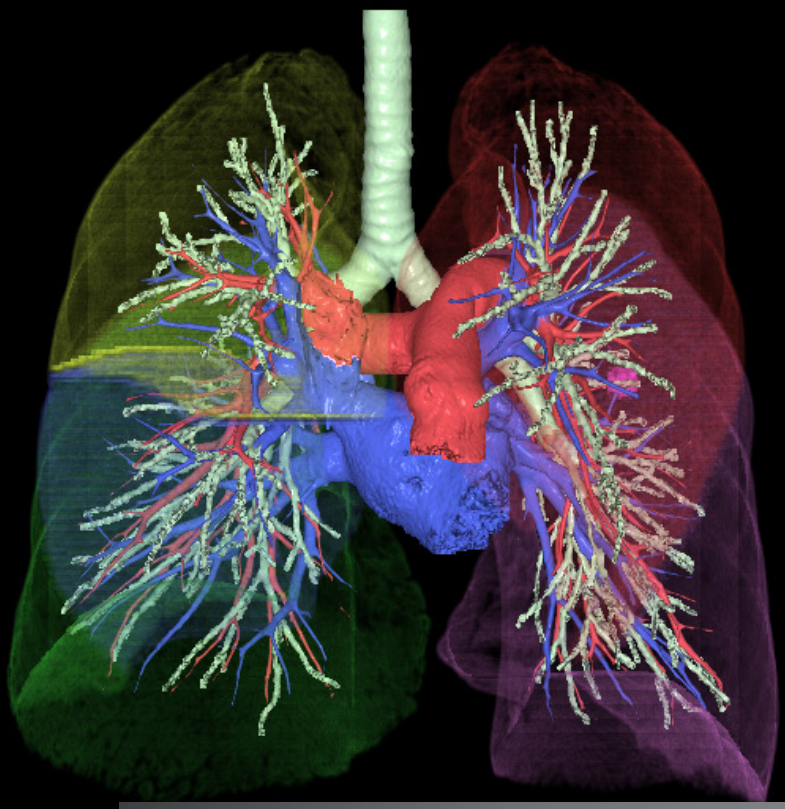
SYNAPSE® 3D

Synapse 3d Applications for advanced image visualization and analysis
CT Bundle



- High image quality for clinical confidence
- Scalable platforms and site-selectable application packages
- Comprehensive and clinically relevant analysis software
- Enterprise access for convenience and efficiency

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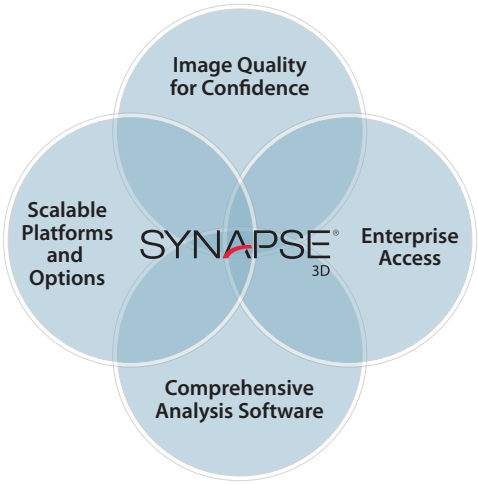
OVERVIEW

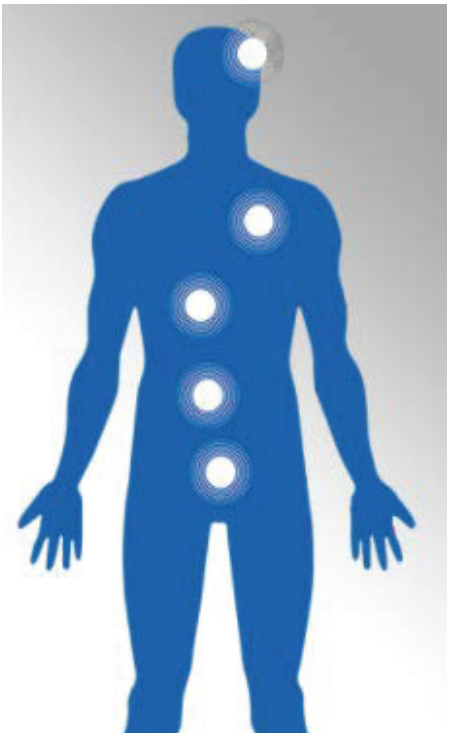
Synapse® 3D provides clinical professionals with a comprehensive collection of applications for advanced image visualization and analysis. Its general tools provide day-to-day 2D, 3D, and 4D image analyses, while its comprehensive, clinically specific tools aid trained clinical users in interpreting, reporting, and providing treatment planning. Most tools can be used alone or combined seamlessly with other tools for additional advanced clinical workflows.

Note: Synapse 3D is not intended for primary diagnostic interpretation of mammography images.



Clinical Tools

BASE TOOLS p. 2
2D Fusion
2D Viewer
3D Comparison
3D Compositor
3D Viewer
3D Viewer with VE
Vessel Extraction
Combination
Dental MPR
Dynamic Data
Fat Analysis 2D & 3D
General CPR
MPR Reformat
Sector MPR
Slicer



CARDIOLOGY p. 6
4-Chamber Analysis
Aortic Valve Analysis (TAVR)
Calcium Scoring
Cardiac Ablation Analysis
Cardiac Function CT
Cardiac Fusion
Cardiac Perfusion CT
Coronary Analysis CT

PULMONOLOGY p. 13
Lung Analysis/Airway

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BASE TOOLS

2D Fusion

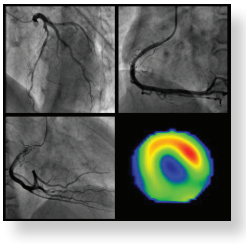
Fuses multimodality, multidimensional data for purposes such as breast or prostate MRI or police science applications. Viewer superimposes two 2D or 3D images of same or different modality. Main functions include:

- Fusing of 2D or 3D images
- Ability to save created fusion images as DICOM file

2D Viewer

Provides simple viewing of multimodality images in a single application. 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



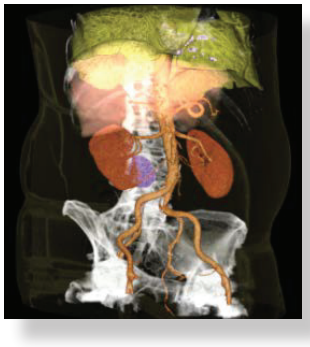
3D Comparison

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, annotations, and histograms
- Display of the average image

3D Compositor

Helps with 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. Applications include display of CT images of the liver exposed at multiple time phases, CT images of bone fused with MRI images of soft tissue, and MRA images of artery with phase contrast of vein.

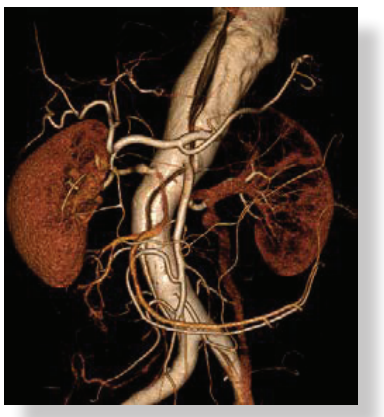


3D Viewer

Allows orthogonal, oblique, and endoscopic analysis of CT, MR, NM, and PT data. Main functions include:

- Macros: Save and play workflows
- 2D and 3D display of cross-sections
- Body part recognition, extraction, and removal, including:
  - Bone extraction or removal (CT)
  - Bed removal (automatic)

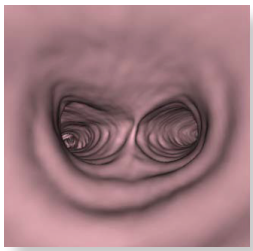
  - Brain extraction (CT or MR)
  - Heart extraction (CT)
  - Colon extraction (CT)
  - Lung and bronchus extractions (CT)
  - Liver extraction (CT)
  - Tumor extraction (CT)
  - Vessel extraction (CT)
  - Hip extraction (CT)
  - Spine extraction (CT)
  - Bone separation (CT)
  - Tube extraction (CT)
  - Cerebral vessels (CT)
  - Small bone extractor (CT)
- Insertion of image planes: Inserts 2D cross-section planes into 3D view and synchronizes with 2D cross-section view
- Outputs observations and images to a report
- Launch of 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-masking of up to 12 layers
  - Reverse, ADD, SUB, AND, XOR operations



3D Viewer with VE

Allows a fly through with contrast enhanced vessels or hollow structures. Main features include:

- Observation of the external wall of hollow organs
- Ability to move automatically without hitting the walls of the lumen
- Automatic recording of the path of the endoscope camera



Combination

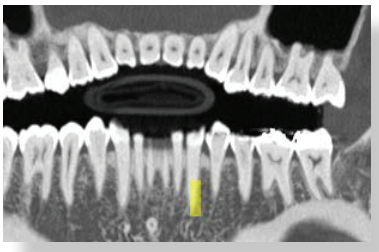
Combines multiple series into a single series, especially useful for visualizing multiple spine or vessel series as a single image. Images do not need to overlap, but should be captured at continuing positions. Main functions include:

- Display of orthogonal sections of MIP created by combining different series
- Ability to save DICOM images after combining

Dental MPR

Creates and displays panoramic images of teeth and alveolar bones, useful for implant planning. Main functions include:

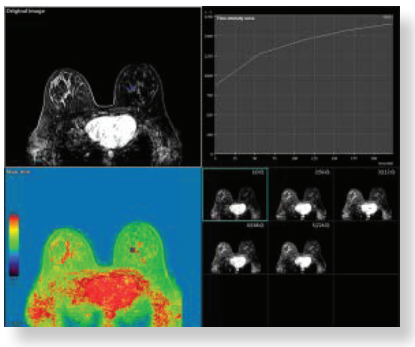
- Display of cross-sections
- Display of panorama images of alveolar bones
- Virtual implant operations
- Ability to output to DICOM or Windows printer



Dynamic Data

Conduct clinical assessment of images over time, including breast and prostate MRI and dynamic PET analysis. The software displays individual parameter images or time-intensity/time-activity curves of slices of multiphase data. Main functions include:

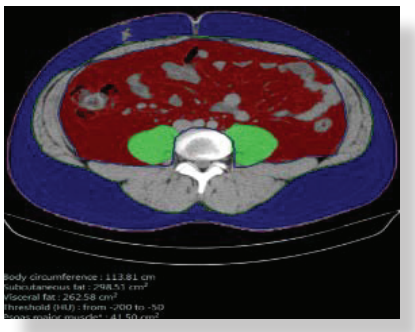
- Loading of single or multiple slice cine images
- Display of time-intensity curves
- Display of time-activity curves (for NM or PET data
- Display of parameter images (difference, time to peak, max-min, area underneath curve)
- Measurement of circular, rectangular, and freehand ROIs. Output of measurement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



Fat Analysis 2D & 3D

Calculates 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 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



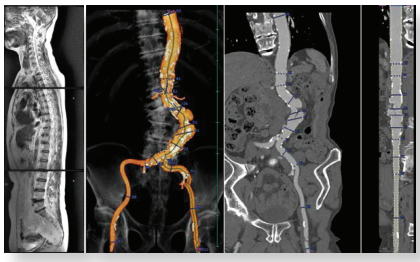
multiphasic MRI. Main functions include:

- Comparison reading of current to nine priors
- Reference reading
- MPR reading
- Configurable overlay and blending
- Automatic rigid registration
- Manual rigid registration by translation and rotation
- Composites of two images using rigid and/or flexible body registration and support for 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
- Layout options optimal for PET and SPECT-CT viewing
- Measurement of SUV
- Comparison with past analysis results and report output

General CPR

Visualizes curved planar reconstructions (CPR), useful for clinical analysis of blood vessels (aorta, carotid, etc.) and other tubular structures. Main functions include:

- Creation of CPR path
- Modification of CPR center line and contour
- CPR image display
- Measurement of stenosis ratios
- Color-coded display from color mapping analysis
- Virtual stent graft with TAA, AAA, and TAVR templates



MPR Reformat

Creates a plane along a straight line or in the shape of a fan on 2D images and prints or saves the plane as a new image. Links directly to 3D Viewer for additional analysis.

Sector MPR

Simulates ultrasound examinations, particularly for aspiration and biopsy planning. The software allows display of single or multiphasic studies, allowing you to visualize probe and centesis placement. Main functions include:

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

Slicer

Reconstructs slice data through various translations, especially helpful for complex spinal analysis such as scoliosis treatment planning. Main functions include:

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