

# The Future of MRI: Faster and Easier than Ever Before

Productivity is the name of the game. When health budgets are under pressure while the demand for quality and output is rising, one way to cope is to increase workflow efficiency. To achieve that, Siemens is launching Dot and *syngo.via*, two advanced and integrated solutions that will make working with MRI easier and faster.

Both solutions allow the user to automate routine tasks to their standards, which, until now, had to be done manually. These solutions make the most out of the latest advances in Tim® (Total imaging matrix) technology, which are now also ready for the market. Together with the Dot<sup>1</sup> (Day optimizing throughput) engine, the throughput for magnetic resonance imaging (MRI) can be increased by up to 30 percent, Siemens specialists say. In addition, *syngo.via*<sup>1</sup> will help make it easier to process and document the data afterwards, making it more efficient and faster for radiologists, technologists, and their medical colleagues. This new imaging software will further enhance Dot's increase in productivity. Setting up an MRI system for an examination can be a tedious and complicated task. A great number of parameters need to be taken into account and medical professionals might spend up to a half-hour just to prepare an examination. "A lot of these activities can be done by intelligent software," says Christoph Zindel, MD, Vice President of MR and Head of MRI Applications and Software Development at Siemens Healthcare. Thus, Dot is designed to take the complexity out of MRI scans and will have a profound effect on how MRI examinations will be done in the future. The seamless workflow it offers helps radiologists and

technical personnel increase their productivity.

Zindel notes that there is no point in wasting the precious time of medical professionals when routine processes can be automated without compromising quality. This is exactly what Dot is designed to do. It will help to increase the efficiency of an MRI department by speeding up the examination process through Guidance, Personalization, and Automation. Today, a patient enters the scanning room and the technologist places and positions him or her in the MRI system according to the needs and the nature of the examination. With Dot, that positioning will, to a large extent, be done automatically. If, for example, a liver scan is scheduled, the technologist positions the patient on the table and just pushes the Dot Control Center and the patient will be automatically positioned up to the abdomen in the isocenter of the magnet. For a cardio examination, this will be up to the point where the thorax region is in focus. However, Siemens managed to make Dot even smarter when it comes to brain and knee examinations. For example, Dot features AutoAlign, which will even suggest the positioning of the slices that will offer most insight (based on the users standards of care). "The only thing the technologist still needs to do is to approve the systems' suggestions," Zindel says. Even more time is saved when Dot's personalized workflows together with the customer's sequences and protocols are used. Since every patient is different, a

lot of time is spent adjusting the MRI setup to a patient's special requirements. The setup needs to take into account the fact that a person might not be able to hold his or her breath for a few seconds, – something that is often requested of patients during an MR scan – or that a child<sup>2</sup> simply won't easily lie still during the examination.

"We designed a number of personalized workflows that are tailor-made for cases like these," Zindel says. The radiographer simply chooses which Dot strategy fits the patient best. Dot still leaves ample room for individual preferences of the medical professionals in charge. The radiologist can define personalized protocols that reflect his or her special needs and preferences when doing certain examinations.

Dot also provides guidance for planning the examination. This will help dramatically reduce the time needed to prepare even complex scans, for example, in cardiac MRI. The user is guided from start to finish through every step of the examination and is offered "decision support." The integrated guidance suggests what may be done next or which alternatives are available. However, it remains the radiologist's job to make the final decision. Siemens put great emphasis on designing Dot's user interface as attractive, appealing, and easy to use. During the

<sup>1</sup> The information about this product is being provided for planning purposes. The product requires 510(k) review and is not commercially available in the U.S.

<sup>2</sup> The safety of imaging infants under two years of age has not been established.

development of the system, customers were an integral part and had a say on what the software should be doing and how it should work. What is always important when designing software is ease of use: It should be possible to learn to use it quickly and, even more important, intuitively.

Higher productivity comes not only from preparing the examinations more efficiently, but also from being able to analyze the images more quickly. Thus, *syngo.via* is designed to speed up image processing, preparing the cases, and making the results available in a network. With the unique networked scanner, a radiologists or technologists can work simultaneously at the new Tim+Dot MRI scanners MAGNETOM® Skyra<sup>1</sup> (3T) or MAGNETOM Aera<sup>1</sup> (1.5T) and *syngo.via* on two screens with only one mouse and keyboard. With this, they can prepare and scan different patients easily without screen overlays and possible confusions, which results in a new level of efficiency at the scanner.

Thus, Dot and *syngo.via* work hand-in-hand to achieve a seamless workflow for the user from acquisition to diagnosis. They are the ideal combination to get the maximum output out of Siemens' innovative imaging technology. Tim, Dot, and *syngo.via* will allow radiologists to concentrate on what they do best: diagnosing and helping patients.

"We would like to see performing MRI scans become easy and even fun," Zindel says. The new Siemens solutions are a giant step toward this goal.

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