

MRI scan minus the acoustic discomfort

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Singapore: GE Healthcare's recently-launched Silent Scan is a revolutionary technology under magnetic resonance imaging (MRI) scan portfolio that dramatically quietens MRI exams, and is growing in clinical adoption around the world.

Silent Scan addresses the issue of excessive acoustic noise generated during a MRI scan. Conventional MRI scanners can generate noise in excess of 110 decibels, roughly equivalent to rock concerts and requiring ear protection. Silent Scan technology is designed to reduce MR scanner noise to ambient (background) sound levels and improve a patient's MRI exam experience. Silent Scan is realized by the combination of very fast RF transmission, high stability gradient and dedicated software. A first install in Asia was completed in Japan at Seirei Hamamatsu General Hospital in Shizuoka prefecture.

Since late August this year, Japan's Seirei Hamamatsu General Hospital, as one of 10 global trial sites, has been using a Silent Scan-equipped Discovery MR750w 3.0T MRI device. From the experience of using the actual device, Dr Takayuki Masui of Seirei Hamamatsu said that it isn't just that the machine does not emit the usual noise, but he also pointed out the high image quality as a key point of the system. During the press conference held in Tokyo during September, he gave T1-weighted images particularly high marks. In addition, he also mentioned that high-speed switching of RF coils makes it possible to bring TE down to zero, thereby, making possible image acquisition with a high degree of signal homogeneity. This is particularly useful in MRA (MR Angiography).

Noise is one of the major complaints from patients who undergo a MRI exam. Historically, medical manufacturers have addressed the noise issue by using a combination of acoustic dampening material or performance degradation to reduce the noise level. With Silent Scan, a radically new type of 3D MR acquisition, in combination with proprietary high-fidelity gradient and RF system electronics, noise is not merely dampened; it is virtually eliminated at the source.

Meeting local needs

Asia is a diverse region consisting of many different countries and cultures. We must have good listening skills to understand our customers' needs at each local level. There is no 'one size fits all' for Asia, and we need to discount the idea that whatever works in the US should work in Asia, and localization is a critical part of GE's globalization strategy. This allows the company to make many decisions quickly and locally to provide the best solution for our local customers. GE observes customer needs evolving, which further influences the way new products are developed. In the past, priorities were primarily

on continuing to enhance traditional technical features of medical systems, such as higher rotational speed per second, number of image slices per rotation, etc. In recent years, GE Healthcare have been focusing more on the softer side of needs, such as patient comfort, safety, energy efficiency, compact size, and ease of use, in addition to technical enhancements. This allows us to be unique and align with the true needs of our customers and patients.

Some of the latest examples of GE innovations include: the Optima CT 660, launched three years ago as a "patient friendly, hospital friendly, and environmentally friendly" product, with its compact size, low dose and low energy consumption while maintaining all technical capabilities; the hand-held ultrasound device called Vscan, affordable and small enough to fit in a pocket to be carried anywhere and highly popular among general practitioners and physicians in rural areas; and of course the MRI Silent Scan technology that we just introduced globally.