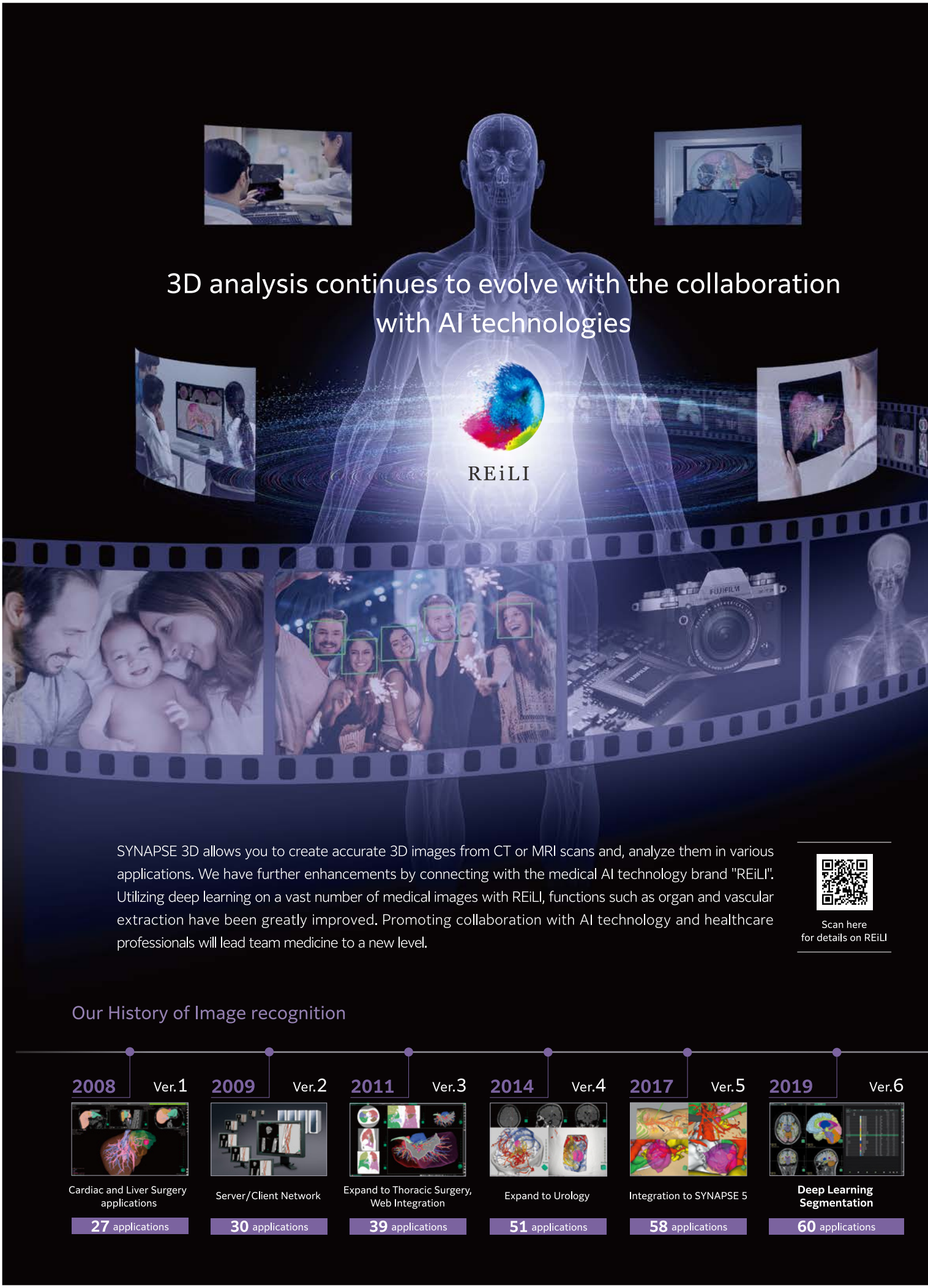
FUJIFILM
Value from Innovation

SYNAPSE 3D

REiLI



3D analysis continues to evolve with the collaboration with AI technologies

REiLI

SYNAPSE 3D allows you to create accurate 3D images from CT or MRI scans and, analyze them in various applications. We have further enhancements by connecting with the medical AI technology brand "REiLI". Utilizing deep learning on a vast number of medical images with REiLI, functions such as organ and vascular extraction have been greatly improved. Promoting collaboration with AI technology and healthcare professionals will lead team medicine to a new level.

Scan here
for details on REiLI

Our History of Image recognition

2008 Ver.1

Cardiac and Liver Surgery applications

27 applications

2009 Ver.2

Server/Client Network

30 applications

2011 Ver.3

Expand to Thoracic Surgery, Web Integration

39 applications

2014 Ver.4

Expand to Urology

51 applications

2017 Ver.5

Integration to SYNAPSE 5

58 applications

2019 Ver.6

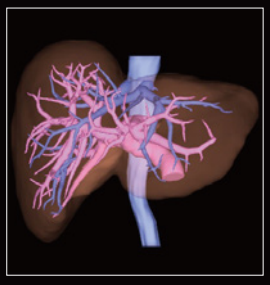
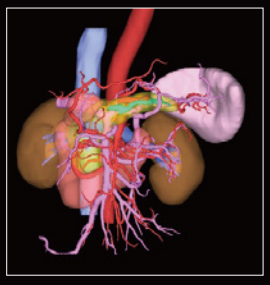
Deep Learning Segmentation

60 applications

3D analysis technology

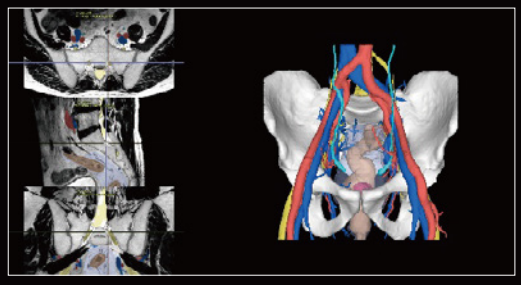
Scan to see videos

Powered by REiLI

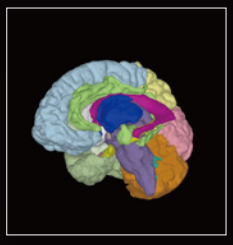
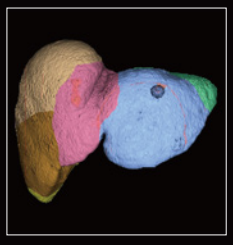
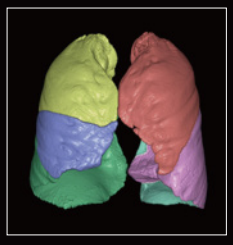
Organ extraction from CT images

Various organs and vessels can be extracted from CT images.
Liver Analysis: Volumetry of liver parenchyma, segmentation of portal vein etc. can be easily performed.
Pancreas Analysis: Pancreas, pancreatic duct and surrounding organs, etc. can be extracted.



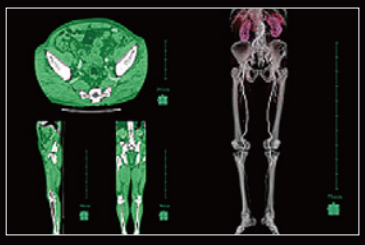
Organ extraction from MRI images

Rectal Analysis: Extraction of the rectum, surrounding organs, blood vessels, and nerves of the pelvic region can be performed.

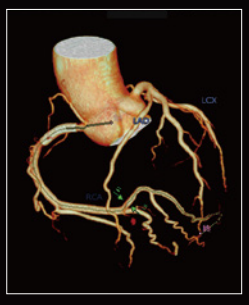
Segmentation

Anatomical segments can be calculated from images.
For example, brain segmentation, Couinaud liver segmentation and lung lobe segmentation can be identified.



Bone extraction/removal

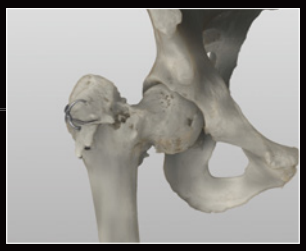
Bones can be accurately extracted and removed from both contrast and non-contrast CT images with a single click.



Vessel extractions

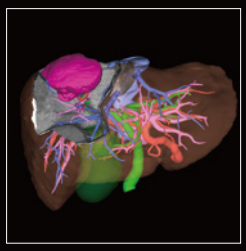
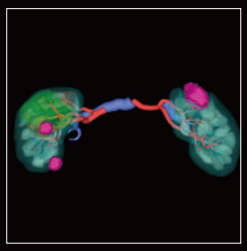
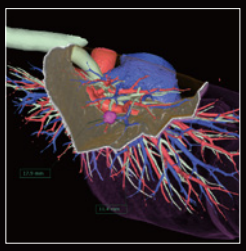
Blood vessels throughout the body can be extracted such as following:
Coronary artery
Coronary arteries can be automatically extracted and labeled as RCA, LAD, and LCX using contrast CT images.
PA/PV and Aorta
Pulmonary arteries, veins, and aorta can be extracted even from non-contrast CT images.

Other Technology



Photorealistic Rendering

A new rendering technology is now available. 3D images with this Photorealistic Rendering look more lifelike.

Preoperative planning

Visualization of vessels, organs, and tumors. Volumetric data and preoperative planning using territory calculation supports minimal invasive surgery.

2024
Ver.6.8

Applications list

Head

Brain Subregion Analysis
MR
Automatically segment brain subregions and measure each volume from head MRI images.

Brain Perfusion CT
CT
Analysis of the changes in cerebral blood flow from dynamic CT images.

Brain Perfusion MR
MR
Analysis of the changes in cerebral blood flow from dynamic MRI images.

4D Perfusion
CT
Analysis of the changes in cerebral blood flow from whole brain dynamic CT images.

Craniotomy/Tensor Analysis
Multi
Tensor analysis and extraction and observation of white matter tractography pathways.

Dental MPR
CT
Creates and displays teeth and alveolar bone, useful for implant planning.

Vessel Extraction
CT
Automatic segmentation of cerebral arteries, veins and calcifications.

Heart

Coronary Analysis MR
MR
Automatic segmentation of all coronary arteries for various evaluations.

Coronary Analysis CT
CT
Morphological and qualitative analysis by automatic extraction of heart and coronary arteries.

Cardiac Function MR
MR
Automatically calculates EF, EDV, ESV, SV and more from multi-phase MRI data.

Cardiac Function CT
CT
Automatically calculates EF, EDV, ESV, SV and more from multi-phase CT data.

Delayed Enhancement
MR
Evaluate myocardial viability by calculating Delayed Enhanced area.

Calcium Scoring
CT
Automatic labelling of coronary arteries and calcium evaluation based on Agaston score.

Cardiac Tx Map
MR
Displays the ECV map and other qualitative evaluations of the myocardial region.

Aortic Valve Analysis
CT
Analysis and measurement of aortic valve preoperative simulation for TAVI.

Cardiac Perfusion MR
MR
Analysis of myocardial ischemia showing time-intensity curve of myocardial segmented area using stress/rest MRI.

Cardiac Perfusion CT
CT
Various analysis of myocardial ischemic area using stress/rest 4D CT images.

Cardiac Fusion
Multi
Observe cardiac morphological and functional fusion image.

4-Chamber Analysis
CT
Automatic segmentation of 4-chamber and aorta for evaluation of each chambers' function.

Cardiac Ablation Analysis
CT
Preoperative simulation of the ablation by extracting the pulmonary vein from the left atrial region.

Mitral Valve Analysis
CT
Mitral valve measurements to guide transcatheter mitral valve replacement (TMVR) planning.

Chest

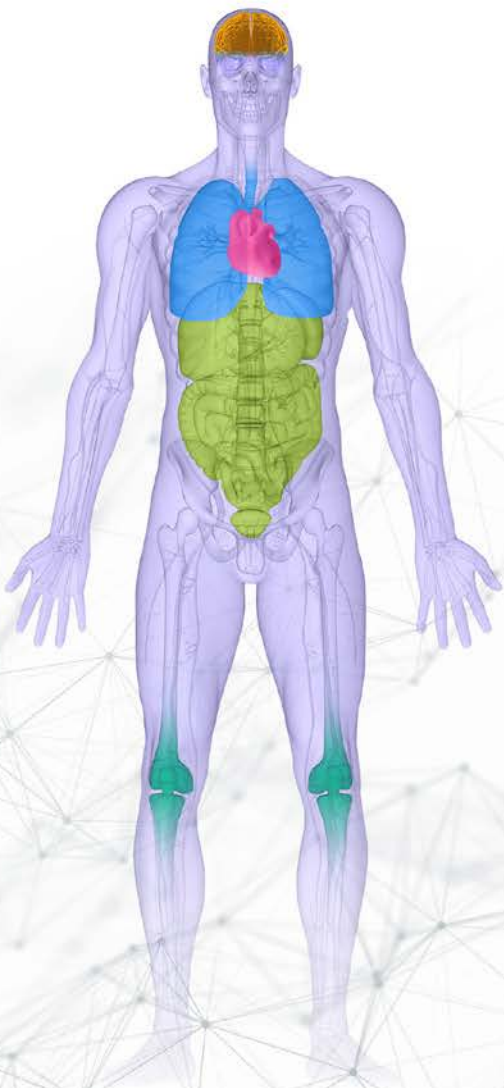
Lung Analysis/Airway
CT
Analysis of lung nodules, bronchi and low-attenuation areas.

Lung Analysis Resection
CT
Pre-operative simulation of lung resection by automatically extracting each lung region.

Lung Analysis Scope
CT
Preoperative simulation of bronchoscopy by planning the optimal path to a lung lesion.

Rib Viewer
CT
Automatic extraction and labelling of spine and ribs. 3D and curved planar (CPR) images of them can be observed.

Breast Analysis MR
MR
Analysis of breast tumors using dynamic MRI images and generation of a BI-RADS report.



Legends

Brain Subregion Analysis — MR

Automatically segment brain subregions and measure each volume from head MRI images.

AI (REiLI) — CT

MR — Multimodality

Abdomen

Liver Analysis CT
Liver and surrounding organs can be extracted for preoperative analysis and hepatectomy planning.

Liver Analysis MR
Observe liver MRI dynamic study and calculate liver region. Liver Analysis (CT) segmentation results can be applied.

Pancreas Analysis
Pancreas and surrounding organs can be extracted for preoperative analysis and planning.

Kidney Volumetry
Polycystic kidneys can be extracted, and its volume can be compared to past results to observe change over time.

Kidney Analysis
Kidney and surrounding organs can be extracted the for preoperative analysis and planning.

Prostate Viewer
Analysis of prostate tumors using multiple MRI series and generation of a PI-RADS report.

Abdominal Perfusion CT
Analysis of the blood flow of abdominal organs, including the pancreas overtime.

Colon Analysis
Detection of polyps or other lesions in the colon via 3D flythrough or 2D review for CTC examination.

3D Fat Analysis
Areas and volumes of subcutaneous fat, visceral fat, and skeletal muscle in multiplanes can be calculated.

2D Fat Analysis
Areas of subcutaneous fat, visceral fat, and skeletal muscle in 2D can be calculated.

Rectal Analysis
Rectal and surrounding organs can be extracted from MRI images for preoperative analysis and planning.

Lower limbs

Knee Joint Analysis
Bone, cartilage, and meniscus can be extracted from knee joint MRI images for observation.

Common

Sector MPR
Virtual ultrasound images can be observed.

Combination
Combine multiple series into a single view.

Nuclear Medicine Viewer
Fusion of CT images and nuclear medicine images (SPECT or PET) and SUV measurements can be performed.

ADC Viewer
ADC values are calculated and visualized from MRI diffusion-weighted images.

IVIM
ADC, EADC, or other maps can be visualized by calculating diffusion coefficients from MRI diffusion-weighted images.

Oncology Viewer
Identify and track changes over time in solid tumors using PERCIST, RECIST or other criteria.

Endoscope Simulator
Preoperative planning for thoracic and abdominal laparoscopic surgery can be performed.

Interventional Radiology Simulator
Preoperative interventional radiology planning by extracting target regions and paths.

Tx Map
Various Tx value calculations derived from MRI signal values.

MR Flow Analysis
Blood flow volume and flow velocity can be calculated.

4D Flow
Blood flow volume, velocity, and vector of an arranged ROI can be calculated visualized in 3D.

Surface Viewer
Surface models can be automatically generated and edited from the extracted mask areas.

Dual Energy Analysis
Various analyses can be performed using two CT images with different tube voltages.

2D Viewer
CT, MRI or other DICOM images can be displayed.

3D Viewer
Display and measurement of 3D or MPR and virtual endoscope are available.

4D Viewer
Loads multi-phase images and plays them back based on their time information.

Dynamic Data Viewer
Time-intensity curves can be observed from data taken over time.

3D Compositor
Multiple series images can be fused in the same space to display 3D images.

3D Comparison
Multiple series image can be displayed side by side with synchronization.

Slicer
Observation of any cross-section, mainly for supporting complex spinal analysis.

Fusion
Images from different modalities can be fused and displayed.

2D Fusion
Two series images can be fused and saved.

General CPR
CPR vessel images can be created for clinical analysis including stenosis and calcification.

MPR Reformat
Any cross-section image can be created, printed, and saved.

Option tools

Offline VR
3D images can be exported in a format that can be rotated and observed in a web browser.

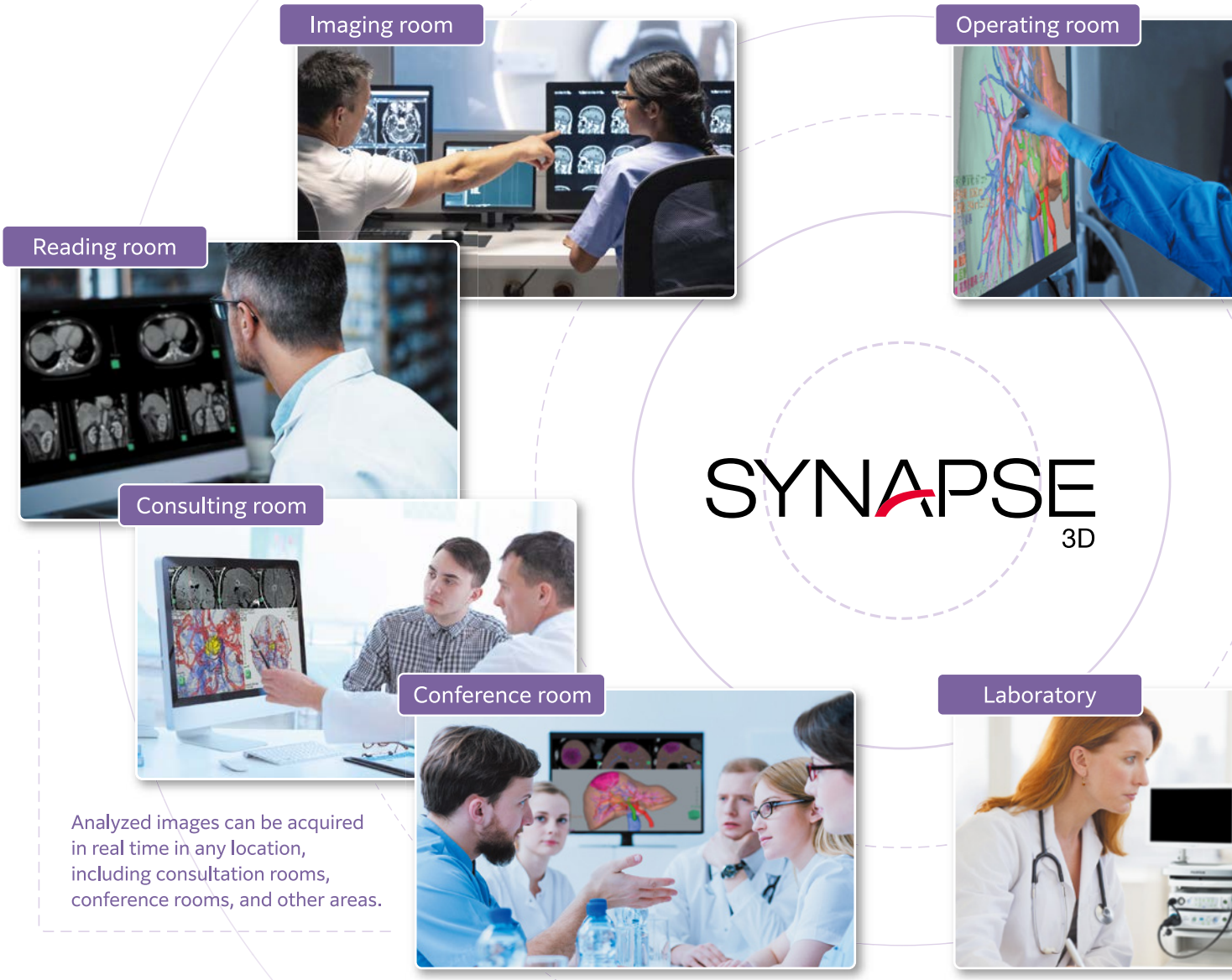
STL Output*
STL, DICOM, OBJ, USDZ, and 3D PDF formats can be generated and used with compatible applications.

PixelShine™
Noise reduction for low-dose CT images using deep learning technology.
*PixelShine™ is a trademark of AlgoMedica.

*Compatible applications of STL Output
3D Viewer/ Liver Analysis CT/ Lung Analysis Resection/ Kidney Analysis/ Craniotomy·Tensor Analysis/ Knee Joint Analysis/ Surface Viewer/ Pancreas Analysis/ Rectal Analysis

and more..

Delivers optimal images to multiple departments



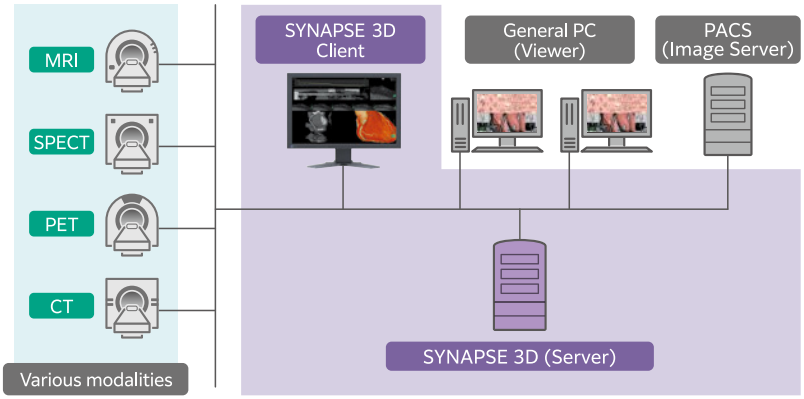
Analyzed images can be acquired in real time in any location, including consultation rooms, conference rooms, and other areas.

Flexible system configuration

Configuration example 1

Server type

Integration with SYNAPSE PACS viewer allows server/client type system configurations.
The seamless connection of the system provides more comfortable reading environment.

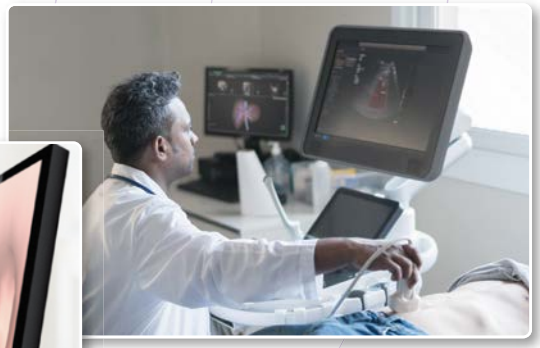


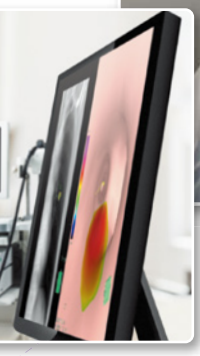
Configuration example 2

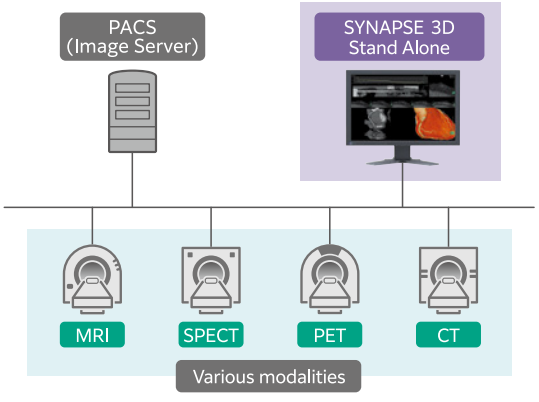
Stand Alone Type

Connect to modality for independent use, or upload studies for offline operation in an office environment.

*Use outside of the patient environment.





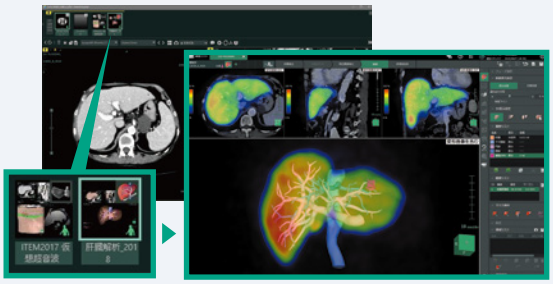


Utilizes smooth integration

3D images can be observed quickly from PACS viewer in following two ways. Thin slice images on the SYNAPSE 3D server can be DICOM transfers to the SYNAPSE PACS viewer.

1	Launch SYNAPSE 3D in SYNAPSE PACS viewer

2	Launch native SYNAPSE 3D application from the thumbnail view.

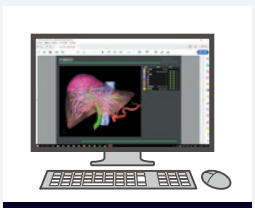


*The specification differs depending on the version.

Various output formats

Several output formats such as 3D PDF/STL/OBJ allow you to observe images on various devices. STL Output license is required.

Tablet device



RIS/EMRs screen

*Output devices are not supported.

Operability — Ease of use operation

UI Design

reddot winner 2022
best of the best interface design

SYNAPSE 3D ver 6.1

Our UI design won the 2022 Red Dot Award—Best of the Best. Praised for its user-friendly design, customizable user interface, and a common operating system. Intuitive operation reduces your work time.

Online help

Help pages linked to the current operation are displayed in real time. Free text search is also available.

■ Explanation is provided for each function

Applications

The contents of the application are subject to change without notice.

2D Fat Analysis	ASL Perfusion Analysis	Combination	Kidney Volumetry	PixelShine™
2D Fusion	Brain Perfusion CT	Coronary Analysis CT	Knee Joint Analysis	Prostate Viewer
2D Viewer	Brain Perfusion MR	Coronary Analysis MR	Liver Analysis CT	QPM Analysis
3D Comparison	Brain Subregion Analysis	Craniotomy/Tensor Analysis	Liver Analysis MR	QSM Analysis
3D Compositor	Breast Analysis MR	Delayed Enhancement	Lung Analysis Resection	Rectal Analysis
3D Fat Analysis	Calcium Scoring	Dental MPR	Lung Analysis Scope	Rib Viewer
3D Viewer	Cardiac Ablation Analysis	Dual Energy Analysis	Lung Analysis/Airway	Sector MPR
4-Chamber Analysis	Cardiac Function CT	Dynamic Data Viewer	Mitral Valve Analysis	Slicer
4D Flow	Cardiac Function MR	Endoscope Simulator	MPR Reformat	STL Output
4D Perfusion	Cardiac Fusion	Fusion	MR Flow Analysis	Surface Viewer
4D Viewer	Cardiac Perfusion CT	General CPR	Nuclear Medicine Viewer	Tx Map
Abdominal Perfusion CT	Cardiac Perfusion MR	Interventional Radiology Simulator	Offline VR	Vessel Extraction
ADC Viewer	Cardiac Tx Map	IVIM	Oncology Viewer	
Aortic Valve Analysis	Colon Analysis	Kidney Analysis	Pancreas Analysis	

*PixelShine™ is a trademark of AlgoMedica.

Administration

The system Administration is easily undertaken by the site IT team, including user and application use management from one easily accessible web based utility.

- Specifications are subject to change without notice.
- All brand names or trademarks are the property of their respective owners.
- In some countries, regulatory approval may be required to import medical devices.
- For the availability of these products, please contact your local sales representatives.

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global.fujifilm.com

Contact

For additional information, please contact our local sales.

If you do not have contact information, please contact us: **msg-FF-SYNAPSE3D-sales@fujifilm.com**
Or visit us online and select your country: **http://www.fujifilm.com/contact**
Content of this brochure is based on the information available as of July 2024
This product is sold all over the world.