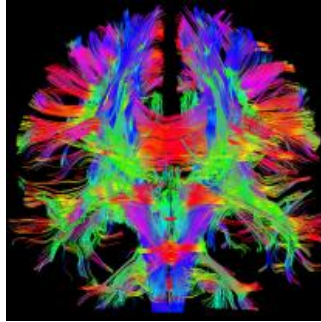

New 3-tesla MRI scanner Magnetom Prisma from Siemens



How can we better understand the complexity of the brain? How can we measure and visualise body physiology? To answer such questions in the fields of neurology, physiology or tissue metabolism, the Magnetom Prisma MRI scanner from Siemens Healthcare will offer a new level of MRI imaging capabilities.

The 3-tesla scanner combines high gradient strength and fast gradient slew rates in a way that is unprecedented for commercial whole-body systems worldwide. Based on the same technology platform as the 3-tesla scanner Magnetom Skyra, the Magnetom Prisma is capable of extraordinarily high spatial and temporal resolution to achieve outstanding image quality, especially in very demanding applications.

To also provide existing customers with these new possibilities, Siemens will offer to upgrade the 3-tesla scanner Magnetom Trio to the latest technology of Magnetom Prisma. The Magnetom Prisma was presented at the Radiological Society of North America (RSNA) Annual Meeting 2012 in Chicago with a planned European availability in the second half of 2013.

In combining 80 millitesla per metre (mT/m) and a slew rate of 200 tesla per metre per second (T/m/s) simultaneously, Magnetom Prisma offers a tandem configuration unavailable in any other commercial whole-body system today. When compared to conventional devices, the scanner's combination of high gradient strength and fast gradient switching speed allows for increased image quality. This can open up new possibilities in areas such as diffusion imaging, because even minor diffusion effects can be captured with a high gradient strength. To make full use of this potential, the new Diffusion Spectrum Imaging (DSI) application makes it possible to resolve fine anatomical details of the brain, such as crossing white-matter fibres by using up to 514 diffusion encoding directions.

In addition to insights into brain function, Magnetom Prisma has great potential in the research fields of body physiology, organ morphometry, tissue metabolism, and quantitative MRI. Magnetom Prisma's excellent image quality is derived from not only the gradient strength but also advanced shimming solutions that allow for finer and more effective compensation of patient-induced field disturbances.

Magnetom Prisma is based on one technological platform with the 3-tesla scanner Magnetom Skyra. It is designed as leading-edge 3-tesla scanner for clinical research for instance in the field of neurology, while Magnetom Skyra remains the top-of-the-line scanner for advanced clinical imaging. Both systems are equipped with the parallel transmit technology TimTX TrueShape, which can provide better image quality and shorter examination times. Together with syngo ZOOMit, the worldwide first parallel transmit application, it is possible to selectively excite specific regions of the body, enabling entire organs or parts of organs to be evaluated in detail. Magnetom Prisma is equipped with Tim 4G, the fourth generation of Siemens' integrated coil technology. With a new head-neck coil with 64 receive channels for this scanner as well as for Magnetom Spectra, users can combine up to 84 receive channels in a single scan when combining it with the standard body and spine coils – the highest number of receive channels currently available on the market. Supported by 64 or 128 receive channels of the scanner, image quality can be substantially increased while reducing scan time.

Magnetom Prisma can perform challenging research examinations at a consistently high level. Besides zero helium boil-off technology, users benefit from Dot (day optimizing throughput) technology, which makes it possible to select the right scanning strategy, depending on the indication. Dot technology guides users step-by-step through the examination and supports physicians by offering suggestions for their decisions at critical points during the examination. This increases scan consistency and reproducibility. Predefined Dot workflows facilitate the repetition of measurements for a given patient at different time points or the ability to compare examinations obtained at different sites, such as during the course of multi-site research projects.

Customers who have already installed the 3-tesla scanner Magnetom Trio will be offered onsite upgrades to the latest technology of Magnetom Prisma.

