WHSE BLDG 297 (WLA) B20047
V.A. Medical Center
VAMC WEST LA
11301 WILSHIRE BLVD
LOS ANGELES, CA 90073
P.O.# 691-B20047

Item Description

Neuro Radiology

X-ray angiography system with primary clinical use in neuroradiology, including application-specific accessories.

Artis zee biplane (A)

Biplane, floor-mounted and ceiling-mounted C-arm angiography system with high-resolution flat detectors. The motorized rotation of the floor stand into the lateral position enables complete patient access at the head end and generous patient coverage. The two powerful 100 kW generators 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.

Sys SW incl DSA/DR (2)

Imaging system software including digital subtraction angiography and digital acquisition technology in 1k/12-bit matrix.

High Speed / Card Acquisition

Fast acquisition module for DR and DSA as well as digital card acquisition technology with frame rates of 7.5, 10, 15 and 30 f/s, acquisition, display and storage in matrix 1k.

Radiology

Radiographic system for medical applications with emphasis on interventional radiology.

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 the syngo iPilot option to overlay calculated 3D reconstructions with live 2D fluoroscopy images.

DynaCT Package

syngo DynaCT offers cross-sectional imaging in the interventional suite from projection images of rotational angiography by an Artis FD system. syngo DynaCT provides excellent soft tissue image quality (512 matrix) for neuro and body imaging. Abdominal soft-tissue images are reconstructed within 30 seconds, and neuro soft-tissue images in less than one minute.

Item Description

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.

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.

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.

19in Color Flatscreen Display

LCD color flatscreen display with high luminance and extended field of view.

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.

syngo FlyTrough Standalone

Fly-Through standalone for simulation of virtual endoscopy or bronchoscopy and for Fly-Through in vascular structures, where real endoscopic procedures could be impossible.

InSpace 3D Stenosis Measuremt

InSpace 3D Stenosis measurement to determine the degree of stenosis.

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.

syngo iFlow

syngo iFlow enables color images of a complete DSA scene to be calculated and displayed. As a result, contrast agent flow can also be visualized, supporting image evaluation.

syngo Scene Compare incl. Biplane

Dual monitor support with biplane review functionality for the postprocessing of DSA scans. An optional monitor 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.

19in Color Flatscreen Display

LCD color flatscreen display with high luminance and extended field of view.

syngo 3D Basic SW-License

Basic 3D viewer platform for display of 3D series with Multiplanar Reconstruction (MPR), Surface Shaded Display (SSD) and Maximum Intensity Projection (MIP).

syngo Security Package

SW option/extension for LEONARDO/syngo Workplace System, providing enhanced security features including user management and audit trail functionality.

Item Description

syngo keyboard, USA

Keyboard with special syngo keys.

Customer documentation, English

VA Kit for syngo XWP VB15

Second documentation set for deliveries to the Veterans' Affairs Administration Hospitals in the U.S.

Image Memory Extension R640 XWP

Option to expand image memory by 300 GB.

Initial onsite training 32 hrs

3D / Dynavision

Native or subtracted (with DSA option only) rotational angiography with angle and ECG triggering, generating the image data required for 3D reconstruction.

Detector 30x40 Crossh.(A) 30x40(B)

Two high-resolution dynamic flat detectors for fully digital imaging chains, each with an integrated, removable grid and laser crosshairs as a positioning aid. Two MEGALIX 3-focus high-performance X-ray tube assemblies, rotatable angio collimators including CAREfilter, CAREwatch measuring chambers for recording the dose area product, and integrated collision protection.

Acquistion 2k

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.

Table with Tilt

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

table top (narrow) / mattress (thin)

Carbon fiber patient positioning tabletop narrow including special-foam mattress. Mattress including cover.

Foot Switch Biplane (Wireless)

For release of fluoroscopy, exposure and table brake, roadmap selection and mask reset as well as a configurable additional function. Wireless connection via radio communication.

Large Display with DCS extended (2)

Large 56" color flat screen display with cables for biplane systems in the examination room, installed on a ceiling-mounted, longitudinally mobile, swiveling, rotating, and height-adjustable display suspension system (DCS extended) with an enhanced working range. A video controller (MDM) that can process up to 21 video input signals. With integrated selection of up to 12 display configurations via the ECC.

Ceiling Rail Extension (2)

Rails for extending the longitudinal travel range of the display suspensions system by 1.2 m.

LD complete internal video source

Contains all required connection kits for connecting internal video signals for the Sensis Large Display, the MM/X Workplace A/B, and analog VGA video signal.

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.

LD Bypass Display (rear)

Monochrome 19" replacement display incl. 36 m cable and transceiver for display installation on the rear of the DCS for the Large Display. A replacement display always has to be available in case an error occurs in the imaging chain of the Large Display.

Item Description

ACE Cable Set in Equip. Room (2) A

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

C-Room DVI 4xBWD-19C (2xL+2xR) -36m

Four monochrome 19" flat-screen displays with blue background color.

Memory Ext. 4 (100k-1k Matrix)bi

Memory capacity extension to 100,000 images in 1k matrix.

Vessel analysis

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

Fluoro Loop (2)

Storage of fluoroscopic sequences, for both planes. Storage and display of dynamic fluoroscopic sequences (Fluoro Loop), for both planes. The maximum storable fluoroscopic time depends on the selected pulse rate, e.g. 17 s at 30 p/s, 34 s at 15 p/s.

Automap

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

MULTISPACE.F

Manual stand rotation for additional work positions.

DICOM HIS / RIS

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

DICOM MPPS

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.

DICOM Print

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

Head Side Support

The head end holder can be attached at the head end of ARTIS tabletops (narrow = card). This is a special accessory rail holder enabling incorporation of the head supports, shoulder supports and articulated arm supports, and the anesthetic curtain.

Handles with support (2pc.)

Hand grips for patient positioning for examinations requiring the arms to be held in a specific position.

Syngo security package (SW lic.)

SW-Option/Extension for AXIOM Artis, providing enhanced security features including user management and audit trail functionality.

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.

Upper Body Rad. Protection Artis-F

To protect the upper body against scattered radiation within the operating range of the examiner, e.g. during interventional procedures.

Item Description

Examination lamp, 115 V

Ceiling-mounted examination lamp, flexibly adjustable towards the user, for diagnostics and minor surgery.

Interface for C-Room Operation(MA)

Interface for connecting the optional system control from the control room.

C-Room Table Support Short

Rail profile for hanging control modules (e.g. the table module) in the control room.

Control room emerg. stop module

Safety button for switching off all system functions from the control room.

Handswitch

Additional hand switch for radiation release and additional control functions.

Control Room Injector Interface

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

syngo Keyboard, English - US

Keyboard with special syngo keys.

Emerg.power supp. imag. syst. bipl.

Emergency power supply imaging system biplane.

Cable Set UPS - Imag. System (long)

Injector Wall Connection

Wall interface for connection of the contrast medium injector in the examination room, remote from the patient table.

VA kit Artis zee systems

Second set of documentation for deliveries to the Veterans' Affairs Administration Hospitals in the U.S.

Head end operation with trolley

Trolley with accessory rails and 4.5m cable for individual head-end positioning of Artis control modules.

Armholder (pair)

Two arm holders for comfortable lateral arm positioning along the patient's body.

Kyphoplasty arm rest "UNI"

Arm rest for patient positioning in prone position.

Tabletop widening

For additional arm support for big and obese patients.

Head Holder (prone pos., adults)

Gel pad for positioning the heads of adults in prone position.

Body Belt Protection

The body belt protection set consists of two belts with Velcro strap. They are used for general fixation and compression and are laid around patient and tabletop.

Customer documentation, English

PreIns. mon.trol./DCSext/Displ.Boom

Pre-install Artis table, std

Initial onsite training 32 hrs

Item Description

Follow-up training 12 hrs

Additional onsite training 24 hours

Additional onsite training 32 hours

Injector, ProVis, Rack Mt, Table BR HD

PEDESTAL FOR INJECTOR HEAD,MARK V PROVIS

Standard Rigging zee BP

Offset Initial Training 32 hrs

One complimentary biomedical tuition is included with the purchase of this system. This training must be completed before the end of the warranty period.

TWO SETS OF SERVICE AND OPERATORS MANUALS

Additional Rigging AXA early AM delivery

Additional Rigging AXA deinstall and ship Artis

Description

The accessories include the following components:

- Arm cradles (pair)
- Catheter tray, foot end
- Head support with set of pads
- Head holder, flat
- Head holder, deep
- Instrument tray

System configuration
The biplane angiography system for digital acquisition is designed to meet the requirements of modern angiography and interventional procedures.

C-arm floor-mounted stand:

- Two working and one park position.
- 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 image receptor movements
- Synchronous movement of both planes maintaining the relative angle.
- Integrated, computer-aided collision monitoring ICP (Intelligent Collision Protection).
- C-arm positioning 0° to the head end and 35° to the left side of the patient longitudinal axis.
- Double oblique projections of ±130°, LAO/RAO and +55°/-45° cran/caud;
  cranial max. 52° with isocenter 12 cm above patient tabletop.
- Variable C-arm speeds up to 25°/s.
- Variable source-to-detector distance between 90 cm and 120 cm.
- Isocenter-floor distance 106 cm.
- Focus-isocenter distance 75 cm.

C-arm ceiling-mounted stand:
Ceiling-mounted, slim C-arm for hemiaxial oblique projection in simultaneous biplane operation.

- Two working and one park position.
- 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 image receptor movements
- Synchronous movement of both planes maintaining the relative angle.
- Integrated, computer-aided collision monitoring ICP (Intelligent Collision Protection).
- Motorized longitudinal travel of the C-arm, variable up to 15 cm/s, from the thorax region to the park position outside the examination range.
- Double oblique projections from 0° to 120° LAO and +55°/-45° cran/caud.
- Variable C-arm speeds up to 10/s.
- Variable source-to-detector distance between 94 cm and 124 cm.
- Isocenter-floor distance 106 cm.
- Focus-isocenter distance 75 cm.

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 of leaving the examination room. The intuitive tableside *syngo* operating elements allow for managing the whole process from preparation of the patient to image post-processing in a simple and time efficient way.

Description

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.

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.

Displaying 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
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
50 000 images in 1k/12 bit image matrix (extendable).

Operating modes

- Digital pulsed fluoroscopy with pulse frequencies of 10 p/s, 15 p/s, and 30 p/s (monoplane and biplane) 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 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.
- 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 entry dose (CAREwatch) at the flat-screen display.
  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).

  Configurable screens on the data display and imaging system monitor:

Description

During fluoroscopy: patient entry dose rate.
During fluoroscopy interval: Accumulated patient entry dose or dose-area product or percentage of the dose limit (total dose from fluoroscopy and acquisition).

The critical equivalent dose of the skin (skin dose) to avoid X-ray related skin injury is at about 2 Gy. CAREwatch consistently calculates and displays the actual accumulated skin dose (in percent). This helps the user to detect a potential patient hazard quickly and with certainty.

- 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: enables three skin dose thresholds to be established. If the accumulated skin dose exceeds the configured threshold, a warning appears on the live display and tableside at the touchscreen control. This provides ideal skin dose monitoring during the examination.

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 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.

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, 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.

Description

- 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.

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 generators
Microprocessor-controlled high-frequency X-ray generators 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 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 provides excellent 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,

Description

- 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.

* Not all services of the Customer Care. Life offerings are necessarily available for all systems.

Imaging system software including 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_2 contrast (MinOpac);
- adding of the anatomical background (landmark) from 0 to 100%;
- acquisition, display and storage in 1k matrix.

Digital acquisition technology

- in 1k/12 bit matrix and with digital real-time filtration,
- single image and serial acquisitions between 0.5 f/s and 7.5 f/s with time-controlled and manually variable image frequency.

The software functionality can be extended to suit specific user or clinical needs in angiography, cardiology, fluoroscopy, and radiography by adding optional application modules. The use of the licensed software including optional programs is limited exclusively to the specific *syngo* X Workplace included with this order or the original workstation order.

syngo X Workplace is a *syngo*-based postprocessing workstation for angiography, cardiology, fluoroscopy, and radiography configured as a DICOM-connected standalone system. The workstation is ideal for providing additional or specialist clinical workplaces.
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 8/12 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

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.

Description

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 graphics card, and enables low-dose DynaCT acquisitions. 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.
- 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.

Description

- 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 overlaying 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.

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

Description

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.

Note on software usage
The use of the licensed software, including programs, is limited exclusively to the specific *syngo* X Workplace included with this order or the original workstation order.

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. Providing enhanced decision making during oncology procedures such as chemoembolization and RF-ablations, spinal procedures. In neuroradiology *syngo* DynaCT allows the visualization of bleedings, 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 of 5 HU of an object 10 mm in size in a Thick-MPR display. (Measured with a CATPHAN 16 cm CT phantom with CTP 515 module.)

***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 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
- 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.

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.

Description

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.

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)
- Maximum brightness (typ.): 280 cd/m^2
- Flicker-free and distortion-free image display
- Anti-glare screen

The controlled background lighting provides stable lighting throughout the entire product life cycle.

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.

Fly-Through standalone featuring 'quick endo view' mode with one-click display of internal anatomy as perspective VRT image at the position indicated by reference lines in MPR images.

- Orientation control with correlation of MPR reference lines and colored beam projections in perspective VRT image.
- Interactive navigation on endoscopic view or reference segments with push/pull, fly around, look around or zoom/pan mode.
- Path creation with key frames at points of interest.
- Automatic or interactive fly mode along created path or along automatically found path.
- Possibility to store path or range of perspective VRT images.

Standard and perspective VRT settings can be modified independently and stored in VRT gallery.

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.

Description

Easy and comfortable handling enables measurement during an intervention at the examination table.

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 in the *syngo* Angio (DSA) viewer of the *syngo* Workplace for biplane and single-plane radiographs, 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 1024^2 matrix
- 15 f/s with a 512^2 matrix

Monoplane (native):

- 15 f/s with a 1024^2 matrix
- 30 f/s with a 512^2 matrix

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)
- Maximum brightness (typ.): 280 cd/m^2
- Flicker-free and distortion-free image display
- Anti-glare screen

The controlled background lighting provides stable lighting throughout the entire product life cycle.

Input check for data consistency:
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.

Data set preparation:
The data to be displayed can be limited through the clip box or the function “irregular volume of interest“, which filters out disturbing information.

Image processing
Multi-Planar Reconstruction (MPR) for interactive movement through 3D volumes in any direction

- 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.
- Calculation of curved cuts is possible. Automatic generation of parallel or radial areas.
- Frequently used area settings can be stored.
- Reference lines can be determined in the reference topogram or from a 3D surface reconstruction.

Description

Maximum Intensity Projection (MIP) for angiographic display:

- 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.
- Thin MIP function for the projection within a slab of the data set.
- Automatic generation of radial areas. The resulting series can be viewed in three-dimensional display by means of the Movie function.

Shaded Surface Display (SSD) for the surface display of complex anatomies:

- 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.
- The 3D objects can be tilted and rotated on the monitor in real-time by means of a virtual trackball.
- Automatic generation of radial series of SSD displays.

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.

This SW license enables the LEONARDO/syngo Workplace System to support enhanced user and system management, including:

- user authentication to prohibit unauthorized access
- privileges to define user/role based functionality
- permissions to control data access.
- audit trails to log system and data access.

Keyboard for easy operation of syngo (browser, viewer, filming). There are special keys for windowing, scrolling, printing, marking and network communication.

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.**

Angle and ECG-triggered digital rotational angiography with corresponding image transfer to a*syngo* X Workplace and native or subtracted (with DSA option only) image display in 3D.

- Rotation speed is up to 60°/s (Artis zee ceiling, Artis zeego) and 45°/s (Artis zee floor, Artis zee biplane).
- Angle triggering allows a reduction in dose through a reduced acquisition frame rate while at the same time achieving better image quality.
- All parameters required for the 3D reconstruction are included in the organ program. This enables optimized image quality and easy handling.
- 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,

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.

Flat detectors 30 x 40 (for both planes)
The digital high-resolution dynamic flat detectors with integrated removable grid are 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.

Usable input formats:

- Overview mode 30 cm x 38 cm.

ct	Description
)	- 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 detectors are mounted on a motorized rotating turntable at the C-arm. They can be rotated by 90°, so that they can be adjusted to landscape format or portrait format. Any angle in between can be adjusted. Motorized adjustment of the detector-patient distance. The digital data transfer from the detectors to the imaging system is done 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 reduction 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. **Tube assembly MEGALIX Cat Plus 125/20/40/80-12xGW (for all countries except China)** Two 3-focus high-performance X-ray tube assemblies with flat emitter technology, metal center tube with 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) - Anode angle 12° - Maximum anode heat storage capacity: 3,375,000 HU - Maximum tube current for fluoroscopy: 250 mA * Image quality improved **or tube assembly MEGALIX Cat 125/15/40/80-12xGW (for China only)** Two 3-focus high-performance X-ray tube assemblies, metal center tube with lubricated spiral groove bearing technology for permanent, noise-free rotation. - Maximum tube voltage 125 kV - Focus: 0.3/0.6/1.0 (15/40/80 kW) - Anode angle 12° - Maximum anode heat storage capacity: 2 000 000 HU - Maximum tube current for fluoroscopy: 170 mA 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 collimators** Two compact multileaf collimators 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

Description

of the dose-area product and the calculated patient entry dose (CAREwatch).

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° Trendelenburg position.
- 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).
- Electromechanical release of table swivel by the push of a button at the table.
- Telescopic foot with motorized height adjustment.
- Maximum patient weight: 200 kg plus 40 kg of supplied accessories.

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.

Color flat display
The large 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.

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.
- Screen size 56" (142.2 cm).
- Resolution: 3840 x 2160 (pixels); 8 megapixels at 4 x HD.
- Color depth 16.7 10^6 colors.
- Brightness: typical 450 cd/m^2; calibrated 300 cd/m^2.
- Contrast ratio max. 1200:1.
- Contrast ratio min. 900:1.
- Flicker-free and distortion-free image display.
- Ambient light sensor for optimum adaptation of the image display to the room brightness.

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 suspension system (DCS extended) with extended working range contains a large 56” color flat display.
All cables are integrated into the universal mounted DCS with double-articulated arm.
The double-articulated arm of the “extended” display suspension system provides greater flexibility and a greater

Description

positioning range for the Large Display.

Technical specification for the display ceiling-mounted stand:

- Longitudinal travel range 315 cm.
- Height adjustment range 75 cm.
- Swivel range between the articulated joint and the suspension at the ceiling-mounted carriage ± 150 degrees.
- Swivel range between the freely-suspended cantilever arm and the articulated joint ± 120 degrees.
- Display swivel range 330°.

Including:

- 2x LD Input Sensis 14417124
- 2x LD Input MMWP / XWP 14417125
- 1x LD Input VGA ext. (ultrasound) 14417310

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:

- 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 (e.g., EN/IEC 60601-1-1).

Should you have any questions, please call the LD hotline: +49 (9191) 18-8080-201. In the USA, please call the local LD hotline.

For safety reasons, an LD bypass display must always be available to ensure emergency operation for the fluoroscopy image should the MDM video controller or other parts of the image chain fail.
It is attached to the rear of the DCS Large Display.
Mounting brackets are already available.

Monochrome TFT technology flatscreen display with high luminance and extended viewing angle.

- Screen size 19" (48 cm).

Description

- Resolution 1280 x 1024 (pixels).
- Maximum brightness 1000 cd/m^2.
- Typical brightness 400 cd/m^2.
- Typical contrast ratio 600:1.
- Viewing angle (horizontal and vertical) 170 degrees.
- Flicker-free and distortion-free image display.
- Ambient light sensor for optimum adaptation of the image display to the room brightness.

Four 19“ high-contrast b/w displays for live and reference image display in the control room. Table design with black frame.

Displays in monochrome TFT technology with high luminance and extended viewing angle.

- 19“ (48 cm) monitor.
- Resolution: 1,280 x 1,024 (pixel).
- Maximum brightness (typ.): 1.000 cd/m².
- Flicker-free and distortion-free image display.
- Ambient light sensor for optimum adaptation to the room brightness.

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 3mm and 42mm.

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.

Manual stand rotation for free positioning of system and table relative to each other, for example for the following additional work positions:

- Left-side patient access.
- OR work, standby and park position.
- Orthogonal system control, along patient longitudinal axis.

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

Description

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.

DICOM MPPS (Modality Performed Procedure Step)
Sending of dose data, patient data, and examination data to an external RIS/HIS patient management system.
Sent in MPPS:

- **Total dose-area product**
- **Number of exposures**
- **kV** per image (DICOM Exposure Dose Sequence)
- **ms** per image
- **mA** per image

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.

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.

In order to be able to move the image receiver (I.I. or flat detector) as closely as possible to the object during cardiological examinations, the patient’s arms must be held in a specific position above his head.
With this positioning aid the patient can hold on to the hand grips, his arms resting comfortably on the supports. The stainless steel hand grips and the radiolucent support are mounted to the accessory rails of the head-end holder.

SW-License for enabling AXIOM Artis to support enhanced user management, including

- User authentication to prohibit unauthorized access
- Privileges to define user/role based functionality
- Permissions to control data access
- Audit trails to log system and data access

Description

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.

Radiation protection attached via a ceiling-mounted, mobile stand for protection against scattered radiation; inc. 4 m ceiling rail.

- Swivable and rotatable around the fixing 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).

The 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.
Examination light Mach 130F with focusable dielectric light system:

- Luminance: 50,000 Lux (4,650 fc) for 100 cm distance.
- Working distance: 70 to 140 cm.
- Color rendering index Ra (allg.): 96.
- Color temperature: 4,300 Kelvin.
- Focusable spot size: 14 to 25 cm.
- Diameter of light head: 22 cm.
- Halogen lamp: 22.8 V/50 W.

Power connection OR lamp 115 V.

Rail profile:

- Weight: 1.4 kg
- Rail length: 12 cm
- Width: 20 cm
- Height: 14.5 cm

Keyboard for easy operation of syngo (browser, viewer, filming). There are special keys for windows, sheets, printing, marking and network communication.

Bridging of the imaging system power supply (50/60 Hz) until line voltage is back. In case of power failures of more than 90 seconds the imaging system will be shut down automatically.
Nominal power: 2.2 kW

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.

This support makes it possible to position the patient's arm comfortably in various positions underneath the tabletop, e.g. in the elbow position at an angle of 90° parallel or transversally to the tabletop.
The positioning of the arms can be adjusted according to the arm length and thickness with an additional pad for the armrest.

Description
The patient's head can be comfortably positioned in a special head holder for children or adults (options). The arm rest is attached to the tabletop under the mattress without the need for an additional attachment.
The lateral table extension is used especially in angiography and general radiology for big and obese patients as an additional arm support. It is slid underneath the positioning mattress and fixed by the patient's weight. The lateral table extension consists of radiolucent carbon fibre material, which avoids disturbing edges and shadows in the image. Arm pads made of washable plastic foam material are available on both sides. The patients's arms are immobilized by velcro straps. Load per side 20 kg max.
During interventions requiring the patient to be positioned on the tabletop in prone position, the head can comfortably be positioned on a head pad filled with soft gel material. An oxygen tube can be laterally passed to the patient's mouth.
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.**
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.**
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.**
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.**
M2PRM22060515SM5 – Mark V ProVis Rack Mount (w/ Table Bracket) The Mark V ProVis Rack Mount contrast medium injector consists of an electronics unit, a control console for remote control of all important functions, and an injector head. In the table bracket configuration, the injector head is attached to the patient table in the examination room with a table bracket, head cable and base outlet (supplied). The electronics unit and control console are located in the control room. The injector system includes: - An injector head with automatic mechanical stop (protection against over-volume injection), manual control knob, and syringe-release lever - A table bracket and support arm for attaching the injector head to the tabletop - A separate user control console with large, segmented display field and monitor - A separate electronics unit in the control room - A contrast medium heat maintainer

Description

- A manual release handswitch

Functions (for 150 ml syringes)

Pressure Limitation:

- 6 to 82 bar, corresponds to 100 to 1200 psi
- Display can also be configured in kpa and kg/cm^2

Flow Rates:
0.3 to 50 ml/s

- Increments of 0.1 ml/s up to 10 ml/s and 1 ml/s up to 50 ml/s
- 0.3 to 59 ml/min
- Increments of 0.1 ml/min up to 10 ml/min and 1 ml/min up to 59 ml/min
- 0.3 to 59 ml/hr
- Increments of 0.1 ml/hr up to 10 ml/hr and 1 ml/hr up to 59 ml/hr

Flow Rate Rise/Fall:

- 0 to 9.9 s in 0.1 seconds increments

Release Delay for Injection or Radiation:

- 0 to 99.9 s in 0.1 seconds increments

Adjustable Volume:

- 1 ml to the max. syringe capacity in 0.1 ml increments.

Filling Rate:

- Variable syringe filling speed up to 7 seconds or as long as required.

Programming:

- Up to 49 single-phase or 33 multi-phase injection programs possible.
- Up to 4 steps (i.e. alle parameters) per injection.

Display Parameters:

- Injection speed
- Injection volume
- Remaining volume
- Injection duration
- Applied pressure

Contrast Medium Heating:

- Nominal 37°C (98°F)

Included in the scope of delivery

- Standard syringe configuration with 150 ml/150 ml dual turret
- Two pcs. 150 ml pressure jackets
- Two pcs. 150 ml disposable syringes
- SIEMENS interface cable
- User manual (German, English, French and other languages available)
- Service manual (English)

Power supply

- Standard: 210-240 V, 60 Hz
- Special order:
- 95-105 V, 105-120 V, 120-125 V, 190-210 V, 210-240 V, 240-250 V