonitor supports the physician by enabling dose-efficient examinations, thereby significantly reducing the risk of skin burns. It includes special monitoring of the skin entry dose, taking into account the geometric conditions of the system (device angulation, table position). This ensures that the skin entry dose applied to a specific region of the patient's body will not exceed a specified threshold, thereby better protecting the patient from the harmful effects of X-radiation.
	  The critical equivalent skin dose to avoid X-ray-related skin injury is at about 2 Gy. CAREmonitor consistently calculates and displays the actual accumulated skin entry dose. This helps the user to detect a potential

/ Product	Description
(Continued) **Artis zee ceiling**	patient hazard quickly and with certainty. Dose reporting - 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 can be sent together to a DICOM archive. The display of dose information in DICOM format permits the flexible analysis and further processing via a DICOM-capable analysis software/database. **CLEAR package** The CLEAR package enables optimized image quality through real-time processing of the image data without increasing the radiation dose. - 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. - CLEARview: Dose-dependent filtering of the image data efficiently suppresses image noise, enabling clear, sharp images, even for low-dose acquisitions. - CLEARvessel: Every pixel is analyzed in real time, and vessel edges are shown in high contrast without adding noise to the image. - 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. In addition there is Dynamic Density Optimization (DDO) for on-line harmonization of native series and single images. **Image processing** - Positive/negative image display, windowing, contrast/brightness, electronic display (shutter), image shift (roaming), vertical and horizontal image inversion, magnifying glass, and zoom functions. - Storing of single images as reference images also during fluoroscopy. - ECG acquisition and storage: Recording, storage, and display of an ECG lead. Displayed together with the image information on a flat display. - Quantification: angle/length measurement, selection of automatic and/or manual calibration. - Text functions: user-definable image annotation, free annotation or by means of text components, comments line for the image, R/L display. - Fast and direct access to all series, single images, and photo file via MULTIMAP both in the examination and in the control room. **DVD / CD burner (DICOM)** DVD drive for automatic digital image storage in the background on DVD-/CD-ROM for off-line data exchange in DICOM format. **Networking** Network interface (1000 BaseT) with the following integrated DICOM services: - 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. - 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. - 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. - 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.

/ Product	Description
(Continued) **Artis zee ceiling**	**Note concerning DICOM interface(s)** The description in the DICOM Conformance Statement downloadable from the Internet is exclusively binding for the functionality of the DICOM interface(s). Functionalities across interfaces 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. 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. **X-ray Generator** Microprocessor-controlled high-frequency X-ray generator with automatic dose rate control for angiography. - 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. - SID tracking (automatic tube current adaptation to source-to-image receptor distance). - CAREMATIC automatic X-ray control system for fully automatic calculation and optimization of exposure data based on fluoroscopic data. - Patient transparency monitoring. - Tube load monitoring with indication in the data display. The optimal X-ray parameters depend on the transparency of the patient at the current angulation, measured during fluoroscopy. These parameters are continuously 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. **Accessories included in the scope of delivery.** - Unilateral armrest - Infusion bottle holder - Additional hand switch for radiation release and additional control functions. **Siemens Remote Service** Prepared for Siemens Remote Service SRS™ (during warranty, then with service contract): - Hardware and software remote diagnosis. - System remote configuration, e.g. adding of a DICOM node. - Early warning system ensuring system operation. ***syngo* Evolve for Artis zee** *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. **Customer Care. Life - the customer care solution by Siemens Healthcare** From the moment you purchase your Siemens system you will benefit from many services that are offered by "Customer Care. Life*, e.g.: - initial application training, - interactive e-learning for various applications, - free customer magazines, - arrangements for clinical training via a global network, - and free trial licenses You will find detailed information on our e-learning program and further details on general "Customer Care. Life" services on the internet. * "Customer Care. Life" offerings are not necessarily available to the full extent for all systems.

/ Product	Description
Sys SW incl DSA/DR (1)	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 diagnostics and safe interventions. Imaging system software including digital subtraction angiography (DSA) and digital acquisition technique. Single image and serial acquisitions with time-controlled and manually variable frame rate. DSA - with frame rates of 0.5 to 7.5 f/s, - including pixel shift, remask, roadmap, peak opacification for iodine contrast (MaxOpac) and CO_2 contrast (MinOpac); - adding of the anatomical background (landmark) from 0 to 100%; - acquisition, display and storage in 1k matrix. Digital radiography (DR) - 1k/12-bit matrix and digital real-time filtration, single image and serial acquisition at frame rates of 0.5 f/s to 7.5 f/s with time-controlled and manually variable frame rate. - Digital pulsed fluoroscopy with pulse frequencies of 7.5 f/s, 10 f/s, 15 f/s, and 30 f/s in 1k/12-bit matrix. - Overlay fade: On-line overlay of active fluoroscopy and reference image. 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. With software version VC21 and higher, the following additional functions are available with Roadmap: - DSA image can be selected as a mask for Roadmap - Zoom can be changed during Roadmap Catheter and vascular contrast can be adapted separately
XWP w. InSpace 3D FlashRT zee/zeego	*syngo* **X Workplace** 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. The base viewing system can be extended by adding a wide range of application options. *syngo* **X Workplace PC** 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. *syngo* X Workplace can be connected to an existing network via Gigabit/100 Mbit Ethernet. *syngo* **X Workplace Basic User Software** The *syngo* X Workplace software features an intuitive and thus easy to learn user interface developed from prototypes tested in close cooperation with users. 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. **Package comprising the following software licenses** Basic software with CD and dongle for the following functions: - Patient Browser - Filming - Viewer - System services

/ Product	Description
(Continued) **XWP w. InSpace 3D FlashRT zee/zeego**	Patient Browser: - Patient management. - DICOM communication with Send, Receive, Query/Retrieve, Print. - Reading of CDs/DVDs. - Module for writing DICOM CDs/DVDs for data exchange. Writing is in background mode. 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. Image Review: Image Review supports interactive 2D review, evaluation and documentation functions. Multiple studies from the same patient can be displayed side-by-side for comparison. - Image display: 1.024^2 screen matrix, configurable with up to 64 image segments. - CINE display: Automatic or interactive dynamic presentation technique for the visualization of time and volume series. - Synchronized viewing of multiple series. - Measurement and annotation: Text annotation; distance, angle, circle, ROI and pixel lens, depending on information available from the acquisition system. System services: Microsoft Office 2003 Word, Excel, PowerPoint plus Outlook are supported (not provided!). - 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. - 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. Scope of functions - Network stations can be configured. - Unlimited selection of stations. *syngo* InSpace 3D Flash RT *syngo* 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. 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). **syngo iDentify (Dual Volume Visualization)** 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. *syngo* iDentify 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. Features: - Reconstruction protocols, for visualization of vessels, bones, clips and coils. - The result of the reconstruction can be native or subtracted. - Modification of reconstruction area to allow zoom via reconstruction. - Visualization with shading and light source for an improved three-dimensional impression. - Interventional volume measurement. Image data: - Volume data from AX, CT, MR, and PET modalities. - Loading of two volume data sets simultaneously.

/ Product	Description
(Continued) **XWP w. InSpace 3D FlashRT zee/zeego**	- Layouts: single (1on1), double (2 on1) and quadruple (4on1) for MPR display. - Two displays are supported for simultaneous display of two volumes side-by-side. Image display modes: - VRT, Color VRT, MIP, MinIP, and MPR rendering. - Thin slice renderings for VRT, MIP, and MinIP. - Variable light source. - Shading effects. Volume editing: - Cut planes. - Editing of clip planes and control volumes. - ROI punching. Presets: - Series-specific bookmarks, to store and retrieve volume visualization parameters. - Global presets for series-unspecific application of volume visualization parameters. Output: - Radial ranges, including macro range definitions. - 2D and 3D measurements, measurement grid, distance measurement and annotations. - AVI format export with selectable compression format and compression ratio. - TIFF, PNG, BMP, JPEG image export. - Send to film sheet. **Advantages and features of InSpace 3D Flash RT** 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. Diagnosis and treatment can be performed in one session, thus providing a major advantage through the fully integrated workflow. - Transfer of the projection angle to the C-arm stand. - Indication whether the angulation can be achieved at the C-arm without collision with the patient or table. - Interventional volume measurement. **InSpace 3D accessories** Includes the accessories required for 3D reconstruction and visualization: - Plexiglas calibration phantoms - Line phantom for image quality control - Form filter - 3D data link ***syngo* iPilot** 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. 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. 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. **DICOM** 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.

/ Product	Description
(Continued) **XWP w. InSpace 3D FlashRT zee/zeego**	**Note concerning DICOM interface(s)** For diagnostic purposes, only hardcopy cameras/laser printers explicitly approved for this system may be used. The description in the DICOM Conformance Statement downloadable from the Internet is exclusively binding for the functionality of the DICOM interface(s). Functionalities across interfaces 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. 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.
DynaCT Package	*syngo* DynaCT is especially suited to support radiologists and neuro-radiologists during interventional procedures in the angiography suite with both endovascular and non-endovascular procedures. *syngo* DynaCT provides enhanced decision making during oncology procedures such as chemoembolization and RF-ablations. In neuroradiology, *syngo* DynaCT allows the visualization of bleeds, the ventricular system of the brain and microstent placement. With syngo 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). In software version VC21 and higher, DynaCT also offers: - a new reconstruction algorithm optimized for fan beam geometry - 20sDR-H 109 kV for native DynaCT e.g., for detecting bleeding - faster 3D acquisition in 4x4 Binning mode
syngo 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. Includes the license for *syngo* Embolization Guidance.
iPilot functionality for XWP	**syngo iPilot Workflow** In preparation for iPilot-guided intervention, the physician typically performs a 3D reconstruction to visualize the vessel tree or an anatomical structure as a volume. Upon selection of iPilot, this 3D reconstruction is overlaid with the live image. The degree of visibility of the 3D volume can be modified by the user. Patient movements can be compensated by adjusting the 3D volume accordingly.
syngo iGuide w/ InSpace 3D3D Fusion	*syngo* iGuide provides a menu-guided intuitive 3-step approach for consistent needle results: Step 1: Definition and check of the needle path on a DynaCT or external CT data set. Step 2: Check of automatically proposed progression views that will be used for monitoring the needle procedure. 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. Subsequently, a control scan can be performed using *syngo* InSpace 3D/3D Fusion. *syngo* DynaCT, CT, or MR images are accepted for the image fusion. Studies can be done with the same modality or with different modalities. Registration Algorithms: - easy-to-use visual alignment with 6 degrees of freedom (3x translation, 3x rotation) - landmark based registration with convenient landmark editor for point-based registration using anatomical landmarks

/ Product	Description
(Continued) **syngo iGuide w/ InSpace 3D3D Fusion**	- storage of transformation matrix with datasets after registration for later retrieval Visualization Techniques: - Side-by-side visualization of both data sets with correlated pointer and correlated scrolling with dog ears - 2D alpha-blending in monochrome or pseudo-color with adjustable balance between the two superimposed data sets.
syngo iGuide Toolbox	**Linked Marker** '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. 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. '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. **Linked Pointer** 'Linked Pointer' displays the current mouse cursor position on the 3D volume and matches the corresponding position on the live monitor. 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. **Linked Contours** 'Linked Contours' displays a graphical outline on the live monitor to indicate the shape or contour of the 3D volume displayed on the *syngo* 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. 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. The displayed contours are dependent on the current rendering settings (VOI, punching, windowing, transparency) of the displayed volume. Geometrical changes (stand angulation, zoom size, SID, table positions) will automatically result in an update of the displayed graphics on the live monitor.
19in Color Flatscreen Display	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. LCD flatscreen display - 19" (48 cm) screen size - Resolution: 1,280 x 1,024 (pixel) - guaranteed brightness for the entire service life: 137 cd/m² at a contrast ratio of 300:1 - Flicker-free and distortion-free image display - Anti-glare screen The controlled background lighting provides stable lighting throughout the entire product life cycle.
Inroom Control SW-License	The InRoom Control software extension allows for remote control of the syngo Workplace from the examination room via touchscreen and joystick. For this, another set of functions is offered on the Artis touchscreen. These are implemented for 3D navigation and allow the user to manipulate the 3D image displayed on the optional display.

/ Product	Description
InSpace 3D Stenosis Measuremt	Vascular evaluation for *syngo* InSpace 3D Flash, *syngo* InSpace 3D Pro, and for *syngo* InSpace Viewer: - Automated contour detection and path planning in the vessel tree. - Determination of degree of stenosis. - Automatic and manual reference diameter determination. Easy and comfortable handling enables measurement during an intervention at the examination table.
syngo Angio Package	The *syngo* Angio package enables dynamic review of DSA scenes (in subtracted or native display) and their postprocessing at the *syngo* Workplace, with functions such as: - Remasking. - Pixelshift. - Anatomic background. - Opacification etc. - Review of DYNAVISION and PERIVISION scenes The high-speed functionality increases the image review frequency, especially of biplane and single-plane cardiac scenes, depending on the frame rate and the *syngo* Workplace hardware used. With the current *syngo* Workplace hardware the following maximum image review frequencies of the scenes can be achieved: Biplane (native): - 6 f/s with a 1024² matrix - 15 f/s with a 512² matrix Monoplane (native): - 15 f/s with a 1024² matrix - 30 f/s with a 512² matrix
19in Color Flatscreen Display	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. LCD flatscreen display - 19" (48 cm) screen size - Resolution: 1,280 x 1,024 (pixel) - guaranteed brightness for the entire service life: 137 cd/m² at a contrast ratio of 300:1 - Flicker-free and distortion-free image display - Anti-glare screen The controlled background lighting provides stable lighting throughout the entire product life cycle.
syngo Dicom SR Viewer #X	For optimized display of reports that were created with *syngo* applications the *syngo* DICOM SR Viewer gets delivered with dedicated templates. Unknown report types (e.g. from other vendors) are displayed by using a generic template.
syngo Angio-Leg Composing SW-Lic.	The image series are created in the Peristepping or Perivision mode and combined to a native full-format image on the LEONARDO/syngo Workplace. Printout of the full-format images on laser or paper printer possible. For diagnostic purposes, hardcopy cameras/laser printers explicitly approved for this system may be used only.
syngo keyboard, USA	Keyboard for easy operation of syngo (browser, viewer, filming). There are special keys for windowing, scrolling, printing, marking and network communication.

/ Product	Description
syngo Expert-i	When clinical questions arise at the *syngo* Workplace, a second user with a Windows PC can quickly and efficiently access the *syngo* Workplace via the network. He or she can assume full control of every application on the *syngo* Workplace and can see all screen contents that is displayed for the local user on the main monitor. This allows the parties involved to discuss clinical questions via phone and quickly reach solutions on a joint basis.
3D Acqu. incl. DYNAVISION DSA/DR	Angle-triggered digital rotation angiography with corresponding image data transfer to a *syngo* X Workplace for 3D image data reconstruction. - The rotation speed is up to 45°/s (Artis zee multi-purpose) - Angle triggering permits dose saving by frame rate reduction with simultaneously improved image quality. - All parameters required for the 3D reconstruction are included in the organ program. This enables optimized image quality and easy handling. - In the case of DYNAVISION DR for native images and DYNAVISION DSA for subtracted images (only with DSA option), image frequencies of 0.5 to 7.5, 10,15, 30 f/s and different increments for image acquisition can be selected for rotation angiography. Includes DYNAVISION DR for native and DYNAVISION DSA for subtracted (with DSA option only) rotational angiography. Reconstruction at the *syngo* X Workplace is not possible with these operating modes.
Detector 30x40 incl LaserCrossh.(T)	**Flat detector 30 x 40** The digital high-resolution dynamic flat detector with integrated removable grid is especially designed to fulfill the requirements of angiographic and interventional applications. 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. Usable input formats: - Overview mode 30 cm x 38 cm. - Zoom 1: 30 cm x 30 cm; diagonal 42 cm. - Zoom 2: 22 cm x 22 cm, diagonal 32 cm. - Zoom 3: 16 cm x 16 cm; diagonal 22 cm. - Zoom 4: 11 cm x 11 cm, diagonal 16 cm. - Zoom 5: 8 cm x 8 cm; diagonal 11 cm. The very compact design with integrated collision protection provides maximum C-arm angulation range for excellent patient access. 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. Motorized adjustment of the detector-patient distance. Digital data transfer from the detector to the imaging system is via a high-speed Gigalink fiber-optic cable. Removable grid: The grid can easily be removed, saving the user time in examinations not requiring a grid. For example in pediatrics, where dose saving is especially important. 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. The 30 x 40 flat detector offers additional operating functions directly on the detector housing, such as angulation, FD rotation (cranial/caudal, RAO/LAO), and change of the focus-detector distance. **Tube assembly MEGALIX Cat Plus 125/20/40/80-122GW** 3-focus high-performance X-ray tube with flat emitter technology, metal center tube in lubricated spiral groove bearing technology for permanent, noise-free rotation. - Maximum tube voltage 125 kV - Focus: 0.3/0.6 x 0.6*/1.0 (17/38/80 kW)

/ Product	Description
(Continued) **Detector 30x40 incl LaserCrossh.(T)**	- Anode angle 12° - Maximum anode heat storage capacity: 3,375,000 HU - Maximum tube current for fluoroscopy: 250 mA * Image quality improved 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. **Angio collimator** Compact multileaf collimator for DSA and cardiological applications with rectangular diaphragm, wedge-shaped filter diaphragms and finger-shaped graduated filter. - Automatic synchronous rotation of detector and collimator unit to compensate image rotation in the different working positions of the gantry. - Manual rotation of the detector and collimator unit using the control right on the detector housing. - 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. - Independent rotation and shifting of filter diaphragms. - 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). StraightView The flat detector and the multileaf collimator are installed on a motorized rotating turntable on the C-arm. They automatically line up with the table swivel, thus ensuring upright images of objects which are in line with the table. The flat detector and multileaf collimator can also be rotated together at any angle relative to the table, enabling upright presentation and collimation of objects which are not in line with the table.
PERISTEPPING / PERIVISION	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 privided. 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. PERISTEPPING: 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. - Position-dependent variable frame rates. - Fully automatic exposure control. - Automatic storage of the collimator settings for each step. PERIVISION: 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. - Only one single automatically acquired mask image for each individual position. - Position-dependent variable frame rates. - Fully automatic exposure control. - Automatic storage of the collimator setting for each step.
Table with Tilt	Floor-mounted patient positioning table designed for angiographic examinations and interventions. - Direct patient access from all sides, both through the swiveling table and large tabletop cantilever. - ±15° head up/head down positioning. - Iso-tilt functionality for maintaining the projection during table tilt along the patient axis. - Motorized, power-dependent table movement in longitudinal direction when the table is tilted (power-assisted control).

/ Product	Description
(Continued) **Table with Tilt**	- Electromechanical release of table swivel at the touch of a button at the table. - Telescopic foot with motor-driven height adjustment. - Max. patient weight 200 kg. Accessories weighing up to 40 kg can also be installed.
table top (narrow) / mattress (thin)	Narrow-shaped carbon fiber patient tabletop with head-end recess, e.g. for cardiological applications. Tabletop tapered in the thorax area for maximum freedom of C-arm angulation. Matching, special-foam mattress, 4 cm, made of open-pore polyurethane material. This visco-elastic comfort mattress for tabletop narrow, reacting to temperature, has the special property of adapting to the individual body shape under the influence of body weight and heat.
Large Display with DCS	**Color flat display** The 60" or 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. 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. The extended Roadmap function is included, if DSA is available: - During fluoroscopy (FL), the native live FL image is displayed, otherwise the LIH image (Last Image Hold). - During Roadmap/subtracted fluoroscopy, the native live FL image is displayed, otherwise the LIH image (Last Image Hold). - During DSA acquisition, the native live image is displayed, otherwise the native max fill image. Contains the dual reference function: - An additional, static reference image for parallel display of two reference images on the Large Display. 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. 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. Technical specification for the display: - Display size (W x H) 124.4 x 70 cm. or 60 " 133 cm x 74,8 cm - Screen size 56" (142.2 cm). or 60 " 153 cm - Resolution: 3840 x 2160 (pixels); 8 megapixels at 4 x HD. - Color depth $16.7 \cdot 10^6$ colors. - Guaranteed brightness for the entire service life: 300 cd/m² at a contrast ratio of 800:1. - Flicker-free and distortion-free image display. **Multi Display Manager** 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. **Display ceiling-mounted stand** 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. Technical specification for the display ceiling support: - Longitudinal travel range 217.5 cm with 300 cm rails. - Longitudinal travel range 337.5 cm with 425 cm rails. - Height adjustment range 85 cm.

/ Product	Description
(Continued) **Large Display with DCS**	- Swivel range (max. system rotation) 300 degrees. - Display swivel range 330 degrees. **Bypass concept** 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. **Backup concept** 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).
LD MDM-Controller High 24 Inputs	The Multi Display Manager (MDM) receives various internal and external video signals and processes this information for presentation to scale on the Large Display (LD). Up to 24 external and internal video sources can be connected (max. 18 DVI-D and 6 analog (VGA) channels). In total, only 21 video signals can be displayed simultaneously. Important images for diagnostic purposes can be displayed to scale in their original size on the LD. Less important, non-diagnostic information can be displayed at a reduced size in the interpolation algorithm for image information integrated in the MDM. An enlarged or reduced display can be selected individually via the display configurations at the touch screen (ECC). The MDM controller takes over interpolation and adaptation of image size. In waveform images with high resolution, such as for electrophysiological recording systems, the curves are displayed free of artifacts because of a special interpolation algorithm.
XWP/MMWP video cabling	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. The inputs support a maximum resolution of 1920x1200. It includes the following components: - a video splitter - A DVI to fiber-optic cable adapter - A fiber-optic cable (36 meters) - A fiber-optic cable to DVI adapter - Two 5 volt power supplies for the adapters

LD Input external IR/CARD/NEURO kit	Including:
	- 3 x LD Input External Digital Kit 14417161:
	  A digital kit 14417161 includes:
	  1 x digital input and connection kit for an external digital DVI-D video signal including cable and DVI-D video splitter.
	  For digital video signals, DVI-D, HDMI, comprising 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.
	  All required DVI-D cables, fiber-optic cables, power supplies, adapter and power plugs, and labels are also included.
	- 2 x LD Input External Analog Kit 14417131:
	  An analog kit 14417131 includes:
	  Analog input and connection kit for external analog video signals including cable and video splitter.
	  For analog video signals, VGA, BNC VGA, DVI-I, BAS, PAL, NTSC, comprising 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.
	  All required VGA cables, fiber-optic cables, a converter, power supplies, adapter and power plugs, and labels are also included.
	
	* To display images from third-party video sources on the Large Display interfaces for external video signals, note the following requirements:

/ Product	Description
(Continued) **LD Input external IR/CARD/NEURO kit**	- 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. - Siemens cannot assume any warranty for the connection of the third-party device with respect to the image quality and its suitability for diagnosis. - 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. - The system configurator is responsible for ensuring that the valid versions of the relevant standards are met. Should you have any questions, please call the LD hotline: +49 (9191) 18-8099. In the USA, please call the local LD hotline.
C-Room DVI 1xBWD-19 (Live) -36m	19" high-contrast b/w display for live image display, as well as syngo operation in the control room. Table design with black frame. Display in monochrome TFT technology with high luminance and extended viewing angle. - 19" (48 cm) monitor. - Resolution: 1,280 x 1,024 (pixel). - Guaranteed brightness for the entire service life: 400 cd/m² at a contrast ratio of 500:1. - Flicker-free and distortion-free image display. - Ambient light sensor for optimum adaptation to the room brightness.
Vessel analysis	Measuring program integrated in the imaging system for objective, precise and reproducible evaluation of vessels. - Automated contour detection. - Determination of degree of stenosis. - Automatic and manual reference diameter determination. - Automatic and manual calibration methods. - Distance and angle measurement. 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 0.5 mm and 50 mm.
Automap	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.
DICOM HIS / RIS	**DICOM MWL (Modality Worklist):** Import of patient/examination data from an external RIS/HIS patient management system. **Note concerning DICOM interface(s)** For diagnostic purposes, only hardcopy cameras/laser printers explicitly approved for this system may be used. The description in the DICOM Conformance Statement downloadable from the Internet is exclusively binding for the functionality of the DICOM interface(s). 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. 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.

/ Product	Description
(Continued) **DICOM HIS / RIS**	With regard to expenses for interface configurations that might be required, the agreements on maintenance/service of the product apply.
DICOM Print	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. Note concerning DICOM interface(s) For diagnostic purposes, only hardcopy cameras/laser printers explicitly approved for this system may be used. The description in the DICOM Conformance Statement downloadable from the Internet is exclusively binding for the functionality of the DICOM interface(s). 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. 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.
LB rad. protection w/ pivot arm	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: - A basic unit shielding the area between accessory rails and the floor. It is flexible and can be adapted to the examiner's preferences. - 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. - Two clip-on units pointing upwards from the upper edge of the basic unit with a length of 57 cm and 27 cm. 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.
Upper Body Rad. Prot. Artis-T	Radiation protection attached via a ceiling-mounted, mobile stand for protection against scattered radiation; inc. 4 m ceiling rail. - Swivable and rotatable around the fixed point, range of rotation 360°. - Counter-balanced, height-adjustable support arm. - Acrylic glass with Pb equivalent of 0.5 eq (w x h: 61 cm x 76 cm), with recess for interventional examinations.
LED Exam Light	Mach LED 130F examination light with focusable light system. Can also be installed on the Portegra2 ceiling support of the portable radiation protection panel. It is therefore fully integrated into the ceiling-installed radiation protection system of the Artis Zee/Q/Zen family. - Luminance: 60,000 Lux for 100 cm distance - Working distance: 70 to 140cm - Color rendering index Ra: 95 - Color temperature: 4,300 Kelvin - Focusable spot size: 14 to 25cm - Diameter of light head: 33cm - Number of LEDs: 19 - Total input power: 20 VA - Max. reach of the spring arm combination: 185 cm - Total weight of light head with grip sleeve: 2,4kg

/ Product	Description
(Continued) **LED Exam Light**	Lamp power connection 230V or 115V possible
syngo Keyboard, English - US	Keyboard for easy operation of *syngo* (browser, viewer, filming). There are special keys for windowing, scrolling, printing, marking and network communication.
Intercom - Comfort	Communication / Intercom system for communication between examination room and control room, with additional footswitch for conversation selection in the examination room. Microphone and control box on the console in the control room. With adaptive acoustic filter for background noise suppression in the examination room. Microphone in the examination room installed on the ceiling.
Safety screen for Large Display	Depending on the view angle toward the panel, there is a reduction in contrast as well as image blurring. We therefore recommend removing the glass (which is easy to do) when evaluating diagnostic images.
Mattress thin f. tabletop wide	This visco-elastic comfort mattress for the long and straight tabletop, reacting to temperature, has the special property of adapting to the individual body shape under the influence of body weight and heat.
Armholder (pair)	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. 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.
Eaton Powerware 9355 15 kVA UPS	This UPS is recommended when protection and uninterruptible power is required for the C-arm and table. Emergency fluoroscopy is not available with this UPS. If emergency fluoroscopy is required, the 9390 - 160 kVA UPS is recommended for the full system. One UPS per lab. **Operation**: - Since this UPS is working completely uninterrupted, a power failure is observed when no radiation is available and the display shows "No X-ray please wait". - The Emergency power lamp (red) will light on the power display during a power failure. All stand movements are possible and the image system functions are protected against data loss. Guaranteed back up time: 10 min. - Restoring of hospital's main power supply is indicated when the generator boots again (also green Hospital power lamp lights). Full exposures are available after apx. 75 seconds. Includes UPS, battery, maintenance bypass panel, and one year on-site parts and labor coverage (24x7) by Eaton Powerware. Additional seismic brackets are required to make this system OSHPD approved.
Grey anti-fatigue floor mat for hospital	**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'.**
Mark 7 Arterion, Table Mount Injector	The Arterion Mark 7 Table contrast medium injector allows for the remote installation of the system power supply and installation of the injector head onto a table bracket. The injector system includes: - Power supply and injector head with corresponding cabling - An adjustable height table bracket for the injector head - A desk mounted user control console with large touch screen

/ Product	Description
(Continued) **Mark 7 Arterion,** **Table Mount Injector**	**Functions** Pressure limitation: - for 150 ml syringes 689 to 8273 kPa, corresponds to 100 to 1200 psi. . Flow rates for 150 ml syringes: - 0.1 to 45 ml/s in increments of 0.1 ml/s - 0.1 to 59.9 ml/min in increments of 0.1 ml/min - rise/fall: 0 to 9.9 s in increments of 0.1 seconds Release delay for injection or radiation: - 0 to 99.9 s in increments of 0.1 s. Adjustable volume for 150 ml syringes: - 1 ml to the max. syringe capacity in increments of 1 ml. Fill rate: - Variable syringe filling speed 1-20ml/s. Injection protocols: - Up to 40 injection protocols possible. Parameters currently displayed on the touch screen display and on the head display: - Injection speed - Injection volume - Remaining volume - Injection duration - Applied pressure Contrast medium heating: - Nominal 35°C (95°F)+-5°C (9°F) Injection data memory - Up to 50 injection data items stored **Included in the scope of delivery** - Injector standard configuration 150 ml - SIEMENS interface cable - Operator Manual - Service manual (English). **Power supply** 200 V to 250 V; 50/60 Hz.