

Healthcare Sector Imaging & IT Division

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A world's first in imaging – integrated whole-body molecular MR system available for clinical use testing

Siemens unveils Biograph mMR* whole-body integrated MR and PET system capable of simultaneous data acquisition. First system already undergoing clinical use testing in Munich, Germany.

Today, Siemens Healthcare unveils its new system, Biograph mMR, the world's first integrated whole-body molecular MR with simultaneous data acquisition technology, currently undergoing clinical use testing. This revolutionary system comprises a magnetic resonance (MR) scanner and an integrated PET (Positron Emission Tomography) detection system with an architecture that performs as one. In the new 3-tesla hybrid system, Siemens developers have succeeded for the first time in simultaneously capturing MR and PET data with a whole-body system. The Biograph mMR system has been installed at the university hospital Klinikum rechts der Isar of the Munich Technical University, Germany.

“Together with our partner Siemens we are entering a new dimension in diagnostic imaging today“, said Prof. Dr. Markus Schwaiger, director of the clinic for nuclear medicine at the university hospital. “We've initiated clinical use testing of Biograph mMR in an effort to diagnose diseases at a very early stage; to see the progression of disease and to use that information to develop a therapy plan precisely focused on the respective patient. Furthermore, we plan to use the system for cancer follow-up in the long run, by reducing radiation exposure by the use of the system.“

With the simultaneous acquisition of MR and PET data, this system is designed to provide new opportunities for imaging. While MR provides exquisite morphological and functional details in human tissue, PET goes further to investigate the human body at the level of cellular activity and metabolism. The innovative system has the potential to be a particularly valuable tool for identifying neurological, oncological and cardiac conditions of disease and in supporting the planning of appropriate therapies. Since MRI does not emit ionizing radiation, Biograph mMR may provide an

added benefit with lower-dose imaging. The Biograph mMR also opens new opportunities for research, such as the development of new biomarkers or new therapeutic approaches.

“Biograph mMR is the latest breakthrough innovation of Siemens in the field of diagnostic imaging. It will be a new instrument for driving personalized medicine forward”, said Walter Maerzendorfer, CEO of the Business Unit Magnetic Resonance at Siemens Healthcare. “Biograph mMR is designed to simultaneously acquire morphology, function, and metabolism for the entire body”, added Britta Fuenfstueck, CEO of the Business Unit Molecular Imaging at Siemens Healthcare.

MR and PET have become an established part of everyday healthcare routines and have proven themselves to be valuable clinical diagnostic tools. The integration of these two technologies into a single system capable of simultaneous acquisition brings the potential to revolutionize the diagnosis of many conditions. Initial research suggests that with this system, Molecular MR can scan the entire body in as little as 30 minutes for the combined exams, compared to one hour or more for sequential MR and PET examinations.

Siemens envisions a wide range of clinical applications for molecular MR including the early identification and staging of malignancies, therapy planning (including surgery planning) and therapy control.

A technical revolution

Until now, it was nearly impossible to integrate MR and PET technologies: the conventional PET detectors, which use photomultiplier tubes, could not be used in the strong magnetic field generated by an MR system. Integration was further limited by the lack of space inside the MR device. For this reason, MR-PET imaging was the result of two separate scans (MR and PET) with a significant time lag. With Biograph mMR, Siemens brings the first molecular MR system for clinical research that integrates MR with compact, specialized PET detectors.

The Biograph mMR – incorporating Tim, the “Total imaging matrix” technology from Siemens may make it even quicker and easier for clinicians to perform the MR examination.

More information and press pictures can be found under:

<http://www.siemens.com/press/healthcare/Biograph-mMR>

***The Biograph mMR system requires 510(k) review by the FDA and is not commercially available. Due to regulatory reasons its future availability in any country cannot be guaranteed. Please contact your local Siemens organization for further details.**

The outcomes achieved by the Siemens customers described herein 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 others will achieve the same results.

The **Siemens Healthcare Sector** is one of the world's largest suppliers to the healthcare industry and a trendsetter in medical imaging, laboratory diagnostics, medical information technology and hearing aids. Siemens offers its customers products and solutions for the entire range of patient care from a single source – from prevention and early detection to diagnosis, and on to treatment and aftercare. By optimizing clinical workflows for the most common diseases, Siemens also makes healthcare faster, better and more cost-effective. Siemens Healthcare employs some 48,000 employees worldwide and operates around the world. In fiscal year 2010 (to September 30), the Sector posted revenue of 12.4 billion euros and profit of around 750 million euros. For further information please visit: www.siemens.com/healthcare.