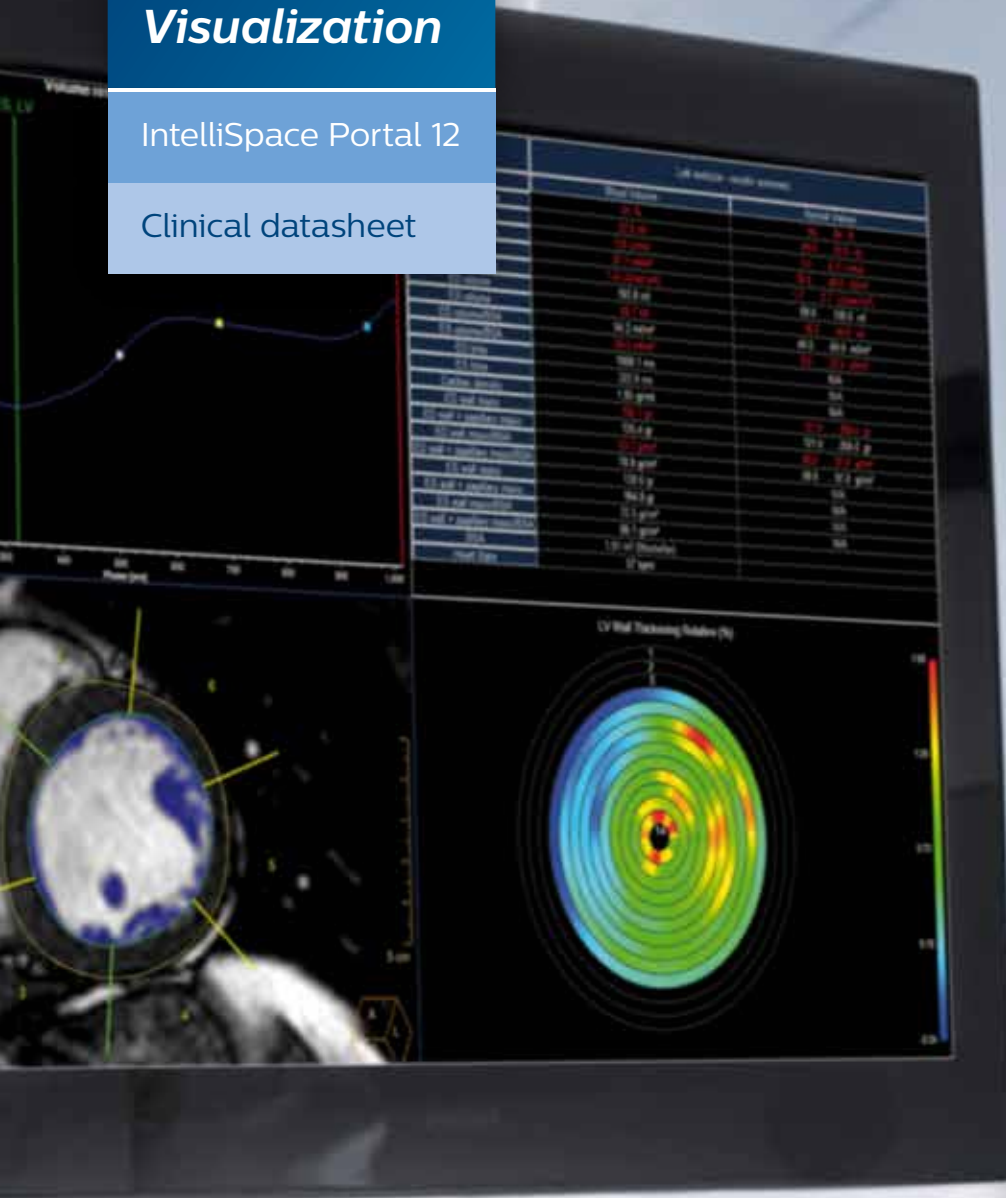


PHILIPS

*Advanced
Visualization*

IntelliSpace Portal 12

Clinical datasheet



All your advanced
analysis needs
**One comprehensive
solution**

Content

A single solution for the most complex patients

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⁽¹⁾ Zero Footprint Viewer is not intended for diagnostics. Please contact your Philips representative for more details.
⁽²⁾ The viewer is supported on OS X 10.10 and Windows 7,10 using: Internet Explorer, Chrome, Edge, Safari. functionality is not available in IX workstation configuration
⁽³⁾ Not intended for diagnostic use
⁽⁴⁾ ClearRead CT is a trademark of Riverain Technologies inc.
⁽⁵⁾ These functionalities may not be available in all territories. Please contact your Philips representative for more details.
⁽⁶⁾ CAD functionality is not available for sale in the US
⁽⁷⁾ VeraLook is a trademark of iCAD inc. and is available for sale only in the US

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⁽⁸⁾ Caas is a trademark of Pie Medical Inc.
⁽⁹⁾ Not available for sale currently in the US
⁽¹⁰⁾ This functionality is not available in IntelliSpace IX workstation configuration
⁽¹¹⁾ NeuroQuant is a trademark of CorTechs Labs, Inc.
⁽¹²⁾ Mirada is a registered trademark of Mirada inc.
⁽¹³⁾ Corridor4DM is a registered trademark of Invia, LLC.
⁽¹⁴⁾ Cedars-Sinai Cardiac Suite is a registered trademark of Cedars-Sinai.
⁽¹⁵⁾ Emory Cardiac Toolbox, ECTb, HeartFusion, and SyncTool are registered trademarks of Emory University
⁽¹⁶⁾ Not available for sale in the USA
⁽¹⁷⁾ NeuroQ is a trademark of Syntermed

A single solution for the most complex patients

Philips IntelliSpace Portal 12 is an advanced visualization platform that offers a single integrated image post-processing solution to help physicians perform quantitative analysis – especially in complex cases and follow-up.

IntelliSpace Portal 12



Intelligent

First-time right clinical insights designed to support your diagnostic confidence



Automated

Reduce time to report through optimized workflows and results automation

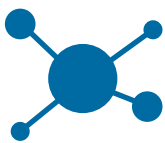


Connected

Scalable AV platform seamlessly integrated within your enterprise



Multiple clinical domains, one standard for facilitating the diagnosis process
IntelliSpace Portal 12 helps you extend your clinical depth and coverage. Leverage a broad range of over 70 applications, designed by clinicians for clinicians. Spanning multiple clinical domains including oncology, cardiovascular, neurology, and pulmonary these applications offer exceptional flexibility to access, analyze, and quantify patient data in one unified view.



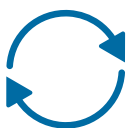
Multiple modalities, one comprehensive view

IntelliSpace Portal 12 handles CT, MR, MI, US, XA, DSA, and DXR data from multiple vendors⁽¹⁾ within a consistent multi-modality viewing environment, providing you a comprehensive view of the patient's condition from one chair. IntelliSpace Portal 12 includes a suite of applications for the Philips Spectral CT scanner, which supports both in-depth spectral information on demand and retrospective analysis.



Multiple advanced tools, one consistent workflow

Designed to optimize your workflow, IntelliSpace Portal 12 supports consistency across applications. IntelliSpace Portal 12 is predicated on intelligent workflows empowered by AI methods.



One solution for today and tomorrow

Advanced analysis is changing rapidly. Stay at the forefront of clinical innovation available in IntelliSpace Portal with Philips RightFit Service Agreements⁽²⁾. The service solution allows you to take advantage of a steady stream of clinical and IT innovations via IntelliSpace Portal, including clinical support on demand and consulting services.

⁽¹⁾ Please contact your local Philips representative for details about multi-vendor coverage

⁽²⁾ Consult your local Philips representative for information on RightFit Service Agreements

IntelliSpace Portal powered by Artificial intelligence

- actionable insights for precision diagnosis

The true value of Artificial Intelligence is when it fuels the progress from strong data insights to confident decisions about the care pathway, designed to yield the best outcomes. But, AI needs to be combined with a deep human understanding of the clinical and operational context.

IntelliSpace Portal is leveraging intelligent workflows empowered by AI methods, across multiple clinical domains. From Lung nodule detection and characterization, automatic segmentation algorithms for Liver and lungs, CAD for colon polyps and pulmonary embolism, subtle brain changes highlighted during longitudinal assessment, cardiac MR ventricles segmentation for functional analysis, quality indicators for automatic brain perfusion results assessment and more.

Finally, we embed the intelligence driven from AI directly within workflows so that it's natural to the caregiver by automating care pathways. By being contextual, embedded and enhancing the user experience, IntelliSpace Portal AI offers a seamless, integrated and personal experience throughout the health journey.



Clinical focus areas

Cardiovascular

Diagnose and monitor cardiovascular diseases in a comprehensive manner. Quantitative tools such as 3D models and maps offer quick analysis designed to support diagnostic work. Bring advanced diagnostic imaging closer to the interventional suite by integrating Allura/Azurion Interventional Suite with IntelliSpace Portal which automatically retrieves patient data of your scheduled patients.

IntelliSpace Portal 12 now offers new and enhanced capabilities for vascular analysis workflow, cardiac CT coronaries extraction, cardiac MR automatic LV & RV segmentation for functional analysis, MR 4D flow analysis, cardiac MR Strain⁽²⁾⁽³⁾⁽⁴⁾ analysis, CT spectral cardiac viewing and Photo Realistic Volume Rendering (PRVR) for 3D images.

⁽¹⁾ The Photo Realistic Volume Rendering (PRVR) is not intended for diagnostic image review

⁽²⁾ These functionalities may not be available in all territories. Please contact your Philips representative for more details

⁽³⁾ Caas is a trademark of Pie Medical Inc.

⁽⁴⁾ Not available for sale currently in the US

⁽⁵⁾ 3D models are not intended for diagnostic use

⁽⁶⁾ Cedars-Sinai Cardiac Suite is a registered trademark of Cedars-Sinai.

⁽⁷⁾ Corridor4DM is a registered trademark of Invia, LLC.

⁽⁸⁾ Emory Cardiac Toolbox, ECTb, HeartFusion, and SyncTool are registered trademarks of Emory University

⁽⁹⁾ Not available for sale in the USA

Cardiovascular applications

- Photo Realistic Volume Rendering (PRVR)⁽¹⁾
- CT spectral cardiac viewer
- MR Caas⁽²⁾⁽³⁾ 4D flow
- MR Caas⁽²⁾⁽³⁾⁽⁴⁾ Strain
- Multi Modality Advanced Vessel Analysis (AVA)
- CT Comprehensive Cardiac Analysis (CCA)
- CT Spectral Comprehensive Cardiac Analysis
- CT Cardiac Viewer
- MR Cardiac
- 3D Modeling⁽⁵⁾
- CT Spectral Viewer
- CT Calcium Scoring
- CT Advanced Vessel Analysis (AVA) Stent Planning
- CT Cardiac Plaque Assessment
- CT Dynamic Myocardial Perfusion (DMP)
- CT EP Planning
- CT-MI Fusion
- CT Myocardial Defect Assessment
- CT Spectral Advanced Vessel Analysis
- CT Spectral Magic Glass on PACS
- CT TAVI Planning
- MR Cardiac Functional Analysis
- MR Cardiac Spatial Enhancement
- MR Cardiac Temporal Enhancement
- MR Cardiac Quantitative Mapping
- MR Cardiac Whole Heart
- MR QFlow
- NM Cedar-Sinai Cardiac Suite 2017⁽²⁾⁽⁶⁾
- NM Corridor 4DM⁽⁷⁾ 2018
- NM Emory Cardiac Toolbox (ECTb) v4.2⁽²⁾⁽⁸⁾
- NM Emory Cardiac Toolbox (ECTb) HeartFusion⁽²⁾⁽⁸⁾⁽⁹⁾
- NM Emory Cardiac Toolbox (ECTb) SyncTool⁽²⁾⁽⁸⁾⁽⁹⁾
- NM Processing Applications Suite

Neurology

Neurological disorders represent a major global burden, ranging from neurodegenerative diseases to brain tumors, stroke and other brain conditions. Neurological cases can be challenging, especially stroke, where you need to act fast. By providing qualitative and quantitative assessment of brain images combined with analysis and quantification of vascular occlusions, advanced visualization helps physicians assess brain tissue affected by ischemic stroke and determine the access route for recanalization. IntelliSpace Portal offers automated brain perfusion workflow that helps you determine areas of reduced cerebral blood flow compared to the contralateral hemisphere by conveniently reviewing results automatically available on PACS.

IntelliSpace Portal now offers neuro workflow enhancements such as ability to automatically generate and share CT brain perfusion results via email⁽¹⁾ as well as improved results saving and export capabilities within various neuro applications.

⁽¹⁾ Content sent via email is not for diagnostic use.

⁽²⁾ 3D models are not intended for diagnostic use

⁽³⁾ These functionalities may not be available in all territories.

Please contact your Philips representative for more details.

⁽⁴⁾ NeuroQuant is a trademark of CorTechs Labs, Inc.

⁽⁵⁾ Mirada is a registered trademark of Mirada inc.

⁽⁶⁾ Not available for sale in the USA

⁽⁷⁾ NeuroQ is a trademark of Syntermed

Neurology applications

- Multi Modality Advanced Vessel Analysis (AVA)
- CT Brain Perfusion
- MR FiberTrak
- MR Longitudinal Brain Imaging (LoBI)
- Multi Modality Viewer (MMV)
- 3D Modeling⁽²⁾
- CT Spectral Viewer
- CT Spectral Advanced Vessel Analysis
- CT Spectral Light Magic Glass
- CT Spectral Magic Glass on PACS
- MR T2* (Neuro) Perfusion
- MR Advanced Diffusion Analysis
- MR Diffusion
- MR IViewBOLD
- MR MobiView
- MR NeuroQuant^{(3) (4)}
- MR Permeability
- MR SpectroView
- MR Subtraction
- NM NeuroQ Amyloid
- NM Mirada Viewer⁽⁵⁾
- NM NeuroQ 3.8^{(3) (6) (7)}

Oncology

Cancer is increasingly managed across multiple phases and multiple disciplines, requiring a comprehensive approach. Integration along the cancer care continuum is therefore critical in order to enhance patient experience and patient care. IntelliSpace Portal 12 offers an extensive portfolio of multi-modal post-processing applications ranging from screening and diagnosis to treatment planning and follow-up, and provides an integrated advanced visualization solution along the cancer care continuum in one single platform. With automated volumetric segmentation and quantification, multi-parametric tumor analyses, advanced response criteria across multiple time points or dedicated capabilities to aid in treatment planning, IntelliSpace Portal supports clinical workflows at critical phases of patient care.

IntelliSpace Portal 12 now offers new and enhanced capabilities for AI based Lung Nodule CAD detection, tumor segmentation workflow across multiple time-points and enhancements differences visualization for multiphase CT acquisitions.

⁽¹⁾ ClearRead CT is a trademark of Riverain Technologies inc.

⁽²⁾ These functionalities may not be available in all territories. Please contact your Philips representative for more details.

⁽³⁾ 3D models are not intended for diagnostic use.

⁽⁴⁾ CAD functionality is not available for sale in the US

⁽⁵⁾ VeraLook is a trademark of iCAD inc. and is available for sale only in the US

⁽⁶⁾ This functionality is not available in IntelliSpace IX workstation configuration

⁽⁷⁾ Mirada is a registered trademark of Mirada inc.

Oncology applications

- CT Lung Nodule Analysis (LNA)
ClearRead CAD^{(1) (2)}
- CT Multiphase Analysis
- CT Lung Nodule Assessment (LNA)
- Multi Modality Tumor Tracking (MMTT)
- 3D Modeling⁽³⁾
- Multi Modality Tumor Tracking qEASL
- CT Spectral Viewer
- CT Liver Analysis
- CT Virtual Colonoscopy
- CT Body Perfusion
- CT Lung Nodule (CAD)⁽⁴⁾
- CT Spectral Magic Glass on PACS
- CT Spectral Tumor Tracking
- CT Virtual Colonoscopy
- VeraLook CAD⁽⁵⁾
- DynaCAD Breast^{(2) (6)}
- DynaCAD Prostate^{(2) (6)}
- MR Advanced Diffusion Analysis
- MR MobiView
- MR SpectroView
- MR Subtraction
- MR T1 Perfusion
- NM Mirada Viewer⁽⁷⁾
- NM Processing Application Suite



Multi Modality (MM) - clinical applications



Enhanced

Comprehensive vascular analysis

Multi Modality Advanced Vessel Analysis (AVA) is intended for visualization, assessment and quantification of vessels in CTA and MRA data with a unified workflow for both modalities. For CTA data, it provides both automatic and manual bone removal and vessels segmentation including extraction of vessel centerlines, lumen contours and vessel contours. For both modalities, it provides tools for extracting and editing centerlines.

- ✓ Vascular
- ✓ Surgery
- ✓ Neurology
- ✓ Cardiology

MM AVA offers inspection views for selected vessels centerlines and local analysis. It allows creating, capturing, and reviewing of basic user selected endovascular measurements (and calculations when applicable), as well as predefined measurements sets and measurements correlations.

The AVA application is intended to be used for arteries analysis in: Head and Neck, Body, and Peripherals.

MM AVA now offers ⁽¹⁾ a new, simplified workflow, designed to speed your analysis work while continue to support in clinical decision. It includes:

- New intuitive User Interface
- Reduced steps, fewer clicks, and results saving automation, to accelerate time to results generation and capturing
- New improved fully automatic Head & Neck bone removal and vessel extraction algorithm (including automatic extraction of the Subclavian arteries)
- New semi-automatic, interactive editing and segmentation tools, for coping with challenging vessel's pathologies
- New lumen contour mechanism for vessel inspection

⁽¹⁾ New version not available for sale currently in the US, Pending 510k



Enhanced

Streamline workflow for analysis and follow-up of oncology patients

Multi Modality Tumor Tracking (MMTT) is a post processing software used to display, process, analyze and quantify anatomical and functional images, for CT, MR, PET/CT, SPECT/CT and Dual Energy CT at one or multiple time points. The application offers enhanced semi-automatic volumetric segmentation, as well as selectable oncology response criteria including standards such as RECIST 1.0, RECIST 1.1, WHO, CHOI, PERCIST, irRC and mRECIST. The application also supports PET SUV analysis including glucose-corrected SUV. Findings can be shared with other IntelliSpace Portal applications such as CT Liver Analysis and CT Viewer or exported in different formats including RT Structures.

- ✓ Oncology
- ✓ Pulmonary

MMTT now offers a new tumor segmentation workflow and propagation capabilities across multiple time-points for longitudinal assessment as well as ability to load saved segmentation results from LNA application.



Access to advanced DICOM viewing anywhere^{(1) (2)}

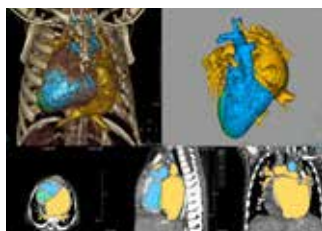
IntelliSpace Portal Zero Footprint Viewer provides a clinically rich viewing environment, like quick prior comparison with automatic registration, MPR and Volume modes and Key images workflow. The HTML-based viewer allows access⁽²⁾ to imaging data stored and created on IntelliSpace Portal from anywhere. Built-in peer-to-peer real time collaboration capabilities supports communication and consultation between physicians. Supported by a dedicated HW, this viewer can scale-up and support up to 50 concurrent users.

- ✓ General

⁽¹⁾ This functionality is not available in IntelliSpace IX workstation configuration.

⁽²⁾ Zero Footprint Viewer is not intended for diagnostics image review. The viewer is supported on OS X 10.10 and Windows 7, 10 using: Internet Explorer, Chrome, Edge, Safari.

Multi Modality (MM) - clinical applications



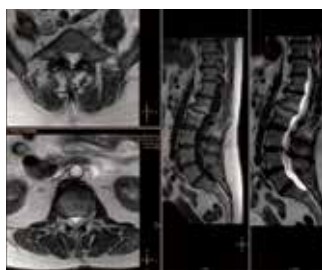
Streamline 3D modeling workflow

3D Modeling allows the user to view volumetric images of anatomical structures, perform segmentation, edit and combine segmented elements (tissues) into a 3D model. The user may determine the information related to the exported elements of the 3D model such as smoothness and output mesh size. The application allows to create batches for export in standard industry formats such as STL, and/or to render the mesh surface file in a 3D PDF format.

✓ General

Studies of CT & MR can be used to create a single 3D model of the same patient. The application provides tools that allow the user to align between the volumes of interest in the images. 3D Modeling batch files can be easily exported in standard formats such as STL, with the option of generating a 3D PDF as an additional means of sharing results with 3D printing or other services⁽¹⁾. Contours can also be exported as RT Structures.

⁽¹⁾ 3D models are not intended for diagnostic use.

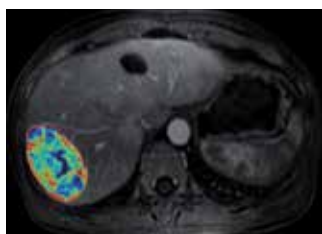


Initial viewing platform for advanced analysis needs

Multi Modality Viewer (MMV) supports study review, side-by-side comparison, series arrangement as well as 2D and 3D manipulation of MR, CT, PET, NM, US, DX, CR, RF and XA images. It offers a set of tools for basic measurements, stitching multi-station data and generation of new DICOM series/objects for communication purposes. The viewer supports multiple image rendering modes and geometries as well as fusion capabilities of two series including registration options. The application allows creation and saving of results/processed images in standard DICOM and non-DICOM formats, and supports sharing of key images to Film and Report of all supported modalities. The viewer also supports the generation of MR DICOM series in the form of a dedicated MPR series derived from the 3D T1 acquisition, fused with objects like fiber, SPM (fMRI) and/or segmented structure. A unique patient-centric workflow facilitates communication between the IntelliSpace Portal and Philips Image Guided Therapy systems, to automatically launch relevant advanced analysis data before intervention.⁽¹⁾

✓ General

⁽¹⁾ This requires specific plug-in installation on the ISP client which integrates with the Philips cath lab systems.



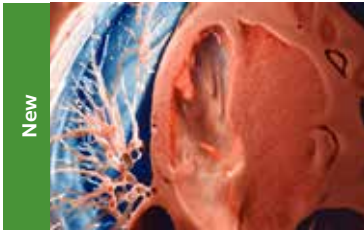
Semi-automatic tumor quantification

Multi Modality Tumor Tracking supports the creation of **Quantitative EASL (qEASL)** maps used to measure segmented volumes of interest in heterogeneous lesions. This semi-automated 3D (Volumetric) tumor response assessment tool, based on EASL (European Association for the Study of the Liver) criteria incorporates functional information from both CT and MR contrast enhanced scans. Data are presented as a color map overlaid on the scans to show regional tumor enhancement heterogeneity. The color regions of the segmented lesions are where there is more enhancement than the predefined reference region.

✓ Oncology



CT - clinical applications



New

Enhance the way you visualize 3D images

✓ General

The **Photo Realistic Volume Rendering (PRVR)**⁽¹⁾ engine is a post-processing technique used in 3D visualization of medical images, aimed to create realistic 3D images. It has an artificial light source which gives the operator the ability to move it anywhere within the 3D volume image and manipulate light and shadow on anatomical structures for better understanding of depth and spatial relation between key anatomical structures. This technique makes the image more “lifelike” than traditional image-rendering methods, utilizing more than 20 visualization protocols optimized for different anatomies from cardiac and vascular to pulmonary and MSK. It can also be used to leverage the educational and communication methods of 3D imaging within the enterprise. This technique is integrated seamlessly on the main general and cardiac CT viewers, offering all the interactive capabilities of traditional VR, such as 3D/4D batch, clipping planes etc. Leveraging an optimized GPU, there is no compromise on interactive performance, making the user experience seamless.

⁽¹⁾ The Photo Realistic Volume Rendering (PRVR) is not intended for diagnostic image review



New

Perform nodule search faster and detect previously missed actionable nodules

✓ Oncology
✓ Pulmonary

CT Lung Nodule analysis (LNA) ClearRead⁽¹⁾⁽²⁾⁽³⁾**CAD**, powered by Riverain's ClearRead CT Vessel Suppress, offers deep-learning based detection capabilities for all nodules types including solid, part-solid and ground-glass. ClearRead CAD provides adjunctive information to aid the radiologist in the detection of pulmonary nodules during review of CT examinations of the chest on an asymptomatic population, as well as in already diagnosed patients⁽⁴⁾. It is not intended to be used without the original CT series. ClearRead CAD is optimized for Low dose CT and designed to work on scans with or without intravenous contrast, independent of scanner vendor and acquisition protocol. Pre-processed CAD detection results are also automatically available on PACS as a new series.

⁽¹⁾ ClearRead CT is a trademark of Riverain Technologies inc.

⁽²⁾ These functionalities may not be available in all territories.

Please contact your Philips representative for more details.

⁽³⁾ Please note that there are two CAD options available for LNA application, depending on different territories

⁽⁴⁾ Intended population for ClearRead CAD differs in different markets.

Please contact your Philips representative for more details.



Enhanced

Assess lung nodules over time

✓ Oncology
✓ Pulmonary

CT Lung Nodule Assessment (LNA) is intended for the review and analysis of thoracic CT images, providing segmentation, quantification and characterization of physician-indicated lung nodules in a single study, or over the course of several thoracic studies. The application can be used in both diagnostic and screening evaluations, supporting Low Dose CT Lung Cancer Screening*. It features automatic lung and lobes segmentation as well as one-click 2D and 3D nodule segmentation. The application also supports LungRADS⁽²⁾ categorization, Fleischner Society guidelines for incidental findings⁽²⁾. It also features a Risk Calculator⁽¹⁾⁽²⁾ tool based on patient and nodule characteristics for estimation of the probability that lung nodules detected on baseline screening low-dose CT scans are malignant. Deep-learning based pre-filled⁽²⁾ data including characteristics for each nodule in configurable presets, lobe location, nodule shape, nodule spiculation, endobronchial and Perifissural/Subpleural are provided automatically by the application.

CT LNA now supports updated LungRADS categorization version 1.1, in addition to LungRADS version 1.0

⁽¹⁾ These functionalities may not be available in all territories.

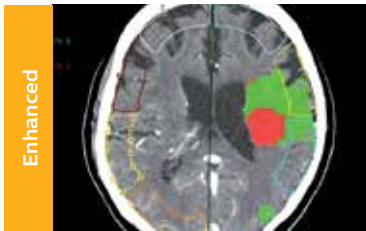
Please contact your Philips representative for more details.

⁽²⁾ offered as separate commercial add-on.

CT - clinical applications



✓ Neurology



Determine areas of reduced cerebral blood flow as compared to the contralateral hemisphere

CT Brain Perfusion generates qualitative and quantitative information about changes in image intensity over time. The application calculates and displays quantitative color maps of cerebral blood flow (CBF), cerebral blood volume (CBV), mean transit time (MTT) and time-to-peak (TTP), and provides summary maps which may help physicians in determining areas of reduced cerebral blood flow compared to the contralateral hemisphere. The default parameters and thresholds used to create the summary maps may also be edited by the user according to the physician's preference. Perfusion and summary maps can be generated automatically and sent to PACS for convenient reviewing. The application also offers automatic motion correction which can be further refined manually if needed. In addition, quality indicators ("traffic lights") point at possible acquisition faults that may affect the results. With studies of sufficient scan duration, permeability analysis can be used as an assessment of the contrast agent permeation of the blood-brain barrier. The application also includes pre-defined regions of interest templates for systematic and reproducible quantitative regional results.

CT Brain Perfusion now offers ability to automatically generate and share perfusion and summary maps results via email⁽¹⁾ to a pre-defined list of recipients.

⁽¹⁾ Content sent via email is not for diagnostic use

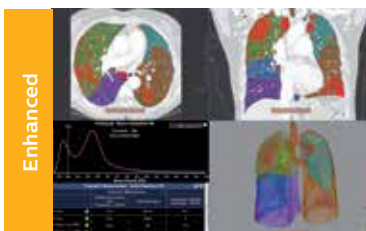


Comprehensive cardiac analysis

CT Comprehensive Cardiac Analysis (CCA) is designed to assist the user in viewing, analyzing and quantifying dedicated Cardiac CT Angiograms, mainly for coronary arteries analysis on Coronaries CT Angiogram (CCTA) data. The application also offers cardiac function measurements. The application uses an automatic 3D model-based whole-heart segmentation to enable cardiac function analysis. Analysis calculations include standard cardiac parameters such as EF, SV, CO, LV and RV mass, regurgitation volume and fraction index, RV/LV Early and Late filling volumes, and Early/Late LV filling ratio. The user has the ability to edit and modify the segmentation and the derived parameters.

CT CCA now offers enhanced automatic extraction and visualization of the coronary tree, as well as enhanced automatic labeling of the different coronary segments.

✓ Cardiology



Quantify diffuse lung disease

CT COPD helps visualize and quantify the destructive process of diffuse lung disease (e.g. emphysema). The application provides a guided workflow featuring automatic lung, lobes and airway segmentation, localization and quantification of low attenuation areas, as well as dedicated tools for air trapping assessment. The application also provides automatic airway centerline calculation, airway tree segmentation, and enables the measurement of airway parameters such as lumen diameter and wall cross section. In addition, CT COPD features an endoluminal view as well as tools for qualitative and quantitative temporal comparison of up to four follow-up studies.

CT COPD now offers improved automatic lung segmentation, as well as advanced quantification of low attenuation areas using two adjustable thresholds

✓ Pulmonary

* The screening must be performed within the established inclusion criteria of programs/protocols that have been approved and published by either a governmental body or professional medical society. Please refer to clinical literature, including the results of the National Lung Screening Trial (N Engl J Med 2011; 365:395-409) and subsequent literature, for further information.



CT - clinical applications

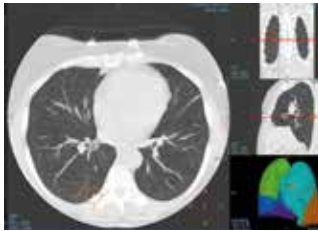


Quick cardiac visualization

CT Cardiac Viewer provides a set of tools for the visualization of one or multiple cardiac phases using original images or MPR\MIP images in axial, coronal, sagittal or dedicated cardiac axes (short axis, horizontal long axis, and vertical long axis). Automatic removal of the rib-cage structures enables a 3D anatomical Volume Rendering image of the heart and the large blood vessels connected to it. The viewer supports basic measurements as well as basic ventricular functional analysis based on "Area-Length" method to estimate end systolic volume (ESV), end diastolic volume (EDV), cardiac output (CO), and ejection fraction (EF).

✓ Cardiology

CT Cardiac Viewer now offers scrolling capability through the images while the cine movie is playing, workflow improvements such as ability to launch a selected phase into CCA from within the viewer and support of photorealistic image rendering



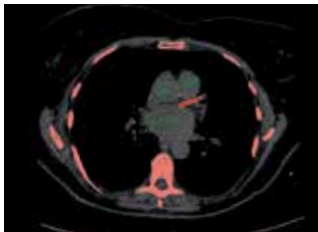
Automated computer aid for lung nodule detection

CT Lung Nodule CAD ⁽¹⁾⁽²⁾ offers an automated process that identifies and marks regions of interest based on image features associated with lung nodules. It is intended for use as a second reader after an initial interpretation of the diagnostic image has been performed. Volumetric segmentation detects nodules based on size, shape, density, and anatomical context. The application features one-click display of the findings.

✓ Oncology
✓ Surgery
✓ Pulmonary

⁽¹⁾ CAD functionality not available for sale in the US

⁽²⁾ For CAD functionality available for sale in the US please refer to CT Lung Nodule analysis (LNA) ClearRead CAD option

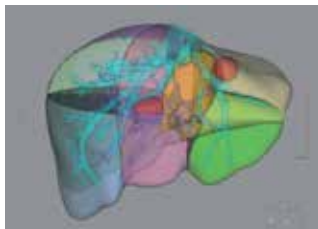


One-click 3D calcium segmentation

CT Calcium Scoring features a one-click 3D segmentation and quantification for coronary arteries calcifications including mass, Agatston, and volume scores. Calcium scoring is achieved by performing automatic calculations on CT HU values in user-defined ROIs. The application supports ECG-gated and non ECG-gated images in DICOM format from Philips and other vendors (mass score can only be calculated for Philips CT scanners).

✓ Cardiology
✓ Pulmonary

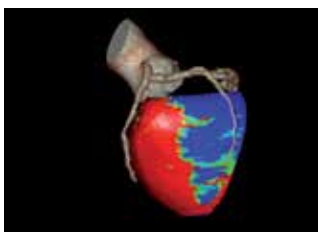
The application incorporates parameters from the MESA (Multi Ethnic Study of Atherosclerosis) database.



Advanced liver segmentation

CT Liver Analysis automatically identifies, segments and quantifies the liver from the portal venous phase of a tri-phase liver scan, and automatically segments and classifies the hepatic and portal veins. The application features several semi-automatic segmentation methods to segment the liver (i.e. Couinaud) and provides tools to analyze and quantify the whole liver, liver segments and user-defined regions of interest. CT Liver Analysis also enables virtual hepatectomy, providing volumetric estimates of resected and residual liver segments. Results from CT Liver Analysis can be loaded into MMTT and vice-versa.

✓ Oncology
✓ Surgery

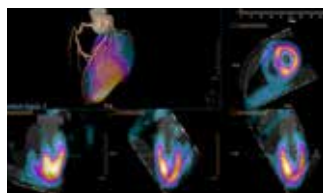


Assessing myocardial defects

CT Myocardial Defect Assessment relies on the automatic 3D model-based whole-heart segmentation from the CCA application to provide visual and quantitative assessment of segmented, low-attenuation areas within the Left ventricle myocardium from a single, gated cardiac CTA scan. Volumetric visualization of coronary arteries along with segmentation maps can be displayed as an overlay on top of a 3D myocardial surface. Quantitative information includes volume of low attenuation areas within the myocardium and their percentage out of the total myocardial volume.

✓ Cardiology

CT - clinical applications



Fusing cardiac CT-MI

CT-MI Fusion allows loading both gated and un-gated rest, and gated and un-gated stress MI datasets simultaneously with the CT study. The MI images are displayed in the short axis and the two long axis planes. The axes' definition is derived from the CT study. Support for PET/SPECT includes viewing tools, the Fusion mode, dedicated layouts, PET/SPECT/Fused color-maps, and image manipulations.

✓ Cardiology



Evaluate coronaries plaque

CT Cardiac Plaque Assessment enables cross-sectional measurements along the coronary arteries, and automatically calculates regional and global quantities of plaque volume. The tool provides automatic color-coded visualization of plaque content areas on vessel cross-sectional images.

✓ Cardiology



Visualize data from dual-energy acquisition

CT Dual Energy Viewer provides a set of tools for registration, quantification, and visualization of dual-energy image data acquired from the Philips scanners' sequential dual-energy acquisition, as well as from other vendors dual energy-acquisitions⁽¹⁾. This application is designed to assist in separation and analysis of different tissue materials based on their energy value.

✓ General

⁽¹⁾Please contact your local Philips representative for details about multi-vendor coverage.



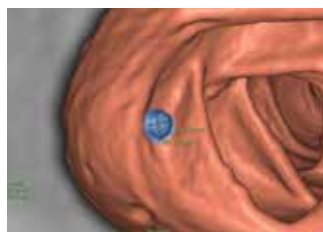
Reduce reading times in virtual colonoscopy

CT Virtual Colonoscopy enables 3D visualization of colon scans. The application automatically segments the air-filled colon and displays a calculated navigation path. The Perspective Filet view provides a synchronized display of the full colon surface wall with a single unidirectional view, reducing the need to review in both directions. The Electronic Cleansing function⁽¹⁾ can reduce the effect of residual liquids and fecal materials by "tagging" them via contrast-enhancement, allowing the user to automatically segment and subtract them. In addition, the CAD option⁽¹⁾ can be used as a second reader and assist in the search for polyps.

✓ Oncology

✓ Surgery

⁽¹⁾These functionalities may not be available in all territories. Please contact your Philips representative for more details. Please also note that there are two CAD options available, depending on geographical location.



Automatically detect potential polyps in CT colonography exams

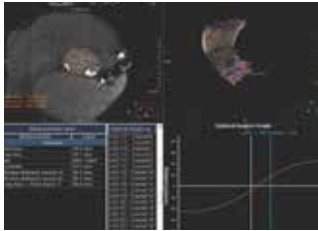
VC VeraLook CAD⁽¹⁾ uses image processing and pattern recognition technology to identify colon polyps in CT colonography images, which can help streamline the reading process and improve workflow for radiologists while supporting accuracy, consistency and productivity in colon cancer screenings. Indicated for use as a second read, VeraLook is designed to enhance clinician accuracy and efficiency by improving detection of pedunculated, sessile, flat and fluid submerged colonic polyps.

✓ Oncology

⁽¹⁾ VeraLook is a trademark of iCAD inc. for sale only in the US.



CT - clinical applications



CT imaging in TAVI to advance patient care

CT TAVI Planning application provides 2D and 3D visualization as well as automated measurements designed to assist in proper TAVI-device sizing, on contrast-enhanced, prospectively ECG-gated axial or retrospectively gated helical CT images. These include area and diameter calculations for the aortic annulus, LVOT, sinotubular junction, sinus of valsalva and ascending aorta planes, as well as distance to coronary ostia from the annulus plane. The application provides 3D segmentation and visualization of aortic valve calcifications. The application also provides tools such as inspection of minimal diameter, calcifications and vessel tortuosity, to assess the peripheral vessels along the access route.

✓ Cardiology



Quickly plan vascular access route for endovascular procedures and stent placement

Multi Modality Advanced Vessel Analysis (AVA) Pre-procedural Planning⁽¹⁾ includes multiple preset and user-defined options to gain detailed numerical generating predefined stent and access route protocols. The application allows you to export customized results to external reporting systems.

⁽¹⁾Optional add-on on top of Multi Modality Advanced Vessel Analysis (MM AVA) application.

✓ Vascular
✓ Surgery

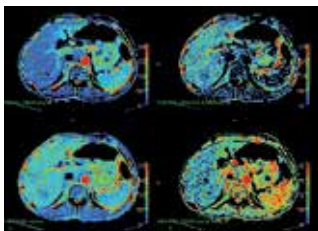


One application for assessing selected anatomies

CT Acute MultiFunctional Review⁽¹⁾ (AMFR) provides dedicated tools for findings detection, visualization and assessment of vessels, bones and spine anatomies, all within a single application. The application allows the user to select predefined layouts per anatomical area (head, chest, abdomen, spine and extremities). It supports 2D and 3D CT images and offers an automatic navigation path for calculation of the spinal cord as well as automatic detection and labeling of spine vertebrae and discs. The application segments bones using an interactive segmentation tool to create a workspace for virtual repositioning of individual bone segments. It also provides segmentation, editing and measurement tools for vascular analysis.

⁽¹⁾This functionality may not be available in all territories. Please contact your Philips representative for more details.

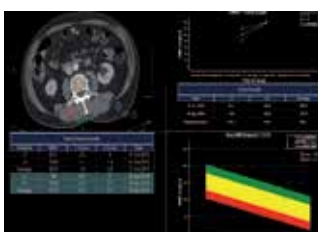
✓ Surgery
✓ Trauma
✓ MSK
✓ Vascular



Quantifiable perfusion

CT Body Perfusion is intended for visualization, assessment and quantification of blood flow, blood volume, time to peak and peak enhancement using dynamic CT data. The application measures temporal changes in tissue density based on the linear relation with iodine concentration and is applicable to whole-organ or single-location liver, lung and kidney perfusion. The application also enables data analysis for optimization of injection timing as test prior to the clinical scan.

✓ Oncology



Track degenerative and metabolic bone disease

CT Bone Mineral Analysis (BMA) is designed to measure bone density at one or multiple time points. Using an internal reference method ⁽¹⁾, the application reduces reproducibility errors in multiple time point measurements and provides T- and Z- scores which help physicians assess the risk of osteoporosis. The user can compare patient's results to several reference populations.

⁽¹⁾Muller DK, et al., Phantom-less QCT BMD system as screening tool for osteoporosis without additional radiation. Eur J Radiol. 2011; 79(3):375-81.

✓ MSK
✓ Orthopedics

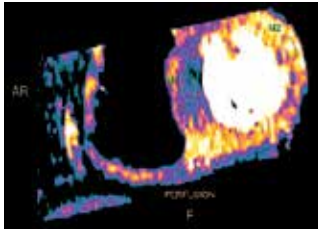
CT - clinical applications



Planning for oral procedures

CT Dental Planning is designed to support the planning of oral procedures, and facilitate collaboration between radiologists and surgeons. The panoramic, cross sectional and volumetric images provide qualitative and quantitative information about the position of teeth and roots, existing implants, the mandibular canal and the density of the bone. The thickness of the bone and depth of the jaws can also be evaluated and measured.

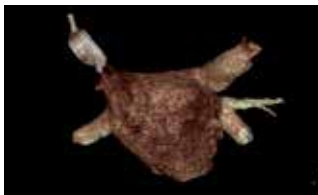
✓ Surgery



Dynamic color maps provide an assessment of myocardial risk

CT Dynamic Myocardial Perfusion (DMP) provides automatic and manual tools to help visualize and assess signal intensity differences (in Hounsfield Unit) focusing on the left ventricular myocardium, providing quantitative myocardial perfusion measurements for CT images. It supports axial, ECG-gated CTA images, consisting of multiple time shots within the same acquisition of the myocardial region over time (i.e., dynamic CT scans), after an injection of intravenous contrast. The application contains automatic and manual tools providing quantitative myocardial perfusion parameters as: Peak Enhancement, Time To Peak, Perfusion and Blood Volume, and provides color-map representation of the results and graphical representation of intensity curves.

✓ Cardiology

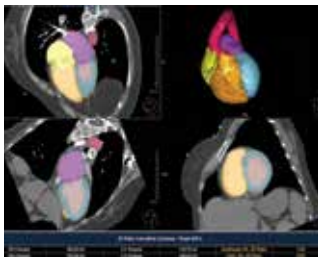


EP procedures planning

CT EP Planning provides semi-automatic segmentation and edit tools to generate views of different anatomical heart structures: left atrium (LA), pulmonary veins (PV), and appendage. These anatomical images can be exported to other modalities / systems for 3D visualization of the anatomy.

✓ Cardiology

✓ Surgery



Assess suspected findings of pulmonary embolism

CT Pulmonary Artery Analysis (PAA) offers automatic and manual segmentation tools to assist in localization of suspected pulmonary embolism findings on segmental and sub-segmental contrast-opacified pulmonary arteries. A suite of tools helps visualize the lungs, review results, and report any pulmonary embolism findings. The application also allows the user to extract relevant cardiac measurements such as RV/LV ventricular ratio and chambers volumes. In addition, a CAD option⁽¹⁾ can be used as a second reader, after the initial diagnosis is completed by the radiologist.

✓ Pulmonary

⁽¹⁾ This functionality may not be available in all territories. Please contact your Philips representative for more details.



CT Spectral - clinical applications

CT Spectral applications⁽¹⁾

As the world's first and only detector-based spectral CT, the Philips Spectral CT family delivers multiple layers of retrospective data in a single, low-dose scan, empowering clinicians to improve their clinical confidence and positively impact patient care.

Philips IntelliSpace Portal suite of Spectral clinical applications has been optimized for the viewing and analysis of spectral data sets from Philips Spectral CT. These applications are spanning various clinical domains—from Oncology to Cardio-vascular, enabling spectral results anytime, virtually anywhere, enterprise-wide



Clinical and workflow benefits

- Improve reading of incidental findings, with retrospective spectral results always available
- Quantify the iodine concentration with iodine maps
- Visualize virtual non-contrast images to reduce the need for true non-contrast acquisitions
- Review Images at different energy levels (MonoE 40-200 keV):
 - Enhance contrast visualization within vascular structures, and brain gray-white matter, with low MonoE
 - Reduce impact of image artifacts and improve stents visualization with High MonoE
- AV spectral capabilities integrated within routine workflow of cardiac and oncology apps
- AV Spectral insights integrated into primary reading, via Spectral Magic Glass on PACS

IntelliSpace Portal 12 now offers

- Automatic zero-click pre-processed fusion of spectral results for comprehensive analysis
- Creation of multiphase CT enhancements differences color maps such as AEF and ECV maps
- Visualization of spectral images optimized for cardiac analysis via a dedicated cardiac viewing environment
- Enhanced automatic extraction and visualization of the coronary tree based on spectral images
- Automatic registration workflow within the spectral viewing environment

⁽¹⁾ Spectral CT reconstruction provides a single DICOM entity containing sufficient information for retrospective analysis - Spectral Base Image (SBI). SBI contains the full range of spectral results with no need for additional reconstruction or post-processing. Spectral applications create different spectral results from SBI.

CT Spectral - clinical applications

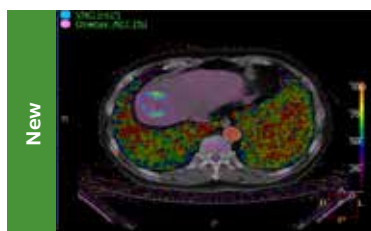


CT Spectral Cardiac Viewer⁽¹⁾

Assists in viewing and evaluating CT images acquired on the Philips Spectral CT scanners family for inspection of spectral images in axial, coronal, sagittal or dedicated cardiac axes (short axis, horizontal long axis, and vertical long axis).

CT Spectral Cardiac Viewer now offers, within the integrated cardiac spectral viewing package, visualization of cardiac spectral results derived from the Philips Spectral CT, which are optimized for ECG-gated acquisitions and are leveraging capabilities such as coronary calcifications separation.

⁽¹⁾Optional add-on to CT cardiac viewer



CT Multiphase Analysis

The CT Multiphase Analysis application supports the creation of enhancement differences maps from registered conventional or spectral multi-phase contrast-enhanced Computed Tomography data. The application supports the following maps:

- Arterial Enhancement Fraction (AEF) - the ratio between the absolute enhancement of the tissue in the arterial phase and the portal venous phase
- ExtraCellular Volume (ECV) - the absolute enhancement of the tissue in the equilibrium/late phase

The application supports SBI processing for the generation of Spectral CT images. The supported spectral result images include Conventional CT images, Mono Energetic (MonoE) images at energies ranging from 40 to 200 keV as well as Iodine Density and Iodine no Water. The user can select to generate HU based maps, using Conventional or MonoE series, or non-HU based maps, using Iodine no Water or Iodine Density series.



CT Spectral Viewer

CT Spectral Viewer is optimized for analysis of spectral data sets from the Spectral CT scanners. CT Spectral Viewer is designed to enable spectral quantification through proprietary spectral tools, including the exclusive Spectral Magic Glass.

This comprehensive viewing environment enables easy switch across different spectral results through a viewport control and a comprehensive set of viewing tools which are similar to the routine IntelliSpace Portal CT viewer. Additional spectral viewing capabilities include:

- Spectral volume quantification to perform quick sub-lesion segmentation and visualization of hypo-perfusion regions
- Anatomy aware presets- hanging protocol workflow, tailored to the viewed anatomy and user's preferences
- Automatic adaptive windowing for different keV levels

CT Spectral Viewer now includes automatic registration workflow within the package similar to routine CT viewer.



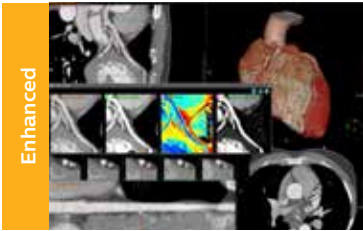
CT Spectral Tumor Tracking (part of MMTT)

Assists in viewing and evaluating CT images acquired on the Philips Spectral CT scanners family for the inspection of tumors, on contrast enhanced, soft tissue oriented, and whole body scans. Supports lesion viewing and analysis based on different spectral data types such as iodine density maps or virtual non-contrast-enhanced images. Tissue segmentation and editing tools allow user-defined ROI and the application provides information on physical (length, width, volume) and composition properties (effective atomic number, attenuation, and HU) of the tumor. The application supports longitudinal viewing of cases taken from different examination times.

CT Spectral Tumor Tracking now offers visualization of additional spectral images types derived from Spectral CT including Electron-density and Calcium suppressed images.



CT Spectral - clinical applications

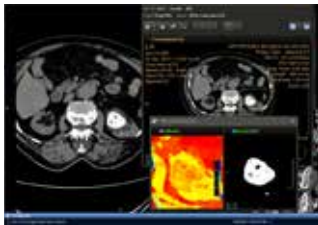


CT Spectral Comprehensive Cardiac Analysis (part of CT CCA)

Supports automatic segmentation of cardiac chamber and coronary tree acquired on the Philips Spectral CT scanner, using MonoE images and provides information on physical (length, width, volume) and composition properties (effective atomic number, attenuation, HU) of the coronary vessel and findings along it.

The application also supports cardiac segmentation at different energy levels as well as the comparison of vessel curves from various spectral data types. CT spectral CCA enhances the visual assessment of coronary vessel patency. The application also supports beam-hardening artifact reduction for the visualization of perfusion deficits and calcified plaque.

CT CCA now offers enhanced automatic extraction and visualization of the coronary tree, as well as enhanced automatic labeling of the different coronary segments. If required, the user has the ability to edit these results.



CT Spectral Light Magic Glass

The CT Spectral Light Magic Glass option enables the user to review spectral data in a range of CT applications that are not spectral-enhanced.

The purpose of the CT Spectral Light Magic Glass option is to allow retrospective use of spectral data that was saved in a series of spectral base images (SBI). The fast launch of LMG allows review and identification of the most relevant results to be launched into the application for further analysis. The option is available from the following applications: Brain Perfusion, Functional CT, Liver Analysis, PAA, TAVI, Acute Multifunctional Review, and Virtual Colonoscopy. Spectral Magic Glass can be launched only for CT images or images created on the Philips Spectral CT.



CT Spectral Magic Glass on PACS

Philips Spectral CT is the only family of scanners to offer CT Spectral Light Magic Glass and CT Spectral Magic Glass on PACS, helping radiologists review and analyze multiple layers of spectral data at once, including on their PACS.

This functionality includes:

- On-demand simultaneous analysis of multiple spectral results for an ROI
- Integrates into a health system's current PACS setup for certain PACS vendors
- Spectral results available during a routine reading, virtually anywhere, enterprise-wide
- Keyboard shortcuts for fast switching of visualized spectral results

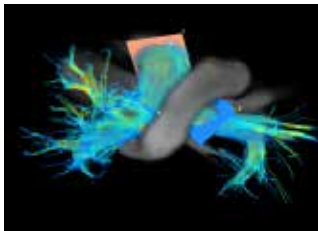


CT Spectral Advanced Vessel Analysis

Supports in viewing and evaluating CT Angiography (CTA) cases, on contrast enhanced and whole body CTA scans, acquired on the Philips Spectral CT scanners family for the inspection of contrast-enhanced vessels.

The CT Spectral AVA application provides automatic, semi-automatic and manual bone removal functions for body and skull as well as automatic extraction of the vessel navigation-path. Lumen and vessel contours are generated after body bone removal. Automatic vessel labeling of major vessels is performed, if detected. Review modes include Volume Rendering, Maximum Intensity Projection, Volume Intensity Projection, Axial/ Coronal/ Sagittal orientation, and curved MPR view with cross sections. Results obtained at different energy levels can be compared. Measurements are provided for vessel assessment, including maximum and minimum cross section diameters, lumen areas, and vessel lengths.

MR - clinical applications



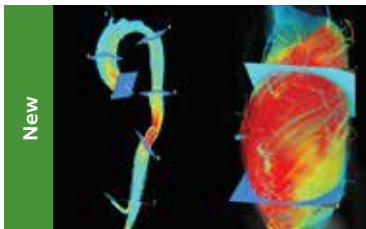
Visualization and quantification of blood flow

MR Caas⁽¹⁾⁽²⁾ 4D Flow is a post-processing software solution that enables users to generate 3D volume reconstructions for MR datasets, to visualize and evaluate blood flow in cardiovascular structures, including heart valves, chambers, and vessels, based on cardiovascular MR 4D Flow imaging.

It consists of 2 modules (Heart and Artery), with intuitive and validated workflows that guide you to reliable and reproducible results in a few easy clicks, to support your clinical decision making and planning.

⁽¹⁾ Caas is a trademark of Pie Medical Inc.

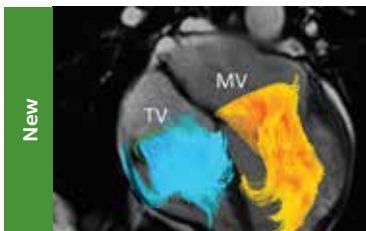
⁽²⁾ These functionalities may not be available in all territories. Please contact your Philips representative for more details.



4D Flow Artery⁽¹⁾

Enables to construct a 3D volume of a (cardio)-vascular structure. The software provides multiple options for visualization of blood flow, which can be visualized by streamlines, time-resolved 3D pathlines, or as color coded vectors.

⁽¹⁾ These functionalities may not be available in all territories. Please contact your Philips representative for more details.



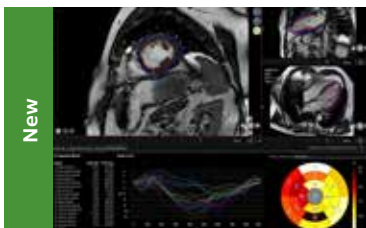
4D Flow Heart⁽¹⁾

Used to visualize and measure flow in the heart chambers and over all four heart valves during the heart cycle. The blood flow can be visualized by streamlines over the heart valves.

Automated tracking of a valve plane allows multi-valvular flow for the same cardiac cycle⁽²⁾. Speed overlays are available based on the 4D flow data. Results include forward and backward flow and regurgitation fraction.

⁽¹⁾ These functionalities may not be available in all territories. Please contact your Philips representative for more details.

⁽²⁾ Automated Cardiac Valve Tracking for Flow Quantification with Four-dimensional Flow MRI. V Kamphuis et al, Radiology, 2018.



Quantify myocardial strain⁽¹⁾

MR Caas⁽²⁾ Strain⁽³⁾ quantifies myocardial strain in the left ventricle using short- and long axis SSFP images. Strain is used to describe the myocardium deformation- such as shortening, thickening and lengthening- during the cardiac cycle.

MR Caas Strain provides global strain parameters such as global longitudinal strain (GLS), global circumferential strain (GCS), and global radial strain (GRS). MR Caas Strain can assist in the diagnosis and monitoring of patients with Dilated cardiomyopathy (DCM), Hypertrophic cardiomyopathy (HCM), or Restrictive cardiomyopathy (RCM), and in patients with Valvular heart disease.

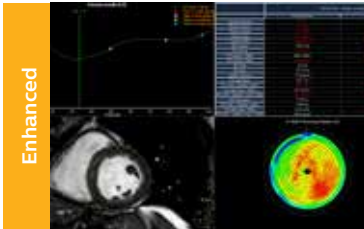
⁽¹⁾ These functionalities may not be available in all territories. Please contact your Philips representative for more details.

⁽²⁾ Caas is a trademark of Pie Medical Inc.

⁽³⁾ Not available for sale currently in the US.



MR – clinical applications



Detailed quantification of cardiac function

MR Cardiac (MRC) package includes a viewer and functional analysis module. The MR Cardiac Viewer allows side-by-side review of single, multiple or all available cardiac series in a default or in a user-defined viewing protocols. It automatically links multiple series in respect to DICOM geometry, zoom/pan, time and position link for qualitative assessment, and analysis in AHA 17 segment templates of the MRC data types. It supports basic measurements and screen captures. Functional analysis allows volumetric analysis of both the left and right ventricles based on short axis or axial acquisition. The application provides fully automatic, semi-automatic and manual tools for segmentation. The user has an option to apply automatic papillary muscles extraction if desired. The application calculates cardiac functional parameters such as volumetric parameters, wall motion, wall thickness and thickening. Results tables can be configured by the user, and values indexed by Body Surface Area (BSA). All results and screen captures can be collected, saved and exported by the user using a Findings Navigator functionality

✓ Cardiology

MR Cardiac functional analysis now offers a fully automatic segmentation of short-axis functional datasets, for both the left and right ventricles, together with automatic detection of end-diastole and end-systole phases. Preprocessed results automatically displayed on images, allowing the completion of LV&RV analysis in less than 5 minutes.



Visualize subtle changes in brain images over time

MR Longitudinal Brain Imaging (LoBI) supports the visualization of brain images for the evaluation and monitoring of changes across multiple time points. The application performs automatic registration between studies and provides semi-automatic segmentation and editing tools for volumetric measurement of brain lesions. The Comparative Brain Imaging feature uses bias field-correction, intensity scaling, image registration and mathematical subtraction to provide color-coded images highlighting subtle brain changes over time.

✓ Neurology

✓ Oncology

MR LOBI now offers the ability to register, compare and subtract between series of the same study, and save the subtraction result as a new series.



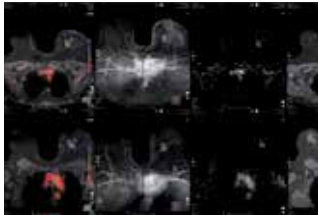
Visualize white matter connectivity in the brain

MR FiberTrak provides visualization and quantification of white matter structure in the brain and spinal tracts using task guidance for generating common or user-defined tracts. The guidance panel suggests which regions of interest and plane are common for identification of certain tracts such as the corticospinal tract. The results can be overlaid with other data like fMRI or anatomical series. The application allows evaluation of fiber tracts around tumors and lesions in combination with functional areas. It also supports DICOM-based output with merged anatomical tractography information through the Multi Modality Viewer.

✓ Neurology

MR Fibertrak now offers ability to create and capture image batches, including export to surgery-navigation system function, from the application user-interface.

MR - clinical applications



Next-generation of breast care

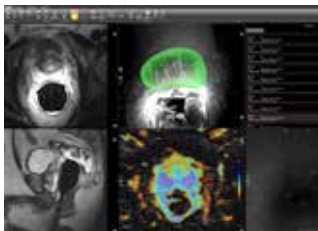
DynaCAD Breast^{(1) (2)} has been tailored to enhance the review and analysis of MRI breast studies by providing a flexible workspace with custom hanging protocols and multi-vendor⁽³⁾ viewing capabilities. DynaCAD's automatic segmentation allows for on-the-fly user modification and provides volume analysis, lesion composition statistics, histograms, and a 3D rendered morphological overview. Results are automatically incorporated into standardized reports. The DynaLOC Breast Interventional Planning software module offers visual guidance for planning MR-guided breast biopsy procedures.

⁽¹⁾ This functionality is not available in IntelliSpace IX workstation configuration.

⁽²⁾ These functionalities may not be available in all territories. Please contact your Philips representative for more details.

⁽³⁾ Please contact your local Philips representative for information regarding multi-vendor coverage.

✓ Oncology



Advanced prostate image analysis

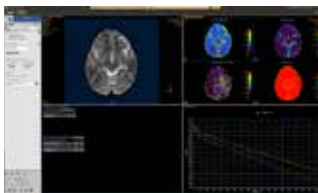
DynaCAD Prostate⁽¹⁾ provides a powerful, easy-to-navigate, multi-vendor⁽³⁾ MR image analysis application featuring custom hanging protocols with all images synchronized for easy, multi-parametric review. DynaCAD features automatic segmentation of the prostate gland, providing an overall gland volume estimation. It also features single-click volume analysis, and lesion statistics, and histograms as well as color overlay based on diffusion ADC values. Lesions are assessed using the PIRADS v2 scoring and incorporated into standardized reports. Lesions identified and marked on the system can be passed to a UroNav system for MR/Ultrasound fusion biopsy.

⁽¹⁾ This functionality is not available in IntelliSpace IX workstation configuration.

⁽²⁾ These functionalities may not be available in all territories. Please contact your Philips representative for more details.

⁽³⁾ Please contact your local Philips representative for information regarding multi-vendor coverage.

✓ Oncology

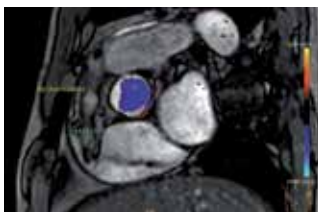


Computed diffusion weighted images at a b-value of choice

MR Advanced Diffusion Analysis (ADA) is a post processing software application used to view, process and analyze MRI Diffusion Weighted Images. The application calculates and displays cDWI at a chosen b-value (from 0 to 5,000 s/mm²) and provides advanced supportive analysis and visualization tools of diffusion MRI images and parametric maps. The application presents a default diffusion analysis model based on the available original DWI images as well as a selection of alternative models including monoexponential, biexponential, simplified IVIM, and kurtosis. A 'goodness of fit' value and fitted curve show the fitting quality of the selected model. The application also provides parametric maps of perfusion fraction (f), pseudo diffusivity (D*), Diffusivity (D) and Kurtosis (K).

✓ Neurology

✓ Oncology



Visualizing and quantifying blood flow dynamics

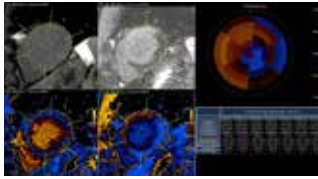
MR QFlow supports visualization and quantification of blood flow dynamics by assisting in review of MR phase-contrast data, on vascular ROIs segmented manually, or semi-automatically. Quantification includes the following parameters: stroke volume, regurgitant fraction, forward and backward flow volumes, flux, stroke distance, mean velocity, maximum velocity, minimum velocity, peak velocity, vessel area, peak pressure gradient, E/A ratio, and deceleration time. The application supports manual Background Correction (BC) to correct for phase (velocity) offset. Qflow analysis is integrated as part of MR Cardiac Suite allowing flow and functional analysis in one suite with combined reporting.

✓ Vascular

✓ Cardiology



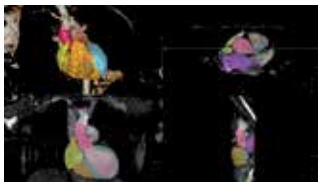
MR – clinical applications



Assess myocardial tissue characteristics

✓ Cardiology

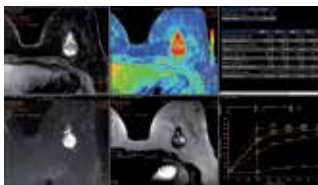
MR Cardiac Quantitative Mapping allows the user to verify and quantify parametric maps (T1 native, T1 Enhanced, T2 & T2*) delivered directly by the scanner, manual and or automatic motion correction in case of bad quality, and re-calculation of parametric maps in Portal. The user has options for local and regional segmentation to verify user-defined regions and provides user-customizable look-up tables (color bars) to concentrate on a user defined normal range for color coded maps. Numerical values, bull's eye in regional segmentation and screen shots can be saved and captured for communication.



Detailed 3D visualization of the segmented heart

✓ Cardiology

MR Cardiac Whole Heart allows 3D visualization of the heart and vessels anatomy on T1 3D or MRA acquisition. The user has the ability to use manual editing tools as well semi-automatic tools based on seed and mask-based segmentation as well as full automatic model-based heart segmentation. Any segmentation can be manually corrected with editing tools until the user has reached the defined image details. Any 3D visualization can be saved with a batch tool or the user can create and export the segmented objects in VTK or STL format.



Evaluate time intensity curves

✓ Oncology

MR T1 Perfusion is designed to evaluate time intensity curves of a T1 signal enhancement series. The application produces measurements including relative enhancement, maximum enhancement, time to peak (TTP), and wash-in/wash-out rates. The package includes user-selected color-coding of parametric. The maps which can be viewed and stored as overlays on anatomical reference images. The opacity of the overlay is user-defined. The series can be referenced to any other series such as Diffusion data within the same study.

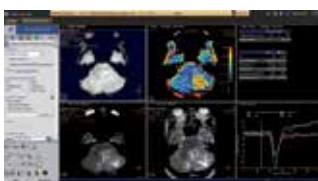


Automated brain image analysis

✓ Neurology

MR NeuroQuant⁽¹⁾ automatically segments and measures volumes of brain structures and compares these volumes to a normative database adjusted for age, gender and intracranial volume. The application also helps perform multi-time point evaluations to assess brain structure volume changes over time.

⁽¹⁾ NeuroQuant is a trademark of CorTechs Labs, Inc.



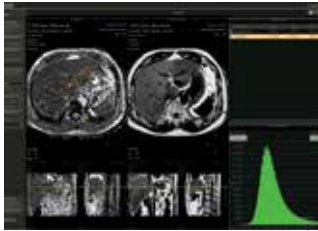
Reviewing brain tissue perfusion viability

✓ Neurology

MR T2* (Neuro) Perfusion is designed to provide physicians with information for the evaluation of stroke, or assessment and follow-up of brain tumors. The application supports the analysis of T2* Perfusion studies to generate parametric data including TTP, MTT or Tmax. It offers several analysis techniques⁽¹⁾ such as leakage correction, which allows the user to assess the time intensity curves where there is no proper recovery of the baseline after contrast passage, and manual arterial input function (AIF) which enables perfusion-diffusion mismatch if a Diffusion input dataset is available in addition to the Perfusion series. The package includes user-selected color coding of the functional data, and maps can be viewed and stored as overlays on anatomical reference images. The opacity of the overlay is user-defined.

⁽¹⁾ These functionalities may not be available in all territories. Please contact your Philips representative for more details.

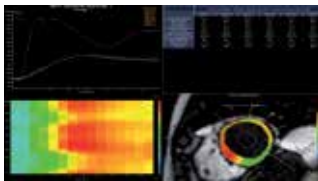
MR - clinical applications



Automated MR liver assessment

MR Liver Health offers a dedicated workflow to support the assessment of liver diseases from MRI biomarkers such as Fat Fraction (FF) or $T2^*/R2^*$. The application provides automatic segmentation of the whole liver on T1 weighted images. Thresholding on $T2^*$ and/or FF maps is available for quantification of liver tissue from the segmented whole liver. The application also features 3D visualization and parametric quantification of liver segments and user-defined regions of interest. Longitudinal assessment is available to compare MR parametric maps at different time points.

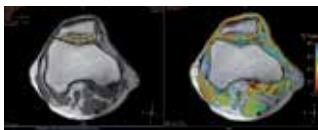
✓ Radiology



Support assessing temporal enhancements of the myocardium

MR Cardiac Temporal Enhancement facilitates myocardial analysis of dynamically resolved cardiac data (multi-slice, dynamics) and enables comparison of rest and stress studies. Results are presented using either the AHA standardized or adapted bull's eye views. The package includes a correction algorithm and manual tools to correct frame-to-frame heart displacements caused by breathing.

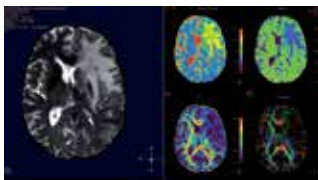
✓ Cardiology



Visualize cartilage structures

MR Cartilage Assessment enables the visualization of cartilage structures integrated with color-coded T2 maps. Positioning of cartilage-shaped, layered regions of interest is used to assess variation of T2 values across the cartilage depth to determine the degradation of the cartilage.

✓ Orthopedics



Analyze diffusion and anisotropic properties of tissue

MR Diffusion is designed to analyze diffusion and anisotropic properties of tissue. The application evaluates DWI series to generate parametric maps such as ADC and eADC. For Diffusion Tensor Imaging data, additional parametric maps are generated, including fractional anisotropy, axial diffusivity or radial diffusivity. The user can make a sub-selection of the acquired b-values for analysis and select preferred color-coding for the parametric maps.

✓ Neurology

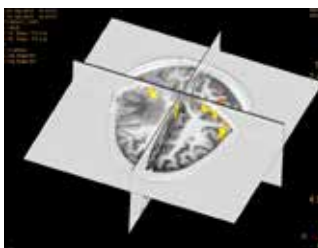
✓ Oncology



Optimizing image contrasts for multi-echo MR data

MR Echo Accumulation is used to perform pixelwise echo accumulations for imaging series with multiple echoes. It enables preview, save and analysis on the calculated new series. MR Echo Accumulation enables the calculation of new images based on the selected sum of echo times of series with multiple echoes. The processing provides interactive update of the results.

✓ Orthopedics



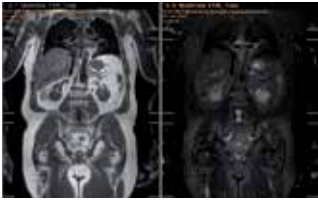
Brain activation analysis

MR IViewBOLD helps identify and visualize functional regions of the brain, relying on local metabolic and hemodynamic changes that occur in activated brain areas. The tool applies a generalized linear regression model to analyze block paradigms, event-related paradigms, and resting state data. Paradigms can be user-defined or imported. The application supports the export of functional results through the Multi Modality Viewer including DICOM-based images with co-registered anatomical and fMRI maps.

✓ Neurology



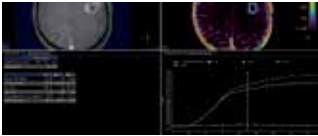
MR – clinical applications



Automatic review of total body MR data

MR MobiView, an option within the Multi Modality Viewer, automatically combines (“stitches”) images from multiple acquisitions of the same examination to create one overall volume. Key clinical cases are MRA run-offs, whole body metastases screening from eye-to-thighs, and total spine views to show the complete CNS. The resulting image series can be viewed, filmed, and exported using a DICOM compliant tool.

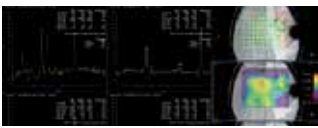
- ✓ Oncology
- ✓ Neurology



Lesion characterization by reviewing vascular leakage

MR Permeability is designed to visualize T1 weighted DCE 3D datasets and assist in analyzing the tissue response. The application calculates parametric maps such as K_{trans} , K_{ep} , V_e and V_f . The application has been validated for prostate and brain cancer.

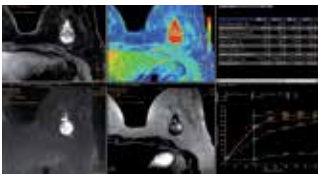
- ✓ Oncology
- ✓ Neurology



Review metabolite maps

MR SpectroView is a task-guided application providing hydrogen single voxel spectra as well as metabolic and ratio maps. The application automatically identifies the anatomy to preselect appropriate metabolites or supports a user-defined combination of metabolites.

- ✓ Neurology
- ✓ Oncology

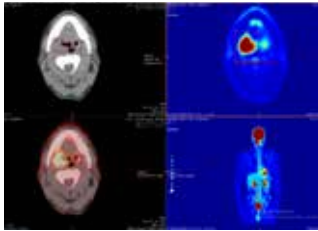


Perform basic calculations between two volumes

MR Subtraction enables basic calculations between two volumes, including addition, subtraction and ratio from within a single dynamic series. The application allows the user to subtract pre-contrast from post-contrast series. Weighing factors can be applied to impact the calculation.

- ✓ Neurology
- ✓ Oncology

MI - clinical applications



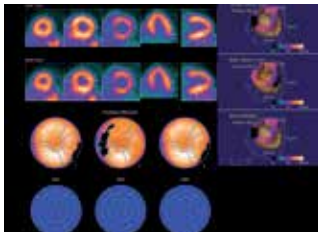
PET/CT and NM viewing and quantification

NM Mirada Viewer⁽¹⁾ is designed to enhance productivity of PET/CT and NM reading. It offers a solution for handling multiple studies requiring rigorous quantification of MV data.⁽²⁾ The Mirada Viewer includes quick and configurable protocols for convenient reading, lesion tracking and treatment response, exportable tables and graphs, PET/CT, PET/MR, and PET/CT/MR registration.

⁽¹⁾ Mirada is a registered trademarks of Mirada inc.

⁽²⁾ Please contact your local Philips representative for details on multivendor coverage.

- ✓ Oncology
- ✓ Neurology
- ✓ General Nuclear Medicine



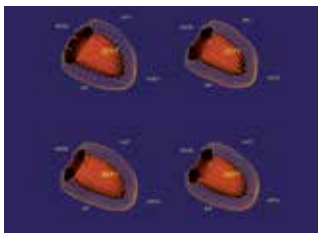
SPECT and PET cardiovascular quantification, review, and reporting

NM Corridor4DM⁽¹⁾ 2018 is designed for advanced cardiovascular quantification and image display and includes intelligent workflow and quality assurance measures for increased confidence. Quantify myocardial perfusion, function, and viability using multiple review screens, with integrated reporting through customizable templates. NM Corridor4DM 2018 also includes: LV surface estimation and quantification.

- Quantifies, displays, and provides reporting for SPECT and PET myocardial perfusion and function, PET FDG metabolism, and SPECT blood pool studies in a single, configurable application
- Provides tools to generate and review DICOM static and multi-frame secondary screen captures
- Configurable for different workflows, protocols, and preferences
- PET Myocardial Blood Flow (MBF) quantification
- LV surface estimation and quantification

⁽¹⁾ Corridor4DM is a registered trademark of Invia, LLC.

- ✓ Cardiology



Advanced cardiac quantification

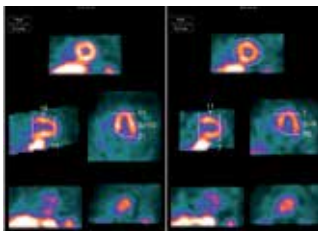
NM Cedars-Sinai Cardiac Suite 2017⁽¹⁾ ⁽²⁾ provides comprehensive cardiac quantification tools for gated, perfusion, and blood pool SPECT and quantitative PET. Cedars-Sinai Cardiac Suite 2017 application provides efficient workflow for study interpretation with integration of perfusion and function.

- Automated RV contouring, quantification and analysis
- User customizable viewing layouts
- Enhanced Phase Analysis algorithm, Smart Launch, color pallet editor
- QGS, QPS, QBP analysis
- QPET analysis

⁽¹⁾ Not available for sale in all countries. Please check for availability in specific countries.

⁽²⁾ Cedars-Sinai Cardiac Suite is a registered trademark of Cedars-Sinai.

- ✓ Cardiology



Cardiac analysis

The **NM Emory Cardiac Toolbox (ECTb) v4.2⁽¹⁾** provides advanced tools for cardiac SPECT and PET analysis including comparison of perfusion to viability data, display of 3D images with coronary overlays and gated 3D cine, normal limits for agent match/mismatch as well as optional phase analysis for wall motion and evaluation of thickening.

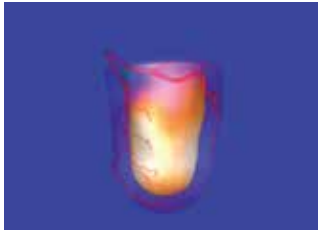
- Automated structured reporting dedicated to Nuclear Cardiology
- Transaxial reorientation
- Systolic and Diastolic Dyssynchrony analysis
- ECTb4-FlowToolV2 for PET Myocardial Blood Flow quantification

⁽¹⁾ Emory Cardiac Toolbox, ECTb, HeartFusion, and SyncTool are registered trademarks of Emory University.

- ✓ Cardiology



MI - clinical applications



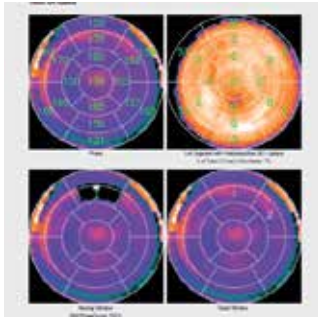
Evaluate fused coronary anatomy

NM Emory Cardiac Toolbox (ECTb) HeartFusion^{(1) (2)} tool offers fusion of a patient's coronary tree from cardiac CT angiography with MI perfusion images to correlate stenosis with perfusion defects and identify muscle mass at risk.

⁽¹⁾ Emory Cardiac Toolbox, ECTb, HeartFusion, and SyncTool are registered trademarks of Emory University.

⁽²⁾ Not available for sale in the USA

✓ Cardiology



Assess cardiac mechanic dyssynchrony

NM Emory Cardiac Toolbox (ECTb) SyncTool^{(1) (2)} provides an objective evaluation of left ventricular (LV) dyssynchrony using phase analysis. It also provides the cardiologist with additional prognostic information that can be obtained from 3D perfusion images, such as the presence and location of scar tissue. The SyncTool review screen includes phase polar maps, phase histograms, and a summary of systolic wall thickening analysis including peak phase and standard deviation of the phase distribution.

⁽¹⁾ Emory Cardiac Toolbox, ECTb, HeartFusion, and SyncTool are registered trademarks of Emory University.

⁽²⁾ Not available for sale in the US

✓ Cardiology



Aiding the differential diagnosis of dementia

The **NM NeuroQ⁽¹⁾ 3.8** application is designed to help clinicians perform a quantitative analysis of FDG-PET brain scans. The application compares the regional brain activity in an individual scan to activity values derived from a group of asymptomatic control subjects. It analyzes the distribution of FDG-PET in individual scans, as well as the sometimes hard to detect differences between two PET scans on the same patient taken at different points in time.

- 3D surface projections display
- Export comparison values to an excel spreadsheet
- Helps to detect clinically meaningful abnormalities of regional brain metabolism
- NeuroQ brain SPECT analysis option (99mTc-HMPAO and 99mTc-ECD (Neurolite) normal databases)
- NeuroQ DatScan analysis: quantitative analysis for DaTscan SPECT for differential diagnosis between Parkinson's disease and essential tremor

⁽¹⁾ NeuroQ is a trademark of Syntermed

✓ Neurology



Assessing Amyloid plaque

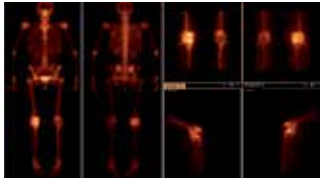
The **NM NeuroQ⁽¹⁾ Amyloid** analysis tool is designed to help clinicians to assess the presence or absence of Amyloid plaque in the brain. Provides quantitative analysis tools for Brain PET scans using Amyvid, NeuraCeq and Vizamyil agents.

Supports quantitative analysis of amyloid uptake levels in the brain.

⁽¹⁾ NeuroQ is a trademark of Syntermed.

✓ Neurology

MI - clinical applications

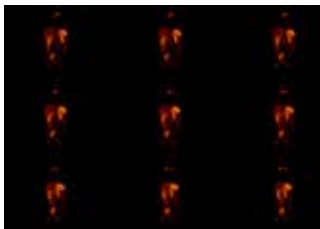


Streamline Molecular Imaging workflow

NM Processing Applications Suite offers comprehensive analysis and processing protocols for planar and SPECT studies including renal, lung, whole-body and bone, cardiac (first pass, shunt, and MUGA), gastric, esophageal, hepatobiliary, and endocrine applications.

NM Processing Application Suite features Philips AutoSPECT Pro software for automated SPECT reconstruction and re-orientation with motion correction, as well as CT-based attenuation and scatter correction. The application includes a set of tools to perform daily and periodic quality calibration for SPECT cameras.

✓ Molecular Imaging



Enhance SPECT resolution

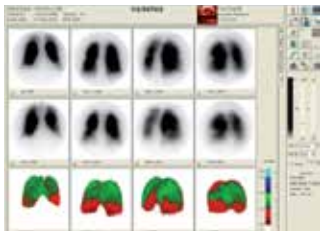
NM Astonish Reconstruction is an advanced reconstruction option that uses a matched dual filtering technique to minimize noise and improve reconstructed image resolution and uniformity.

Enables half-time cardiac SPECT imaging using supported Philips systems for improved workflow efficiency while maintaining image quality. By improving signal-to-noise ratio, it can provide equivalent image quality which may shorten SPECT scan times to achieve increased throughput, enhanced patient comfort, and reduced motion-induced artifacts.

NM Astonish Reconstruction is compatible with the following Philips cameras only: CardioMD (acquisition software v2.x), Forte, BrightView, BrightView X, BrightView XCT, SkyLight, and Precedence

Can be applied to SPECT studies using Tc-99m, Tl-201, In-111, Ga-67, I-123, or I-131 and used for most Molecular Imaging procedures. A CT attenuation map can be used in conjunction with NM Astonish Reconstruction to provide attenuation correction.

✓ Molecular Imaging



Generate new clinical insights

NM JETPack Application Suite for general MI includes a complementary set of organ-specific applications including endocrine, gastric, hepatobiliary, lung, neuro, renal, and whole-body and bone applications. It allows calculation of regional cerebral blood flow, brain perfusion index, dopamine transport, liver perfusion, micturition, and gastro-esophageal reflux.

✓ Molecular Imaging

IntelliSpace Portal optimizes your workflow

Optimized Workflow Across Modalities

In radiology, time is critical and patients requiring advanced visualization can have the most complex imaging studies. Philips IntelliSpace Portal is designed to incorporate studies from a variety of imaging modalities. The platform supports consistency across modalities and offers multi-vendor⁽¹⁾ coverage for the different scanners in your department.

Seamless PACS Integration And Beyond

Review and complete entire cases in one session without leaving your chair. IntelliSpace Portal makes it possible to integrate via open interfaces with Philips PACS and with other vendor's PACS systems⁽²⁾.

⁽¹⁾ Please contact your local Philips representative for details on multi-vendor coverage.

⁽²⁾ Requires integration with your PACS vendor which may vary between vendors

Adaptive And Responsive To Your Needs

With the machine learning features, IntelliSpace Portal automatically learns from your prior application usage to anticipate the series and data type which preprocessing should be applied. Periodically, the feature relearns usage patterns to track any changes in your imaging needs with no user configuration required. Combined with configurable hanging protocols, the portal optimizes to fit your specific needs.

Make The most Of Your Advanced Analysis With Real-time, Context-Based Training

Turn to KnowledgeScape Clinical Education for on-the-spot support. Our training materials include step-by-step instructions on how to use each application. Under service contract, every IntelliSpace Portal user can access these resources through the main screen or from within any application.

Results Generation And Sharing

Communicate with referring physicians easily and in the way you choose. Create a customized report for a comprehensive multi-modality workup that includes multiple patient findings, graphs, and tables. Take advantage of a variety of tools to capture, organize, store, and share information. Export clinical results directly into your enterprise's PACS or RIS using HL7 and DICOM. Save key image notes and tables directly to your reports, and combine multiple patient findings into a single patient-level report. Support consistency in your reporting with integrated PowerScribe360 functionality.

Philips Real-Time Assistance

Philips Real-Time Assistance delivers direct access to a clinical expert for timely application support that enables:

- Streamlined workflows
- A high level of efficiency and productivity
- Uninterrupted patient care
- Scheduled real-time trainings based on your evolving needs

Philips clinical experts can personalize training to suit your specific needs and schedule. They bring clinical education to the point of care with no need for you to travel. This supports team-based learning that builds confidence and expertise. The sessions are designed to help improve productivity, patient care and build staff capabilities in using clinical applications.

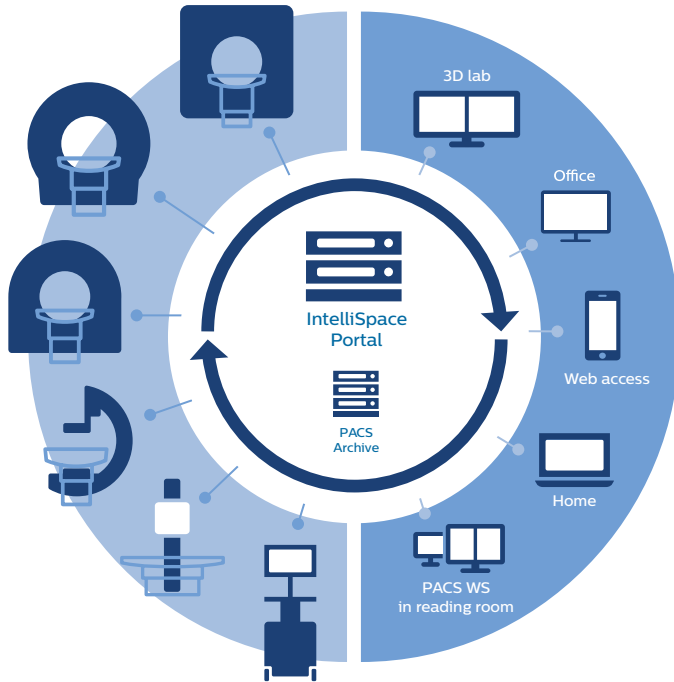
A unified diagnostic workspace for confident reading

By integrating advanced visualization into primary reading, Philips offers a unified diagnostic workspace enabling radiologists to enhance their diagnostic confidence without compromising on efficiency.

Combining powerful functionalities natively embedded into the workflow and IntelliSpace Portal's wide range of advanced applications conveniently accessible within the PACS client, Vue offers a new approach to Precision Diagnosis.

Simple right-click menu shortcuts, configurable according to the user's needs, provide access to in-depth analysis at your fingertips





One solution that grows as you grow

- Experience the benefits of addressing all your clinical needs on a single AV solution.
- Keeping pace with the evolution of clinical care and technology, Philips offers RightFit service contracts. In addition to keeping your system technically up to date, our packages include training courses on the latest applications, clinical support, tailored workflow consulting, and more to help you get the most out of your advanced analysis platform.
- With the enterprise scalability⁽¹⁾ of the IntelliSpace Portal, you can access the power of advanced analysis anywhere within your organization while maintaining consistent applications and user preferences. Enterprise deployment can scale as your organization grows, helping drive collaboration across your network.

⁽¹⁾IntelliSpace Portal Enterprise is powered by Concerto engine

For more info contact your local Philips representative or go to www.philips.com

