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WHSE/INSIDE DELIVERY
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PO# 667-B39014

syngo MultiModality Workplace

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

Qty	Item Description
1	syngo MultiModality Workplace The syngo MultiModality Workplace combines a high performance, Windows XP based PC with 2D and 3D hybrid image viewing and filming software. The syngo MultiModality Workplace is well-suited for advanced 3D post-processing of oncology, cardiology, and neurology examinations.
1	Siemens LCD Color 19 inch #L Siemens 19" Flat Screen Color Monitor
1	syngo Keyboard USA English USA English syngo keyboard
1	Neurology Engine Premium PET.CT The Neurology Engine Premium PET.CT facilitates neurological diagnosis, dementia assessment, ischemic stroke evaluation, and brain tumor assessment. Included in the Neurology Engine Premium PET.CT are utilities for visualization, volumetric analysis, automated and manual fusion/registration of PET studies with CT and MR, comparison of PET studies with a predefined reference database, brain perfusion assessment, and bone extraction from contrast CT angiography.
1	syngo MI Viewing The syngo MI Viewing package provides a flexible user interface that automates a wide range of viewing capabilities.
1	Corridor 4DM SPECT Suite The Corridor4DM SPECT Suite provides quantification and visualization of gated and non-gated SPECT myocardial perfusion studies in a single integrated package.
1	Cedars Cardiac SPECT Suite The Cedars Cardiac SPECT Suite provides a comprehensive set of quantitation program for the evaluation of SPECT Myocardial Perfusion Imaging.
1	syngo Scenium SPECT Scenium(tm) advances neurological evaluation by providing a clinically focused software solution for brain analysis when used with SPECT and SPECT.CT imaging. This exceptional application offers powerful tools to radiologists and nuclear medicine physicians assessing patients with neurological disorders and dementia. By combining standardized anatomy and a comprehensive normal database with advanced fusion techniques, Scenium enables automatic correlation of the patient's study with an average brain for quick computation of abnormalities. The fusion engine produces results that are reliable and reproducible between multiple sessions and multiple users

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MI SPECT/CT Processing Package

The MI SPECT/CT Processing Package combines Flash 3D, CT Attenuation Correction, Scatter Correction and SPECT/CT 1/2 Time Imaging advanced reconstruction algorithms within a highly integrated and fully DICOM compliant Nuclear Medicine Processing software package.

Detailed Technical Specifications

syngo MultiModality Workplace

Part No. / Product	Description
<p>14415265 syngo MultiModality Workplace</p>	<p>Scope of delivery:</p> <ul style="list-style-type: none"> - PC - syngo Base User software - syngo MM Basic Evaluation - 1 Siemens 19" Flat Screen Color Monitor - ECAT Transfer Tool <p>PC High Performance Windows XP based Workstation with Dual Xeon Processors, 12 Gbyte RAM, and 147 Gbyte RAID-0 disk for patient data. The workstation is equipped with an OpenGL accelerator board to support 3D applications. To exchange medical images on DICOM-compatible DVD-R's the system is equipped with a DVD-Recording unit.</p> <p>The syngo MultiModality Workplace can be connected to an existing network via 10/100/1000 Mbit Ethernet.</p> <p><u>syngo Based User Software:</u></p> <p>Patient Browser</p> <ul style="list-style-type: none"> - Patient management - DICOM 3 communication with Send, Receive, Query&Retrieve, and Storage Commitment - DICOM Print - Reading of CDs - DVD/CD-R module for writing DICOM media for data exchange. Writing is in background mode. <p>Filming: A virtual film sheet shows a 1:1 display of the film sheets to be printed, thus permitting an effective preview of the filming job and re-windowing the images, as well as providing a large number of evaluation functions.</p> <p>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.</p> <p>CINE Display: Automatic or interactive dynamic presentation technique for the visualization of time and volume series. Synchronized viewing of multiple series.</p> <p>Measurement and annotation: Text annotation; Distance, angle, circle, ROI and pixel lens, depending on information available from the acquisition system.</p> <p>Video sequences stored on offline media: 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.</p> <p><u>syngo MM Basic Evaluation</u></p> <p>The syngo MM Basic Evaluation package includes the fundamental applications required for hybrid registration and visualization:</p>

Part No. / Product	Description
<p><i>(Continued)</i> 14415265 syngo MultiModality Workplace</p>	<p>syngo Basic 3D</p> <p>Image Generation:</p> <p>Multi Planar Reconstruction (MPR) for interactive move through 3D volumes at arbitrary orientations Realtime reconstruction of secondary slices in orthogonal, oblique or double-oblique orientations with variable slice thickness (MPR thick, MPR thin) and slice distance. Calculation of curved cuts. Automatic generation of parallel or radial ranges. Frequently used range settings can be stored. Cutlines can be determined in the reference topogram or from a 3D surface reconstruction.</p> <p>Maximum Intensity Projection (MIP) for angiographic display Projection of pixels with highest intensity (vascular information) onto an arbitrarily oriented plane for display and diagnosis of e.g. aneurysms, plaques, stenoses, vascular anomalies or vascular origins. Thin MIP function for projection within a slab of the dataset. Automatic generation of radial ranges. The resulting series can be viewed with a three-dimensional impression using the Movie function.</p> <p>Shaded Surface Display (SSD) for surface display of complex anatomies 3-dimensional display of surfaces from a series of contiguous slices using a variable threshold with fast preview and high image quality mode. Used to display and analyse various anatomies, e.g. from the visceral cranium, pelvis, hips etc. for the purpose of planning surgical interventions. The 3D objects can be tilted and rotated in realtime on the monitor using a virtual trackball. Automatic generation of radial series of SSD displays.</p> <p>Image Fusion</p> <p>CT, MR, NM, or PET images are accepted as input for image fusion. Studies can be done with the same modality or with different modalities</p> <p>Registration Algorithms:</p> <ul style="list-style-type: none"> - Automatic based on Mutual Information or Surface Matching - 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 after registration for later retrieval with datasets <p>Visualisation Techniques:</p> <ul style="list-style-type: none"> - side by side visualisation of both datasets 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. <p>Syngo CT Basic Evaluation</p> <p>syngo Volume CT Volume CT is an evaluation function which allows accurate calculation of a volume from a stack of two-dimensional CT images. This can be done by Volume-of-Interest (VOI) definition and by limiting the minimum and maximum density (HU) values for the calculation. Different views of the image data provide fast navigation and easy volume definition. Potential applications are volume measurements of a tumor or of organs such as lung and kidney.</p> <p>syngo Dynamics CT Dynamics is an evaluation function which allows you to analyze the absolute or relative enhancement of Hounsfield values within a Region-of-Interest. The enhancement value is computed from a stack of CT images which are obtained at different points in time after contrast agent injection. For dynamic evaluation, usually images from the same cross-section of the body are taken, such as a Multiscan through an unclear process in the liver. The time to the maximum enhancement (Time-to-Peak) and the way a certain tissue or structure absorbs the contrast medium can be very helpful in differential diagnosis of a given process.</p>
<p>14415155 Siemens LCD Color 19 inch #L</p>	<p>The Siemens 19" LCD flat screen display features a very high contrast even under very bright ambient light conditions. The Gamma curve was precisely adapted to the CIE-/DICOM recommendation and is thus suited especially for gray scale display.</p> <p>The controlled background lighting ensures stable lighting throughout the entire product life cycle.</p>

Part No. / Product	Description
<p><i>(Continued)</i> 14415155 Siemens LCD Color 19 inch #L</p>	<p>LCD flatscreen display</p> <ul style="list-style-type: none"> - 19" (48 cm) screen size - resolution: 1.280 x 1,024 (pixel) - Maximum brightness (typ.): 280 cd/m² - Flicker-free and distortion-free image display - anti-glare screen
<p>14415116 syngo Keyboard USA English</p>	<p>syngo Keyboard for the selected language. For easy operation of MultiModality workplace browser, viewer and filming tasks. Special keys for windows, sheets, printing, marking and network communication.</p>
<p>14415216 Neurology Engine Premium PET.CT</p>	<p>Neurology diagnosis benefits from volumetric visualization and quantification techniques that provide fused anatomical and functional volumes. This engine can display a full metabolic cortical view for displaying the entire cortex on a single view or offers layouts to display correlated PET and CT, or PET and MRI and fused images of either.</p> <p>With the use of optimized workflows which are included, this engine can combine standardized anatomy and a comprehensive normal database with advanced fusion techniques, to enable automatic correlation of the patient's study with an average brain for quick computation of abnormalities. The engine produces results that are reliable and reproducible between multiple sessions and multiple users. The superior quantification tools include voxel-by-voxel and regional evaluation of abnormal glucose metabolism and automatic positioning of anatomical regions of interest which are optimized for evaluation of dementia. Additional anatomical brain regions of interest are possible which makes this application flexible to evaluate a number of neurological disorders. In addition, several anatomical regions may be selected for quick assessment of a single patient scan or for quantitative comparison to other scans. Color-coded statistical analysis highlighting patterns of hyper-metabolism and hypo-metabolism are created and can easily be incorporated into clinical reports. Unique fusion techniques, automated evaluation steps, and comprehensive quantification tools meet the needs of the emerging PET and PET.CT neurological evaluations. A reporting mechanism is also incorporated to help ensure consistent patient reporting.</p> <p>This engine also allows the quantitative evaluation of dynamic CT data of the brain from predefined scan protocols to aid in early differential diagnosis of acute ischemic stroke, and image the blood-brain barrier disruption found with some brain tumors. By providing images of Cerebral Blood Flow (CBF), Cerebral Blood Volume (CBV), Time-to-Peak and Multi-Parameter Classification from one set of dynamic CT images, this engine allows a quick and reliable assessment of the type and extent of cerebral perfusion disturbances. This engine also supports simultaneous multislice processing as well as the stringent time and workflow requirements in an emergency setting where time is of the essence. The additional capability to generate permeability images of brain tumors may enhance the physician's ability to grade tumors, plan biopsies and monitor therapy. Using many automated functions, mirroring of ROI's, and automated calculations, fast results like multiparameter tissue classification can occur in seconds.</p> <p>This engine is further enhanced by a dedicated post-processing function which allows removing bone structures from CT-Angiography (CTA) datasets of the brain for improved visualization of the cerebral vasculature. It uses a non-enhanced CT scan, either a low-dose scan or a spiral acquired diagnostic scan, to automatically subtract and quickly remove bone from a cerebral CTA data set. The algorithm works automatically to make this application very easy to use improving the visualization of vascular structures in the area of the skull base, like the internal carotids or vertebral arteries to help delineate aneurysms and other vascular diseases.</p> <p><i>Applications include: syngo Scenium PET, syngo Neuro Perfusion CT, syngo CT Neuro DSA</i></p>
<p>14415193 syngo MI Viewing</p>	<p>Standard Features</p> <p>Customizable Displays (Flexible Display Activity) Features</p> <ul style="list-style-type: none"> - 24 Bit Display - Add customized display pages to any workflow - Re-Usable Display Components - All Display Components have "self-contained" properties which are available anytime, anywhere. All display parameters are saved when the workflow is saved (zoom, colors, layout, etc) - Compare one page to another with a single click

Part No. / Product	Description
<p>(Continued) 14415193 syngo MI Viewing</p>	<ul style="list-style-type: none"> - Any customized page is automatically a save screen - Choose from Slice, Splash, Cine, Single Image, Curve, Text, and Bitmap display Components for layouts - WYSIWYG Page Customization - Automatic Labels <p>Display Components and Tools</p> <ul style="list-style-type: none"> - Multi-page Comparisons - Slice Display - Series Display - Cine Display - Fusion Slice Display - Fusion Series Display - Multi-Modality Slice Display - Correlated Cursors - Image Display - Curve Display - Multiple ROI Statistics Display - Annotation - Panning - Zooming - Flip Horizontal and Vertical - Rotate by 90 - Interactive Window control - Auto-normalization - Text Annotation - Ruler - Arrow Annotation - Angle Measurement <p>Hardcopy Features</p> <ul style="list-style-type: none"> - Print Preview of all results - Any display built in flexible display can be printed (WYSIWYG) - Final output is prepared ("Displayed" off screen) in the actual resolution of the configured printer - Supports automatic printing (in the background) - Supports immediate printing - The Hard Copy Activity is responsible for saving "save screens" - Any display built in flexible display can be saved as a "save screen" - All save screens are saved into a single series - User definable save screen series name - Supports multiple devices simultaneously (i.e. send output to a color printer and film within a single workflow) - Configurable Header - Choose to display Patient Name, Patient ID, Patient DOB, Study Name, Study Date - Choose to display header at top or bottom of output - Background Color (Black or White) - Choose from many paper sizes– 8 x 10, letter, legal, tabloid, A4 - Printer Setup

Part No. / Product	Description
<p><i>(Continued)</i> 14415193 syngo MI Viewing</p>	<ul style="list-style-type: none"> - Number of copies from 1 to 99 - Savable printer configuration settings <p>3D Orientation</p> <ul style="list-style-type: none"> - Free angle reorientation of reconstructed series - Process up to 4 series simultaneously - Process 1 series to create 3 different series, each in a different plane <p>Image Fusion</p> <ul style="list-style-type: none"> - Automatic adjustment based on pixel size - Volume translation and rotation operations - Manual, interactive volume manipulations - Manually enter desired translation and rotation parameters - Adjustable alpha blending display - Selectable viewing angles - Choice of output matrix size (64, 128, or 256) - Landmark registration technique
<p>14415227 Corridor 4DM SPECT Suite</p>	<p>The suite provides quantification of non-gated SPECT images, parameters related to left ventricular function from gated SPECT images, assessment of ventricular function from gated blood pool SPECT images, assessment of myocardial viability from SPECT images and evaluation of the extent of mismatch between myocardial viability and perfusion. Dedicated tools for quality control assessment of SPECT data are provided along with ICANL compliant reporting capability.</p> <p>The Corridor4DM application is an OEM product developed by INVIA Medical Imaging Solutions.</p>
<p>14415163 Cedars Cardiac SPECT Suite</p>	<p>The Cedars Cardiac SPECT Suite includes the following programs; Quantitative Gated SPECT (QGS) Quantitative Perfusion SPECT (QPS) Quantitative Bloodpool SPECT (QBS) QGS Companion Software QPS Companion Software</p> <p>This cardiac package (QGS, QPS and QBS) calculates a comprehensive set of cardiac parameters including ejection fractions, volumes, wall motion including right ventricular free wall motion in QBS, wall thickening, perfusion (%). Phase analysis is available for both gated SPECT and gated SPECT Bloodpool studies. QPS allows for the quantitation of prone SPECT data and of serial perfusion changes. Both 20 and AHA-17 segment scoring models are available. In addition to calculating and Eccentricity Index, QGS also calculates a more regional measure of LV shape known as the Shape Index.</p> <p>Displays include gated slices with contours, a motion frozen display which results in better resolution and contrast by eliminating motion of the cardiac cycle, interactive 3D images, and polar maps. Manual over-ride of contours and DICOM compatible output are additional features.</p> <p>Outputs include DICOM secondary capture files, result files as well as the ability to generate an AVI file format.</p> <p>Supported on syngo MI Workplaces running a minimum of syngo MI Application 2006A software.</p> <p>Not supported for Profile reconstructed data.</p> <p>The Cedars application is an OEM product developed and supported by Cedars Sinai.</p>
<p>14415167 syngo Scenium SPECT</p>	<p>The superior quantification tools include voxel-by-voxel and regional evaluation of abnormal brain perfusion and automatic positioning of anatomical regions of interest which are optimized for evaluation of dementia. Scenium also includes additional anatomical brain regions of interest which make the application flexible to evaluate a number of neurological disorders. In addition, several anatomical regions may be selected for quick assessment of</p>

Part No. / Product	Description
<p>(Continued) 14415167 syngo Scenium SPECT</p>	<p>a single patient scan or for quantitative comparison to other scans. Color-coded statistical analysis highlighting patterns of hyper-perfusion and hypo-perfusion are created and can easily be incorporated into clinical reports. Scenium provides unique fusion techniques, automated evaluation steps, and comprehensive quantification tools to meet the needs of SPECT and SPECT.CT neurological evaluations.</p> <p>Features</p> <ul style="list-style-type: none"> - Fully integrated with syngo MI Application™ on the syngo MI Application @syngo MultiModality Workplace. - Optimized workflow for SPECT neurological studies - Clear and quick assessment of hyper- and hypo-perfusion brain regions - Standard voxel-by-voxel reporting of statistics - Predefined 3D anatomical brain regions - Cortical View details entire cortex on a single view - Advanced evaluation tools - Minimum, maximum and mean SUV - Standards deviation from normals - Multiple color-maps - Gallery or single image views - One-click image snapshot capabilities. - Hybrid visualization of anatomy (CT.MR) and physiology (SPECT) - Report Generation <p>Scenium is non-diagnostic software. It is an aid to assessment and quantification of pathologies.</p>
<p>14415221 MI SPECT/CT Processing Package</p>	<p>Advanced SPECT/CT Reconstruction</p> <p>The Advanced SPECT/CT Reconstruction package utilizes the most advanced reconstruction algorithms available. These include:</p> <ul style="list-style-type: none"> - Flash 3D: an innovative SPECT OSEM 3D algorithm providing higher contrast, higher resolution and decreased image noise. - CT Attenuation Correction: takes into account the beam model of the CT and the energy of the nuclear exam to correct for attenuation inherent in nuclear examinations - Scatter Correction: Uses both DEW and TEW techniques to allow the subtraction of scatter windows from the primary energy window to improve image contrast and resolution while reducing noise. - The SPECT/CT ½ Time Imaging package is based upon a statistical, adaptive de-noising and de-blurring process for planar images and longitudinal whole body bone scans. It can be used to shorten the acquisition time of planar images, bone scans or SPECT studies without loss in image quality. Alternatively, current acquisition times can be maintained to produce better looking images. <p>Organ Based Processing</p> <p>3D Reorientation</p> <ul style="list-style-type: none"> - Free angle reorientation of reconstructed series - Process up to 4 series simultaneously - Process 1 series to create 3 different series, each in a different plane <p>Cardiac Planar Gated Blood Pool</p> <ul style="list-style-type: none"> - Left and Right Ventricular EF Analysis - Regional EF Analysis - Automated Image Filtering - Automatic or Manual ROI determination - Functional Image Creation - Curve Analysis - Filling and Emptying Rate Analysis <p>Shunt Analysis</p> <ul style="list-style-type: none"> - Automatic Composite Creation

Part No. / Product	Description
<p><i>(Continued)</i> 14415221 MI SPECT/CT Processing Package</p>	<ul style="list-style-type: none"> - Curve Smoothing and Fitting Options - Integral Calculation for Patient and Shunt Curve - Shunt Qp/Qs via Area Method - Shunt Qp/Qs via Height Method <p>Optional Cardiac Packages</p> <ul style="list-style-type: none"> - Corridor4DM - Cedars Cardiac Suite - Emory Cardiac Toolbox - Cardiac Flash 3D <p>Lung Analysis</p> <ul style="list-style-type: none"> - Total or Segmented analysis - Perfusion Quantitation - L/R Lung Comparison - Geometric Mean Calculation - Single Lung Processing <p>Thyroid Analysis</p> <ul style="list-style-type: none"> - Automatic or Manual ROI determination - Uptake, Countrate, Area and Volume Calculations - Single Lobe Processing - 6 and 24 Hour Uptake <p>Renal Analysis</p> <ul style="list-style-type: none"> - Automatic or Manual ROI Determination - Gates GFR - Oberhausen ERPF - Itoh ERPF - Oriuchi MAG3 - MAG3 without Blood Sample - Transplant - Captopril Comparison - Curve Analysis - R/L Ratio - Bubeck (TER) Processing <p>Gastric Emptying Analysis</p> <ul style="list-style-type: none"> - Automatic or Manual ROI Determination - Dual Isotope / energy window support - Geometric Mean Calculation - Curve Fitting Routines - Liquid / Solid Processing - Emptying Calculations <p>Hepatobiliary</p> <ul style="list-style-type: none"> - Automatic or Manual ROI Determination - EF Calculations - Dynamic and Static Methods supported - User Defined Interval EF Processing

Part No. / Product	Description
<p><i>(Continued)</i> 14415221 MI SPECT/CT Processing Package</p>	<p>Brain Analysis</p> <ul style="list-style-type: none"> - ROI Quantitation and Ratio Analysis - Bloodflow Analysis - Patlok Plot & Cerebral Bloodflow - Lassen Method - IMP - IMP-ARG - NIMS <p>Image Manipulation</p> <ul style="list-style-type: none"> - Series Filter - Series Arithmetic - Series Reformat - Series ROI & Curve <p>Image Fusion</p> <ul style="list-style-type: none"> - Automatic adjustment based on pixel size - Volume translation and rotation operations - Manual, interactive volume manipulations - Manually enter desired translation and rotation parameters - Adjustable alpha blending display - Selectable viewing angles - Choice of output matrix size (64, 128, or 256) - Landmark registration technique