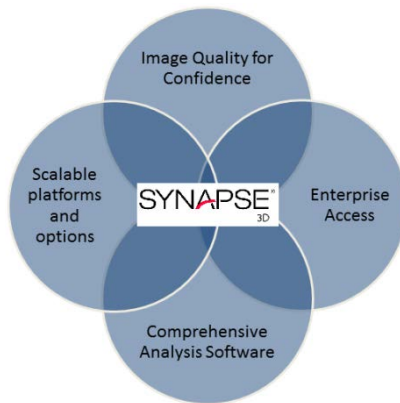


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Overview

Synapse® 3D provides radiologists, cardiologists, surgeons, researchers and other clinical professionals a comprehensive collection of application tools for advanced image visualization and analysis. The general tools provide day-to-day 2D, 3D and 4D image analyses while the clinical tools provide comprehensive clinically-specific tools that aid trained clinical users to interpret, report and provide treatment planning analysis. Most tools can be used alone or combined seamlessly with other application tools for additional advanced clinical workflows. **Note:** Synapse 3D is not intended to use with or for the primary diagnostic interpretation of mammography images.



Key Benefits

- High image quality for clinical confidence
- Scalable platforms and options
- Comprehensive and clinically-relevant analysis software
- Enterprise access for convenience and efficiency

Clinical Tools

Brain Perfusion CT Brain Perfusion MRI 4D Perfusion (CT)	RECIST Tracker PERCIST Tracker
Lung Analysis Lung Analysis Resection Lung Analysis Scope	Coronary Analysis CT Coronary Analysis MRI Cardiac Function CT Cardiac Function MRI Calcium Scoring Cardiac Fusion MR Flow Analysis Aortic Valve Analysis Ablation Analysis 4-Chamber Analysis
2D Fat Analysis 3D Fat Analysis Liver Analysis CT Liver Analysis MRI Colon Analysis Kidney Analysis	

General Tools

2D Viewer	General CPR	Slicer
3D Viewer	MPR Reformat	Sector MPR
4D Viewer	Dynamic Viewer	Vessel Extraction
Fusion Viewer	3D Comparison	Dental
2D Fusion	Combination	ADC Map
Nuclear Medicine Viewer	Compositor	Tx Map

General Tools

3D Viewer

3D Viewer is a comprehensive tool that allows orthogonal, oblique and endoscopic analysis of CT, MR, NM and PT data. Main functions include:

- Macros – allows users to save and play workflows
- 2D and 3D display of cross sections
- Body part recognition, extraction or removal of the following:
 - Bone extraction or removal (CT)
 - Bed removal (automatic)
 - Brain extraction (CT or MR)
 - Heart extraction (CT)
 - Colon extraction (CT)
 - Lung and Bronchus Extractions (CT)
 - Liver Extraction (CT)
 - Tumor Extraction (CT)
 - Vessel Extraction (CT)
 - Hip Extractions (CT)
 - Spine Extraction (CT)
 - Bone Separation (CT)
 - Tube Extraction (CT)
 - Cerebral Vessels (CT)
- Inserts image plane – inserts 2D cross section planes into 3D view and synchronizes with 2D cross section view
- Report – outputs observations and images to report
- Launches General CPR Tool for vessel analysis
- 3D Reformats including
 - Volume rendering (VR)
 - Shaded surface rendering (SSD)
 - Maximum intensity projection (MIP)
 - Minimum intensity projection (MinIP)
 - Ray summation (RaySum)
- VR Color template
- Mask editing
- Object extraction and removal using erosion, dilation, threshold, etc.
- Multi-mask up to 12 layers
 - Reverse, ADD, SUB, AND, XOR operations



2D Viewer

The 2D viewer is a useful tool for anyone wishing to view multi-modality images in a single application for simple viewing. This software is also embedded as the simple CD/DVD viewer. Main functions include:

- Cine playback
- Synchronization of density adjustment, panning, and zooming among multiple images
- Synchronization of coordinate positions among multiple images
- Change (reconstruction) the displayed plane
- Display of the average image
- Batch capture of images in a series
- Display of the following DICOM-compliant SOP classes:
 - CR Image Storage
 - CT Image Storage
 - MR Image Storage
 - PET Image Storage
 - NM Image Storage
 - XA Image Storage
 - US Image Storage
 - US Multi-frame Image Storage
 - SC Image Storage
 - Enhanced CT Image Storage
 - Enhanced MR Image Storage

4D Viewer

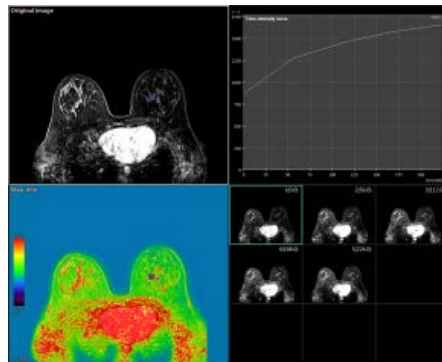
Synapse 3D 4D Viewer is useful for viewing CT and MRI multi-phasic data in cine mode. Examples include cardiac CT or MRI or Cine plays with synchronization between 2D cross sections and 3D images. Main functions include:

- Ability to specify display time for each phase in milliseconds or percentage (%) of the total play time.
- Creates movies of all images or only 3D images

Dynamic Data

Dynamic Data is a useful tool for clinical assessment of images over time including breast or prostate MRI or dynamic PET analysis as examples. The software displays individual parameter images or time-intensity/time-activity curves of slices of multi-phase data. Main functions include:

- Loads single or multiple slice cine images
- Displays time-intensity curves
- Displays time-activity curves (for NM or PET data)
- Displays parameter images (difference, time to peak, max-min, area underneath curve)
- Measurement or circular, rectangular, and freehand ROI's. Output of measurement results in .csv format
- Displays and edits time



Fusion Viewer

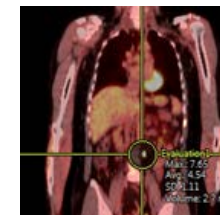
Fusion Viewer is a useful tool to analyze anatomical and physiological data between two 3D intra/intermodality images. Clinical applications include, but are not limited to, PET-MR, SPECT-CT and multi-phasic MRI. Main functions include:

- Comparison reading of current to 9 priors
- Reference reading
- MPR reading
- Overlay or blending is configurable
- Automatic rigid registration
- Manual rigid registration by translation and rotation
- Composites two images using rigid and/or flexible body registration and supports the following post-processing reconstructions for 3D viewing: subtraction value, absolute subtraction value, addition value, average value, maximum value, minimum value In case of different modalities, WL conversion can be specified for reconstruction
- SUV evaluation for PT data

Nuclear Medicine Fusion

Nuclear Medicine Fusion Viewer allows the fusion and display of CT and Nuclear Medicine (SPECT or PET) to visualize anatomical and physiological data together. Main functions include:

- Fusion of structural images captured by CT and functional images using rigid or non-rigid registration
- Manual or automatic registration
- Fusion display in orthogonal or oblique planes
- Layout options optimal for PET and SPECT-CT viewing
- Measurement of SUV
- Comparison with past analysis results and report output



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website: <http://3dimaging.fujimed.com>

2D Fusion

2D Fusion is useful for users wishing to fuse multi-modality, multi-dimensional data for purposes such as breast or prostate MRI or police science applications. Viewer superimposes two 2D or 3D images of same or different modality. Main functions include:

- Fuse 2D or 3D images
- Save created fusion images as DICOM file

MPR Reformat

MPR Reformat allows users to create a plane along a straight line or in the shape of a fan on 2D images, allowing the user to print or save the plane as a new image. The user is able to link directly to 3D Viewer for additional analysis.

3D Comparison

3D Comparison is a tool that allows direct side-by-side comparison and synchronization of multiple 3D data. Main functions include:

- Simultaneous display of images in multiple series
- Synchronization using “Image Intelligence”
- Synchronization of various operations between images including measurements and annotations and histograms
- Display of the average image

Combination

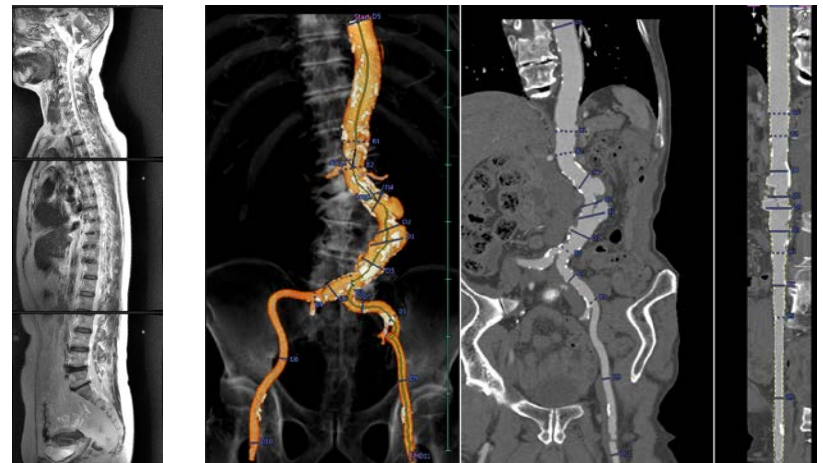
Combination is an application tool designed to combine multiple series to a single series, especially useful for visualizing multiple spine or vessel series as a single image. Images do not need to overlap, but should be captured at continuing positions. Main functions include:

- Display of orthogonal sections of MIP that are created by combining different series
- Save DICOM images after combining

General CPR

General CPR is an application tool designed to visualize curved planar reconstructions (CPR), useful for clinical analysis of blood vessels (aorta, carotid, etc.) and other tubular structures. Main functions include:

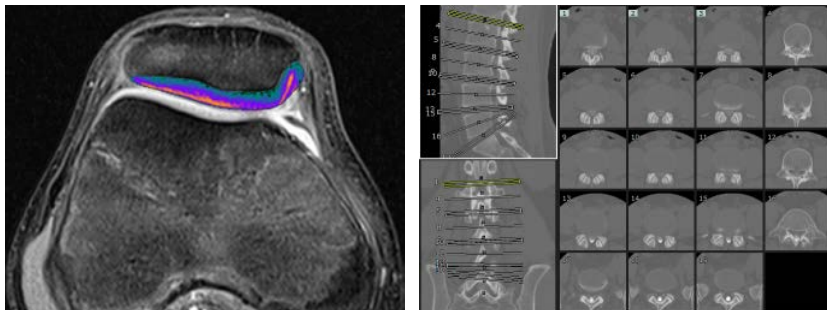
- Display of axial, sagittal, and coronal images
- CPR path creation
- Modification of CPR center line and contour
- CPR image display
- Display of vessels started from a different application
- Measurement of stenosis ratios
- Color-coded display from color mapping analysis
- Virtual stent graft with TAA, AAA and TAVR templates
- Display of catheter diameter rate and curve angles for procedure planning
- Panorama display
- Saving CPR and orthogonal plane images



Tx Map

Tx Map provides radiologist calculations derived from the MR signal values. Clinical utility of T2 assessment include cartilage and collagen analysis. T2* is useful to determine iron deposits and distribution. Main functions include:

- Display the T2* Map
- Measure T2* values in ROIs
- Monitor the T2* Map time intensity curve
- Pseudo-color display of T2* Map images



Slicer

Slicer is an application tool useful for reconstructing slice data through various translations, especially helpful for complex spinal analysis such as scoliosis treatment planning. Main functions include:

- Display slice images
- Reformat and reconstruction options
- Specialized layouts for slice visualization
- Spine detection with spine labeling
- Output slice images to DICOM or Windows printers

Sector MPR

Sector MPR is a tool that is used to help radiologists simulate ultrasound examinations, particularly for aspiration and biopsy planning. The software allows display single or multiphase studies allowing the radiologist to visualize probe and centesis placement. Main functions include:

Main functions include:

- Display of sector MPR images
- Cine playback of multiphase MPR images
- Display of pseudo light decay shading for realistic visualization
- Measurements on sector MPR images for centesis planning

ADC Viewer

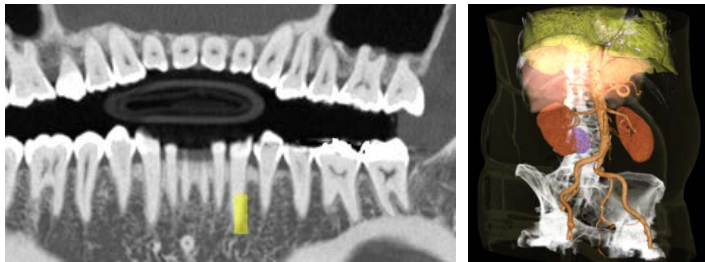
ADC Viewer is a useful tool for radiologists and neurologists. In ADC Viewer, apparent diffusion coefficients are calculated and visualised from information on signal values of diffusion-weighted images collected with MR. Main functions include:

- Display ADC Map and EADC Map images
- Measure ADC values in ROIs
- Pseudo-colour display of ADC Map images
- Blending display of ADC Map images and background images
- Automatic/manual registration of ADC Map images and background images

Dental MPR

Dental MPR is a useful tool for radiologists to create and view panoramic images of teeth and alveolar bones, useful for implant planning. Main functions include:

- Display cross sections
- Display panorama images of alveolar bones
- Virtual implant operations
- Output to DICOM or Windows printer



Compositor

Compositor is an application tool helpful to radiologists and surgeons, especially for complex surgical interventions. The software allows the fusion of up to five series in the same space to display the volume rendering of combined images. Example uses include displaying CT images of the liver exposed at multiple time phases, CT images of bone fused with MRI images of soft tissue or MRA images of artery with phase contrast of vein. Main functions include:

- Fusion of up to five 3D series in the same space and display the 3D volume rendered images
- Automatic and manual registration of images

Tumor Tracking

PERCIST Tracker

PERCIST is useful to determine temporal changes of solid tumors using PERCIST 1.0 evaluation criteria. Main functions include the following:

- Automatic or manual registration of PET/CT images
- Measurement of background and lesions
- Evaluation by the PERCIST 1.0
- Comparison and synchronization with up to 9 past studies
- Output of status of approval, determination, and overall determination of studies
- Display of evaluation data with exportable trend graphs and data tables
- Management of user authority

RECIST Tracker

RECIST is useful to determine temporal changes of solid tumors using RECIST, WHO, mRECIST or Choi evaluation criteria. Main functions include the following:

- Allows evaluation of CT or PET-CT data
- Automatic or manual registration of PET/CT images
- Measurement and display of lesions
- Evaluation according to tumor evaluation criteria (WHO, RECIST1.0, RECIST1.1, mRECIST, Choi criteria)
- Comparison with up to 9 prior studies
- Display of evaluation data with exportable trend graphs and data tables
- Management of user authority



Pulmonology Focus Clinical Tools

Lung Analysis Airway

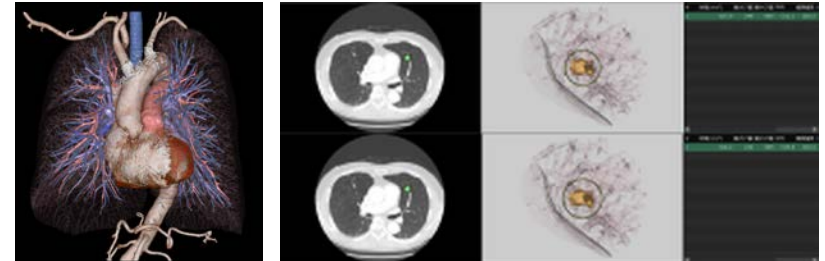
Lung Analysis Airway is a useful tool to analyze lung nodules, bronchi and low attenuation areas of the lungs, useful to assess nodules, airway obstructions and lung data over time. Main functions include:

- Automatic and semi-automatic extraction of the lung field and lung lobes
- Extraction of the contact area between the lung field and diaphragm
- Semi-automatic extraction and volume calculation for nodules existing in lung field
- Extraction of bronchus regions and measurement of diameter of bronchi
- Signal values, Goddard Score and low attenuation cluster analysis for lung field region
- Comparison of nodules, attenuation and airway between current and prior studies

Lung Analysis Resection

Lung Analysis software extracts lung regions, pulmonary artery, pulmonary vein, bronchus and other regions for a 3D visualization of the lungs. Lung resection simulation can be performed by extracting and segmented the territories of pulmonary vessels and bronchi, useful for preoperative planning. The main functions include:

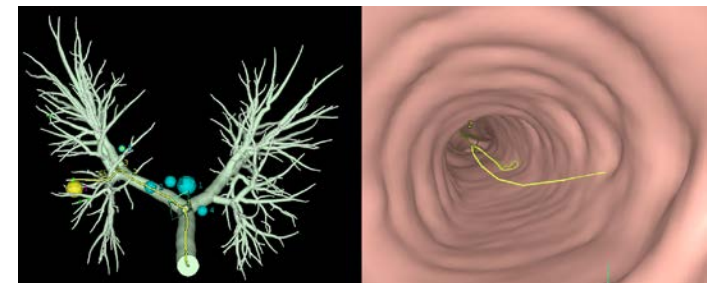
- Automatic and semi-automatic extraction of the lung field and lung lobes
- Extraction and display of diaphragm region
- Extraction of tumors with volume calculation
- Automatic extraction of the pulmonary artery, pulmonary vein, and bronchus
- Surface display, printable to .stl formats for 3D printing
- Calculation of the territories of pulmonary vessels and bronchi of the lung field region



Lung Analysis Scope

Lung Analysis Scope is an application tool recommended for pulmonologists planning endoscopy procedures. The software searches for optimal bronchus pathways towards a lung lesion. A bronchoscope simulation is performed along the path, helpful to visualize difficult procedures prior to invasive examinations. Main functions include:

- Automatic extraction of the lung field and bronchus
- Semi-automatic extraction of lung nodule, setting of lymph node
- Automatic search for optimum bronchus path to access the lung nodule
- Bronchus display in realistic patient procedure orientation
- Virtual endoscopic image display along the bronchus path



Neurology Focus Clinical Tools

Brain Perfusion CT

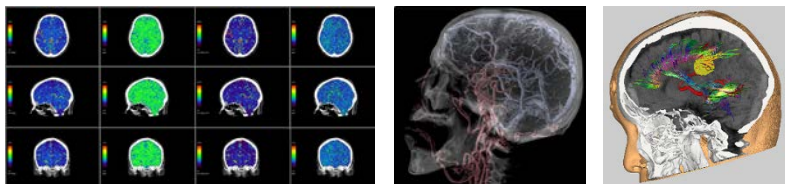
Brain Perfusion CT is a useful tool for radiologists and neurologists. The software analyzes the changes in cerebral blood flow from the dynamic scan images of CT for the same slice and calculates CBV (Cerebral Blood Volume), CBF (Cerebral Blood Flow), MTT (Mean Transient Time), and TTP (Time to Peak) from the analysis results. Main functions include:

- Analysis of 3D or 4D brain perfusion CT data
- Automatic registration
- Position detection and correction of arteries and veins
- Calculation of CBV, CBF, MTT, and TTP
- Analysis result list display

Brain Perfusion MR

Brain Perfusion MR is a useful tool for radiologists and neurologists. The software analyses the changes in cerebral blood flow from the dynamic scan images of CT for the same slice and calculates CBV (Cerebral Blood Volume), CBF (Cerebral Blood Flow), MTT (Mean Transient Time), and TTP (Time to Peak) from the analysis results. Main functions include:

- Automatic registration
- Position detection and correction of arteries and veins
- Calculation of CBV, CBF, MTT, and TTP
- Analysis result list display
- Blend with the ADC Map



Vessel Extraction

Vessel Extraction is a useful tool for radiologists and neurologists. In Vessel Extraction, the blood vessel region is semi-automatically extracted from the post-contrast image by removing the bone region using the pre-contrast image. Main functions include:

- Display three planes (axial, sagittal, and coronal) and respective 3D images
- Display of artery, vein and calcium
- Automatic and manual registration of images
- Displays of the brain vessel extraction result as 3D, MIP or Fusion
- Stereoscopic display using two 3D images with differing angles

Tensor Analysis with Craniotomy

Tensor Analysis with Craniotomy is a useful tool for radiologists, neurologists and neurosurgeons. It enables tensor analysis from diffusion-weighted MR images and tractography-based extraction and observation of white matter tractography pathways. Additional images (mainly CT images) can be loaded, and skin, bone, brain parenchyma, tumor, and cerebral vessels can be extracted in craniotomy simulations. Main functions include:

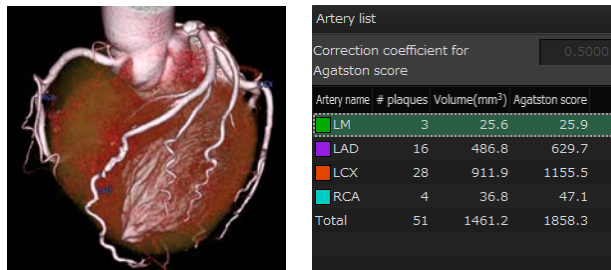
- Displays Fractional Anisotropy (FA) and diffusion colormap images
- Extract and observe white matter tractography
- Calculate FA value, number of fibres, area, and volume in the specified ROI
- Simultaneous display of white matter tractography and skin, bone, brain parenchyma, tumour, artery, vein, and other regions.
- Simultaneous display of DWI and ADC, useful to differentiate between malignant and benign tumors.³
- Craniotomy simulations involving cutting of skin and bone regions, brain surface clipping by depth, and tumor plane clipping
- Automatic and manual data registration options

Cardiology Focus Clinical Tools

Coronary Analysis CT

Coronary Analysis CT is a useful tool for cardiologists and radiologists. Using the software, the user is able to extract the path of the target blood vessels and perform evaluation of the coronary arteries. Main functions include:

- Display of axial, sagittal, and coronal images
- Automatic extraction of the heart
- Automatic extraction of coronary arteries
- Color-coded display of plaque (hard plaque and soft plaque)
- Measure coronary artery stenosis ratios
- Virtual stent graft
- Display coronary artery CPR images
- Save coronary artery CPR and orthogonal plane images
- Modify coronary artery paths and heart region
- Various types of 3D displays for observation of coronary arteries
- Simultaneous display of CT images in direct comparison to related XA images



Cardiac Function CT

Cardiac Function CT is a useful tool for cardiologists and radiologists. The software allows cardiac function analysis by obtaining the contour of ventricle and myocardium from CT images constructed by the multiple time phases. Cardiac Function CT calculates ejection fraction, end-diastolic volume, end-systolic volume, stroke volume etc. Main Functions include:

- Automatic extraction of the heart
- Automatic extraction of the contours of ventricle and myocardium which are required cardiac function analysis
- Display the long axis and short axis images of the heart
- 3D mapping display of analysis results
- Volume measurement and display of the bull's eye for ventricle and myocardium
- Measuring of various cardiac function evaluations including end-diastolic volume, end-systolic volume, end-diastolic ventricular index, end-systolic ventricular index, stroke volume, cardiac output, peak filling rate, time to peak filling, cardiac index, ejection fraction, body surface area, heart rate, and myocardial mass
- Output cine movies

Calcium Scoring

Calcium Scoring is a useful tool for cardiologists and radiologists. The software displays the plaque area of the coronary artery by color and calculates the quantitative value of plaque by using the Agatston score method. Main functions include:

- Automatic extraction of the heart
- Calculation of the Agatston score based on the Agatston score method
- Threshold value setting for scoring
- Specification for the plaque area in 2D and 3D images

4-Chamber Analysis

4-Chamber Analysis is a useful tool for cardiologists and radiologists. The software extracts left and right ventricles, atria, and myocardium region from CT images consisting of the multiple time phases, calculates cardiac function parameters such as ventricular ejection fraction, and enables observation of transitions in ventricle and atrial volume. Main functions include:

- Pre-rendering and automatic extraction of ventricular, atrial, and myocardial regions
- 3D surface rendering of ventricular, atrial, and myocardial regions, saves to .stl format for 3D printing
- Automatic extraction of the contours of ventricle and myocardium which are required cardiac function analysis
- Display the long axis and short axis images of the heart
- 3D mapping display of analysis results
- Volume measurement and bull's eye display of ventricle, atrium, and myocardium
- Measuring of various cardiac function evaluations including end-diastolic volume, end-systolic volume, end-diastolic ventricular index, end-systolic ventricular index, stroke volume, cardiac output, peak filling rate, time to peak filling, cardiac index, ejection fraction, body surface area, heart rate, and myocardial mass
- Output cine movies
- Non-rigid phase registration

Cardiac Fusion

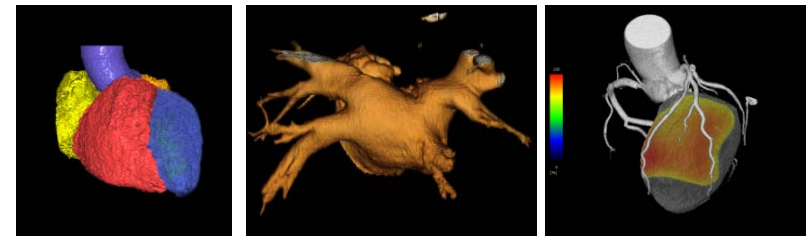
Cardiac Fusion is a useful tool for cardiologists and radiologists for viewing fusion of cardiac anatomy and functional analysis. Main functions include:

- Display the axial, sagittal, and coronal plane images
- Overlay display of a functional image and a structural image
- Automatic and manual registration of images

Cardiac Ablation Analysis

Cardiac Ablation Analysis is a useful tool for cardiologists and electrophysiologists. The software extracts left and right ventricles, atria, and myocardium regions from CT images consisting of the multiple time phases. The software also extracts the pulmonary vein based on the left atrium region, in pre-operation simulation for ablation, and in post-operation observation. Main functions include:

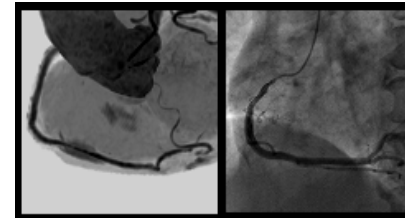
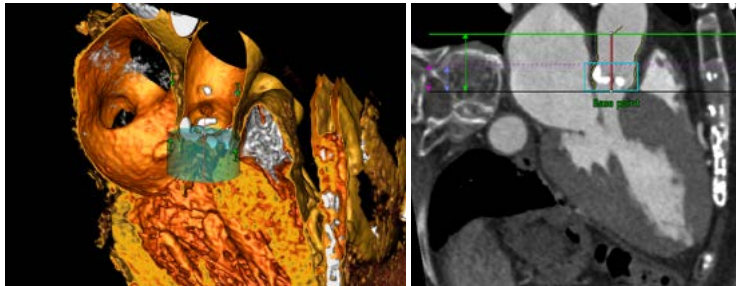
- Automatic extraction of the heart
- Automatic extraction of ventricular, atrial, and myocardial regions
- Automatic pulmonary vein extraction
- Extraction and visualization of esophagus for positioning
- 3D view inside the pulmonary vein
- Virtual endoscopic view of inside the pulmonary vein



Aortic Valve Analysis (TAVR)

Aortic Valve Analysis is useful for cardiologists in preparation for Transcatheter Aortic Valve Replacement (TAVR) planning. The software measures various aspects of the vicinity of the aortic valve by extracting the heart and aorta regions from the input CT images. Aortic Valve Analysis also allows the confirmation of the size of the aorta and the performance and calcification of the aortic valve to support an aortic valve replacement. Main functions include:

- Pre-rendering with automatic extraction of the heart and aorta regions
- Allows single or multi-phase data
- Automatic detection of the contour of the aorta
- Measurements include circumference, area, major and minor axis, average diameter and area, distance to right and left coronary artery, and plaque volumes
- Transapical approach displays and measurements
- Coronary cusp labelling
- Virtual valves with presets
- Output cine movies and data to report summary



Heart rate	50.0	bpm	
R-R interval	1200.0	ms	
ROI No.	1	2	3
Area [cm ²]	3.40	3.14	3.42
Mean flux [ml/s]	2.2	4.6	1.3
Forward flow volume [ml]	3.2	2.6	5.6
Backward flow volume [ml]	5.5	7.4	3.9
Regurgitant fract. [%]	63.2	73.8	40.8
Abs. stroke volume [ml]	8.7	10.0	9.5
Stroke volume [ml]	2.6	5.5	1.5
Mean velocity [cm/s]	0.6	1.4	0.4
Stroke distance [cm]	0.8	1.7	0.5

Coronary Analysis MR

Coronary Analysis MR is a useful tool for cardiologists and radiologists. The software uses MR images to extract the path of the target blood vessels and performs evaluation of the coronary arteries. Main functions include:

- Display axial, sagittal, and coronal images
- Automatic extraction of coronary arteries
- Color mapping analysis
- Measure coronary artery stenosis ratios
- Virtual stent graft
- Display coronary artery CPR images
- Save coronary artery CPR and orthogonal plane images
- Modify coronary artery paths and heart region
- Various types of 3D displays for observation of coronary arteries

MR Flow Analysis

MR Flow Analysis is a useful tool for cardiologists and radiologists. In MR Flow Analysis the blood flow volume and the flow velocity per heart rate velocity of an arranged ROI can be calculated. Main functions include:

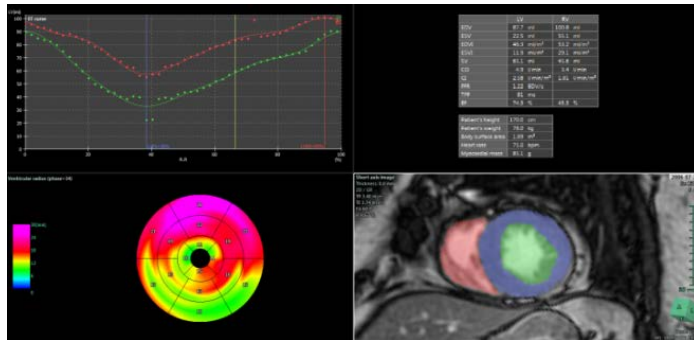
- Display analysis table (flow volume analysis and flow velocity analysis)
- Display blood flow velocity image
- Display original image, phase image, or absolute value image
- Display original image, phase image, or absolute value image, overlapped with the blood flow velocity image
- Display the result of the flow volume analysis and the flow velocity analysis by the time intensity curve
- Comparison with past analysis results and report output

Cardiac Function MR

Cardiac Function MR is a useful tool for cardiologists and radiologists. The software evaluates cardiac function, obtains ventricle and myocardium boundaries from MR images consisting of multiple time phases and calculates ejection fraction, end-diastolic volume, end-systolic volume, stroke volume, and other related information.

The contour of ventricle and the contour of the cardiac wall can be set by automatic extraction based on the image information or by user input or modification. The calculated result can be displayed as a graph or bull's-eye images, and it can be printed as a report. Main Functions include:

- Semi-automatic extraction of the contours of right and left ventricle and myocardium which are required cardiac function analysis
- Display the long axis and short axis images of the heart
- 3D mapping display of analysis results
- Volume measurement and display of the bull's-eye for ventricle and myocardium
- Display of measurement results including end-diastolic volume, end-systolic volume, end-diastolic ventricular index, end-systolic ventricular index, stroke volume, cardiac output, peak filling rate, time to peak filling, cardiac index, ejection fraction, body surface area, heart rate, and myocardial mass
- Calculation of the ventricle capacity from a long axis image with the Area-Length method
- Output cine movies

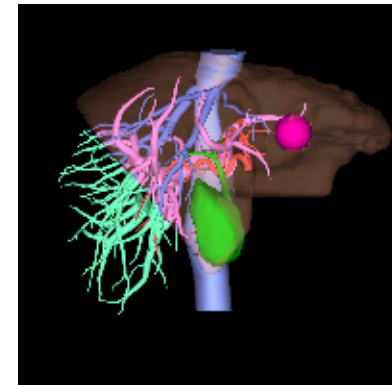


Abdominal Focus Clinical Tools

Liver Analysis (CT)

Liver Analysis (CT) is a useful tool for radiologists and liver surgeons for liver tumor analysis and nephrectomy planning. The software allows extraction of the liver and nearby vessel regions from contrast-enhanced CT images and displays the results as 3D-mapped images. In addition, the dominant region of the extracted liver region, portal vein and veins can be extracted and divided into areas. Hepatectomy simulation can be performed. Main functions include:

- Display of images in axial, sagittal and coronal reformats
- Semi-automatic extraction of liver region
- Semi-automatic or manual options for paths of artery, vein, portal, biliary and other tubular structures
- Simultaneous display of liver, blood vessels, bile duct, tumors, bladder, body surface, bones and other regions
- Volume calculations of liver, tumors, gallbladder and other regions
- Extraction of vascular territories in liver
- Extraction resection areas by portal or arterial territory, drill or manual selections
- Manual modification of any extractions
- Observation and measurements through sector MPR of the liver region
- Fusion of NM or MR comparison data

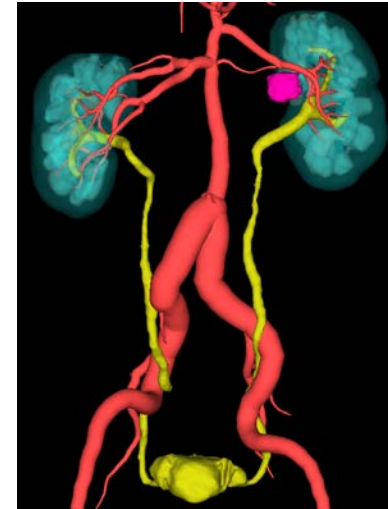


Kidney Analysis

Kidney Analysis is a useful tool for radiologists, nephrologists and renal surgeons for kidney tumor analysis and nephrectomy planning. Synapse 3D Kidney Analysis allows the user to extract the kidney, renal cortex, and regions including various surrounding organs from contrast-enhanced CT images and displays results as 3D images. In addition, further extraction of the extracted kidney region and arterial territory region extraction are possible, regions can be divided, and nephrectomy simulations can be performed.

Main functions include:

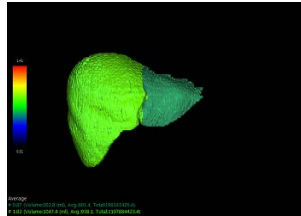
- Display of axial, sagittal, and coronal images
- Semi-automatic extraction of the kidney region
- Automatic and semi-automatic vessel extraction
- Simultaneous display of kidney, blood vessels, urinary duct, tumors, renal calculus, ureters and bladder, body surface, bones, and other regions
- Area and volume calculations for kidneys, tumors, renal cortex, renal medulla, gallbladder, and other regions
- Extraction of the vascular territories in the kidney
- Extraction through tumor drilling in the kidney region
- Manual segmentation of the kidney region
- Observation and measurement through Sector MPR of the kidney region



Liver Analysis (MR)

Liver Analysis (MR) is a useful tool for radiologists, gastroenterologists and liver surgeons for liver function analysis. The software will display MR multi-phase contrast-enhanced images and reference images. The user is able to calculate and view calculation results for liver and spleen regions. Main functions include:

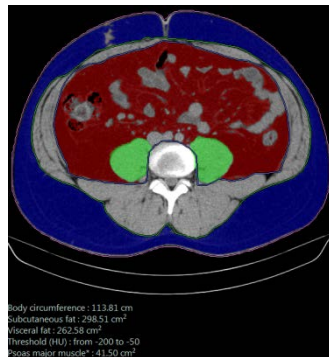
- Display of multi-phase contrast-enhanced images and reference images
- Extraction of liver and spleen regions
- Visualization of calculation results
- Manual modification of extractions



Fat Analysis

Synapse 3D Fat Analysis is a useful tool for radiologists, oncologists, surgeons and endocrinologists. The key benefit of Synapse 3D Fat Analysis is the calculation of subcutaneous fat, visceral fat and psoas muscle volume, useful for monitoring sarcopenia, cachexia and response to chemotherapy. Main functions include:

- Three-dimensional analysis and display of subcutaneous fat and visceral fat, current and prior
- Calculation of the area of subcutaneous fat and visceral fat for each slice
- Extraction of psoas muscle with volume calculation
- Calculation of circumference of the body surface, fat ratio, BMI



Colon Analysis

Synapse 3D Colon Analysis is an application tool recommended for radiologists or gastroenterologists interested in viewing of the colon to detect polyps, masses, cancers and other lesions. The software can be used for reading, interpreting, reporting and screening. Main functions include:

- Automatic extraction of the intestinal canal
- Automatic centerline tracking of intestinal tract
- Observation options for entire colon and lumen
- Comparative observation for supine and prone positions
- Lesion observation and analysis tools
- Special displays such as colon unfolded cube view display, straight open display, straight cross-section display, etc.
- Digital cleansing
- Observation of lesions and colon in 2D and/or 3D
- Simultaneous display of colon and surrounding organs for treatment planning



For more information, or to schedule a demonstration, please contact your Fujifilm Representative by calling 1-866-879-0006.

Common Features

These features are common across all Synapse 3D application tools where applicable:

- 2D cross section display
- Changing window width and level
- Rendering options include MIP, MinIP, Volume Rendering (VR), RaySum and Surface
- Movie Creation and Saving
- Gamma and image edge/smoothing filters
- Measurement and Analysis
 - Measures lines, polygonal lines, angles, intensity values, rectangles, ellipses, polygons, freehand, boxes, and spheres
 - Calculates volume of mask region, and average/max/min/standard deviation of intensity values in 3D images
 - Calculates volume of mask region, and average/max/min/standard deviation of intensity values in 2D images
 - Displays profile curve or histogram of each measurement
 - Semi-automatic measurement of half-width
 - Stores measurement results and graph in text file (.csv, .txt) or in captured image
 - Ability to create ROI along the contour of an image by detecting contours during freehand measurement
- Annotations
- Clipping
- User-customizable settings
- Reformat by straight line, fan shape or circular to preset thicknesses and degrees
- Report to DICOM and PDF
- Save workflow snapshots for viewing on zero client or for workflow enhancement