

**SIEMENS**



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# MAGNETOM Aera

Transforming 1.5T economics.

Answers for life.

# We're talking profound change.

The driving mandate across all of healthcare today is the need to deliver better outcomes at a lower cost. It's clear that technological innovation will play an enormous role in making the promise – and the requirement – of efficient, affordable, and high-quality care, a lasting reality.

MAGNETOM® Aera, the first 70 cm Tim+Dot system is a breakthrough advancement in 1.5T imaging that will significantly increase your productivity by up to 50%<sup>1</sup>, and as a result, transform every part of your day. The benefits will be nothing less than profound.

**MAGNETOM Aera. Transforming 1.5T economics.**



# Tim

Together, they redefine productivity.



Tim® (Total imaging matrix) technology changed MRI forever. With the fourth generation (4G) of flexibility, accuracy, and speed, Tim 4G further advances MRI. It's Siemens ultimate innovation technology that unlocks imaging power like never before. Tim's newly designed ultra high-density coils are combined with the highest RF channel configurations ever offered. And, with Tim 4G's new patient-adaptive technology, image quality and acquisition speed go to a whole new level. Think more exams per day. Every day.

# + Dot

Dot® (Day optimizing throughput) is the next movement in MRI, offering a customizable framework for patient personalization, user guidance, and exam automation to help optimize every part of your MRI workflow. From reduction in your exam times and improved clinical workflows to enhanced staff efficiencies. Exam by exam, patient by patient, Dot helps to take the complexity out of MRI scanning. Dot multiplies the power of Tim resulting in greater image consistency and diagnostic confidence, greater ease of use, and a day that's more productive than ever before.



# MAGNETOM Aera. Transforming 1.5T economics.

MAGNETOM Aera will fundamentally transform the way you work with MRI. Through the groundbreaking integration of Tim 4G and Dot, MAGNETOM Aera sets a new standard of efficiency and care, allowing you to harness a new level of productivity.

Tim 4G gives you the power you need for superb image quality. And Dot helps take away the complexity inherent in MRI scanning that can slow you down. With MAGNETOM Aera you'll significantly optimize your clinical and business processes, reduce staff workload, and radically improve your return on investment (RoI). And, most importantly, deliver the excellent quality of care to your patients – regardless of patient condition.

Today, when healthcare is under pressure from all sides, MAGNETOM Aera delivers. Clinically. Economically. Easily. It will literally transform the way you work with MRI.



reddot design award  
winner 2010





Dot integrated.

The world's



Tim 4G integrated.

first 70 cm Tim+Dot

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MAGNETOM Aera

You can choose between various design options such as different color panels for MAGNETOM Aera. With our new Illumination MoodLight™ design, the color of the panel can be changed as desired. You can also customize the scanner with your own engraved logo.



Top-of-the-line 1.5T.

system.

# Perfect scanning. Perfectly easy.

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## Tim+Dot Patient-centered care

MAGNETOM Aera makes MRI exams easier and more comfortable than ever before.

The roominess of our 70 cm Open Bore will accommodate a large variety of patient sizes, shapes, and conditions. And the super-short magnet allows many studies to be completed with the patient's head outside the bore.

But, you don't have to compromise image quality for comfort. Tim 4G's ultra high-density array enables higher spatial and temporal resolution and a coverage up to 205 cm with no patient repositioning.

Up to 204 coil elements deliver more signal than ever before, enabling flexible Parallel Imaging and supporting the most demanding applications.

The personalized scanning of Dot allows you to obtain optimal scans for each individual patient. Dot engines give you uniquely tailored, optimized scans configurable to the patient condition or the clinical question.

Tim+Dot, together in MAGNETOM Aera, will help you realize a marked improvement in productivity, while allowing your patients to enjoy a comfortable scan experience.

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“With MAGNETOM Aera, we are confident we have one of the most advanced 1.5T MRI systems available on the market today.”

*Professor Christoph Bremer, MD  
Head of the Department of Radiology  
St. Franziskus Hospital,  
Münster, Germany*

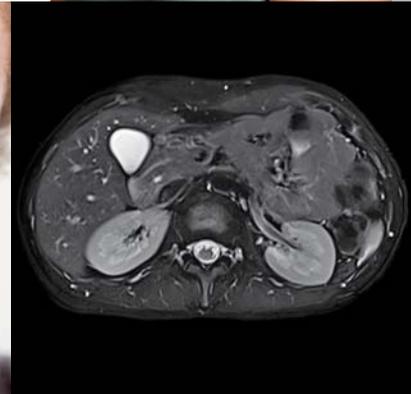
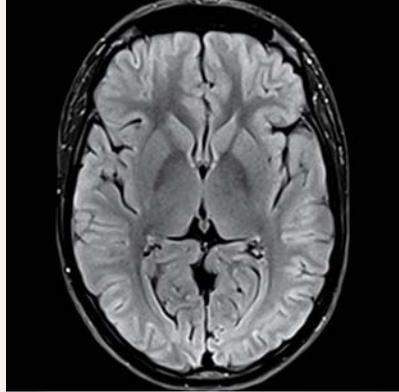
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“We sought a system based on patient comfort, image quality, ease of use for the operator and size of the magnet bore. In every area, the MAGNETOM Aera came out on top.”

*Sue Kingston  
Superintendent Radiographer for MRI  
Royal Glamorgan Hospital, U.K.*

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## Tim+Dot Patient-centered care

### Tim 4G flexibility.

- Now you never have to wonder if you have enough channels to support ultra high-density coils. Tim 4G offers flexibility for the future with up to 64 channels.
- Tim DirectConnect® cableless coils are easier and faster to handle. And they are ultra-lightweight so they are easy on patients, too.
- Select exams, not coils, for superb coverage of the patient's anatomy. Tim 4G's lightweight coils can be seamlessly integrated to support large anatomic coverage, for instance combining head, neck, body and spine coil elements to create a neurovascular array.

### The Tim Dockable Table accelerates patient set-up.

- Patients can be prepared for an exam outside the scanner room and wheeled in when ready.
- Totally Tim-ready with integrated, removable Spine 32-channel coil.
- Holds up to 250 kg / 550 lb to accommodate more patients.
- Enjoy fast patient preparation, easy patient transport, comfort for immobile patients, and flexibility in emergency situations.

### MAGNETOM Aera's 70 cm Open Bore.

- The preferred design by claustrophobic patients.<sup>2</sup> But all patients will enjoy the extra room, too.
- Captures sharper images due to less anxiety-related movement.
- Helps reduce sedation rates.
- Covers the full patient range: pediatric<sup>3</sup>, critically ill, obese, and kyphotic to name a few.





The MAGNETOM Aera's detachable table is beneficial as it is easier for transferring bed patients, such as those with cord compression and for use in emergency situations. Radiographers are benefiting from the system's ease-of-use and appreciate the integrated coil technology which is making for faster scans without compromising on image quality.

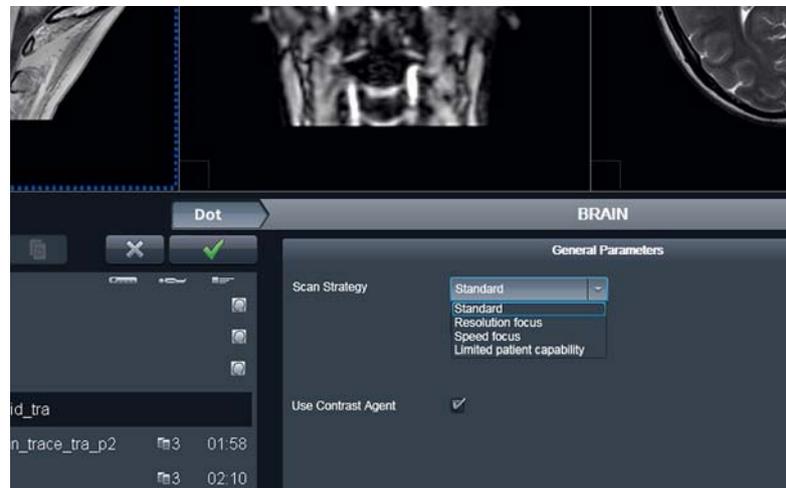
*Kim Robertson  
Head of Radiology Service  
Guy's Hospital, U.K.*

**MAGNETOM Aera's 145 cm short system design.**

- Helps reduce patient fear and anxiety.
- Offers more head-out exams.
- May decrease the number of refused exams.
- Leads to higher throughput and potentially more referrals.
- And now with TrueForm Magnet and Gradient design, which enables imaging of large volumes without compromising spatial resolution or speed.

**Dot is personalized – for every patient and user.**

- Exam strategies can be designed based on patient condition and clinical indication. Just confirm and start scanning.
- Scanning is personalized for individual breath-hold capacity to reduce motion artifacts.
- High quality exams are easily reproduced, even when conditions change.
- Customize Dot to your practice; to your standards of care.
- AutoVoiceCommands in multiple languages make exams more personalized.

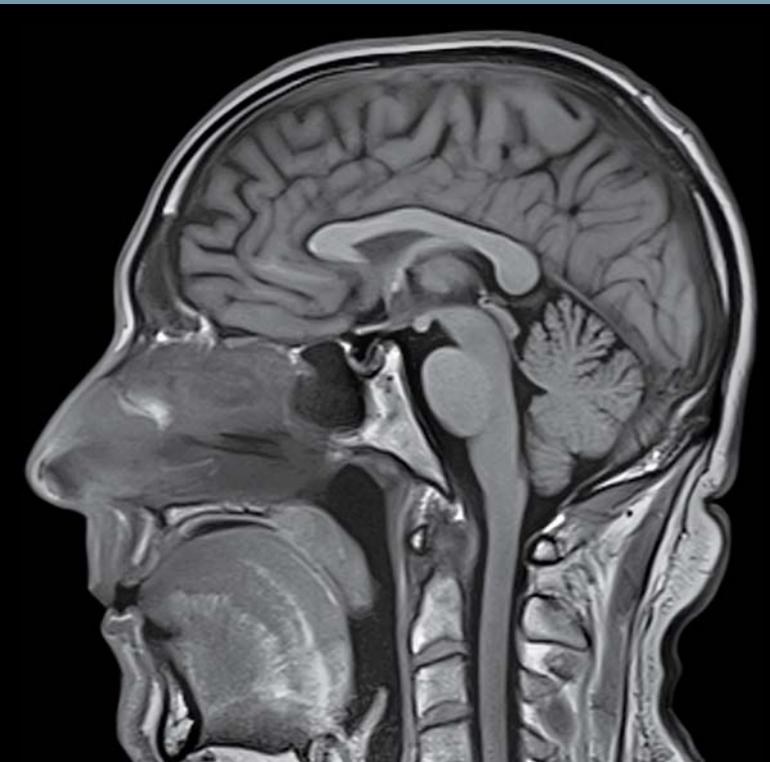


# Consistent scans.

## Tim+Dot Transform the day

The real power of Tim+Dot in MAGNETOM Aera is all about consistency. With the accuracy of Tim 4G integrated with the unique on-board guidance of Dot, you will achieve excellent image quality and consistent results, with fewer repeats.

Tim 4G's ultra high-density array, with up to 204 coil elements, combines with a new RF design, with up to 64 RF channels, for an SNR increase of up to 20%<sup>2</sup>. This enables high-resolution imaging that holds up even when zooming in on multi-station images. So you can scan everywhere. Zoom anywhere.



1.5T brain studies have never been faster. Tim 4G's 20-channel Head/Neck coil offers increased SNR and the new architecture of Tim 4G coils maximize the capability of every channel.



Tim+Dot mean easy scanning of any body shape or size. Tim's TrueForm Magnet and Gradient design lets you use a full FoV up to 50 x 50 x 45 cm without compromising spatial resolution or speed. For scans with contrast media, Dot helps to synchronize bolus timing. Real-time graphics and AutoVoiceCommands assist the user in organizing the ideal timing of breathing, scanning, and contrast media.

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The MAGNETOM Aera has replaced a system that took 12 minutes to conduct a routine lumbar spine scan, which now takes just seven minutes to do the same examination\*.

*Matthew Benbow,  
Superintendent Radiographer  
Royal Bournemouth Hospital, U.K.*

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A complete view of the whole spine is made easy. With Tim 4G, there's no repositioning of your patient. Multi-step exams of the spine can be composed automatically using Inline Composing giving you a complete view of the whole CNS with consistently excellent image quality.



# Top-of-the-line 1.5T.

We've applied our advanced Magnet and Gradient design to MAGNETOM Aera. Originally optimized for 3T systems, TrueForm Magnet and Gradient design enables imaging for large volume coverage without compromising spatial resolution or speed – now for 1.5T as well. In addition, Tim 4G's new all digital-in/digital-out design integrates all RF transmit and receive components at the magnet, eliminating analog cables for true signal purity. The top-of-the-line applications available for MAGNETOM Aera provide you with all information needed

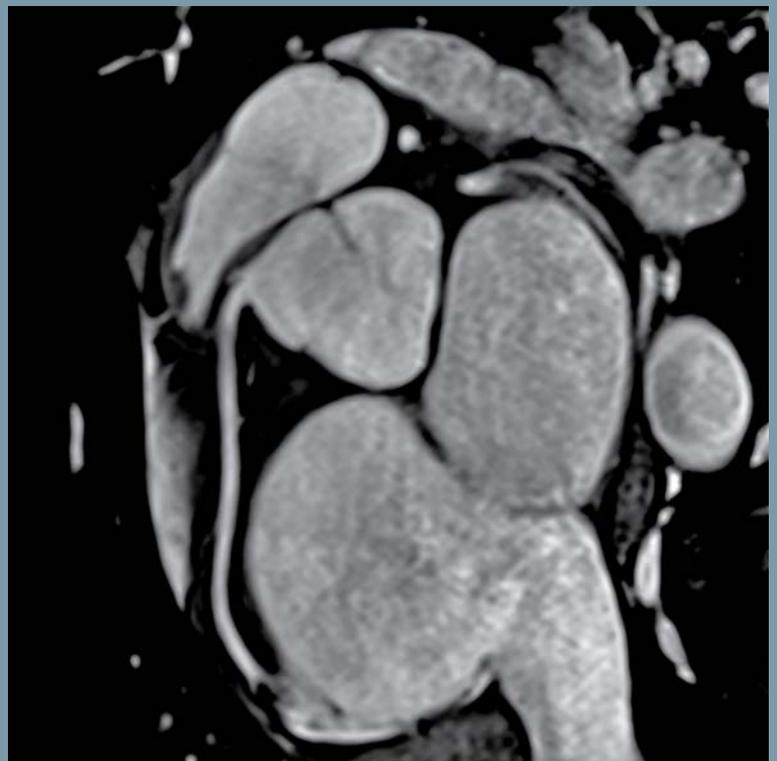
for a confident diagnosis. And Dot makes it all so easy. Your customized guidance navigates the user through each exam, indicating critical decision points along the way.

Dot offers various workflow engines for different body regions and indications. Each can be tailored to your clinical needs in a way that helps take the complexity out of MRI exams – even cardiac and abdomen. Now, decisions can be made more confidently and scanning can be done more reliably.

The result is excellent image quality and greater efficiency at all levels and a dramatic improvement in consistency.



It's a new way to plan and perform orthopedic exams. Tim 4G's new ultra high-density coils for MSK imaging improve SNR and anatomic coverage. Dot's customizable orthopedic workflows for large joints with AutoAlign, offers step-by-step user guidance including guided slice and MPR planning for fast 3D measurements and Inline 3D processing.



Thanks to Dot's on-board guidance and the increased SNR of Tim 4G, now you can perform cardiac exams day and night. The Cardiac Dot Engine helps simplify complete cardiac localization with the automatic alignment of AutoAlign Heart.



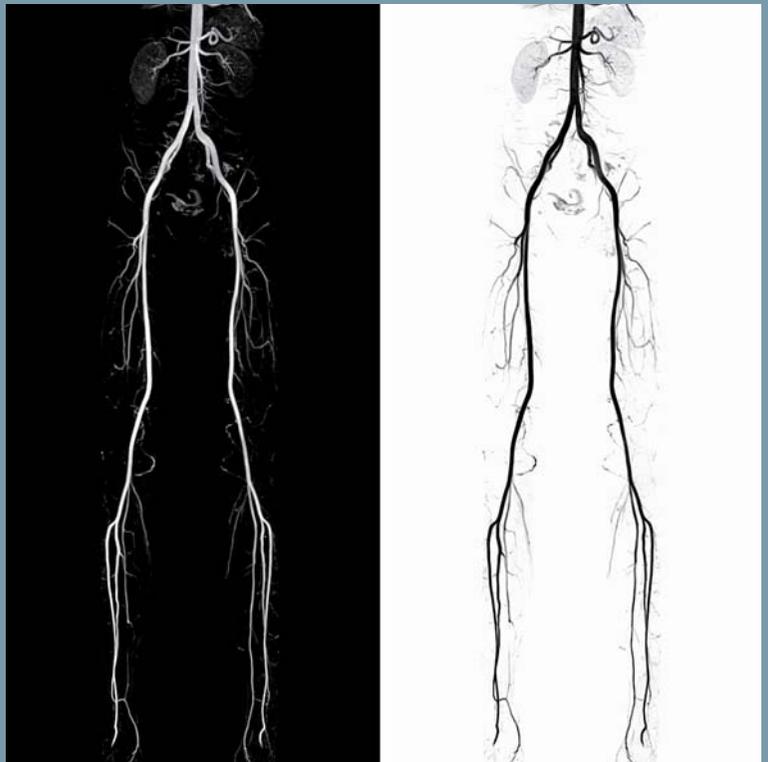
“Within our environment, we just could not provide a cardiac MRI service without the Cardiac Dot Engine.”

*Dr. Russell Bull, MRCP, FRCR  
Consultant Radiologist  
Royal Bournemouth Hospital, Bournemouth, U.K.*

“With the new MAGNETOM Aera system comprising Dot, a technologist spends about 70 percent of his or her time with the examination in comparison to 85 percent without Dot\*.”

*Anton Quinzen, RT  
Senior MRI Technologist  
Institute of Diagnostic Radiology and Neuroradiology  
University Hospital Essen, Germany*

Acquire whole-body coverage for metastasis staging without repositioning the patient. And, with Dot's on-board guidance, exam personalization and workflow automation, you can move through the scan with ease, realizing consistently excellent image quality, and achieving greater diagnostic confidence.



Easily perform high resolution peripheral angio examinations<sup>4</sup> with Tim+Dot. Acquire up to whole body coverage in a single, continuous move with *syngo* TimCT Angiography. Together with Dot's on-board guidance, this innovative technology improves patient throughput and provides superb image quality.

*University Hospital, Essen, Germany*

# Increase your productivity by up to 50%<sup>1</sup>.

## Transforming 1.5T economics.

The economics of 1.5T have never looked smarter. With the enhanced power of Tim 4G and your customized Dot workflows, you can equip your staff with the productivity-boosting tools they need to efficiently handle a full day's patient load and more. From patient preparation and exam set-up, to image acquisition and processing, MAGNETOM Aera with Tim 4G and Dot can help you realize an increase of up to 50% productivity. The speed of Tim 4G dramatically shortens acquisition time, while Dot's intelligent automated workflows help take the complexity out of MRI. Now, even some of the most complex exams such as cardiac and abdomen can be performed confidently as part of your clinical routine.

### Reach out to new patient populations.

- Obese patients
- Pediatric patients<sup>3</sup>
- ICU patients or those dependent on medical equipment

### Better accommodate difficult-to-scan patients.

- Kyphosis
- Respiratory problems
- Pain and mobility issues
- Claustrophobia
- Anxiety

### Start realizing value from your MAGNETOM Aera scanner faster than ever.

- Fast installation
- Fast and easy training for most MRI users
- Familiar *syngo* UI for all modalities means faster user acceptance

**Mobility done right.** The Tim Dockable Table offers an innovative multi-directional navigation wheel for easier handling and 360 degree flexibility.

**Tim Dockable Table** gives you easy docking integrated right into the scanner. The receiving port guides the table, enabling correct alignment.

**New DirectConnect coils.** Eliminate the hassle and inefficiency of cables.





Not only the number of scans is increasing, but we are also able to broaden our diagnostic portfolio for more indications. Various features including the Tim 4G coil technology and Dot allow us to handle our workload with ease.

*Professor Christoph Bremer, MD  
Head of the Department of Radiology  
St. Franziskus Hospital, Münster,  
Germany*

**MAGNETOM Aera will be good to your bottom line.**

MAGNETOM Aera has low operational costs and is easy to site. There's no need for a large, dedicated computer room because the all-digital Tim 4G technology concentrates all transmit and receive components at the magnet. And, with

the seamless integration to *syngo.via* not only the workflow at your scanner but also beyond will be further improved. Lifecycle costs are reduced due to its optimized cooling system and Zero Helium boil-off. With MAGNETOM Aera, it's a whole new day in MRI.

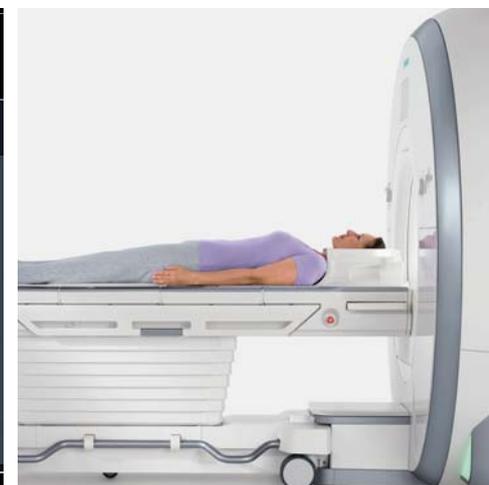
**Dot engines.** Dot automation means that scans can be completed faster and more consistently, with less chance of errors or repeats.

**Timing is synchronized.**

Dot integrates AutoVoiceCommands into your scan process for synchronized timing of breathing and scanning. Contrast timing is more accurate with AutoBolusDetection.

**syngo TimCT moves MRI forward.**

Literally. Offering Continuous Table move for CT-like scanning. Now you can acquire up to whole body planning scans in a single, continuous move.



# Customer care and services

Dedicated to helping you get the most out of your investment throughout the product life cycle and beyond.

## MAGNETOM World

Relevant for the clinical routine: our international user community with the latest clinical information, publications, talks, application tips, videos, education and training programs, and more.

[www.siemens.com/magnetom-world](http://www.siemens.com/magnetom-world)

## Financial Solutions

Siemens Financial Services creates value with best-in-class financing solutions.

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## Options and Upgrades

Get the most out of your Siemens system during the whole product life cycle. Discover new possibilities with our applications, coils, and *syngo*.via.

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

## Customer Services

We offer you a wide range of proactive services – thus enabling increased system availability, optimized performance, and workflow efficiency.

We focus on real-time remote monitoring and preventive maintenance of medical hardware and software. That's how we solve problems before they occur, thus enabling increased system availability, optimized performance, and workflow efficiency. To keep you on track to success – now and in the future.

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## *syngo* Evolve MR

Up-to-date, powerful hardware and software are key factors for enhancing the performance and diagnostic quality of your systems. *syngo* Evolve helps you to keep pace with rapidly developing technological advances.

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MAGNETOM World,  
where MRI meets  
clinical expertise.



# MAGNETOM Aera.

## Transforming 1.5T economics.

- Dot integrated
- Tim 4G integrated
- Top-of-the-line 1.5T

Designed to bring extraordinary value across the entire imaging process, MAGNETOM Aera makes it possible to realize the total power of MRI. To deliver robust image quality, consistently. To increase productivity by up to 50%<sup>1</sup>. To radically improve return on investment (RoI) anywhere MRI is used.

### Clinical perspective

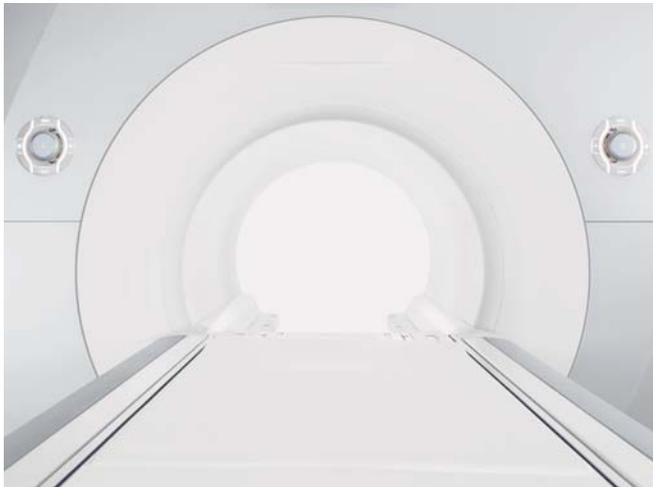
- Comprehensive application portfolio powered by Tim 4G and *syngo* applications.
- Up to 204 elements in combination with up to 64 RF channels for higher speed and maximized image quality.
- Fast and consistent adaptation to patient condition and clinical question.
- Increased image consistency resulting in higher diagnostic confidence.

### Patient perspective

- Ultra-short system length, 70 cm Open Bore design and light-weight coils for unmatched patient comfort.
- Fast examinations without repositioning and feet-first position for nearly all exams.
- Personalized exams and breath-hold commands in native language.
- Illumination Moodlight helps enable a patient friendly environment.

### Business perspective

- Increased throughput thanks to Tim 4G+Dot.
- Efficient and consistent results due to user guidance, workflow automation, and exam personalization.
- Easy siting conditions and less operational cost (Zero Helium boil-off, DirectRF).
- Faster training of MRI users and increased staff versatility.



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The information in this document contains general technical descriptions of specifications and options as well as standard and optional features which do not always have to be present in individual cases.

#### Global Business Unit

Siemens AG  
Healthcare Sector  
Magnetic Resonance  
Henkestr. 127  
91052 Erlangen  
Germany  
Phone: +49 9131 84-0

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

\*The statements by Siemens' customers described herein are based on results that were achieved in the customer's unique setting. Since there is no "typical" hospital and many variables exist (e.g., hospital size, case mix, level of IT

adoption) there can be no guarantee that other customers will achieve the same results.

<sup>1</sup> Data on file; results may vary.

<sup>2</sup> Per nationwide U.S. survey conducted by Siemens.

<sup>3</sup> MR scanning has not been established as safe for imaging fetuses and infants under two years of age. The responsible physician has to decide about the benefit of the MRI examination in comparison to other imaging procedures..

<sup>4</sup> A licensed physician may choose to use FDA-approved contrast agents in conjunction with an MRI exam, based on his/her medical opinion and discretion and in accordance with the instructions for use and indications for use supplied by the pharmaceutical manufacturer for the contrast agents.

#### Local Contact Information

##### In the USA

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

##### In China

Siemens Medical Park, Shanghai  
278, Zhouzhu Road  
SIMZ, Nanhui District  
Shanghai, 201318, P.R. China  
Phone: +86-21-38895000  
Fax: +86-10-28895001

##### In Japan

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

##### In Asia

Siemens Pte Ltd  
Healthcare Sector  
Regional Headquarters  
The Siemens Center  
60 MacPherson Road,  
Singapore 348615  
Phone: +65 6490-6000  
Fax: +65 6490-6001

#### Global Siemens Headquarters

Siemens AG  
Wittelsbacherplatz 2  
80333 Muenchen  
Germany

#### Global Siemens Healthcare Headquarters

Siemens AG  
Healthcare Sector  
Henkestrasse 127  
91052 Erlangen  
Germany  
Phone: +49 9131 84-0  
[www.siemens.com/healthcare](http://www.siemens.com/healthcare)

#### Legal Manufacturer

Siemens AG  
Wittelsbacherplatz 2  
DE-80333 Muenchen  
Germany