



Multimodality performance, anytime, anywhere

Philips IntelliSpace Portal

Philips IntelliSpace Portal offers exceptional flexibility to diagnose and collaborate virtually anywhere. This thin-client application server solution allows simplified access for multimodality clinical review and analysis to enhance patient care.

Rich clinical applications for all specialties

Industry-leading rich clinical applications across specialties are designed to help you realize the full potential of your scanners to quickly quantify and diagnose as never before.

Your world, in the palm of your hand

IntelliSpace Portal provides industry-leading advanced visualization and gives you access to the proven clinical functionality, workflow, and collaboration tools at any Portal location. The capabilities of the IntelliSpace Portal

reach throughout the enterprise as a single applications server integrated with PACS. It's an integrated clinical solution for reviewing and image processing across specialties and modalities.

Collaborate with ease

Gives radiologists the tools to access, create, and disseminate actionable information throughout the enterprise through a secure, real-time, and collaborative platform, including Web Collaborator medical networking tools.

PHILIPS
sense and simplicity

Anywhere you care

The IntelliSpace Portal is a single solution that integrates solutions like specialized 3D servers, stand-alone workstations, remote access, and web-based viewers. The solution helps clinicians analyze, interpret, and present everywhere, including the exam room, reading room, using PACS, and remotely.

What is Imaging 2.0?

It's a revolution inspired by the belief that better collaboration leads to better outcomes at every level. Enabled by advanced technology, Imaging 2.0 offers new levels of performance, integration, and patient comfort across modalities.



Imaging 2.0

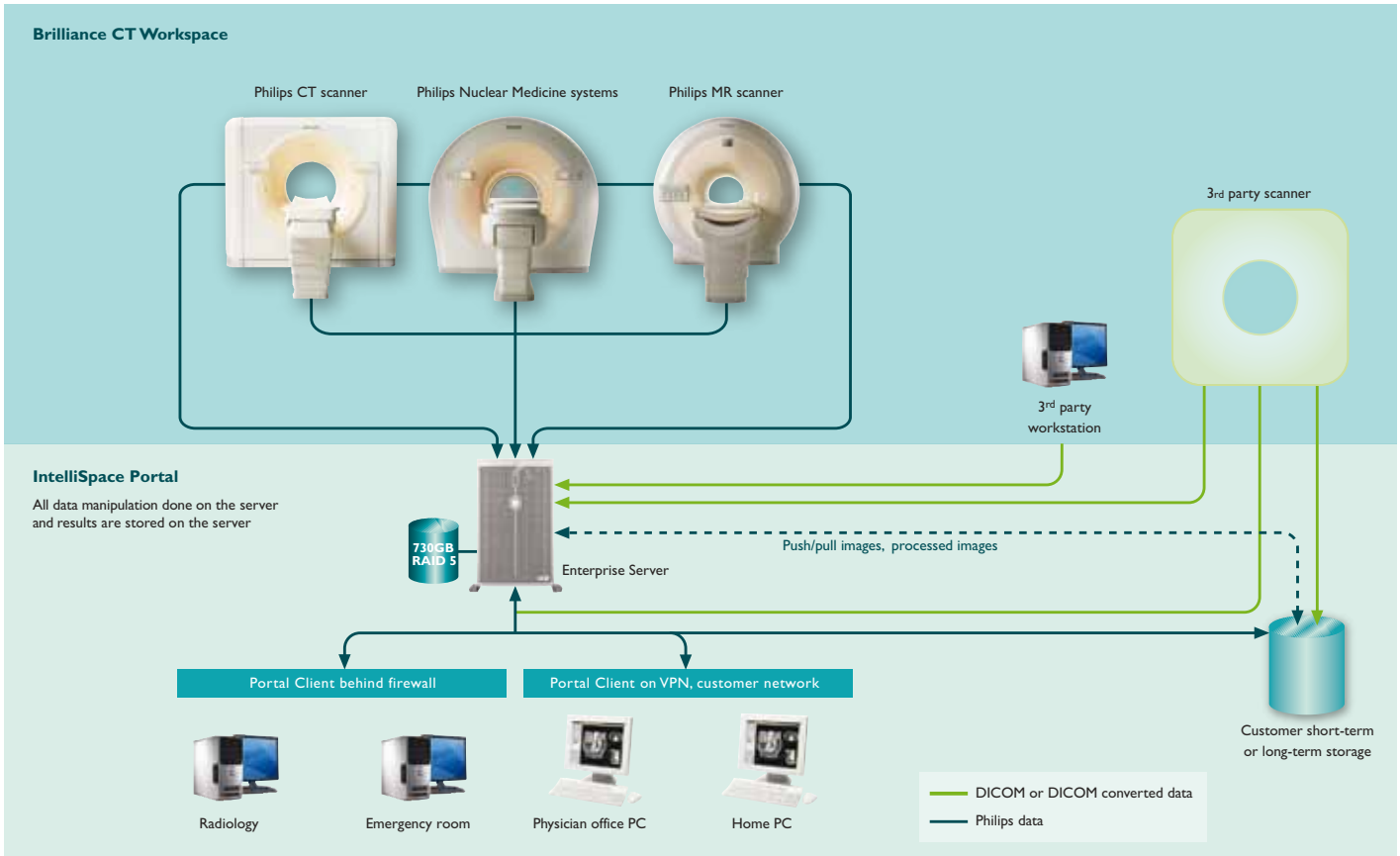
This is a great time to be in imaging with all of the new innovations, but you have told us that you face unprecedented demands for stronger service, cost reduction and patient loads.

Imaging 2.0 (two-dot-oh) from Philips is an approach to clinical collaboration and integration, patient focus, and improved economic value to help radiologists find success in the new realities of practicing medicine.

Imaging 2.0 is our approach to answering the challenges that we heard from over 3,000 radiologists during the past year.

It's a revolution inspired by the belief that better collaboration leads to better outcomes at every level. Enabled by advanced technology, Imaging 2.0 offers new levels of performance, integration, and patient comfort across modalities.

Web 2.0 is used to describe the evolution of the web from being data-driven to user-centric. It is about openness and collaboration to achieve what was unimaginable just a few short years ago. Imaging 2.0 promises to do the same.



A proven pedigree

IntelliSpace Portal is based on the Extended Brilliance Workspace, ranked #1 by KLAS in its 2008 and 2010 “Top 20 Best in KLAS Awards: Software & Professional Services” for Advanced Visualization. KLAS, an independent research firm specializing in monitoring and reporting performance of healthcare information technology vendors, announced that the Philips Brilliance Workspace was the category leader in Advanced Visualization.

Seeing more from the start

Philips has been about illumination from the very beginning, when in 1891 Dutch mechanical engineer Gerard Philips began producing carbon-filament lamps. We are still relentlessly determined to see more and see better, making the invisible, visible. Novel and holistic ways to reduce dose, to find and share answers more quickly and completely, to deliver even greater economic value.

Together we can help clinicians achieve what was unimaginable just a few short years ago.

Clinical richness everywhere you need it

IntelliSpace Portal gives you exceptional and full-featured access to any application anytime. These advanced standard and optional multimodality applications are designed to help you quickly and easily deliver clinical results with insight.

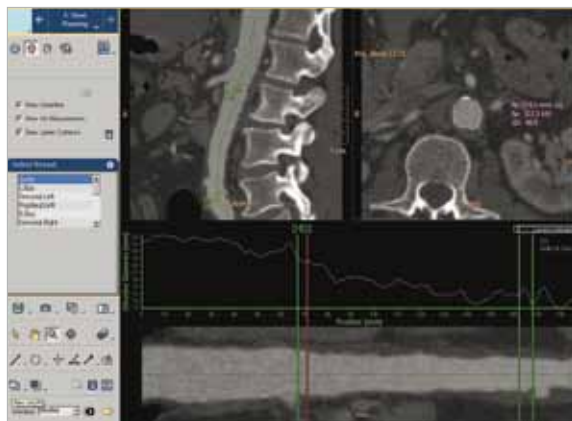
Glass View for clear context



CT Viewer Glass View delivers high-resolution reference viewing for the surgeon, radiologist, and referring physician.

Quickly plan endovascular stent placement

CT Advanced Vessel Analysis (AVA) Stent includes multiple preset and user-defined options to gain detailed information for use in stent planning, reducing overall planning time to five minutes compared to 30 to 45 minutes without the program. The application includes an option which allows results to be printed on a customized report.



CT AVA Stent Planning allows planning of stent placement in a matter of minutes and is useful for nearly any vessel.

Detailed inspection of contrast enhanced vessels

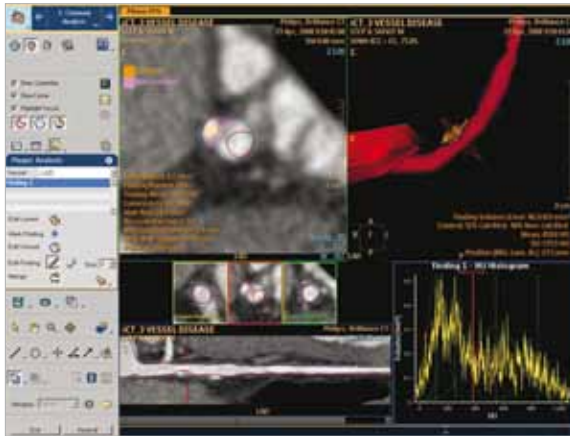
CT Advanced Vessel Analysis (AVA) Stenosis includes an automatic centerline for major vessels, 0-click bone removal for bony structures obscuring vascular structures, and skull removal for clear visualization of carotid siphon.



CT AVA Stenosis includes the tools required for a closer look of contrast-enhanced vessels.

Evaluate plaque risk

CT Coronary Plaque Analysis includes robust capabilities to calculate stenosis and evaluate coronary plaque for analysis, quantification, and classification of plaque from multidetector computed tomography (MDCT) data. This application gives the clinician the capability to assess plaque sites to avert future problems.



CT Coronary Plaque Analysis allows a better understanding of the distribution and composition of plaque in individual patient vessels.

One-click 3D calcium segmentation

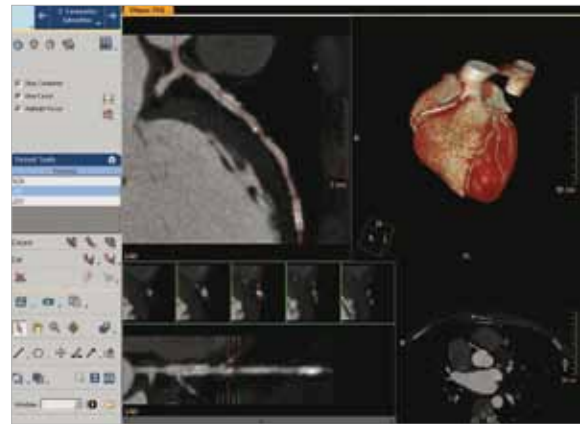
CT Calcium Scoring rapidly quantifies coronary artery calcifications (CAC) and includes mass, Agatston, and volume scores with automated, customizable reporting for paper or electronic distribution of results.



CT Calcium Scoring reports percentile risk based on more than 5,000 multislice CAC scores from Philips CT scanners.

Fast cardiac analysis

CT Comprehensive Cardiac Analysis and advanced LV/RV functional analysis is provided with endo- and epi-luminal segmentation of the heart chambers in order to calculate ejection-fraction, stroke volume, cardiac output, and left & right ventricular mass. It allows visualization of the entire coronary tree, vessel lumen morphological analysis, and free lumen diameter area analysis. Comprehensive Cardiac Analysis also provides ventricular functional analysis and 3D heart chamber and valve morphology, including a dynamic cine mode.



CT Comprehensive Cardiac Analysis provides a wealth of powerful analysis tools based on 0-click total heart segmentation.



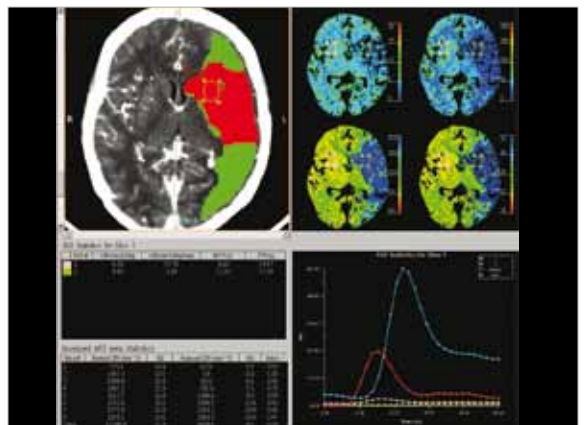
View registration and segmentation across multiple studies over time.

Industry-leading applications



Identify salvageable areas in acute stroke

CT Advanced Brain Perfusion, exclusive to Philips, calculates and displays reduced summary maps to identify areas of salvageable tissue in the acute stroke patient. The program automatically corrects for misregistration or motion artifacts, and displays summary maps which may distinguish between still-viable and non-viable infarcted tissue correlated to MR perfusion and MR diffusion imaging to assist in treatment planning. In addition to summary maps, optional time-sensitive algorithms are also available.



CT Advanced Brain Perfusion allows clinicians to make reasonably accurate predictions in individual patients about which brain tissue will clinically improve with reperfusion therapy.

Customized reports in minutes

A robust set of reporting tools and multimedia capabilities help make communicating results to referring physicians easy. For example, in just minutes you can create a customized report for a complete multimodality workup for paper, print or electronic distribution that can include review of multiphase images on a single customized screen.



Customizable reports can be created in multiple languages and sent to PACS as DICOM SC or DICOM PDF.

Assess lung nodules over time

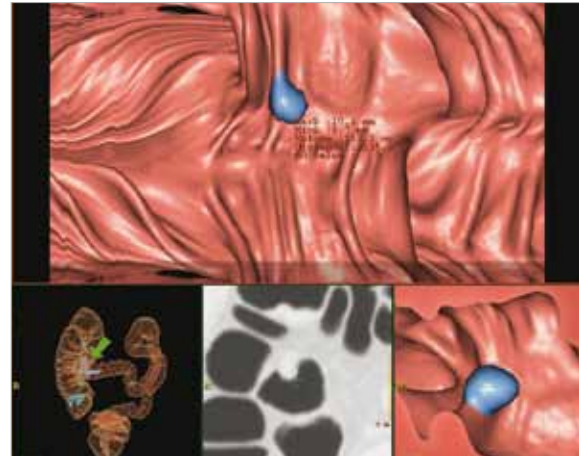
CT Lung Nodule Assessment (LNA) can provide quantitative information about the size, shape, and change over time of physician-indicated lung nodules. The package provides one-click volume segmentation, advanced reporting for rapid distribution of paper and electronic results, and the ability to compare studies by scrolling through multiple linked datasets.



CT LNA can help more accurately assess lung-nodule changes over time and the nodule doubling time.

Reduce reading times in virtual colonoscopy

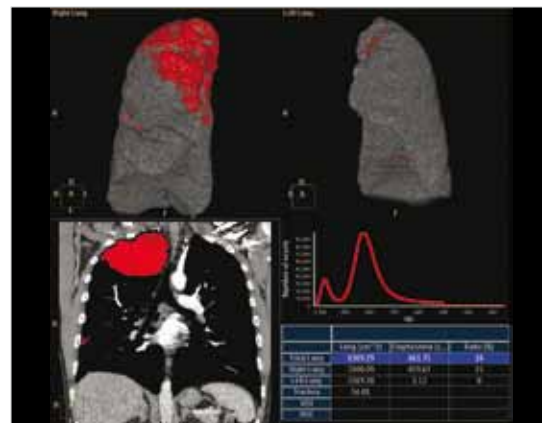
Exclusive to Philips, CT Virtual Colonoscopy with Perspective Filet View allows clinicians to perform a “virtual dissection” of the colon by unfolding or unrolling along the centerline and displaying a portion of the colon for inspection, providing a 100% view of the surface of the colon with no image or hands-on manipulation.



CT Virtual Colonoscopy provides power and flexibility, and can help reduce reading times to just five to ten minutes compared with 30 to 40 minutes previously.

Track lung disease

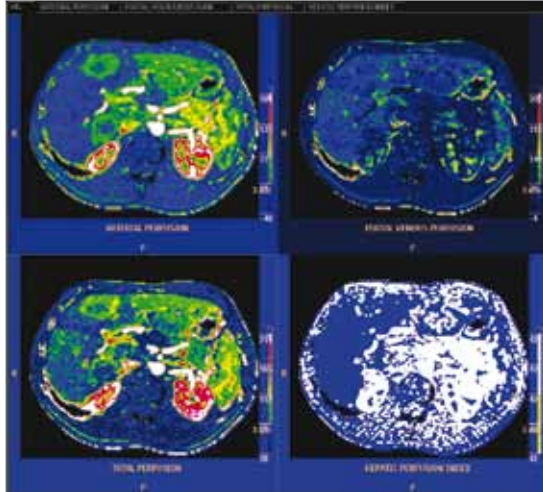
Lung Density offers a quick and easy mechanism to quantify diffuse lung disease, including emphysema, asbestosis, and black lung, as well as more accurately localize specific affected areas.



Lung Density can provide the quantification and localization of the extent of lung disease critical to accurate pre-surgical assessment prior to lung surgery.

Quantifiable perfusion

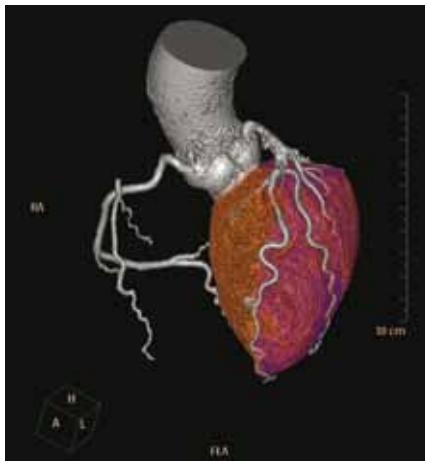
Functional CT aids in the evaluation of acute or chronic stroke patients, as well as providing whole-organ or single-location liver perfusion. The package provides motion correction for high accuracy and large coverage/low-dose imaging for superb neuro results.



Functional CT delivers quantifiable organ perfusion results and can evaluate tumor perfusion to enhance characterization of known lesions.

Fusing cardiac CT-NM

Comprehensive Cardiac Analysis (CCA) incorporates support for myocardial perfusion imaging (MPI). CCA with the CT-NM Fusion option allows loading the following NM datasets simultaneously with the CT data: rest – gated and un-gated, stress – gated and un-gated. The applications display NM images in the short axis and the two long-axis planes. The axes definition is derived from the CT study. The application supports data acquired on The Philips Precedence 16, BrightView XCT, Cardio SPECT/CT, GEMINI TF 16 and 64, and GXL 16 systems.

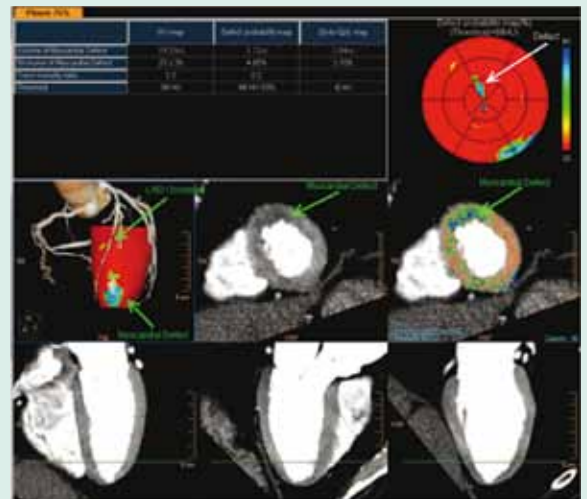


CCA with the CT-NM Fusion option allows loading NM datasets simultaneously.

Assessing myocardial defects

CT Myocardial Defect Assessment provides visual and quantitative assessment of segmented, low-attenuation defect areas within the myocardium from a single, gated cardiac CTA scan (retrospectively-gated spiral or Step & Shoot Cardiac). Because this is adjunct information obtained from a single cardiac CTA scan, there is no additional increase in radiation dose from multiple scans. The application itself is based on the robust, automatic, model-based, whole-heart segmentation from the Comprehensive Cardiac Analysis application. Myocardial Defect Assessment provides visual assessment of low-attenuation deficits within the left-ventricular myocardium via the following:

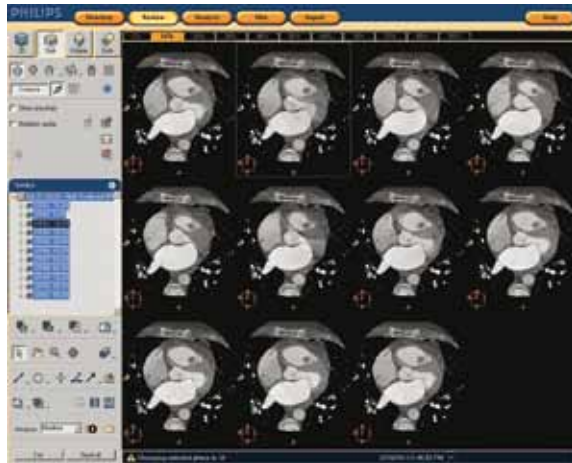
1. Color maps shown in short-axis views
2. Segmentation maps shown on short-axis and polar plots, displayed along with long-axis reference images
3. Volumetric visualization of coronary arteries along with a segmentation maps displayed as an overlay on top of a 3D myocardial surface



Quantitative information includes volume of low attenuation areas within the myocardium based on various maps and the percentage of defect volume out of total myocardial volume.

Quick cardiac visualization

CT Cardiac Viewer provides a comprehensive set of user tools that allows quick visualization of one or multiple cardiac phases, synchronization of multiple cardiac phases with interactive slab-MIP tools for review purposes, cine mode for cardiac axes views and a simple “Area-Length” calculation of end systolic volume (ESV), end diastolic volume (EDV), cardiac output (CO) and ejection fraction (EF) for basic ventricular functional assessment

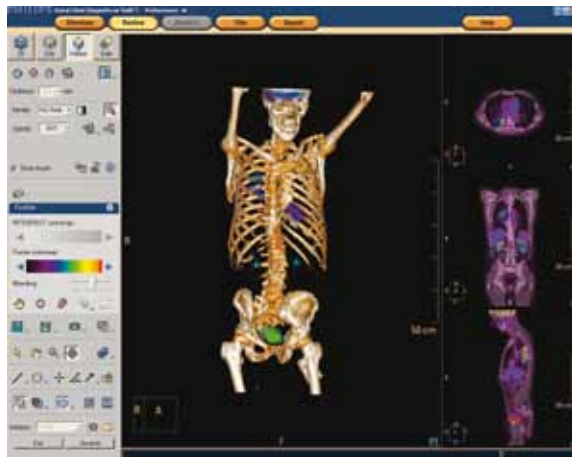


A comprehensive set of user tools to allow quick visualization for cardiac assessment.



Access images and tools anytime, anywhere

IntelliSpace Portal provides enterprise-wide NM viewing, including SUV measurements (cursor and ROI), alpha blending, and slab display.



Share fused images with oncologists and surgeons during multidisciplinary meetings, conferences, and tumor boards.

Automated 3D registration

The Automatic Registration Tool provides automated 3D registration of multimodality studies (PET, SPECT, CT, and MR).

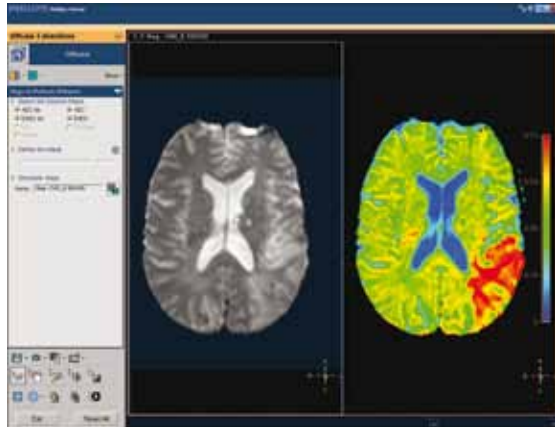


Supports these registration methods: mutual information, cross correlation, auto correlation, and fiducial matching.

Robust applications

Calculating MR diffusion

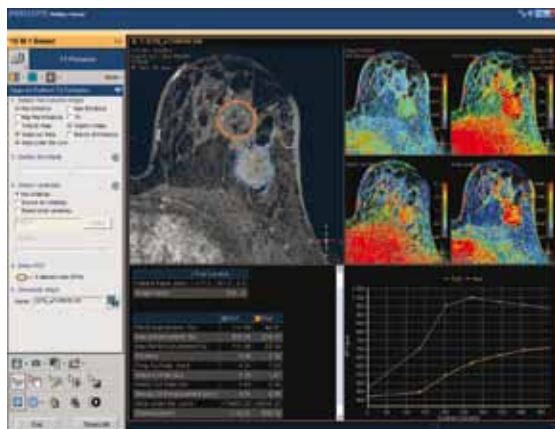
MR Diffusion enables the processing and calculation of various diffusion maps from an appropriate set of diffusion-weighted images. The map types include ADC, eADC, FA, and trace weighted. Registration of the source diffusion-weighted images may be performed.



Includes capabilities such as user-selected color coding of output maps and user-selected choice of specific b-values for the end calculation.

Assessing MR T1 perfusion

MR T1 map types include relative enhancement, maximum enhancement, time to peak (TTP), and wash-in rate. Registration of the source images in the dynamic series may be performed. Temporal and spatial smoothing of the input data can be performed to improve SNR. The package includes user-selected color coding of the functional data. The maps can be viewed and stored as overlays on top of anatomical reference images. The opacity of the overlay is user defined. ROI analysis can be performed.



Example of T1 Perfusion analysis depicting a clear overview of the various hemodynamic maps, tabulated output.



Support for MR image processing

The Portal Routine MR Enterprise supports processing of images acquired using Philips MR systems. Due to the need for information not supported through standard DICOM fields to perform some of the processing, multivendor capability is not supported in all cases.

Assessing MR neuro perfusion

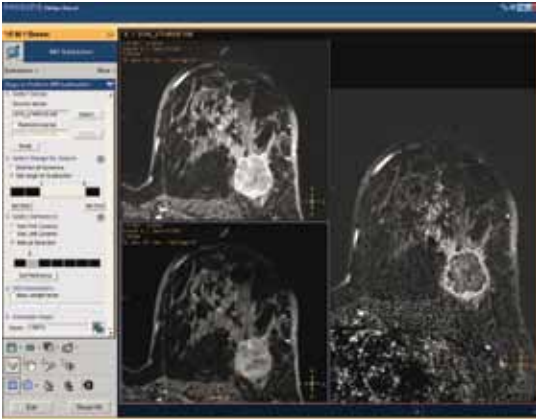
MR Neuro Perfusion map types include mean transit time (MTT), negative integral (NI), time to peak (TTP), time of arrival (T0), and index. Registration of the source images in the dynamic series may be performed. Temporal and spatial smoothing of the input data can be performed to improve SNR. The package includes user-selected color coding of the functional data. The maps can be viewed and stored as overlays on top of anatomical reference images. The opacity of the overlay is user defined. ROI analysis can be performed, and an arterial input functions (AIF) can be defined if required.



Enables processing and calculation of hemodynamic maps from an appropriate set of dynamic images.

Calculating MR subtraction

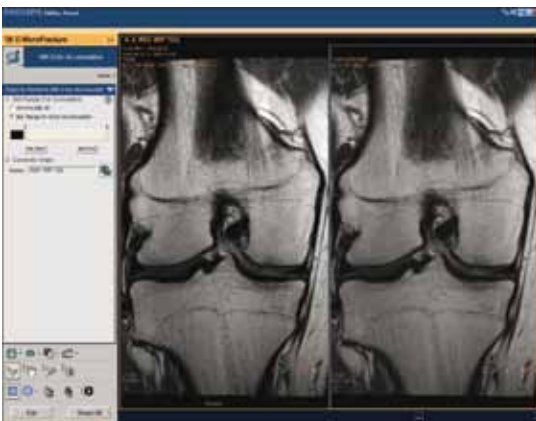
MR Subtraction enables subtraction calculations and also provides for computation of magnetization transfer contrast ratio (MTC) images from an appropriate set of input images. Weighting factors can be defined to influence the subtraction or MTC outcome.



Enables calculation of the subtraction, relative subtraction, and ratio of any MR images.

Calculating MR echo accumulation

MR Echo Accumulation enables the calculation of a new image based on the sum of images with a variety of echo times. The echo times to include are user-defined and the processing provides interactive update of the results.



Enables the calculation of a new image based on a variety of echo times.



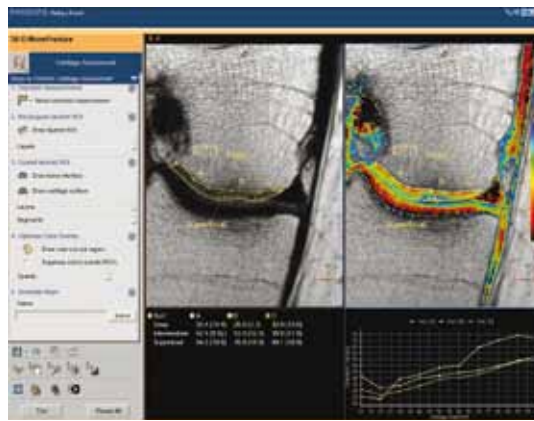
Full FOV MR images

MR MobiView stitched, full FOV images are created with a single mouse-click in the IntelliSpace Portal Multimodality Viewer. Applications for MobiView include the generation of full field of view images or MRAs for the whole body, eye-to-thighs, torso, lower peripherals, whole spine, and complete CNS. The resulting image series can be viewed, filmed, and exported by DICOM.

Enables the stitching and viewing of MRI and MRA series acquired during a multi-station acquisition.

Cartilage quality

MR Cartilage Assessment enables the visualization of cartilage structures using color coded T2 maps. Precise positioning of cartilage shaped layered ROIs are used to assess variation of T2 values across the cartilage depth.



Color coded T2 maps enable visualization of cartilage structures.

Real-time collaboration

Web Collaborator

The IntelliSpace Portal Web Collaborator option provides the ability to share image results and views from the portal applications with other clinicians by using a standard web browser (note: all web browsers may not be supported). The Portal Web Collaborator requires no proprietary software download.

Live views with live tools

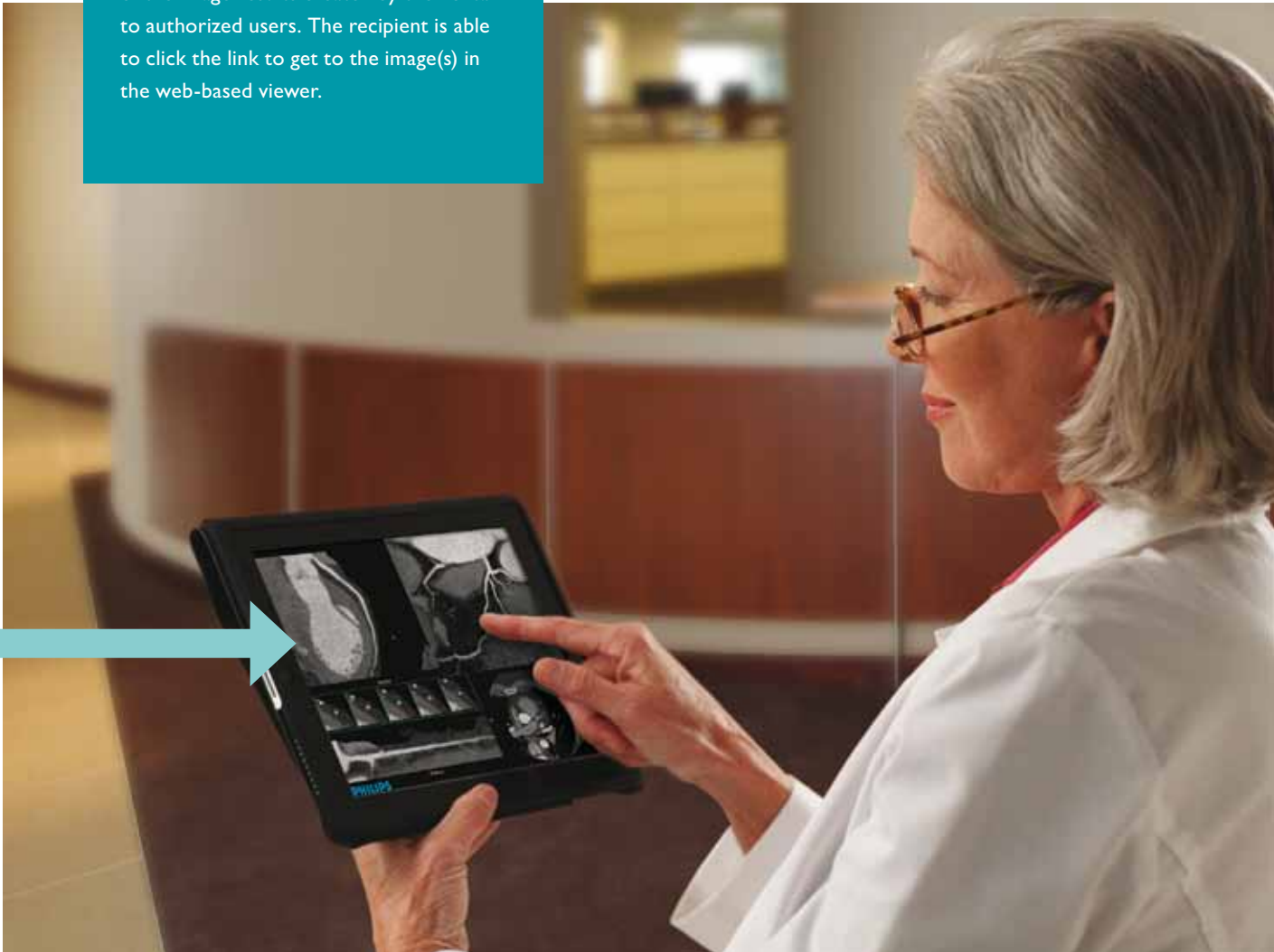
Users can initiate real-time collaboration sessions via instant-invitation or by scheduling using standard PC scheduling tools. When in the collaboration session, users share the same live view of the image in the web-based image viewer and are able to interact with this shared image view using various tools for annotation and control.



Clinicians can dynamically interact with the images while discussing diagnosis and treatment plans either by phone or live chat, allowing for reduced time to arrive at a clinical decision.

Send links to images

IntelliSpace Portal Web Collaborator also allows the radiologists to email links of the image results created by the Portal to authorized users. The recipient is able to click the link to get to the image(s) in the web-based viewer.



Collaboration opportunities include critical care reporting, remote consultation, and peer conferencing.

The server keeps it simple

IntelliSpace Portal provides multimodality display of CT, MR, and NM datasets. Proprietary technology streams display to the client device over a LAN, WAN, or any broadband Internet connection through the hospital's VPN (virtual private network) without the need to download the CT/MR or NM data to the client PC. The "heavy lifting" and complex processing of the data is done on the server.

Optimize workflow

Enhance productivity through reduced pre-processing times and the tools and information for quicker diagnostic decisions.



Twice the view

Workflow is enhanced through the use of dual monitors.



80%

Reduce pre-processing times up to 80% compared with previous systems (optional).



Integrates to any PACS

IntelliSpace Portal features proven open interfaces for integration with Philips PACS and PACS from other vendors.

Attractive to own, year after year

IntelliSpace Portal is updated continually through the server, providing desirable simplicity and scalability while eliminating the need to acquire multiple workstations by modality and specialty over the years.

Advanced performance

- Unlimited number of client installs
- Number of concurrent users only subject to available server resources
- High-performance image manipulation
- Dual-monitor ready
- High availability and extended storage as purchasable option



Advanced clinical applications include

- Multimodality Tumor Tracking
- Advanced Vessel Analysis (AVA) and stent planning
- Customized reports
- Comprehensive Cardiac Analysis
- CT Coronary Plaque Analysis
- CT Calcium Scoring
- CT Virtual Colonoscopy with Perspective Filet View
- CT Lung Nodule Assessment (LNA)
- Lung Density
- CT Advanced Brain Perfusion
- Functional CT
- CT Body perfusion
- CT Viewer
- CT Myocardial Defect Assessment
- Multiphase CT Cardiac
- Cardiac Viewer
- NM Viewer
- CT NM Cardiac Fusion
- Volume rendering
- MR Neuro perfusion
- MR Diffusion
- MR T1 perfusion
- MR MobiView
- MR Subtraction
- MR Echo Accumulation
- Portal Routine MR Enterprise
- CRT Endo
- VIP, surface MIP, MIP, minMIP, and average displays
- Full slab review capabilities
- Multiplanar reformations in curved, paddlewheel, and MasterCut
- Full 2D capabilities, including compare, pan, zoom, scroll, region of interest (ROI), and annotation
- High-priority login for emergencies, regardless of network traffic
- Lossy or lossless compression

All features not available in all applications.



Operating system overview

- IntelliSpace Portal v4.0

Server hardware specifications

- Dell™ T610 server

Server software specifications

- Windows 2008 server, 64-bit edition
- Philips IntelliSpace Portal server software, including:
 - Proprietary Portal Server Application
 - User management application for managing user database
- McAfee® antivirus software
- Networking
 - TCP/IP protocol only
 - Gigabyte network card(s)
 - Static IP address
- Security
 - No unused Windows services running
 - No shared drives
 - Windows access control defined by customer
- Administrative access through server console or remote desktop
 - Encrypted users/groups database file
 - User management application available only to defined Portal administrators
 - Encrypted username/password transmission
 - Event logging
 - Windows firewall

Server power requirements

- Dual power supplies for 120-240V AC

Recommended network specifications

- Gigabit connections
- DNS server with reverse DNS capabilities
- Domain-based network environment
- Remote connection bandwidth minimum 5 Mb/s or above

Client hardware requirements

- Screen resolution: 1280 x 1024 (recommended) or 1024 x 768
- Minimum processor speed: 1 GHz
- Minimum memory: 512 MB (recommended: 1GB)
- Gigabyte-speed network adapter
- 500 MB free on C: drive
- 3-button mouse

Client software requirements

- Windows XP® with SP2 or above
- Windows Vista®, Windows 7® account administrative access for initial installation
- Ability to add the IntelliSpace Portal to the firewall exception list
- .NET® framework

Networking and DICOM

The IntelliSpace Portal complies with IHE Year 3 standards. DICOM 3.0 functionality includes:

- Storage service class as a user
- Storage service class as a provider
- Service class as a provider
- Query/retrieve service class as a user
- Print service class as a user
- Storage commitment service class as a user
- Archiving and networking of images in DICOM 3.0 protocol/format for:
 - Computed Tomography (CT)
 - Magnetic Resonance (MR)
 - Nuclear Medicine (NM)
 - Computed radiology
 - Radiography and fluoroscopy (R&F)

Environmental

Operating temperature	10-35°C (50-95°F)
Storage temperature	-40-65°C (-40-149°F)
Operating relative humidity	8% to 85% non-condensing
Storage relative humidity	5% to 95% non-condensing
Operating vibration	0.25 G at 3Hz to 200Hz for 15 minutes
Storage vibration	0.50 G at 3Hz to 200Hz for 15 minutes
Operating shock	1 shock pulse at 41 G for up to 2 ms
Storage shock	6 shock pulses at 71 G for up to 2 ms
Operating altitude	-16 m to 3,048 m (-50 ft to 10,000 ft)
Storage altitude	-16 m to 10,600 m (-50 ft to 35,000 ft)

Rich applications and access

IntelliSpace Portal configuration	Ideal for...	Number of concurrent users
IntelliSpace Portal DX	Department-sized performance in a cost-effective enterprise solution	2 to 5
IntelliSpace Portal HX	Hospital-sized performance	5 to 9
IntelliSpace Portal EX	Enterprise solution, allows for the highest number of concurrent users	10 to 15

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www.philips.com/healthcare
healthcare@philips.com

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