



PHILIPS

IntelliSpace Portal

Oncology

Advanced visualization along the cancer care continuum

With an estimated 18 million new cases diagnosed every year, cancer remains a global burden, claiming the life of 9.6 million persons annually¹. Because it involves experts from multiple disciplines, cancer requires integrated patient care.

Philips IntelliSpace Portal offers an extensive portfolio of advanced post-processing applications along the cancer care continuum, spanning from screening and diagnosis to treatment planning and follow-up.

From screening and diagnosis to treatment planning and follow-up

With an estimated 100 million survivors worldwide², cancer is increasingly managed across multiple phases and multiple disciplines, requiring a comprehensive approach facilitating effective communication between care providers at every phase. In this challenging context, integration along the cancer care continuum is critical in order to enhance patient experience and optimize health outcomes, while also improving work-life of care providers and reducing the cost of care delivery.

Medical imaging plays an essential role at each phase of the care path. Combined anatomical, functional, and molecular imaging across multiple modalities provides crucial information about structural features and offers valuable biological insights.

Advanced visualization provides a connecting link

Advanced visualization supports cancer management at each stage of the care continuum, from early detection to lesion localization, from tumor characterization and imaging biomarkers to tumor staging, from image-guided interventions to adaptive therapy and early response assessment.

IntelliSpace Portal offers an extensive portfolio of advanced post-processing tools designed to help clinicians analyze and quantify anatomical and functional images from multiple modalities in one single platform. Supporting CT, MRI, Spectral CT, PET, and other modalities, the solution provides automated and semi-automated volumetric segmentation and quantification, multi-parametric analysis of heterogeneous tumor, advanced response criteria across multiple time points or dedicated workflows to aid in treatment planning.



Cancer is responsible for 9.6 million deaths every year¹

There is an estimated 18 million new cancer cases diagnosed annually¹

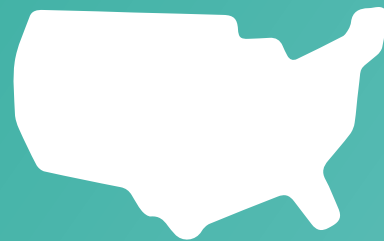


With more than 1.7 million related deaths, lung cancer is responsible for the largest number of casualties¹



Breast cancer is the most frequent cancer among women

and prostate cancer the second most frequent cancer among men¹



In the United States, only 18.4% of liver cancer patients and 9.3% of pancreatic cancer patients survive 5 years³

IntelliSpace Portal core capabilities

Connecting oncology solutions

Volumetric segmentation and quantitative multimodal image analysis play a growing role in procedure planning. By enhancing interoperability with treatment planning and interventional image-guided systems, IntelliSpace Portal helps deliver coherent solutions along the cancer care continuum.

Volumetric segmentation

IntelliSpace Portal offers automatic and semi-automatic volumetric segmentation tools to delineate the contour of organs (lungs, liver, prostate, colon), anatomical structures (pulmonary lobes and airways, liver segments (i.e. Couinaud) and vasculature), as well as regions of interest. For neurological MR images, IntelliSpace Portal also provides functionalities to help segment white matter fiber tracts and task-based fMRI activated regions. One-click segmentation tools are available to contour user-defined lesions or automatically detected lung nodules or colon polyps.

Key benefits

Contours can be exported in several standard formats such as STL or DICOM RT Structures to be utilized by procedure planning systems from Philips (i.e. Pinnacle) or other vendors. DICOM series fused with white matter tracts or activation areas can also be exported to third-party procedure planning applications.

Multimodal lesion characterization

From spectral CT to multi-parametric MRI and molecular imaging, IntelliSpace Portal provides multiple quantitative biomarkers to support tumor analysis.

Application	Biomarkers and parametric maps
MR Diffusion	DWI, ADC, eADC, FA
MR Advanced Diffusion	c-DWI, IVIM, Kurtosis
MR T1 Perfusion	TTP, washin, washout
MR T2* Perfusion	MTT, TTP, rCBV, rCBF, k2
MR Permeability	Ktrans, Kep, Vp, Ve
MR Spectroscopy	Ac, Cho, Cit, Cr, Glx, Lac, Lip
MR Liver Health	R*/T2*, fat fraction
Spectral CT	MonoE, Iodine Density, Z Effective
CT Body Perfusion	TTP, blood volume
MMTT	Peak SUV, qEASL

Key benefits

Parametric maps can be saved as standard DICOM-compatible series and loaded in Multi Modality Tumor Tracking (MMTT) to facilitate multimodal analysis. Parametric maps can also be exported to other image viewers or to treatment planning systems.

Image registration and fusion

Image registration is essential in order to compare studies acquired at different time points or generate fused models by merging images from multiple modalities. Multimodality approaches are particularly useful for diagnosis, treatment planning, image-guided procedures, and follow-up.

Key benefits

IntelliSpace Portal offers automatic and manual multimodal registration and fusion to support the oncology workflow.

Biopsy and treatment planning

In addition to exporting segmented volumes for treatment planning, IntelliSpace Portal supports procedure planning including virtual hepatectomy, providing volumetric estimates of resected and residual liver segments. With DynaCAD Breast and DynaCAD Prostate, IntelliSpace Portal now also offers MR-guidance for planning of breast biopsy procedures as well as a dedicated workflow to prepare for MR-Ultrasound prostate fusion biopsies.

Key benefits

Prostate gland and lesion segmentations can be passed to a UroNav system for fusion biopsy.

Treatment assessment

MMTT offers streamlined image processing workflow to assist clinicians in identifying lesions and monitoring cancer patients over time. Using scans from a variety of modalities, the application covers clinical practice and clinical trials through a rich set of advanced imaging response criteria.

Key benefits

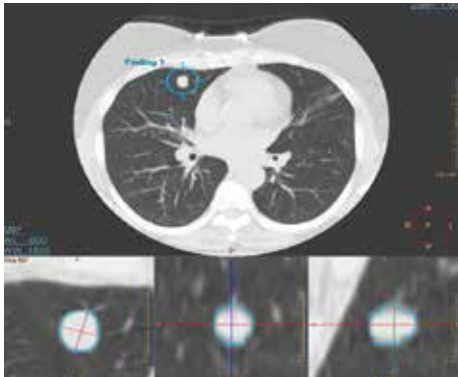
Supports follow-up at multiple time points, providing advanced response criteria such as RECIST, which monitors changes based on tumor size, or qEASL which evaluates response to treatment based on changes in tumor volume enhancement. Additional response criteria include WHO, CHOI, PERCIST, irRC, and mRECIST.

References

- ¹ Globocan, International Agency for Research on Cancer, 2018
- ² Global Health Data Exchange, Institute for Health Metrics and Evaluation (IHME), World Bank Group, 2017
- ³ Surveillance, Epidemiology and End Results Program, National Cancer Institute, 2018

A rich portfolio of advanced imaging functionalities

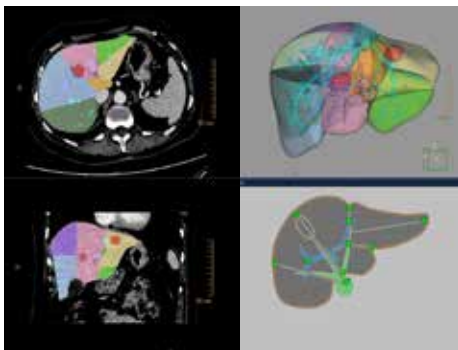
With IntelliSpace Portal, you gain access to a comprehensive portfolio of applications across multiple clinical domains. Through the clinical applications, you can benefit from machine learning capabilities as the platform automatically learns usage patterns and anticipates the pre-processing to be applied. IntelliSpace Portal connects seamlessly with your PACS system¹ supporting the review of patient cases in one single session. Since the platform works on a client-server architecture, you can assess oncology cases anywhere within the organization while maintaining consistent applications and user preferences.



Nodule detection and segmentation in CT Lung Nodule Assessment

CT Lung Nodule Assessment enables automatic segmentation of lungs and lobes as well as one-click segmentation, quantification, and follow-up of physician-indicated lung nodules. Segmentations can be exported as RT Structures for enhanced interoperability with third-party systems or applications.

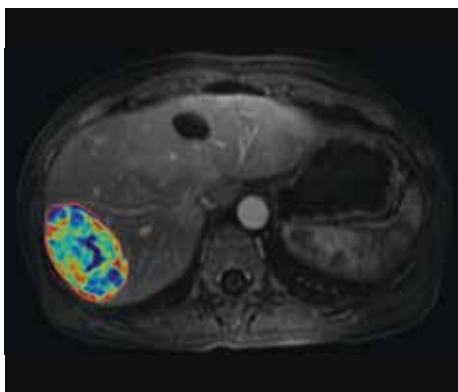
Highlight: optionally features a CADe² as second reader for automated nodule detection, LungRADS categorization, Fleischner criteria for incidental findings as well a Risk Calculator² to estimate the probability of malignancy.



Liver resection planning in CT Liver Analysis

CT Liver Analysis automatically identifies, segments and quantifies the whole liver as well as the hepatic and portal vasculature. The application also features semi-automatic methods to segment the liver (i.e. Couinaud) and user-defined regions of interest.

Highlight: enables virtual hepatectomy, providing volumetric estimates of resected and residual liver segments. Segmentations can be exported as RT Structures for enhanced interoperability with third-party systems or applications.



Biomarkers and response criteria in Multimodality Tumor Tracking

Multi Modality Tumor Tracking enables the visualization, analysis and quantification of anatomical and functional multimodal images at one or multiple time points. It optionally features qEASL maps to measure the enhanced volume of segmented heterogeneous lesions.

Highlight: assists in calculation of response criteria according to RECIST and mRECIST as well as PET SUV analysis including SUVlbm and glucose-corrected SUV. Also supports automatic and manual registration between series and studies.

¹ Requires integration with your PACS vendor which may vary between vendors.

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