SIEMENS

2014
Edition

www.siemens.com/ct-intervention

Get further.
With CT image-guided therapy.

Driving progress in 3D CT-guided intervention

International version. Not for distribution in the U.S.

Answers for life.

What is the Adaptive 3D Intervention Suite?

- A powerful combination of software applications and scanner features – tailored to meet your clinical challenges in CT-guided interventions
- A solution that helps you get the most from your CT scanner in image-guided intervention

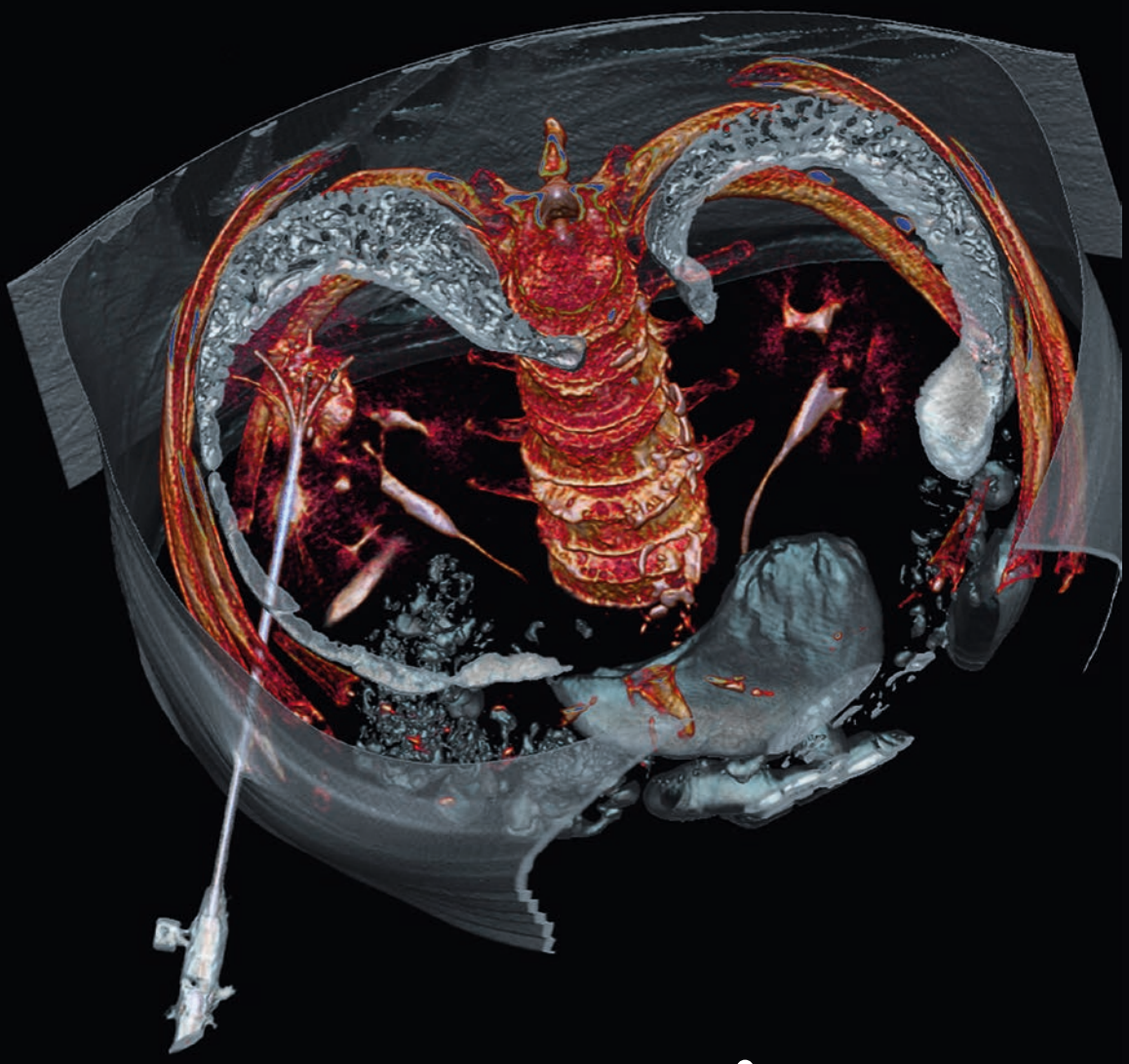
With the Adaptive 3D Intervention Suite, you can continuously enhance the speed, workflow efficiency, and precision of CT-guided interventions.

How far can you get with your CT?

Year after year, CT-guided therapy advances therapeutic possibilities, supporting you in better understanding diseases so that you can guide the right treatment with speed and precision. Now experience the next step with the 2014 Edition.

There is an increasing need for CT image guidance in surgical and minimally-invasive interventions. This technology supports guided surgery and the positioning of biopsy needles and treatment catheters. Siemens is the undisputed leader in this area. Our sliding gantry solutions perfectly complement hybrid ORs. Our Adaptive 3D CT Intervention Suite has the unique ability to work with 3D volume-rendered spiral data sets. This 3D capability allows for fast and accurate positioning in the most complex anatomies, even at difficult oblique angles. In addition, the i-Control gives full wireless in-room control of all relevant scan parameters, directly at the table.

Driving progress in 3D CT-guided intervention.



Precise positioning with 3D CT image guidance

Hybrid suite with SOMATOM Definition Edge sliding gantry CT, the Adaptive 3D Intervention Suite, and robotic Artis zeego angiography system

CT image-guided therapy in hybrid suites

Sliding gantry CT scanners are playing an increasing role in hybrid ORs. Their versatility allows them to be utilized for a variety of minimally-invasive interventions and more invasive surgeries. A two-room configuration makes efficient use of a single CT that can be moved between a CT intervention room and an angio-surgical suite. This allows for high utilization of the CT scanner. You can also save space with a sliding gantry in a single room that combines an angio and CT system.

Different imaging modalities have distinct advantages and combining them offers the best of both worlds. CT imaging excels with low-contrast resolution in visualizing soft tissues and tumor extension. CT perfusion is better able to quantify blood flow for monitoring treatment effects. Dual Energy CT offers superior metal artifact reduction. Conversely, angiography systems offer a larger field of view, easier surgical access, and higher spatial resolution for detailed imaging of the vasculature.

CT image guidance in minimally-invasive therapy

Interventional radiologists are using so-called Miyabi systems to guide the treatment of liver cancer with trans-aortic chemo embolization (TACE) and percutaneous radio frequency ablation (RFA). A floor-mounted SOMATOM Definition AS sliding gantry CT with i-Control and Adaptive 3D Intervention Suite can be elegantly combined with a ceiling-mounted Artis zee angiography system in a single room, making efficient use of a costly footprint. Both CT and angiography systems can be moved into and out of position when needed. In radiation oncology, the use of CT simulators (SOMATOM Definition AS Open) is now being expanded to drive higher patient loads and even more efficient operation. Emerging uses include CT-guided biopsies, drainages, and placement of fiducial markers for image-guided radio therapy (IGRT). In these cases, delivering the dose to the target while sparing healthy tissue has the highest priority. For moving organs like the prostate or liver, IGRT aims to achieve this by tracking fiducials, including gold markers implanted prior to treatment. These markers will be used as surrogates for identifying the position of the target during treatment. CT-guided implantation of fiducials allows for their precise positioning in the tissue surrounding the tumor.

Miyabi suite with SOMATOM Definition AS CT on a sliding gantry with Adaptive 3D Intervention Suite and ceiling-mounted Artis zee angiography system

CT image guidance in surgery

In trauma surgery, every minute counts. A dual room with a SOMATOM Definition Edge sliding gantry CT with Adaptive 3D Intervention Suite and Artis zeego angio system is the ultimate solution. Using a mobile operating table with shuttle system, you can transfer the patient to the CT and then to the hybrid OR without having to reposition the patient. This integration of operating tables into imaging systems is unique on the market. Siemens offers not only full integration of these tables into the sliding gantry CT for high-speed diagnostics but also into the Artis zeego for full functionality in a sterile surgical environment. This saves valuable minutes and minimizes the risks associated with patient repositioning.

Your benefits at a glance

- Combine the best of both worlds with hybrid CT-Angio suites
- Boost your trauma surgery workflow with sliding gantry CT
- Expand the use of your CT simulator into biopsies, drainages, and fiducial marker placement for IGRT

Perform 2D CT-guided intervention with the SOMATOM Perspective Basic Intervention package and i-Control

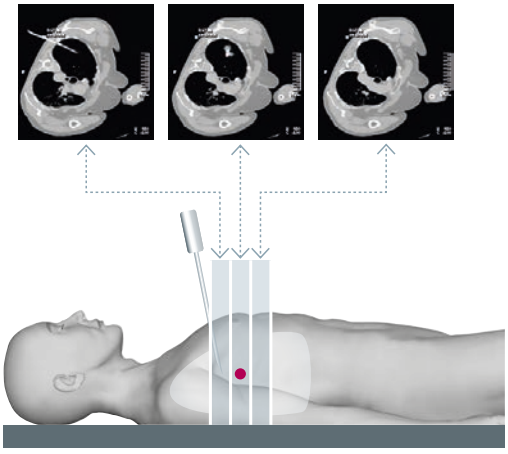
Straightforward solutions for 2D and 3D CT guidance

2D CT-guided intervention with the Basic and Advanced Intervention package

For less complex cases like CT-guided spinal injections, the 2D CT guidance offered with Basic Intervention is appropriate. Three axial images are typically delivered in near real-time over the data set. Basic Intervention supports sequential and spiral modes with quick switching between them for a better overview and navigation in the dataset.

With the CT fluoroscopy offered with Advanced Intervention, you can stay at table side and don't need to leave the room between scans. With CT fluoro, you can scan continuously, view images in near real-time, and hit your target in one pass. HandCARE reduces the dose to the clinician by switching off the X-ray tube in the proximity of the hands.

Offered with the SOMATOM Emotion and Perspective



2D CT-guided intervention with the Basic and Advanced Intervention package

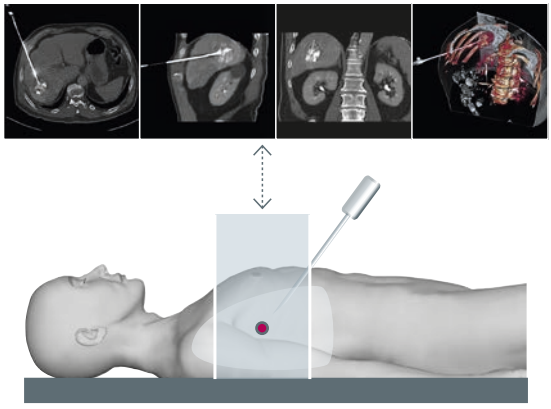
i-Control: Full wireless control of table movement and software at table side

2D and 3D CT-guided intervention with the Adaptive 3D Intervention Suite

Interventions with complex anatomies (like lung biopsies, liver ablation, and spinal surgery) are best visualized with the 3D CT guidance offered with the Adaptive 3D Intervention Suite. It allows you to work freely within a 3D volume-rendered spiral or sequential CT dataset. Full wireless control over table movement and software functions is offered directly at table side with i-Control.

Working in near real-time 3D offers many advantages: You can see the whole organ using a VRT and view the lesion with sagittal, coronal, and axial MPRs. Always be on track with our smart automatic needle-detection algorithms and path planning tools. They automatically select the optimal needle viewing plane and entry point for you and determine the angle for needle insertion. This 3D capability allows for fast and accurate positioning in the most complex anatomies, even at difficult oblique angles. The level of intuitive control provided by these solutions is unprecedented in the marketplace today, giving Siemens the definitive edge in CT-guided intervention.

Offered with the SOMATOM Definition family and SOMATOM Force



3D CT-guided intervention with the Adaptive 3D Intervention Suite

Your benefits at a glance

- **i-Control:** Full in-room control at table side over table movement and scanner software
- **3D CT guidance:** The Adaptive 3D Intervention Suite offers precise positioning even in the most complex anatomies
- **2D CT guidance:** The Basic Intervention package is ideal for spinal injections

SOMATOM Emotion

with joystick

Sliding gantry

SOMATOM Perspective

with i-Control

Our portfolio for CT-guided intervention

2D CT-guided solutions offered with the SOMATOM Emotion and Perspective (Somaris 5 software)

The **Basic Intervention** package
- Appropriate for non-fluoroscopic guidance
- Biopsy mode based on sequential or spiral scans modes
- Quick switching between scan modes
- Control at table side with joystick (or i-Control for SOMATOM Perspective)
- Image guidance facilitated by displaying three slices simultaneously
- In-room monitors available in various options, including on a cart or ceiling-mounted

The Advanced Intervention package
- CT fluoroscopy with CAREVision allows for image-guidance in near real-time
- HandCARE™ avoids direct radiation of the clinician's hand during the intervention by switching off the X-ray exposure for a 100° angle between three possible user positions (10:00, 12:00, and 2:00 o'clock)
- Continuous patient dose monitoring during procedures

SOMATOM Definition AS and Edge

with i-Control

Sliding gantry

SOMATOM Definition Flash

with i-Control

SOMATOM Force

with i-Control

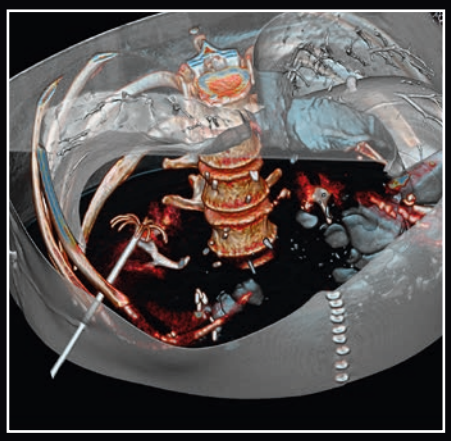
2D and 3D CT-guided solutions offered with the SOMATOM Definition family and the SOMATOM Force (Somaris 7 software)

The Adaptive 3D Intervention Suite

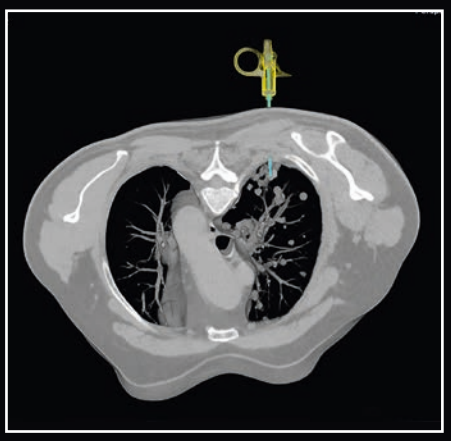
- Premium solution for 2D and 3D CT-guided interventions that demand precision and speed
- i-Control offers full control of software functionality and table movement at table side (wired or wireless)
- Full 2D guidance capability
- 3D volume-based interventions
  - Work freely in all dimensions
  - Near real-time reconstructed MPR images
  - MPRs in coronal, sagittal, and oblique planes
- CT fluoroscopy, sequential, and spiral scan modes
- Quickly switch between i-Sequence, i-Spiral, and i-Fluoro modes
- i-Fluoro CT Fluoroscopy displayed in real time with up to 10 frames/s
- Interventional 3D toolbar available supporting smart algorithms from syngo® 3D tools:
  - Automated Path Planning by selecting target and entry points
  - Auto Needle Detection
  - Switching between patient-oriented view and needle-oriented view
  - i-NeedleSharp to avoid needle artifacts (available for sequential scans on scanners offering gantry tilt)
- Level of intuitive control at table side is unprecedented in the marketplace today

The Adaptive 3D Intervention Suite contains Intervention Pro, Adaptive 3D Intervention, i-Fluoro, and i-Control plus foot switch for radiation release, which can also be purchased separately.

Get further – with CT-guided intervention



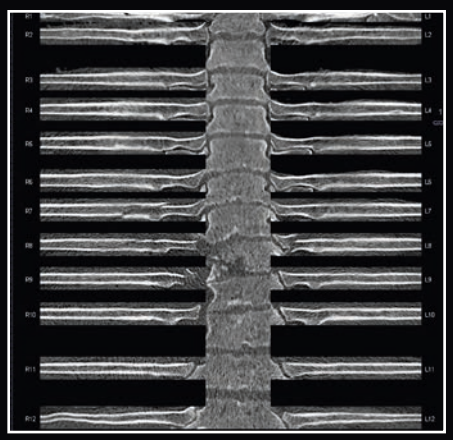
3D-guided radio frequency ablation of the liver with the Adaptive 3D Intervention Suite



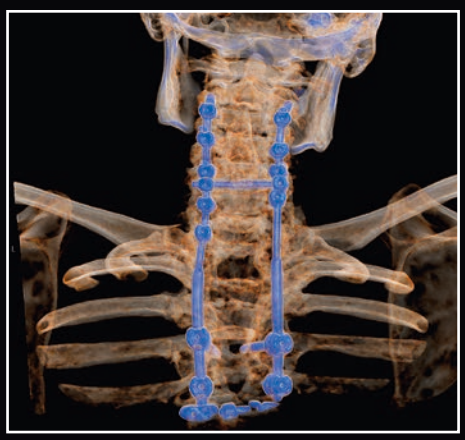
3D-guided lung biopsy with the Adaptive 3D Intervention Suite

2D-guided percutaneous puncture of a cavity in the pelvis using i-Fluoro

2D-guided spinal injection using low-dose i-Fluoro

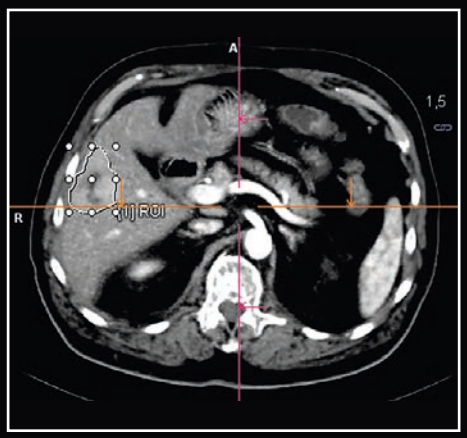


Spine and ribs in unfolded view for spinal surgery planning
syngo.CT Bone Reading*

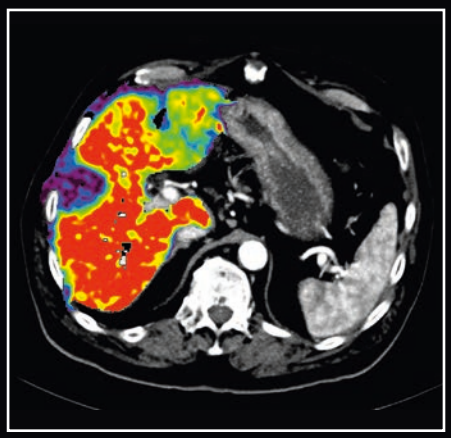


Metal artifact reduction using CT Dual Energy enables better visualization during spinal surgery
syngo.CT DE Dual Energy*

TACE catheter placement in a combined angio CT hybrid suite (SOMATOM Definition AS+ and Artis zee)



Multi-phase contrast-enhanced CT for outlining the liver tumor
syngo.CT Body Perfusion*



CT perfusion demonstrating blood-flow deficit post TACE treatment
syngo.CT Body Perfusion*

*** Optional *syngo*.via applications**

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Order No. A91CT-00703-01C1-7600 | Printed in Germany
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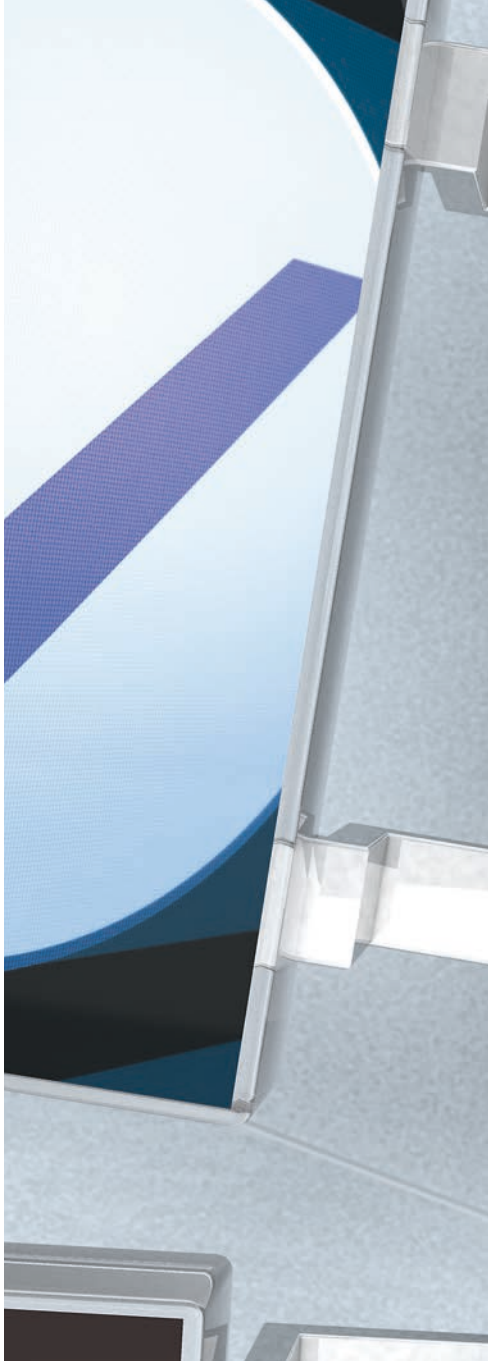

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