syngo MR E11.
Increase your efficiency. Expand your MRI services.

siemens.com/E11

The feature is currently under development; not for sale in the U.S. and other countries, future availability cannot be guaranteed.
Leading in efficiency.

You are aiming for more accurate diagnoses, highest image quality, and consistency. Your investments need to pay off quickly and operating costs need to be kept down. To help overcome these challenges, Siemens offers more efficient and innovative solutions. You can broaden your patient groups, while delivering positive patient care. Guaranteed certainty in liver MRI is just the start.

You are an MRI leader.

Whether you are just beginning to work with MRI or are at the forefront of research, with Siemens’ MAGNETOM® MRI systems, you can be at the forefront of your clinical field. Your research, your patients, and your business will benefit from Siemens’ continued innovation of proven MRI technology.
Growth with Body MRI.

More certainty and efficiency imaging the most challenging part of the body.

When healthcare systems are under pressure, it’s essential to get a fast, precise diagnosis – every time. With Siemens MR, you have the world’s preferred partner by your side. Our new software architecture syngo MR E11 for MAGNETOM Aera and Skyra now offers you even higher efficiency and versatility. How does this help you lead?

- New syngo MR E11 software architecture boosts the flexibility, consistency, and efficiency of your MAGNETOM scanners, featuring the fastest loading speed and shorter reconstruction times as well as intuitive planning and scanning.

- Our brand-new FREEZEit helps you embrace motion in body MRI and open up this huge diagnostic field, while other unique trendsetting applications like Quiet Suite, Advanced WARP, and MyoMaps let you expand your range of MRI services and address new patient groups.
Leading MRI, together.

An intensifying demographic shift, the rise of chronic diseases, patients turning into consumers, the pace of innovation, and a broader access to medical imaging across the globe lead to a constantly growing number of examinations, including MRI. At the same time this development raises central questions for healthcare providers and industry alike:

- How to manage volume growth with limited resources?
- How to control costs without compromising quality of care?
- How to expand services in either established or growing markets?
- How to continuously strive for clinical excellence in the interest of patients despite economic restraints?

Siemens MR provides answers to these questions by offering a unique combination of MRI technology, software and clinical applications, supporting you in turning these challenges into opportunities.

With the “DNA of Siemens MR” – Tim, Dot, Trendsetting Applications, and Life Design – we support you to:

- Deliver exceptional image quality and speed in MRI. With Tim.
- Go for consistent results, efficiently. With Dot.
- Expand your MRI services. With Trendsetting Applications.
- Combine higher patient friendliness and sustainability. With Life Design.
Tim+Dot are the direct response to today’s demanding world of healthcare economics. Tim 4G, Siemens’ integrated coil technology, unlocks imaging power to a new extent. DotGO is Siemens’ next step in MRI exam software, combining intuitive protocol management with quality results for each exam. Together, Tim+Dot redefine productivity – with an increase of up to 50%.

What’s more? All Siemens MRI scanners share the same design philosophy, Life Design. We have thought of all aspects of MRI operations – from the coil design to the user interface – and have made them more ergonomic and user-friendly. Life Design helps you and your team cope with today’s challenges of cost and time pressure in daily clinical routine. Resulting in a more efficient workflow overall.

Increase your efficiency

and obtain sharper results, faster.
**Tim 4G**

Deliver exceptional quality and speed.

In 2003, Siemens launched Tim integrated coil technology, changing MRI forever. Featuring excellent image quality and fast acquisition speed, this proven technology has been installed over 9,000 times to date. Tim’s extended coverage means no repositioning for multiple exams, and more exams per day. Now the newest generation – Tim 4G – is setting new benchmarks.

**Flexibility. Accuracy. Speed.**

- Up to 204 coil elements. Up to 64 RF channels.
- Exceptional image quality with Tim 4G’s high-channel coils and the unique RF architecture DirectRF for true signal purity.
- Up to 40% faster scan times compared to first-generation integrated coil systems.

**More speed with syngo MR E11**

With syngo MR E11 you get faster reconstruction algorithms and more powerful reconstruction hardware. As a result, reconstruction times are cut in half. This means faster image results and less waiting time for your technologist.

**DotGO**

Go for consistent results, efficiently.

In 2009, Siemens set the benchmark in MR scanning and productivity by introducing Dot. Easily adapt to the patient’s condition or clinical question, consistently achieve reproducible, high-quality results, and consequently reduce exam times and the number of rescans. From 2013 on, the newest generation of Dot – DotGO – is also setting the standard in protocol configuration. For true flexibility, consistency, and efficiency in every aspect of MRI.

**Flexibility. Consistency. Efficiency.**

- Intuitive protocol management with one central, flexible user interface
- Quality results for each exam, consistent and reproducible
- Up to 20% shorter exam slots for more efficiency in MRI

**More efficiency with syngo MR E11**

DotGO lets you reduce the overall exam time and makes exam times more predictable (variation less than one minute). Also, time-consuming software interaction is reduced dramatically (up to 46%). All in all turnaround-time to the referrer is quicker, quality higher, and MRI more efficient.

*With DotGO it’s going to be so much easier, and quicker to build protocols on the fly, and not interfere with taking away table time from the patient.*

*Anthony Pavone*

*Chief MRI Technologist,*

*Zwanger-Pesiri Radiology,*

*New York, USA*
Increase your efficiency

>> with the new DotGO

As MRI is applied in a wider and more complex range of clinical diagnoses and the number of MRI examinations is continuously rising on a global scale, efficient exam management and software-based scanning are key to future quality and profitability. DotGO is designed to empower your expertise, increase throughput, and provide top-class results for every exam – in short, consistent results, efficiently.

DotGO. Go for consistent results, efficiently.
**Flexibility. Intuitive protocol management.**

One central user-interface to configure any protocol and flexibly create your exam strategies. Intuitive, fast functionality results in 80%\(^4\) improved usability in exam configuration. DotGO\(^5\) empowers you to provide your MRI expertise for the entire department and to define a higher standard of care for more patients and referrers.

**Consistency. Quality results for each exam.**

Every patient is different. Every referrers’ and radiologists’ requirement is different. But your results need to be consistent and of high quality. Your daily schedule has to be met. DotGO partners you in meeting all of these different needs with dedicated functionality for the clinical question at hand. For nearly 88%\(^6\) of MRI exam requests, there is a Dot engine available.

**Efficiency. Up to 20% shorter exam slots.**

Time, quality and costs define the efficiency of your MRI exams. Dot enables you to reduce exam time by up to 20%\(^2\) and makes scheduling more predictable – exam time variation less than one minute\(^1\). Also time-consuming software interaction is reduced dramatically – by up to 46%\(^2\). Standardized procedures support quality results for each exam and help to reduce rescans. All in all turnaround time to the referrer is quicker, quality higher, and MRI more efficient.

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### Dot engines

- **Brain**
- **Cardiac Angio**
- **Breast**
- **Large Joint**
- **Spine**
- **Tim CT Onco**
- **Tim CT Angio**

### Dot Cockpit

- Automatically apply your standards to your exams and the clinical question at hand.
- Intuitively configure all your protocols to your standard of care.

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\(^1\) Less than 1 minute exam time variation

\(^2\) Up to 20% shorter exam slots

\(^3\) 88% better usability in MRI exam configuration

\(^4\) 80% of MRI exams covered by Dot engines

\(^5\) DotGO

\(^6\) 88% of MRI exam requests
syngo MR E11.

Expand your MRI services

>> to address new patient groups

When it comes to body imaging, MRI is the modality of choice for diagnosing and monitoring many diseases. Nonetheless, contrast timing challenges, long scan times, and breathing motion – especially for patients with limited breath-hold capabilities – hindered routine application of body MRI.

syngo MR E11 offers a range of powerful new imaging applications – to make MRI faster and more robust than it has ever been – even in the most challenging cases. Take this opportunity to embrace motion in body MRI and accommodate more patients, and gain a leading edge on the competition.

New patient groups

- Patients prone to anxiety and claustrophobia
- Patients who cannot hold breath
- Newborns and infants
- Patients with metal implants
- Differentiate and monitor liver diseases on the rise
Abdominal conditions present in a wide variety of forms, calling for an accurate differential diagnosis. Early liver diagnostics can help to detect, treat and follow-up liver diseases much more effective. Lesion detection, localization, characterization, as well as monitoring of the different states of diffuse liver disease are crucial for the planning of any further steps. In fact, hepatologists have been looking for an easy, non-invasive way to reach confident diagnoses.

Liver imaging obstacles

An MRI scan is the method of choice for body imaging – and the ideal and early alternative to biopsies. With previous tools, however, only a very few specialists were able to offer liver MRIs. There are two main issues that can prevent accurate liver imaging or delay diagnosis:

**Motion** is one challenge that needs to be addressed when looking for reliable imaging results. The usage of contrast agent requires an accurate contrast timing which is nowadays often failing and the optimal arterial information of all lesions is missed. In addition, patients who cannot hold their breath during an MR scan can currently not be scanned due to the body movement.

Secondly, we look at certain liver **diseases being on the rise** that are today requiring biopsy, such as steatosis and haemotomachrosis.

Certainty is within reach

The new software architecture **syngo MR E11** tackles these challenges with two specialized packages:

**FREEZEit** our embrace motion technology for

• Always the right contrast timing in dynamic liver imaging

• Free-breathing, contrast-enhanced body imaging

**LiverLab** to monitor diseases on the rise via

• Quantitative liver imaging, non-invasively.

Combined with existing Siemens solutions like Abdomen Dot Engine or diffusion-weighted imaging (e.g. REVEAL) a seamless solution is now available for performing precise liver MRI in everyday clinical practice. **syngo MR E11** thus solves one of today’s key challenges in MRI.
Over 100 liver diseases are known, affecting everyone from newborns to older adults. And, due to demographic and lifestyle changes, many liver diseases are on the rise. Asking the right questions early on and gaining reliable insights can make all the difference.

“Can I get a precise early arterial phase, every time?”

>> Certainly. With TWIST-VIBE.

TWIST-VIBE offers high temporal and excellent spatial resolution with full 4D coverage, always assuring correct contrast timing in dynamic liver imaging. Every exam will produce a reliable image – and provide much greater detail, possibly enabling additional findings. Time-intensive, costly repeat examinations are a thing of the past.

Your benefits:
• Always the right contrast timing in dynamic liver MRI.
• Robust and fast liver imaging with full 4D coverage.
• Excellent images to plan surgical intervention.

“Is there a way to scan patients who cannot hold their breath?”

>> Certainly. With StarVIBE.

In the past, contrast-enhanced body MRI wasn’t an option for patients who have difficulties holding their breath. Now, with StarVIBE, they can breathe freely throughout the scan. Radial imaging with StarVIBE is insensitive to motion while inherently emphasizing contrast imaging. The result: less stress for patients, shorter throughput times, and faster diagnoses.

Your benefits:
• Free-breathing contrast-enhanced body imaging.
• Excellent image quality.
• Reliably image a growing patient population otherwise excluded from MRI.

LiverLab. Monitor diseases on the rise.

“Can I quantify liver fat and iron without performing a biopsy?”

>> Certainly. With LiverLab.

The iron and fat values of the liver are important indicators for a variety of serious illnesses. Evaluating them early could be a decisive step to better monitor early stages of diffuse liver diseases such as steatosis and haemotomas. LiverLab gives you the option of non-invasive virtual biopsies – based on a single clinical workflow that is robust and fast enough to be implemented in routine clinical imaging. The result: A large number of patients can benefit from this evaluation early on.

Your benefits:
• Quantitative liver imaging, non-invasively.
• First robust, clinical, inline workflow, built into DotGO.
• Efficient identification of patients with need for quantitative analysis.
Conventional

StarVIBE

LiverLab – Clinical report

Radial VIBE (StarVIBE) sequence is ideal for MR imaging of pediatric patients. It significantly improves overall image quality and is motion robust, allowing for optimal imaging in free-breathing sedated pediatric patients.

“Sarah S. Milla
Pediatric radiologist
Atlanta, GA

Improving the Robustness of Clinical T1-Weighted MRI Using Radial VIBE

MAGNETOM Flash
Volume 55, Number 3/2013
www.siemens.com/magnetom-flash”
Expand your MRI services

with a rich portfolio of new trendsetting MRI applications and features

In every field, challenges spur leaders to new heights. These unique functionalities, powered by syngo MR E11, can help extend your range of services and allow you to treat new patient populations.

How does this sound? A minimum of 70% reduction in sound pressure for whole routine exams – with no need to compromise image quality or scan time. Quiet Suite lets you attract more patients by offering quieter routine examinations for neurology and orthopedics.

Are you ready to see the details? Zoomed MRI with TimTX TrueShape reveals important anatomical and pathological details previously obscured. With syngo MR E11, TimTX Acceleration takes the next step in parallel transmit imaging, bringing a 20% increase in SNR to zoomed imaging.

Ready to get to the heart of the matter? A new method of quantitative tissue characterization MyoMaps generates comprehensive pixel-based T1, T2 and T2* colored parametric maps, providing you for the first time an additional layer of valuable diagnostic information about even subtle changes in tissue composition – on the fly. This enables you – with other unique cardiac MRI features like the Cardiac Dot Engine – to bring cardiac and vascular MR imaging into your clinical routine.

Can you scan patients with large metal implants? Siemens’ Advanced WARP sequence lets you serve rapidly-growing patient populations with artificial joints. The benefits are substantial: Infections can be diagnosed earlier and there’s a significant gain in image quality for any MR indication.

What about newborns and infants? Expand your range of pediatric care with Siemens’ Pediatric 16. This coil is specifically designed to meet the needs of children up to 18 months of age. Its high channel density together with Tim 4G technology provides higher signal for high resolution neuroimaging with reduced imaging times. Pediatric 16 flexibly combines with other Tim coils for whole body imaging. A cradle facilitates safe and efficient transport and positioning of small patients, reducing stress for all involved.

Expand MRI services through peer-to-peer clinical tips and information

98.5% of the readers of the Siemens MR customer magazine agree that the MAGNETOM Flash provides ideas to grow and expand their practice.

Take inspiration yourself under siemens.com/magnetom-world
Quantify tissue characteristics with MyoMaps

**Myocardial infarction, T1 Map**
*National Institutes of Health, Bethesda, USA*

**Myocardial oedema, T2 Map**
*Diagnostikum Berlin, Berlin, Germany*

**Iron Overload, T2* Map**
*Dudley Pennell, Royal Brompton Hospital, London, United Kingdom*

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Imaging in the presence of metal, e.g. total knee arthroplasty

*University of Texas Medical Branch, Galveston, USA*

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Conventional Advanced WARP

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The realization of quiet MRI is truly exciting. It will improve clinical care for many pediatric, dementia, and psychiatric patients, while providing a more comfortable experience for all patients. For the many patients scanned at our hospital, T1-weighted PETRA provided the same diagnostic information as MPRAGE. PETRA even provided diagnostic advantages in some cases; for example, paranasal sinuses could be imaged without susceptibility-related distortion.

*Dr. Masahiro Ida, Tokyo Metropolitan Ebara Hospital, Tokyo, Japan*
Open up new possibilities in MRI

Unlock your institution’s potential by increasing efficiency and expanding your MRI service.
Cutting reconstruction times in half
70% reduction in sound pressure for routine examinations
46% less software interaction
20% higher SNR in zoomed MRI
Scanning reliably near large metal implants
70% reduction in sound pressure for routine examinations
46% less software interaction
Cutting reconstruction times in half
Up to 50% higher productivity with Tim+Dot
Examining patients who cannot hold their breath
Embrace motion in body MRI.
Expanding pediatric care with a dedicated clinical coil
Obtaining quantitative diagnostic information in cardiac MRI
syngo MR E11 is your key to...
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