WAREHOUSE BLDG 14 B29015
V.A. Medical Center
3601 S 6TH AVENUE
TUCSON, AZ 85723
PO#: 678-B29015

XR-CATH LAB, VAMC TUCSON, AZ

Qty	Item Description
1	**Combo Cardiology/Interv. Radiology** X-ray angiography system for primary clinical use in interventional cardiology as well as 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 cardiac acquisition** Imaging system software including cardiac acquisition with frame rates of 7.5, 10, 15, and 30 f/s. Acquisition, display, and storage in 1k/12-bit matrix.
1	**DSA / DR (1)** Digital acquisition technology and digital subtraction angiography in matrix 1k.
1	**CLEARstent** CLEARstent enables an improved display of vascular supports (stents).
1	**3D / Dynavision** Native or subtracted (with DSA option only) rotational angiography with angle and ECG triggering, generating the image data required for 3D reconstruction.
1	**Detector 20 x 20 incl.Compnts. (T)** High-resolution, dynamic flat detector for fully digital imaging chain, with integrated, removable grid. CAREwatch measuring chamber for detection of the dose-area product. MEGALIX 2-focus high-performance X-ray tube assembly, rotatable card collimator including CAREfilter, integrated collision protection and StraightView.
1	**Table OR Version** Floor-mounted swivelling patient table with telescopic foot, floating and tiltable tabletop (in two axes); motor-driven stepping for digital peripheral angiography. Table control module, power-assisted.

Qty	Item Description
1	**table top (narrow) / mattress (thin)** Carbon fiber patient positioning tabletop narrow including special-foam mattress. Mattress including cover.
1	**Foot Switch Monopl. (Cable)** For release of fluoroscopy, exposure and table brake as well as a configurable additional function. Cable connection.
1	**Connection Kit - 2nd Foot Switch** Connection kit for connecting a second tableside foot switch.
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 extended** 56" or 60"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 extended) with extended working range. 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	**Ceiling Rail Extension (1)** Rails for extending the longitudinal travel range of the display suspensions system by 1.2 m.
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	**Add 19" display for LD (rear mount)** Monochrome 19" display including 36 m cable with DVI-D connection and transceiver for display installation on the rear of the DCS in combination with the Large Display.
1	**Sensis video cabling** This connection kit is needed to display the video signal from a unit, for example the AXIOM Sensis cardiac catheter recording system, on a single display or on a large display in the display suspension system (DCS) in the examination room. Note the following conditions if image content from third-party provider video signals are to be displayed on the Artis displays: - The display of external video signals depends on the operational state of the Artis system. If the Artis system has a malfunction or is shut down, the display of external video signals is not available. For this reason, do not feed the video signal into the Artis system if lacking the external video signal could result in a hazardous situation. - A third-party provider's unit may be connected only if it corresponds to the specifications of the video interface (e.g., at the MDM). - The connection may only be established by a Siemens service technician. Note: The connection must be made with fiber-optic cables to ensure that the unit's galvanic isolation is maintained. The fiber-optic cables must be ordered separately. - A third-party provider's unit must be connected by a technician from the third-party provider or by a hospital technician responsible for the equipment. - It is strongly recommended that a test of image quality be performed by the third-party provider prior to start-up. This test ensures that the required image quality is achieved. - The person placing on the market 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.

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 EP kit**

Contains all required connection kits for connecting the external analog and external digital video signals for the Large Display.

1   **Analog+digital video conn. Panel**

This connection kit is needed to display the analog or digital video signal from a mobile unit, for example a mobile ultrasound system in the examination room, on a single display or on a large display in the display suspension system in the examination room. Note the following conditions if image content from third-party provider video signals are to be displayed on the Artis displays: - The display of external video signals depends on the operational state of the Artis system. If the Artis system has a malfunction or is shut down, the display of external video signals is not available. For this reason, do not feed the video signal into the Artis system if lacking the external video signal could result in a hazardous situation. - A third-party provider's unit may be connected only if it corresponds to the specifications of the video interface (e.g., at the MDM). - The connection may only be established by a Siemens service technician. Note: The connection must be made with fiber-optic cables to ensure that the unit's galvanic isolation is maintained. The fiber-optic cables must be ordered separately. - A third-party provider's unit must be connected by a technician from the third-party provider or by a hospital technician responsible for the equipment. - It is strongly recommended that a test of image quality be performed by the third-party provider prior to start-up. This test ensures that the required image quality is achieved. - The person placing on the market 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   **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   **ECG Interface (1)**

Recording, storage and display of an ECG lead. Displayed together with the image information on a single monitor.

1   **Sensis XP Interface f.Large Display**

Bi-directional communication interface between Artis zee with Large Display and the AXIOM Sensis XP hemodynamic and/or electrophysiology recording system.

1   **AXIOM Sensis Hemo**

Recording system for all types of hemodynamic heart catheterizations.

Qty	Item Description
1	**Sensis XP Starter Kit Vital Signs** The starter kit includes necessary accessories for vital signs measurements.
1	**Starterkit CO Thermo (N)** The starter kit includes necessary accessories for Thermodilution Cardiac Output measurements.
1	**Respiration option** The respiration module measures and presents the respiratory frequency of adults and children in combination with Sensis.
1	**Adult starter kit** Respiration starterkit for adult.
1	**Keyboard english** English keyboard and mouse.
1	**ECG Standard Cableset IEC2** Complete ECG accessories set for US Standard IEC 2.
1	**X-ray transp. ECG Cableset IEC2** Complete ECG accessories X-ray translucent set for US Standard IEC 2.
1	**Artis IF SW data + remote control** Bi-directional communication between Artis zee and AXIOM Sensis XP.
1	**2 x 19" Flat color display** Two 19" color TFT flat screens for the control room with resolution of 1280 x 1024 (pixel) for Hemo application. The flat screen has a foot mount that can be tilted for best viewing angle. Including: Documentation.
1	**UPS 100-120V** Uninterruptible power supply with battery backup for 100-120 V mains. The UPS ensures the supply of power to the Sensis System in the event of line voltage fluctuations and brief power failures.
1	**HP Laser printer** Laser printer, 115 V, Postscript laser printer with 8 MB RAM. For Ethernet connection. Including: Main power inlet cable (115 V), Documentation.
1	**DICOM HIS / RIS Worklist** Import of patient/examination data from an external RIS/HIS patient management system with DICOM MWL (Modality Worklist).
1	**DICOM MPPS License** Feedback of examination status via DICOM MPPS (Modality Performed Procedure Step) to an external RIS/HIS patient management system.
1	**Vital Signs Alarm** Configurable alarms for vital parameters HF, SPO2, NBP, respiratory rate/etCO2 and mean value of invasive arterial pressure during the examination.
1	**FFR License** Integrated measurement of FFR (Fractional Flow Reserve).
1	**Nurse Workstation** The Sensis Nurse Workstation provides a second workspace in the examination room. Requires SW version VC12 or higher.
1	**Keyboard english** English keyboard and mouse.

Qty	Item Description

1

Barcode Reader Kit, wireless, 110 V

The mobile barcode reader enables the automatic input of coded materials used in the cardiac cath lab. The read data is radio-transmitted to the Sensis system.

1

HW Upgr. High-End Server VC12

Replacement of the Sensis SIS high-end server with a Server of the current generation, including the latest SW version VC12 for VC12 Win7 Clients.

1

Sensis Client SW Package

The AXIOM Sensis XP Information System SW client package assists the cardiologists, cardiac nurses, technicians and cath lab managers with comprehensive data access and workflow oriented tools in their daily reporting and administrative tasks. The package enables you to connect multiple AXIOM Sensis XP recording systems to a common AXIOM Sensis XP master server.

1

Statistics manager

The Sensis Statistics Manager supplies necessary tools for e.g. the catheterization lab manager to investigate clinical outcomes and perform quality assurance by doing statistical searches in the Sensis SIS Master database.

1

Barcode Reader Kit, wireless, 110 V

The mobile barcode reader enables the automatic input of coded materials used in the cardiac cath lab. The read data is radio-transmitted to the Sensis system.

1

VA Kit Sensis XP

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

1

Report WS SW License 1-3

The Sensis Report WS Package assists the cardiologists, cardiac nurses, technologists and catheterization lab managers with comprehensive data access and workflow oriented tools in their daily reporting and administrative tasks. The Sensis Report WS Package offers Sensis Information System functionality for customer provided PC. 1 license, price graduation 1-3.

1

Initial onsite training 32 hrs Sensis XP

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 Sensis XP

ECS_FOLLOWUP_32   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.

Qty	Item Description

1   **Sensis Master Server Pkg Impl Service**

Sensis Master Server Package Implementation Services

Siemens Medical Solutions will provide implementation services to facilitate the database configuration to support and enhance facility specific workflow. Implementation services will be provided by Siemens Clinical Implementation Specialists, with experience in database configurations and clinical workflows common to cardiac cath and electrophysiology labs. An implementation specialist will consult with you to discuss your current workflow and your Sensis environment workflow. Included in the discussion will be the "Tailor Book" for database design, report template design, security management, interfaces, and training. Consultation will detail responsibilities of both Siemens and purchasing facility in order to create and define milestones leading to successful outcome for implementation.

Implementation services to include initial database configuration, creation of 5 report templates, and creation of 10 custom queries based upon the database configurations performed.

1   **Standard Rigging Sensis**

1   **Offset Initial Training 32 hrs**

1   **LV analysis**

Analysis of the left ventricular function of the heart.

1   **Vessel analysis**

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

1   **Scientific QCA**

Scientific coronary vessel analysis with determination of degree of stenosis, distance measurement and calibration.

1   **QCA Bifurcation**

Enhances the scientific coronary Vessel analysis with an evaluation of bifurcations.

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 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.

1   **DICOM Print**

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

1   **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.

Qty	Item Description

1

Handles with support (2pc.)

The patient can hold on to these hand grips with his arms above his head resting comfortably on the supports. This is beneficial for examinations requiring the arms to be held in a specific position. The two stainless steel hand grips with two radiolucent arm rests (12.5 x 24.5 cm/ 4.9'' x 9.65'') are mounted to the accessory rails of the head-end holder. Weight: 2.35 kg/ 5.18lb It can only be used in combination with the narrow tabletop and with the head-end holder!

1

LB rad. protection w/ pivot arm

This radiation shield protects from scattered radiation when standing at the table side. It can be attached to the accessory rails either on the right or on the left side of the patient positioning table. It includes a basic unit (71.5 cm x 75 cm/ 28.2'' x 29.5'' (l x w); 7.7 kg/ 16.98 lb), one lower body radiation protection pivot swivel element (77 cm x 48 cm/ 30.3'' x 18.9'' (l x w); 3.8 kg/ 8.4 lb) and two clip-on units (57 cm/ 22.4'' x 34 cm/ 13.4'' (l x h), 2.4 kg/ 5.3 lb and 27 cm/ 10.6'' x 34cm/13.4'', 0.9 kg/ 1.98 lb) with a lead of 0.5 mm Pb. The maximum weight of the accessory rails is 40 kg (88.2 lb); the weight of the attached scattered radiation protection is 8 kg (17.64 lb). Product may not be used in conjunction with a surgery table.

1

Upper Body Rad. Prot. Artis-T

This radiation shield protects from scattered radiation. For room heights up to 290 cm/ 114.2''. It includes a ceiling rail (4m/ 157.48''), a ceiling mounted and movable stand, a support arm and an acrylic glass.   The shield made of acrylic glass with lead equivalent of 0.5 mm/0.02'' equ (w x h: 61 cm/24'' x 76 cm/30'') can be pivoted and rotated around the fixed point with a range 360 degrees. Weight acrylic glass: 9 kg/ 19.8 lb Weight support arm: 10 kg/ 22 lb The operation range is limited when used with Artis floor/biplane MN.

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

C-Room Table Support Short

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

1

Table control module (M)

Second control module to remote-control the patient table in the examination room. Table control within the degrees of freedom supported by the motor drive.

1

Hand switch manual

Additional hand switch for radiation release and additional control functions.

1

Footswitch Single Plane

Additional footswitch for radiation release including configurable control function.

1

syngo Keyboard, English - US

Keyboard with special syngo keys.

1

VOLCANO s5i Cable Set

Cable set for operating the Volcano s5i ultrasound system incl. s5iz and s5iu (CORE-System). It contains all cables for connecting the components at the patient table to the s5i imaging system in the control room. This cable set will already be integrated in the Artis zee table in the factory.

1

Injector conn. in the control room

Interface for connection of the contrast medium injector in the control room, remote from the patient table.

Qty	Item Description

1   **Intercom - Comfort**

Intercom system for communication between examination room and control room. It includes a microphone and a control box in the control room, and a microphone with an adaptive acoustic filter for background noise suppression and footswitch for conversation selection in the examination room. The microphone in the examination room is installed on the ceiling.

1   **Armholder (pair)**

The patient's arms can be comfortably placed along the body using these two arm holders. They slide underneath the patient mattress and is held in position by the patient's weight. It includes two pairs of arm holders of different length (540/690 mm - 21.2''/27.2'') and height (85/115 mm - 3.35''/4.53''), suitable both for thick and thin patient mattresses. Weight small arm holder: each 0.65 kg/ 1.43lb Weight large arm holder: each 0.95 kg/ 2.09 lb Product may not be used in conjunction with a surgery table.

1   **VA kit Artis zee systems**

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

1   **Preinst.Visual GW Artis-T(mono)**

1   **Pre-install Artis table, std**

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.

1   **Offset Initial Training 32 hrs**

Qty	Item Description

1

Mark 7 Arterion, Pedestal System

The Arterion Mark 7 Pedestal contrast medium injector can be positioned anywhere at the patient positioning table on a mobile unit, for direct operation of all functions in the examination room.

The injector system includes:

A mobile pedestal stand with electronics unit, a contrast medium heater and a connection cable to the manual release.

A support arm with injector head and a control lever for moving the injector head.

A user control console with large touch screen and corresponding additional monitoring display on the injector head.

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

Qty	Item Description
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	**Blue anti-fatigue floor mat for hospital**
1	**Standard Rigging zee SP**

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

Detailed Technical Specifications

Artis zee ceiling - latest version

Description
The accessories include the following components: - ECG cable clips - Arm cradles (pair) - Instrument tray

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.

Description

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
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

Description

calculates and displays the actual accumulated skin entry dose. This helps the user to detect a potential 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

Description

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 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.

Digital acquisition technology with frame rates of 0.5 to 7.5 f/s in 1k/12 bit matrix and digital real-time filtration.

Description

Single image and serial acquisitions with time-controlled and manually variable frame rate.

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.

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%.

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 changed separately

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.

CLEARstent enables an improved display of vascular supports (stents) that are growing increasingly difficult to detect in fluoro images due to the increasing number of obese patients and the ever finer structures.

Regardless whether contrast agent is injected during the scene or not, CLEARstent either generates a magnified still image of the highlighted stent or displays the vessel filled with contrast agent alternating with the still image.

The still image from fluoroscopy can then be overlaid.

CLEARstent can be activated with a single operation, directly at the patient table.

Angle and ECG-triggered digital rotation angiography with corresponding image data transfer to a *syngo* X Workplace for 3D image data reconstruction.
- 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 detector 20 x 20
The digital high-resolution dynamic flat detector with integrated removable grid is especially designed to fulfill the requirements of angiographic and interventional applications.

184 µm pixel arrays provide highest spatial resolution and excellent contrast. Fluoroscopy as well as image acquisition are always done in 1k matrix and 14 bit gray scale resolution with high detail visibility. Acquisition frame rates of up to 30 f/s are possible.

Usable input formats:
- Overview: 17.7 cm x 17.7 cm, diagonal 25 cm.
- Zoom 1: 14 cm x 14 cm; diagonal 20 cm.
- Zoom 2: 11 cm x 11 cm, diagonal 16 cm.
- Zoom 3: 7 cm x 7 cm; diagonal 10 cm.

The very compact design with integrated collision protection provides maximum C-arm angulation range for excellent patient access.

Description

The flat detector is mounted on a motorized rotating turntable at the C-arm. This ensures upright presentation of the anatomy on the monitor screen independent of the relative position of the C-arm to the patient at all times. 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.

Tube assembly MEGALIX Cat Plus 125/40/90-121GW
Dual-focus high-performance X-ray tube assembly with flat emitter technology for cardiac angiography, with metal center tube in lubricated spiral groove bearing technology for permanent, noise-free rotation.

- Maximum tube voltage 125 kV
- Focus: 0.4/0.8 (35/90 kW)
- Anode angle 8°
- Maximum anode heat storage capacity: 3,375,000 HU
- Maximum tube current for fluoroscopy: 250 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.

Cardiac collimator
Compact multileaf collimator for cardiac angiography with rectangular collimator and wedge-shaped 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.
- 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.

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.
- ±15° lateral tilting range.
- 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 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.

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.

Description
As a result, two foot switches can be connected directly to the table.   One foot switch is connected via cable, the other is wireless.

Color flat display
The 56" or 60"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) 56 " 124,4 cm 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 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 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 positioning range for the Large Display.

Technical specification for the display ceiling support:
- 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°.

Bypass concept
In case of error, such as controller failure, the Large Display switches automatically to bypass mode and

Description

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).

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.

The Display is attached to the rear of the DCS Large Display.
Mounting brackets are already available.

Flat display in monochrome TFT technology with high luminance and extended viewing angle.
- Screen size 19" (48 cm).
- Resolution 1280 x 1024 (pixels).
- Maximum brightness 1000 cd/m^2.
- Guaranteed brightness for the entire service life: 400 cd/m² at a contrast ratio of 500:1.
- 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.

Using the connection kit, 2 DVI-D video outputs of a unit are connected to two DVI-D video inputs of the Siemens video signal distributor.
Using fiber-optic cables ensures the galvanic isolation of the video source.

It includes the following components:
- Two DVI to fiber-optic cable adapters
- Two fiber-optic cables (36 meters)
- Two fiber-optic cable to DVI adapters
- Two 5 volt power supplies for the adapters

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

Including:
- 5 x LD Input External Digital Kit 14417161:
  A digital kit 14417161 includes:

Description

> 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.

- 3 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.

Using a connection kit, a VGA signal (up to a resolution of 1600 x 1200), DVI signal (up to a resolution of 1920 x 1200), SVideo, or BAS video signal is converted into a DVI-D video signal. In addition, two DVI-D video signals can be transmitted directly.
Using fiber-optic cables ensures the galvanic isolation of the video source.

Note: This kit can be used only if at least one VGA, SVideo, BAS, DVI, or DVI-D connection is available on the unit.

It includes the following components:
- An analog - digital video converter
- Material for installing on the wall of the examination room.
- Three DVI to fiber-optic cable adapters
- Three fiber-optic cables (36 meters)
- Three fiber-optic cable to DVI adapters
- Six 5 volt power supplies for the adapters

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.

The bidirectional communication between Sensis XP recording system and the Artis cath lab allows automatic patient registration at the Artis via transfer of patient demographics from Sensis XP. Thus, there is no longer any need for manual registration on Artis. This saves time and increases data security because wrong data entries

Description

 (e.g. typos) are no longer possible.

In addition, Artis will send its exam data (see below list) back to the Sensis XP so they can get included in Sensis XP exam report.

Transfer of patient demographics, study results and measurements like:

- Acquisition time
- Plane
- RAO/LAO angle
- Cran./Caud. Angle
- SID
- Magnification
- Mode
- Frame frequency
- Pulse width
- Time of scene
- Focus
- Total area dose
- Fluoroscope time
- Average Fluoro voltage
- Average fluoro current

This kit contains a cable set suitable for Artis zee with Large Display.

Recording system for all types of dynamic (hemodynamic) studies with a built-in *syngo*® database for storage of patient examinations including measurements, waveforms, event log, and flow sheet.

Basic configuration including

-
  Dialog computer with 3.0 GHz quad-core processor or faster, 4 GB RAM or more, 1 TB Hard disk or more, DVD-R/CD R-Writer.
- Windows 7 Professional multitasking operating system, including software license.
- *syngo*® multitasking operating system, including software license.
- *syngo*® database system, including software license.

Complete HEMO software

for all pediatric/adult, right/left heart, angio/valvular hemodynamic examinations including functionality for hemodynamic calculations such as gradients, valve areas, shunts. Including: annotations, event log, split-screen, 12 channel ECG.

- Configurable programs that allow user to create/define system settings.
- Special "hot keys" for ease-of-use and flexibility.
- 12-channel ECG, 4 IBP, 4 IBP dP/dt, QRS
- Color waveforms with programmable layout and digital monitoring readout can be displayed on 5 pages.
- Sensis networking software for linking Sensis systems together in a multi-lab environment based on an Ethernet network.

New in Hemo Software with Sensis

- Workflow Support programs – fast setting of pressure parameters, support for more standardized procedures (adaptable by user) for e.g. left heart, right-left heart, or pediatric procedures.
- Pullback sequence: Support for multiple pullbacks in a row.
- Virtual pullback: Calculate gradients from 2 separate pressure measurements.
- Extended catheter site list (including peripheral sites), support for user configurable catheter sites.

Hardware configuration

- DVD-R/CD-R burner for archiving of study data
- Signal input electronic box (SIB) for mounting under the examination table or on the rail including:

Description

 12 channel surface ECG amplifier (10 electrodes)
 Module for thermo dilution cardiac output measurement
 4 invasive blood pressure channels
 Module for SpO_2 measurement
 Module for measurement of Non-Invasive blood pressure
 2 analog outputs
 Holder for mounting
 Prepared for inserting additional modules.
 All modules are integrated in the SIB

- Hemodynamic pressure organizer (HemoMed pod) that provides a single cable connection to the SIB for cardiac output and 4 invasive pressures. Including:
  HemoMed connection cable, 3 m.

- Adapter for mounting the HemoMed pod on the Artis table rail.

Siemens Remote Service
The system is prepared for SRS (Siemens Remote Service) including: hardware and software remote diagnosis.

System remote configuration:
The customer must provide remote access (for router, LAN, etc.) for installation and operation of the system.

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 which act across interfaces with/between partner systems require the presence of corresponding interfaces as well as explicit validation, since the interpretation of the interface by the partner/target system lies outside of this product's area of 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.

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.

The starter kit includes:

2 HemoMed pod adapters, 10-pin;
adapter block to connect pressure transducer cables with 10-pin orange connectors to the HemoMed pod.

1 SpO_2 extension cable 3 m,
for connecting SpO_2 sensors to the SpO_2 module of the signal input box.

1 Reusable SpO_2 clamping sensor for adults.

1 NBP connection hose 3 m,
for connecting adult and child cuffs to the NBP module of the signal input box.

Description
1 NBP Cuff, adults: arm circumference 23-33 cm. 1 NBP extension hose 1 m. For connecting adult and child cuffs to the NBP connection hose 3m   1 adapter package for the Sensis NBP hose (10 units / package) for connecting the new Dräger NBP cuffs to the Sensis NBP hose.
The starter kit includes 1x 33 68 458 CO intermediate cable, 1 m, connects the CO accessories with the HemoMed pod. 1x 84 19 160 CO catheter cable for connecting the catheter to the intermediate cable. 1x 84 20 077 CO Thermistor cable, Ohmeda for connecting with Thermistor T-piece (57 41 975 EH413). 1x 85 39 983 C.O. Thermistor cable, Edwards.
The respiration module measures the respiration frequency of patients (adult/pediatric) by analyzing the CO_2 concentration of the expiratory air. The respiratory frequency will be transmitted to the Sensis. The digital value is presented on the real time display and stored as vital sign value in the Sensis database. Additionally the end-expiratory CO_2 concentration is measured and transferred to Sensis as the $etCO_2$ value. The digital value is presented on the real time display and stored as vital sign value in the Sensis database. The module can be mounted with the HemoMed Pod holder on the Modura rail of the table. Including: - Oridion Microcap Module. - Hemomed Pod holder and clamp. - Respiration SW license.
The respiration kit for adult includes the accessories for the first examinations: - 3 pack adult, >55 kg (25 pcs. each) - 1 pack intermediate, 20-55 kg (25 pcs. each)
Including: 1x ECG basic trunk cable 3.8 m (US Standard). 1x Standard Limb lead electrode cable kit 1.0 m with grabbers 1x Standard Chest lead electrode cable kit 0.7 m with grabbers
Including: 1x ECG trunk cable 3.8m (US Standard). 1x Radio translucent Limb lead electrode cable kit with grabbers 1x Radio translucent Chest lead electrode cable kit with grabbers

Description

1x
Radio translucent ECG electrodes, 30 pcs

Enables the remote control of the AXIOM Sensis XP with the Artis zee touchscreen control, transfer of patient demographic and X-ray data.

Transfer of patient demographics, study results and measurements such as:
- Acquisition time
- Plane
- RAO/LAO angle
- Cran./Caud. Angle
- SID
- Magnification
- Mode
- Frame frequency
- Pulse width
- Time of scene
- Focus
- Total area dose
- Fluoroscope time
- Average fluoro voltage
- Average fluoro current

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

Note, concerning interface(s) (DICOM, HL7, ASCII, etc.)
In case data exchange with an external CDMS / CIS system is done via DICOM, or HL7 or ASCII flat file transfer, the procedure is as follows:

For DICOM interfaces:
The description in the DICOM Conformance Statement downloadable from the Internet is exclusively binding for the functionality of the DICOM interface(s).

For DICOM, HL7, or ASCII interface:
Functionalities which act across interfaces with/between partner systems require the presence of corresponding interfaces as well as explicit validation, since the interpretation of the interface by the partner/target system lies outside of this product's area of 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:
AXIOM Sensis XP does not sent Artis dose data in MPPS.
Only the MPPS status is reported.

Note concerning DICOM interface(s)
The description in the DICOM Conformance Statement, which can be downloaded from the Internet, is exclusively binding for the functionality of the DICOM interface(s).

Functionalities which act across interfaces with/between partner systems require the presence of corresponding interfaces as well as explicit validation, since the interpretation of the interface by the partner/target system lies outside of this product's area of responsibility.

Description

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.

Visual and audible alarms during ongoing examinations, with configurable alarm threshold defaults for adults, children and neonates. Alarms can be enabled/disabled or temporarily muted during the ongoing examination.

The FFR application enables

- FFR data to be measured directly during the examination
- FFR results and the FFR waveform image to be stored in the Sensis system. These are available for reporting or export to the information systems.
- the FFR measurement to be postprocessed

Compatible with the FFR pressure wires of St. Jude Medical (Radi) and Volcano.
Can be connected to a channel of the Sensis HemoMed-Pod.

Including:
an FFR license for a Sensis / Sensis Lite Hemo measuring station with SW version VC11 or higher

The Nurse Workstation offers the Sensis real-time functions for operation directly from the examination room during an ongoing examination.
E.g. functions such as

- Measuring the patient's vital signs
- Hemodynamic measurements/calculations
- Electrophysiological measurements
- Documentation, reporting

The Nurse Workstation is synchronized with the Sensis system in the control room.

The mobile barcode reader simplifies data entry of coded material used in the cath lab into the Sensis Information System. A barcode reader can be connected to any SIS master or client unit of the system. But each requires a separate license.
In the USA the system operates at a frequency of 910 MHz. Depending on the working area a distance of approx. 30 m to the base station is covered.

Including:
Power supply 110 V/60 Hz.

- Base station.
- Mobile scanner
- Connection cable USB
- 1 SW License for one Sensis master/client unit.

Note: The barcode reader can be connected to a Sensis recording system with Sensis Information System (SIS), the SIS master server, the post-processing workstation with Report WS option or a customer PC running the Report Workstation package.

Upgrade Sensis SIS High-end server to the current Server generation and current software version VC12 based on Microsoft Server 2008 R2 operating system to allow to connect Sensis VC12 Win7 clients.

Sensis SIS High-end Server

- 2.4 GHz Xeon Hexa Core processor or faster
- 8 GB RAM or higher
- 6x 146 GB 3.5" hard drive, hot-swappable, in RAID 5 configuration

Description

- 1 GBit Ethernet
- Redundant power supply

The server uses Microsoft Server 2008 R2 SP1 operating system.

The new VC12 version software is directly downloaded to the Sensis Report Workstations (RWS) from the SIS server.

Note:
The RWS with SW VC12 supports
- either Windows XP Professional or Windows 7 (32 or 64 bit)
  (but on Win7 64 bit no support for Statistics manager or HPI)
- Office 2007, Office 2010 or Office 2013.

It supports the cardiologists in creating Windows WORD-based reports for examinations performed in the catheterization lab in a structured way that efficiently supports the workflow.
The AXIOM Sensis XP SW Client package provides additional clients. The package enables you to connect multiple AXIOM Sensis XP recording systems to a common AXIOM Sensis XP Master server.

Included software packages:

The AXIOM Sensis XP Patient Explorer
The "entry point" of the AXIOM Sensis XP information system that supports cardiology personnel in searching for patient studies and reports for further workflow-oriented processing.

AXIOM Sensis XP Documentation Tool
It supports the cardiology personnel in entering and handling administrative and procedural data e.g. catheters, drugs in a customized and structured way.

The AXIOM Sensis XP Report Generator
It supports the cardiologists in creating various Windows WORD based reports for examinations performed in the catheterization lab in a way that efficiently supports the workflow.

The AXIOM Sensis XP Report Composer
It supports the cardiologists in creating Windows WORD-based templates. Events, clusters, tables and fields are used to create your custom configured reports for examinations performed in the catheterization lab.

Microsoft SQL 2008 database access license
Allows connecting to the Master database of the AXIOM Sensis XP Information System SW Master package.

Microsoft WORD 2007 license

NOTE:
It is a pre-requisite that one installed AXIOM Sensis XP SIS Master database already exists.
The AXIOM Sensis XP Information System SW Client package is required on every additional AXIOM Sensis XP recording system.

For installing Statistics Manager on a Sensis RWS.

Including: 1 Statistics Manager license (for RWS dongle).

Minimum requirements for the PC:
- Pentium III 700 MHz or higher
- 512 MB RAM or higher
- 30 GB disk/DVD/CD-ROM.
- Free USB port for dongle
- Network connection (Ethernet or WLAN)
- Windows XP Professional or Windows 7 (32bit)
  Windows 7 64bit is not supported by Statistics manager

NOTE:

Description

For each installation of Statistics Manager a separate license is necessary.

The mobile barcode reader simplifies data entry of coded material used in the cath lab into the Sensis Information System. A barcode reader can be connected to any SIS master or client unit of the system. But each requires a separate license.
In the USA the system operates at a frequency of 910 MHz. Depending on the working area a distance of approx. 30 m to the base station is covered.

Including:
Power supply 110 V/60 Hz.

- Base station.
- Mobile scanner
- Connection cable USB
- 1 SW License for one Sensis master/client unit.

Note: The barcode reader can be connected to a Sensis recording system with Sensis Information System (SIS), the SIS master server, the post-processing workstation with Report WS option or a customer PC running the Report Workstation package.

It supports the cardiologists in creating WORD-based reports for examinations performed in the catheterization lab in a structured way that efficiently supports the workflow.

The Sensis Report Workstation Package offers Sensis Information System functionality for additional workstations based on customer-provided PCs.

Included software packages:

The Sensis Patient Explorer
The "entry point" of the Sensis information system that supports cardiology personnel in searching for patient studies and reports for further workflow-oriented processing.

The Sensis Documentation Tool
It supports the cardiology personnel to enter and to handle administrative and procedural data like e.g. catheters, drugs in a customized and structured way.

The Sensis Report Generator
It supports the cardiologists in creating various WORD based reports for examinations performed in the catheterization lab in a way that efficiently supports the workflow.

SQL Database Client License
Allows connection to the Master database of the Sensis Information System Master package.

Including:

- 1 license, Patient Explorer, Documentation Tool, Report Generator, price graduation 1-3
- RWS software for installation on the customer PC

NOTE:
It is a prerequisite that at least one Sensis SIS Master package exists.
For each installation of Report Workstation Package a separate license is necessary.

Minimum Requirements for the customer provided PC:

- Pentium III 700 MHz or higher.
- 512 MB RAM or higher.
- 30 GB disk/DVD/CD-ROM.
- Free USB port for dongle
- Network connection (Ethernet or WLAN)
- Windows XP Professional or Windows 7 (32bit or 64bit)

Description
- Office 2007, 2010 or 2013.   Windows 7 64bit is not supported by Statistics manager or HPI
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.**
ECS_FOLLOWUP_32 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.**
Scientific measuring program integrated in the imaging system for evaluation of the functionality of the left ventricle. - Automated and manual contour detection. - Automatic end-diastole/end-systole detection. - Calculation of ejection fraction, volumes and indices (area, length and Simpson methods). - Centerline, radial and regional wall motion analyses - Automatic and manual calibration methods. - Distance and angle measurement.
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 Vessel analysis allows precise quantification under sterile conditions, direct at table side by using 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.
Scientific measuring program integrated in the imaging system for clinically validated, objective, accurate and reproducible evaluation of coronaries. - Automated contour detection. - Determination of degree of stenosis. - Automatic and manual reference diameter determination. - - Automatic and manual calibration methods. - Distance and angle measurement. QCA allows precise quantification under sterile conditions, direct at table side by using 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 7 mm. QCA (Quantitative Coronary Analysis) is based on the gold standard in coronary analysis: CAAS II (Cardiovascular Angiography Analysis System Mark II) from Pie Medical Imaging B.V., The Netherlands. The algorithms come from the Thorax Center of the Rotterdam Erasmus University. They are clinically validated and internationally recognized for scientific purposes (Multicentre Studies).

Description
QCA (Quantitative Coronary Analysis) is based on the gold standard in coronary analysis: CAAS (Cardiovascular Angiography Analysis System) from Pie Medical Imaging B.V., The Netherlands, and this option adds the capability to analyze bifurcations. The algorithms come from the Thorax Center of the Rotterdam Erasmus University. They are clinically validated and internationally recognized for scientific purposes (Multicenter Studies).
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 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. 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.

Description

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.

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.

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
Lamp power connection 230V or 115V possible

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 windowing, scrolling, printing, marking and network communication.

Description

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 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.

NT60010835 Interstate Mat Corporation Anti-fatigue Mat

Industrial-grade anti-fatigue floor mat that provides comfort and durability. As ahigh-quality product designed to fight fatigue, it provides support for tired, aching feet, legs and back. Beveled edges for safety. Size 3'x5'.