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United Imaging's uMR Omega Revolutionises MRI at Military Clinical Hospital, Ełk

An overview of the collaboration between United Imaging and the Military Clinical Hospital in Ełk and the shared dedication to ensuring that a wide spectrum of patients can benefit from the highest standards of diagnostic accuracy and safety in medical imaging.

On the 11th of October, 2023, the Military Clinical Hospital in Ełk officially became a new member of the international family of United Imaging. The hospital has decided to expand its diagnostic capabilities by opening a state-of-the-art magnetic resonance imaging (MRI) laboratory, which will involve the world's first Ultra-Wide-Bore 3T MRI.

This comprehensive hospital has eleven highly specialised departments, including an operating room and an emergency room. In addition to providing a wide range of healthcare services to the local population, the Military Clinical Hospital in Ełk has established a close relationship with the Poland-based multinational battalion Battle Group. The hospital is actively involved in handling a variety of emergency cases and taking care of soldiers.

The Military Clinical Hospital in Ełk is the first hospital in Poland and the third in Europe to have such a unique diagnostic tool.

The addition of the uMR Omega to the diagnostic arsenal of the hospital will significantly improve the access of the local population to advanced imaging modalities, thereby ensuring that all patients have the possibility of obtaining precise diagnosis and, subsequently, adequate treatment plan.

The uMR Omega™ has been deliberately designed to satisfy all requirements of contemporary healthcare institutions. This includes the highest-quality imaging supporting the diagnostic process, the option of intraoperative use, as well as option of radiotherapy planning of unparalleled precision.

In order to provide patients with a more comfortable experience during an MRI exam while ensuring the highest image quality and scan speed, United Imaging introduced a revolutionary design reflecting the most recent advances in MRI technology. The unique combination of ACS (Artificial Intelligence Compressed Sensing) and DeepRecon technologies has allowed the time of the MR examination to be reduced by as much as 70%. Thanks to the 75 cm ultra-wide bore construction, patients have 25% additional space, which, together with a unique starlight environment, not only increases the overall comfort but also reduces the potential risk of a panic attack in claustrophobic patients. The additional space not only guarantees that all patients, regardless of their sizes, can undergo MRI but also opens up new ways of patient positioning, expanding diagnostic possibilities for joint examinations, large patients, and pregnant women. With painstaking attention to detail, United Imaging came up with next-generation ultra-flexible soft RF Coils to offer patients a blanket-like feeling. Last but not least, the Dual-Source Millimeter-Wave Radar is the industry's first dual-source phased-array millimeter-wave radar solution for contactless sensing of patients' respiratory motions that renders the need for a respiratory belt obsolete.

Fully integrated within the MRI bore and unobstructed by clothing, the Dual-Source Millimeter-Wave Radar empowers the Free-breathing Renal non-contrast enhanced MRI or free-breathing liver MRI.

The diagnostic process has been significantly improved through the development of higher-density coils, which allow for the hyper-resolution MR imaging of the musculoskeletal system or Ultra-short echo time (UTE) MR imaging in pulmonary metastases from liver cancer.

Leveraging the unique advantages provided by artificial intelligence, United Imaging introduced the ACS (AI-assisted Compressed Sensing) to best balance speed and image quality, combining CS (Compressed Sense), HF (Half Fourier), and PI (Parallel Imaging). What is more, the reconstruction procedure is actively supported by a state-of-the-art deep-learning neural network.

Besides an approximately 97% reduction in acoustic noise, the Qscan, coupled with AI technologies such as ACS and DeepRecon, offers whole-body quiet scanning without increasing the scanning time. As a consequence, radiologists are provided with higher acceleration levels for MRI imaging and improved depiction of small anatomical structures, allowing them to perform rapid breast MRI, rapid whole Spine scans, high-resolution MSK, or, in the case of brain MRIs, significantly facilitating the diagnosis of acute cerebral infarction.

The collaboration between United Imaging and the Military Clinical Hospital in Ełk reflects the shared dedication to ensuring that a wide spectrum of patients, regardless of their background or medical condition, can benefit from the highest standards of diagnostic accuracy and safety in medical imaging.

About United Imaging Healthcare

United Imaging Healthcare was founded in 2011 with a commitment to provide high-performance medical imaging products, radiotherapy equipment, life science instruments, and intelligent digital solutions to global customers. With a mission " To Bring Equal Healthcare for All" and a vision to "lead healthcare innovation", United Imaging is continuously devoted to creating more value for its customers and improving the accessibility of high-end medical equipment and services worldwide through close collaborations with hospitals, universities, research institutions, and industry partners.