

Siemens introduces a new MRI system

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Siemens Healthcare has introduced the Magnetom Terra 7 Tesla MRI system, designed to translate cutting-edge MRI research results into clinical application. It is said to be the world's first ultra-high field research system ready for future clinical use with planned CE and FDA authorization to market for selected neurological and musculoskeletal MR imaging applications.

"I am extremely proud to announce the introduction of our new 7 Tesla scanner Magnetom Terra. It is the first 7 Tesla MRI scanner fully designed and manufactured by Siemens, with a completely new designed 7 Tesla magnet in its core," said Dr Bernd Ohnesorge, CEO, Magnetic Resonance at Siemens Healthcare. He added, "Now, Siemens is the only company to manufacture a complete human ultra-high field MRI system fully in-house."

The new 7 Tesla MRI system provides the whole range of cutting-edge 7 Tesla research functionalities, and is based on the latest software platform syngo MR E11, identical to Siemens' latest flagship 3 Tesla MRI systems, to enable consistent usability and protocol exchange.

Magnetom Terra's new actively shielded magnet is the lightest 7 Tesla whole body magnet, 50 percent lighter than previous actively shielded 7 Tesla magnet generations. It increases the potential for translating cutting-edge research capabilities into future clinical application for anatomical, functional or metabolic MR imaging. This specially designed 7 Tesla technology makes this possible by offering, up to eight channel parallel transmit technology for selective excitation and higher homogeneity in challenging body regions such as cardiac and abdominal; Up to 64 receive channels for higher coil density in the field of view to achieve higher acceleration factors, higher signal-to-noise ratio and higher spatial resolution, and a better coverage of the body regions of interest.

It also offers high gradient strength of up to 80 millitesla per meter (mT/m) and a fast gradient switching rate of up to 200 Tesla per meter per second (T/m/s) for advanced studies with diffusion and functional MR imaging.

"Based on our long-standing experience and the largest innovation network in human ultra-high field MRI, Siemens is committed to further grow the footprint of 7 Tesla MRI in research and clinical application. I am confident that our Magnetom Terra will help explore new territories in MRI research and at the same time it's the world's first 7 Tesla scanner designed for clinical use," said Dr Bernd Ohnesorge.