



The latest MRI solutions from Siemens, MAGNETOM ESSENZA and MAGNETOM Verio, prove to be efficient options for private practices and university hospitals, respectively.

## A Workhorse and a Thoroughbred

Munich, Germany, and Chattanooga, TN, USA, are not necessarily two cities you would mention in the same breath. Separated by language, culture, and some 5,000 miles, the two do, however, share a proximity to mountains and beautiful scenery, as well as a strong regional identity – and most recently, doctors in both places felt a need for enhanced imaging technology.

By Rosemarie E. Overstreet



Doctors at two very diverse medical facilities, one a large German university hospital and the other a private practice, apparently had the same goal in mind when they sought new and improved magnetic resonance imaging (MRI) solutions: They were looking for a workhorse, a robust piece of machinery that could not only handle an ever-growing number of patients, but would also provide enhanced image quality and patient comfort. In addition, the doctors wanted to achieve improved diagnostic accuracy, as well as cost and time effectiveness in whatever solution they finally selected.

### Complex Examinations Quicker and More Comfortable

The Department of Clinical Radiology at Ludwig-Maximilians-University in Munich performs approximately 450,000 radiological procedures annually. The hospital has approximately 1,500 beds and 4,000 personnel. Individuals who come to university hospitals in Germany tend to suffer from serious diseases and illnesses which sometimes limit their ability to undergo complex examination procedures. Their cooperation may be limited by many constraints due to their underlying illness, pain, respiratory distress or functional disablement. It is important to the doctors that they provide as much comfort as possible to these seriously ill patients and that they accelerate the imaging procedure in order to quickly establish a diagnosis.

According to Professor Maximilian Reiser, MD, who is the head of the department, the main goal behind the implementation of 3 Tesla (3T) technology for the entire spectrum of cardiovascular, musculoskeletal, neurological, abdominal, and oncological imaging in all body regions, as well as for all diagnostic applications was to achieve the highest level possible with regard to performance, image quality, and diagnostic accuracy.

The doctors in Munich were attracted to Siemens MAGNETOM® Verio, which combines high-field imaging and a 70-centimeter open-bore design with continuous table movement as part of Tim® (Total imaging matrix) technology, allowing for speed, accuracy, and flexibility. The larger

bore not only allows for examinations of obese patients (up to 550 pounds), but also considerably increases patient comfort due to the spaciousness. "It is crucial for patients to be comfortable so that we can get optimal image quality in the shortest time possible," notes Karin Herrmann, MD, who is Section Chief of MRI and Abdominal Imaging. She says what is very important about MAGNETOM Verio is the availability of fast sequences and thus shortened image acquisitions.

### Successful Implementation

"Image quality is the most important issue in establishing a diagnosis, and when combining parallel imaging techniques and the advantages of 3T imaging with high signal intensity, you can achieve the superb image quality using the newest system," states Herrmann.

The doctors at the Munich facility have been using MAGNETOM Verio since November 2007, and both staff and patients have noticed a difference. In fact, the medical professionals made a point of conducting an initial patient survey to gauge whether the system has been well accepted. Both Herrmann and Reiser report that the response has been overwhelmingly positive.

Says Reiser, "Even though it represents the utmost in modern technology and performance, the shorter length of the magnet is less scary to patients." He adds that the system is an ideal product to implement even when space is limited. Both he and Herrmann note that despite some new features, MAGNETOM Verio does not require additional training – thus once the system was installed, it was up and running, and the staff did not miss a beat. "With MAGNETOM Verio, we not only got a workhorse, we got a thoroughbred," says Reiser.

### Calling in MRI Support Troops

Meanwhile, several time zones away across the Atlantic in Chattanooga, Joseph Busch, MD, who is one of three founders of Diagnostic Radiology Consultants (DRC), feels the same way about his new technology. "MAGNETOM ESSENZA is a beautiful second machine.



“You can achieve the superb image quality using the newest system.”

Karin Herrmann, MD,  
Section Chief of MRI and Abdominal Imaging,  
Department of Clinical Radiology,  
University Hospital of Munich, Germany

“With MAGNETOM Verio, we not only got a workhorse, we got a thoroughbred.”

Professor Maximilian Reiser, MD,  
Director, Department of Clinical Radiology,  
University Hospital of Munich, Germany

For a private practice, we now have the best of both worlds. We envision it as a workhorse magnet,” says Busch. “We feel there is no compromise for routine MR scanning; it is a thoroughbred in its own right.”

DRC has a staff of ten radiologists who run a private practice located at six sites – one hospital of 150 beds and five outpatient sites – performing more than 200,000 exams per year. The facility provides medical care to a large percentage of outpatients. Busch is enthusiastic when describing why he and his team made the decision for the 1.5 Tesla (1.5T) system. He explains that their business is booming to the point that it requires them to scan six days a week – with double shifts during the week and single shifts on Saturdays. The group was very happy with its 70-centimeter MAGNETOM Espree, but was having trouble keeping up with demand. He says their acquisition of MAGNETOM ESSENZA provided relief to the overload on MAGNETOM Espree: “MAGNETOM ESSENZA is like the support troops – at 60-centimeters, its bore is a little smaller than MAGNETOM Espree, so some of our obese patients will not fit in it. But it suits our needs as a complementary piece of technology.” Initially the DRC team’s thinking was to go after a refurbished MAGNETOM Symphony. “With reimbursement going down, down, down, you either need

to buy a first-class used system – and nobody is going to part with their MAGNETOM Symphony – or you have to look for the best 1.5T out there and go for it, and that is what we did,” beams Busch. The doctor points out that in the past, he and his team were not always cost-conscious, but economics has changed all of that. Upgrading to new technology is not merely a choice but a necessity.

### The Most Bang for Their Buck

From a business perspective, MAGNETOM ESSENZA made the most sense in terms of low initial investment, low installation cost, and low operating cost. “The product does not look like its price point, which in itself is clearly surprising. We feel we got the most bang for our buck,” notes Busch. He also points to the clinical benefits of the 1.5T magnet, which include greater diagnostic confidence, and a wider range of applications powered by Tim. “This piece of machinery clearly has the right magnet for the right time,” states Busch, explaining that the market he and his colleagues find themselves in simply does not require a 3T, but another market eventually will. Busch, who likes to mention that one of the founding principles behind DRC was to “bring radiology out of the basement and into the penthouse,” believes purchasing MAGNETOM ESSENZA fits well into that philosophy.



“MAGNETOM ESSENZA is a beautiful second machine. For a private practice, we now have the best of both worlds. We envision it as a workhorse magnet.”

Joseph Busch, MD,  
Diagnostic Radiology Consultants, Chattanooga, TN, USA

“The exams are faster, more comfortable, and more ‘head out,’ which means that the experience for the patient is kinder and gentler – and that is important to us,” Busch emphasizes. He adds that in addition to all of the clinical benefits, the actual installation was one of the fastest and smoothest that DRC has ever done. “Like all Siemens technology, the magnet is meeting our expectations and is better than we originally thought. The company honestly lives up to what it markets.” His peer back in Munich could not agree more: “Not only has Siemens always been interested in gaining input from doctors through its support of research activities – its people also deliver excellent service and are highly responsive.”

*Rosemarie E. Overstreet is a freelance journalist based outside of Frankfurt, Germany. She has written for several international publications and reported and produced for PBS television and ABC World News Tonight. She received her BA from Indiana University, IN, USA, and her master's degree from the American University, Washington, DC, USA.*

## Summary

### Challenge:

- Many healthcare providers are unable to afford state-of-the-art MRI services due to budget restrictions
- Accommodating an ever-growing number of patients of all sizes and ages
- Improving image quality and thus diagnostic accuracy
- Providing more patient comfort for seriously ill patients
- Achieving greater cost effectiveness and time efficiency

### Solution:

- Implementing 3T technology in Munich for the entire spectrum of cardiovascular, musculoskeletal, neurological, abdominal, and oncological imaging in all body regions, as well as for all diagnostic applications at the highest level possible
- Acquiring MAGNETOM Verio for Munich, whose larger bore accommodates very obese patients and provides increased patient comfort and optimal image quality

- Implementing 1.5T technology in Chattanooga, which helps keep up with 24/7 demand
- Acquiring MAGNETOM ESSENZA, providing relief for the private practice
- Tim technology, helping increase speed, efficiency, and flexibility in both cases

### Result:

- A survey done in Munich showed that reaction to MAGNETOM Verio has been overwhelmingly positive, among both patients and staff
- Staff/patient benefits include improved diagnosis and treatment, increased patient comfort, quicker procedures
- In Munich, the shorter length of the magnet is less intimidating for patients
- Administrative benefits of MAGNETOM ESSENZA are low initial investment, low installation cost, and low operating cost

## Further Information

[www.siemens.com/ESSENZA](http://www.siemens.com/ESSENZA)  
[www.siemens.com/Verio](http://www.siemens.com/Verio)