



**I-class.  
All together a better way to work.**

**MAGNETOM Avanto**

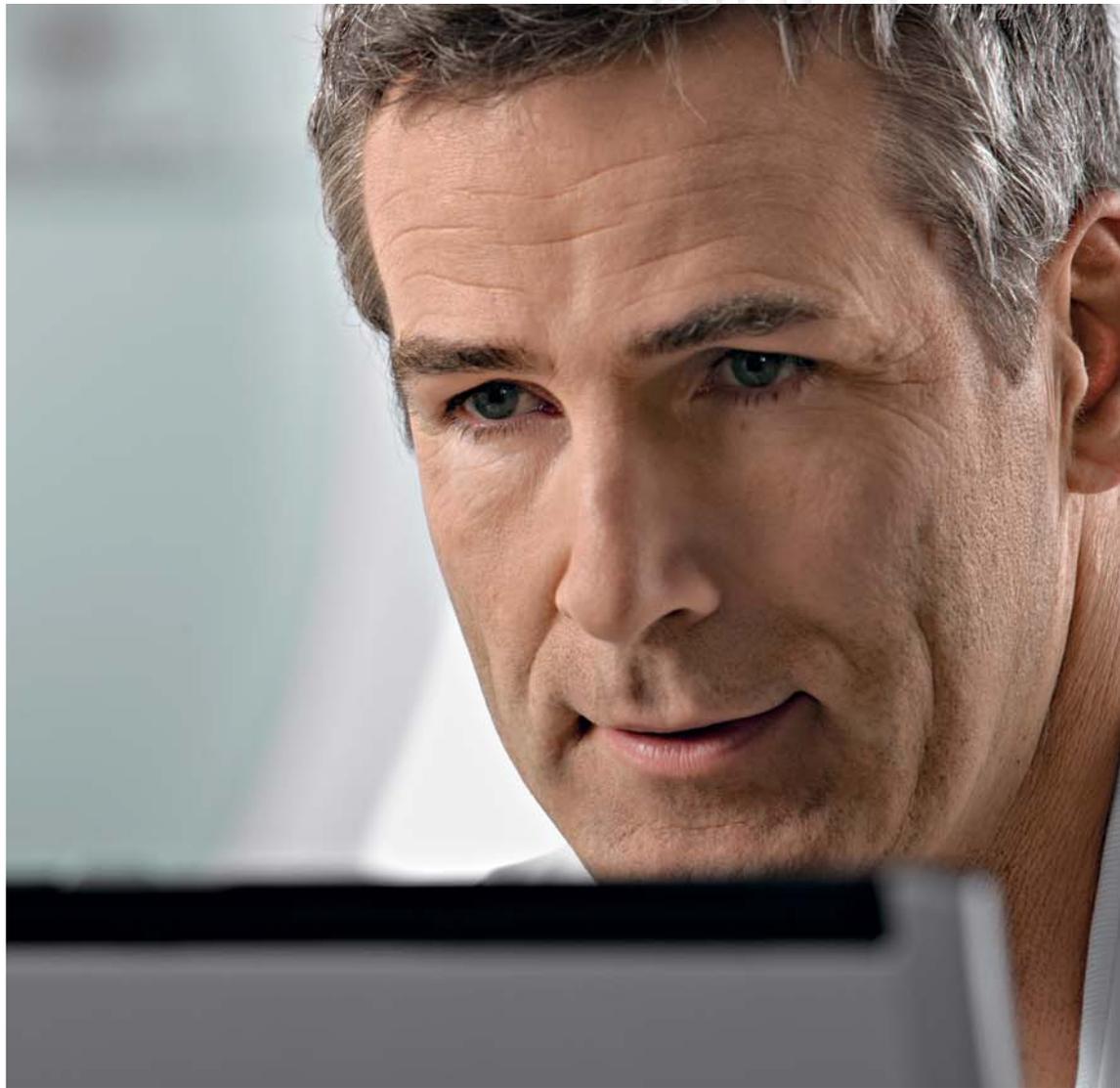
[www.siemens.com/healthcare](http://www.siemens.com/healthcare)

**SIEMENS**

Introducing I-class

# Innovative applications. Innovative workflow.

Welcome to the next generation of MRI. Powered by innovative applications that will advance your clinical and workflow capabilities like no other. Now you can routinely achieve the highest level of image quality. Streamline planning and processing. And diagnose the most challenging diseases quickly and confidently. Welcome to I-class.



**Enter the new world  
of innovative applications.**

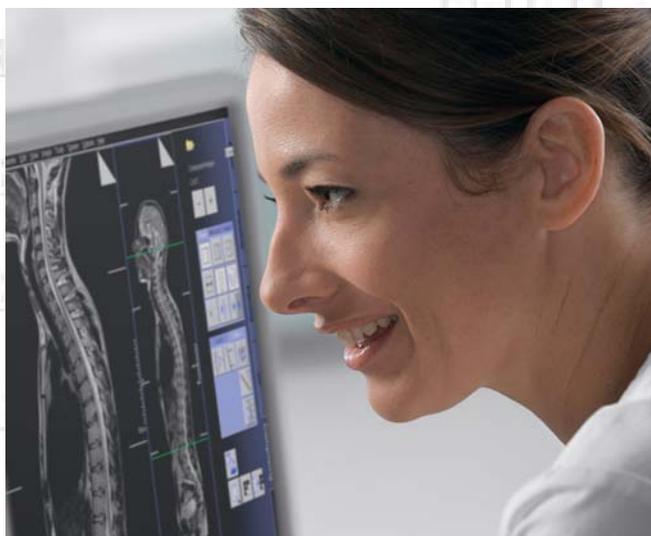
The natural next step in the Tim revolution, I-class combines innovative clinical applications with unprecedented workflow efficiency. Enabling you to see more. And do more.

Powered by Tim®, MAGNETOM Avanto™ with I-class offers a new level of flexibility, accuracy, and speed. With Siemens syngo®-based applications that provide pristine image quality for faster recognition of details. Such as imaging of the spine, diffusion-weighted imaging in the body, and 3D acquisitions with various contrasts.

**Enjoy the ease of innovative workflow.**

I-class, powered by Tim, redefines “easy” along the entire MRI workflow path. Featuring everything you need for simple planning and processing. While eliminating the need for patient repositioning and manual coil changes.

With the power of Tim, MAGNETOM Avanto with I-class provides a solid foundation that will continue to yield innovative new applications. And new opportunities for the future.

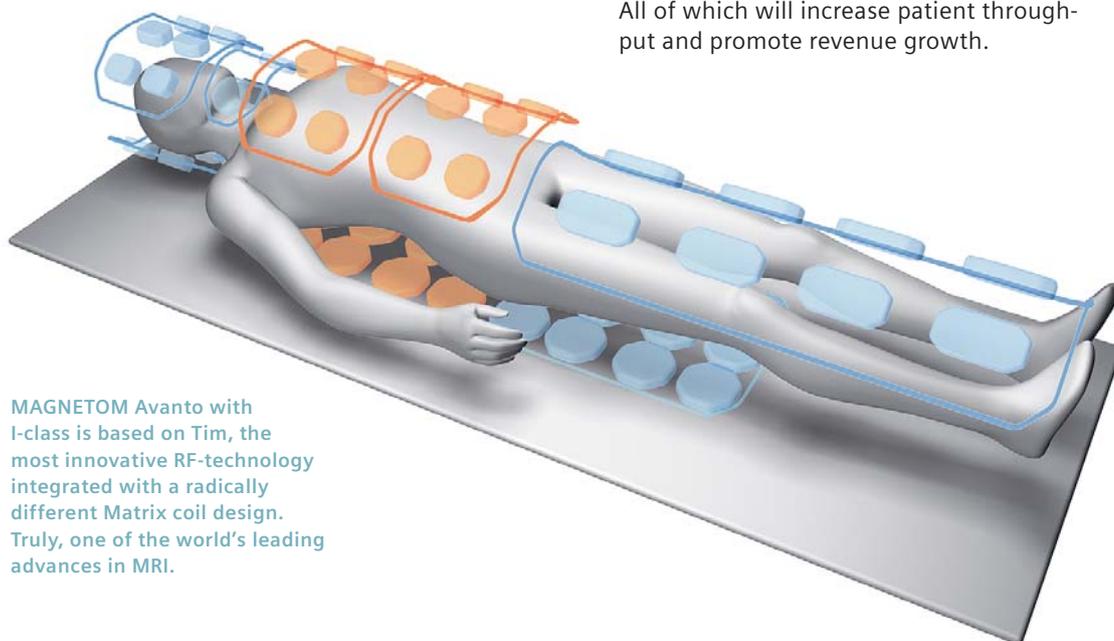


All together a new level of excellence – from every perspective

## MAGNETOM Avanto meets I-class.

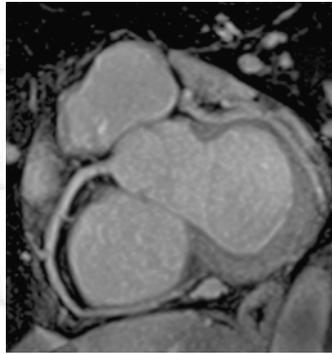
Everything we do is focused on how to best meet the needs of clinicians, administrators, and patients.

MAGNETOM Avanto with I-class combines a new level of pristine image quality with revolutionary acquisition speed and ease of use. For faster, more confident diagnoses. Patient set up is faster than ever. So are scan times and processing. All of which will increase patient throughput and promote revenue growth.



MAGNETOM Avanto with I-class is based on Tim, the most innovative RF-technology integrated with a radically different Matrix coil design. Truly, one of the world's leading advances in MRI.

**Fat saturation.**  
MAGNETOM Avanto with I-class excels in cardiac MRI. With its strong gradients, superb Parallel Imaging with GRAPPA, and its high magnet homogeneity, it's everything the heart desires.



**Large FoV.**  
With the flexibility of Tim's coil combinations and the large 500 mm Field of View, MAGNETOM Avanto with I-class provides the perfect view of any pathology. Because the disease does not stop at the end of the coil.



**Functional MRI.**  
With its strong gradients, MAGNETOM Avanto with I-class is ready to go for the most advanced applications.

**wholeANGIO.**  
Flexible to address any Field of View up to 205 cm. Accurate to see tiny vessels. And fast with Parallel Imaging from head to toe: TA 1:27 min.

So, while MAGNETOM Avanto with I-class offers leading magnet and gradient technology, the real advantage is that clinicians benefit from MRI without compromise:

- Exceptional magnet homogeneity for excellent fat saturation
- Large 500 mm field of view
- Strong gradients for high resolution and short scan times

From a business perspective, MAGNETOM Avanto with I-class offers:

- Easy siting conditions with no need for dedicated computer room
- Zero helium boil-off
- Fewer purchases of dedicated coils

And patients enjoy increased comfort:

- Short scan times
- Ultra-lightweight Tim coils
- AudioComfort for reduced acoustic noise by up to 97%

MAGNETOM Avanto is helping leading institutions around the world develop new approaches to clinical care. From all perspectives, MAGNETOM Avanto with I-class can keep you a step ahead. Now, and years from now.



All together revolutionary

## Tim. The power behind our most innovative

From the beginning, Tim (Total imaging matrix) changed everything. With a new level of flexibility, accuracy, and speed that enables you to advance both your clinical and workflow capabilities. And now, with Tim enabling innovative new applications, everything is about to change again.

**Tim: A revolution in flexibility.**  
Select exams, not coils.

Configure Tim's lightweight Matrix coils any way you want, tailored to the anatomy or clinical question you are interested in. Tim's Intelligent Coil Control then automatically detects and selects the appropriate coil elements. Pathology doesn't stop at the end of a coil, and now a single click is enough to perform your comprehensive exam.



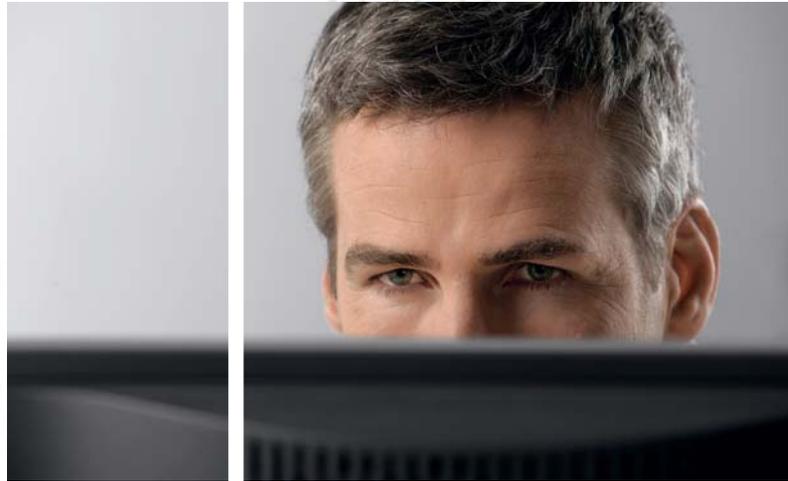
## applications.

**Tim: A revolution in accuracy.**  
Local and total.

With up to 100% more SNR provided by Tim's high density Matrix coil elements, you enjoy pinpointed accuracy. Whether you're scanning a single tiny lesion or focusing on multiple organs, joints, the entire central nervous system, or even the whole body.

**Tim: A revolution in speed.**  
Parallel in all directions.

Tim was designed for superior Parallel Imaging in all directions and from head to toe. Tim gives you the highest acquisition speed without sacrificing spatial or temporal resolution. For 3D exams with double oblique slice orientation. With acceleration factors up to 16, you'll enjoy shorter scan times, shorter exams, and greatly increased patient throughput.



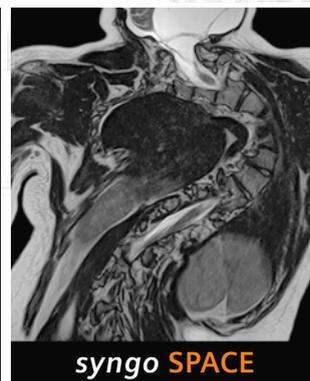
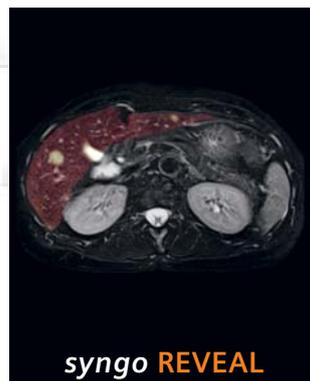
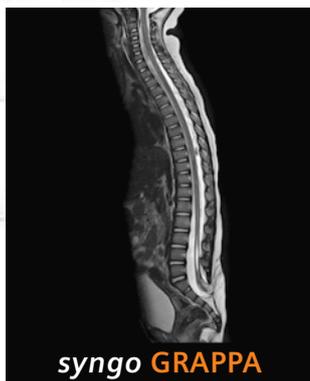
All together the most innovative applications

## Innovative applications: Diagnose extremely challenging diseases quickly and with more confidence.

Stroke. Spinal abnormalities. Liver cancer. Disk herniation. Heart disease. Now you can tackle the toughest studies. Evaluate the most complex pathologies. And handle difficult patients with ease. Siemens *syngo* MRI applications help you to do things never before possible.

Fueled by the unmatched power of Tim, our innovative applications are forever changing the way you work. They're the tools you need to do more. Faster. With increased accuracy.

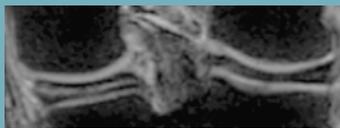
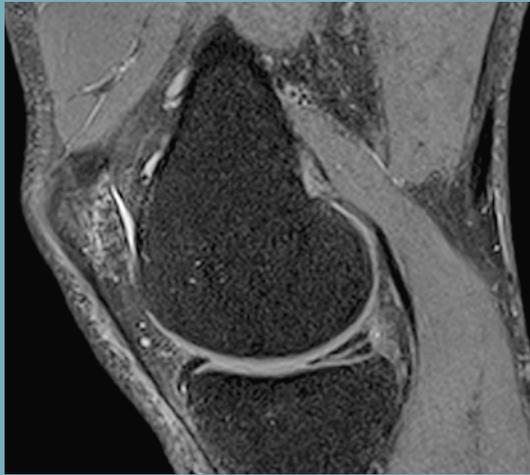
In each clinical field, *syngo* MR applications, powered by Tim, are helping to create the future of MRI.



**Leading applications:  
MAGNETOM Avanto  
with I-class.**

Head, shoulder, knee or toe?  
MAGNETOM Avanto with I-class  
gives you total flexibility, with  
innovative applications for each  
part of the body. And only Tim  
seamlessly scans up to 205 cm  
with no patient repositioning or  
coil changes. For true whole-body  
functionality as well.





### 3D orthopedic imaging

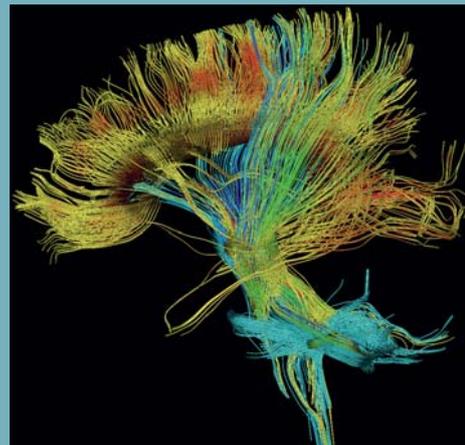
#### *syngo* SPACE

Fast 3D in all directions – including proton density for isotropic orthopedic imaging.

### Advanced neuro imaging

#### *syngo* DTI Tractography

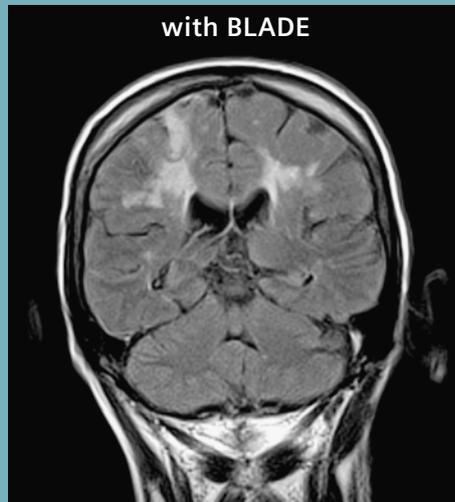
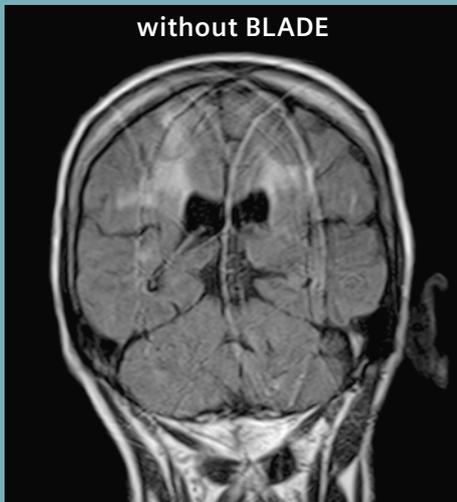
Advanced neuro imaging visualizes white matter fiber tracts.

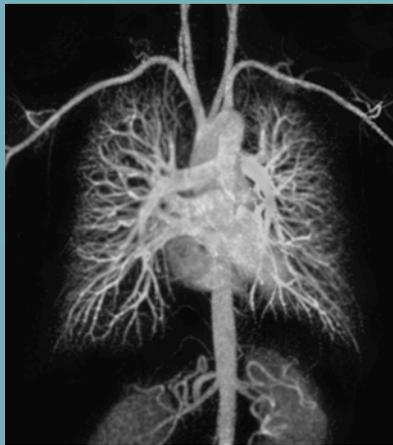


### Cutting edge motion correction

#### *syngo* BLADE

For any organ (head, joint, spine, abdomen), for any contrast (T1, T2, Dark Fluid), and for any orientation.





## Time-resolved MRI Angiography

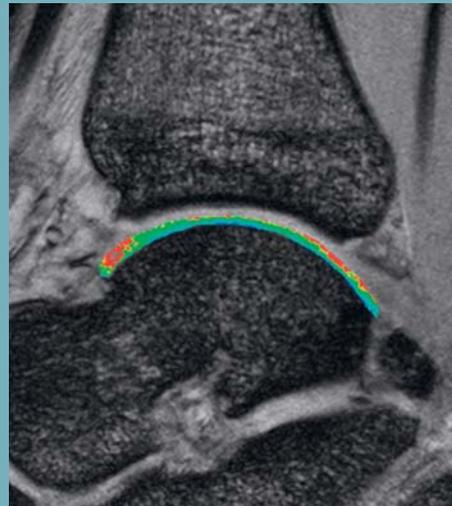
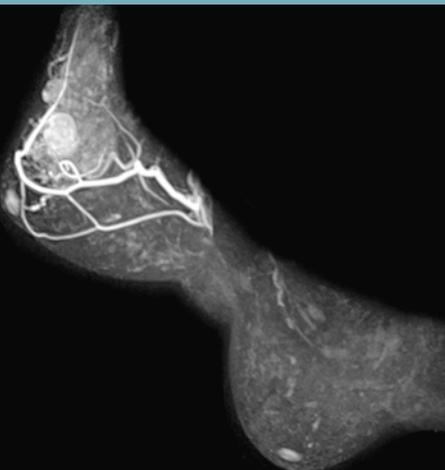
### *syngo* TWIST

4D MRA in all body parts  
with low contrast dose.

## 3D breast imaging

### *syngo* VIEWS

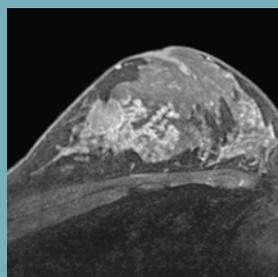
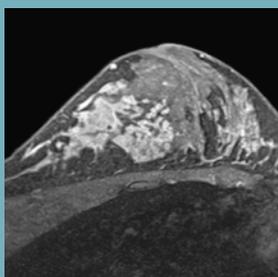
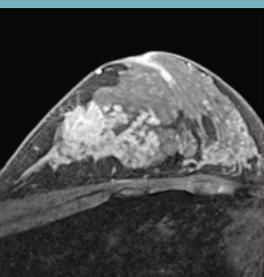
Double oblique and radial  
reconstruction of isotropic  
breast data.



## Enhanced pathology visualization

### *syngo* ParametricMap

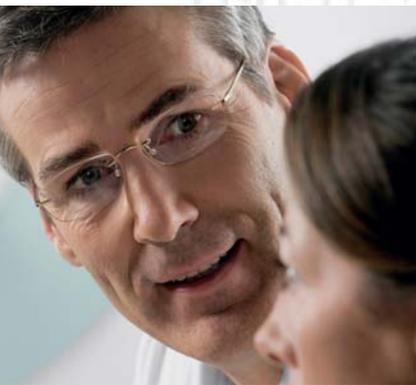
Inline relaxation mapping for  
all joints: T1, T2\*; T2.



All together better workflow

# Innovative workflow: I-class streamlines your MR examinations.

MAGNETOM Avanto with I-class supports your workflow in several ways. With breakthrough applications that save scanning and processing time. Reduce unnecessary tasks. Improve accuracy and speed of diagnoses. And forever change the way you work.



*syngo*, the highly intuitive Siemens cross-modality user interface, is the basis for all MAGNETOM Avanto with I-class applications. Enabling you to expand your capabilities in every clinical field – from women's health to functional MRI.

## Clinical Applications

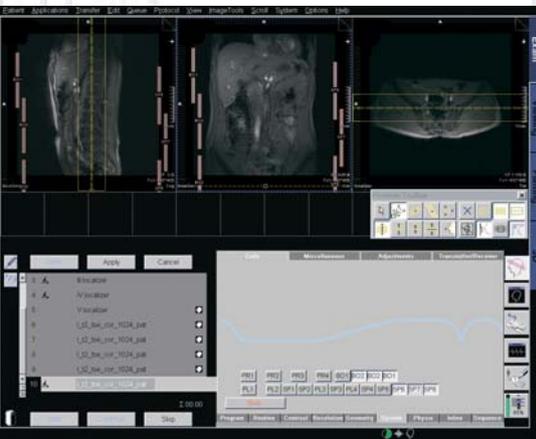
- ***syngo* 2D PACE:** Simplifies body imaging, allowing for multi-breathhold examinations as well as free breathing during the scans without a respiratory belt.
- ***syngo* BLADE:** Provides robust imaging in neurological, orthopedic and abdominal procedures, correcting for motion artifacts in all body regions.
- ***syngo* SPACE:** Acquires high-resolution 3D images at incredible speeds with contrasts that were not possible before.
- ***syngo* SWI (Susceptibility Weighted Imaging):** Reveals blood products and venous structures with great clarity.
- ***syngo* REVEAL:** Body Diffusion Imaging for breast, spine, pelvis, or abdomen with free-breathing (2D PACE).
- ***syngo* GRACE:** Breast spectroscopy including fat, lipid and water suppression, motion correction and choline quantification. Increases specificity and enhances treatment monitoring.



## Workflow Innovations

- **syngo Inline Technology:** Allows you to perform certain processing steps as early as during image reconstruction and display them immediately after completion. That means processing instead of post-processing. Subtraction images, Maximum Intensity Projection, etc., are displayed immediately after completion of the scan.
- **syngo Phoenix and PhoenixZIP:** Enable simple exchange of MR protocols, quickly retrieving the entire protocol information in one easy drag-and-drop step. This allows reproducible follow-up examinations.

- **syngo AutoAlign solutions:** Allows reproducible slice positioning in the head and the spine. No manual adjustments. Maximizes standardization and comparability in follow-up examinations.
- **syngo Expert-i:** Gives physicians and experts the ability to remotely access the MRI suite from virtually anywhere within your network, making it possible to address difficult clinical questions while a patient is being scanned.



**AutoCoil Select** for dynamic, automatic or interactive selection of the coil elements within the Field of View.

A Siemens Magnetom Avanto MRI scanner is shown from a three-quarter perspective. The machine is primarily white with teal accents on the gantry and the patient table. The gantry is open, revealing the internal bore. The patient table is extended outwards. The text 'SIEMENS' is visible on the teal part of the gantry. The text 'I-class' is visible on the side of the gantry. The text 'MAGNETOM Avanto A Tim System' is visible on the side of the patient table. There are four orange circles placed on the image: one at the top center, one on the right side of the gantry, one on the side of the patient table, and one at the bottom right of the gantry. The background is a plain, light-colored wall.

We see a way to reduce breathhold times by up to 50%.\*

A new level  
**I-class**

We see a way to virtually eliminate

We see a way to change a coil with a single mouse click.\*

We see a way to do MR with an increased

of excellence. All together.

= Innovation.

the need for patient positioning.\*

signal-to-noise averaging 100%.\*

\*Results may vary. Data on file.

# Tim leads the way.

Customers around the world have discovered the power of Tim. A revolutionary technology, it has ushered in the next generation of MRI advances. In flexibility, accuracy, and speed.

Tim is also the key building block for MRI going forward. With power and potential that's still untapped, Tim continues to catalyze new applications to help physicians diagnose even more complex diseases and enables greater-than-ever workflow efficiency.

Ultimately, it's all about excellence. In clinical diagnosis. Streamlined workflow. Greater patient comfort. And business outcomes. It's what we're committed to. Today and tomorrow.



**Acknowledgement:**

SKG Radiology, Murdoch, Australia  
St. Vincent's Hospital, Melbourne, Australia  
MR Bremen-Mitte, Bremen, Germany  
University Hospital, Essen, Germany  
University Hospital Grosshadern, Munich, Germany  
University Hospital Rechts der Isar, Munich, Germany  
University Hospital, Tuebingen, Germany  
Tokyo Metropolitan Ebara Hospital, Tokyo, Japan  
Tianjin Huanhu Hospital, Tianjin, P.R. China  
First Hill Diagnostic Imaging, Seattle, USA  
University Hospital NYU, New York, USA  
University Hospital UCLA, Los Angeles, USA

The information in this document contains general descriptions of the technical options available, which do not always have to be present in individual cases. The required features should therefore be specified in each individual case at the time of closing the contract.

Siemens reserves the right to modify the design and specifications contained herein without prior notice. Please contact your local Siemens Sales representative for the most current information.

*syngo* Evolve Package: In the event that upgrades require FDA approval, Siemens cannot predict whether or when the FDA will issue its approval. Therefore, if regulatory clearance is obtained and is applicable to this package, it will be made available according to the terms of this offer.

Note: Any technical data contained in this document may vary within defined tolerances. Original images always lose a certain amount of detail when reproduced.

Please find fitting accessories:  
[www.siemens.com/medical-accessories](http://www.siemens.com/medical-accessories)

© 05.2008, Siemens AG  
Order No. A91MR-500-3C-7600  
Printed in Germany  
CC MR 00500 WS 05082.5

**Contact**

**In the USA**

Siemens Medical Solutions USA, Inc.  
51 Valley Stream Parkway  
Malvern, PA 19355  
Telephone: +1 888-826-9702  
Telephone: +1 610-448-4500  
Telefax: +1 610-448-2254

**In Japan**

Siemens-Asahi  
Medical Technologies Ltd.  
Takanawa Park Tower 14F  
20-14, Higashi-Gotanda 3-chome  
Shinagawa-ku  
Tokyo 141-8644  
Telephone: +81 3 5423 8411

**In Asia**

Siemens Medical Solutions  
Asia Pacific Headquarters  
The Siemens Center  
60 MacPherson Road  
Singapore 348615  
Telephone: +65 6490-6000  
Telefax: +65 6490-6001

**In Germany**

Siemens AG, Medical Solutions  
Magnetic Resonance  
Henkestr. 127, D-91052 Erlangen  
Germany  
Telephone: +49 9131 84-0

Siemens AG  
Wittelsbacherplatz 2  
80333 Munich  
Germany

**Headquarters**  
Siemens AG, Medical Solutions  
Henkestr. 127, D-91052 Erlangen  
Germany  
Telephone: +49 9131 84-0  
[www.siemens.com/healthcare](http://www.siemens.com/healthcare)