

ECR 2018 in Vienna: Austria Center Vienna, Expo X5, Booth 509

Siemens Healthineers expands precision medicine with 1.5T MRI scanner Magnetom Sola and BioMatrix technology

- **Innovative BioMatrix technology available for the first time at 1.5 Tesla MRI**
- **New smart BioMatrix Sensors: The new Kinetic Sensor¹ detects and corrects for head motion, the new Beat Sensor¹ detects cardiac motion in real-time.**
- **Significantly accelerated musculoskeletal scans in nearly half the time with Simultaneous Multi-Slice technology**
- **New clinical capabilities at 1.5T with free-breathing, push-button dynamic liver and cardiac cine imaging, as well as whole-body exams**

Siemens Healthineers launches Magnetom Sola, its new 1.5T magnetic resonance system with a large 70 cm bore, at the ECR European Conference of Radiology (February 28 to March 4, 2018 in Vienna). This system brings BioMatrix technology, introduced in 2017 with the 3 Tesla Magnetom Vida system, to the 1.5 Tesla segment, making it available to a greater range of MRI providers and patients. BioMatrix technology provides consistent, high-quality imaging by automatically adjusting to the patient's individual anatomy and physiology and thus expanding precision medicine.

“With the introduction of Magnetom Sola, we now offer a system that will make many of our latest innovations available at 1.5 Tesla field strength and help to further expand robustness, standardization and productivity in MR imaging. BioMatrix as a core technology will make MRI even more consistent and robust, which is absolutely key for taking the next step to quantification, and then ultimately feeding into artificial intelligence guided systems to help drive clinical decision support,” says Dr. Christoph Zindel, Senior Vice President and General Manager of Magnetic Resonance at Siemens Healthineers. “Magnetom Sola will support our customers with consistent results on the path to precision medicine reducing unwanted variations in MRI examinations, while also offering them highly efficient

workflows, regardless of the type of examination and patient.”

Magnetom Sola is currently being clinically evaluated at the Department of Clinical Radiology and Nuclear Medicine, University Medical Center Mannheim, Medical Faculty Mannheim, Heidelberg University. “Making precision medicine available in daily routine is crucial to the future development of radiology. Still, inconsistencies and unwanted variability often make the path towards truly personalized medicine more difficult and also currently limit productivity in MR imaging,” explains deputy institute director Professor Ulrike Attenberger. “Our initial experience with Magnetom Sola clearly shows that its BioMatrix Technology will significantly improve the reproducibility of scans and the robustness of imaging results so that we can boost efficiency,” concludes Professor Attenberger following the early results of her ongoing studies.

New elements of BioMatrix technology to increase consistency

With Magnetom Sola, in addition to the respiratory sensor, two new BioMatrix Sensors are available: The Beat Sensor¹, seamlessly integrated into the new body coil, is designed to automatically capture heart motion and the time-consuming placement of electrodes on the patient’s skin can be avoided. The Kinetic Sensor¹, an in-bore camera system recognizes the patient’s head motion in real-time. Motion is costly as it can compromise the results of neurological examinations, which often requires multiple rescans. The Kinetic Sensor is designed to adjust the MRI scan based on the real-time motion information. This significantly reduces motion artifacts in MR images, offering higher diagnostic image quality – especially in difficult imaging cases. In addition the avoidance of rescans significantly increases patient throughput and thereby boosts productivity.

BioMatrix Tuners, the new intelligent coil technology, automatically adapt to challenging patient anatomy for reliable exams with CoilShim and Slice Adjust technology, now also for an even broader range of clinical fields. Furthermore, with the introduction of Magnetom Sola, Siemens Healthineers enhances the functionality of its BioMatrix Interfaces for precise and easy patient preparation.

Increased productivity with Simultaneous Multi-Slice and scan automation

Magnetom Sola comes with many new productivity applications to reduce examination times, increase patient throughput, and help lower costs per scan. Simultaneous Multi-Slice

(SMS) allows acquiring multiple slices in parallel and will now also be available for broadly used TSE sequences. Musculoskeletal examinations, which make up a large percentage of MRI exams, can now be significantly shortened by up to 46 percent². Complemented by the use of artificial intelligence to further automate routine tasks, a further reduction of overall exam times can be achieved. With this, Siemens Healthineers is making an important contribution to increase the productivity of MR imaging. In addition to accelerating and automating routine exams, such as brain, spine and musculoskeletal (MSK) exams Magnetom Sola will also provide workflow standardization for more challenging clinical areas such as whole-body MRI. The Whole-Body Dot Engine is now available for the first time with a 1.5T system, and these difficult scans can now be carried out in predictable time slots, in less than 30 minutes, with very high quality.

New clinical possibilities at 1.5 Tesla

Thanks to BioMatrix and further innovative applications, Magnetom Sola offers new and more comprehensive clinical possibilities in 1.5 Tesla imaging, enabling radiology providers to expand their MRI services. For example, cardiac function can be measured in a free-breathing exam with Compressed Sensing Cardiac Cine, which greatly improves the patient experience during the MR examination and enables patients to be imaged who cannot hold their breath. Compressed Sensing Grasp-Vibe is now for the first time available in the 1.5T segment with Magnetom Sola. This application makes dynamic liver imaging under free-breathing possible – with a simple push-button workflow; the complex process of managing the timing of breath-holds and contrast-agent administration is no longer necessary.

Magnetom Sola also features the latest magnet technology from Siemens Healthineers with low helium inventory, efficient energy management, as well as a completely new user environment. An innovative design, lightweight ultra-high density coils and perfectly streamlined workflows are sure to increase user and patient satisfaction alike. BioMatrix technology on Magnetom Sola will serve as the basis to consistently derive quantitative information, and will be the platform to develop future applications powered by artificial intelligence. Magnetom Sola will be available from the 3rd quarter of calendar year 2018.

¹The motion correction framework and Cardiac Triggering and all associated sequences are still under development and not commercially available yet. Its future availability cannot be ensured. Please contact your local Siemens Healthineers organization for further details.

² The numbers described herein are based on results that were achieved in the Siemens Healthineers unique setting. Because there is no "typical" hospital or laboratory and many variables exist there can be no guarantee that other customers will achieve the same results.

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This press release and press pictures are available at

<http://www.healthcare.siemens.com/press-room/press-releases/pr-20180301006hc.html>.

For further information on ECR 2018, please see

<http://www.healthcare.siemens.com/press-room/press-features/pf-ecr2018.html>

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In fiscal 2017, which ended on September 30, 2017, Siemens Healthineers generated revenue of €13.8 billion and profit of €2.5 billion and has about 48,000 employees worldwide. Further information is available at www.siemens.com/healthineers.