

For Immediate release

Mediso Medical Imaging Systems introduces nanoScan® SPECT/MRI, the first commercial in-line integrated preclinical SPECT/MRI system

Revolutionary imaging system opens a new frontier for researchers, utilizing the world's most sensitive and highest resolution SPECT system combined with a compact high-performance MRI system for exceptional soft tissue contrast

Dublin, Ireland – Sept. 5, 2012 – Today, Mediso Medical Imaging Systems unveiled its new system, nanoScan® SPECT/MRI, the world's first commercial in-line integrated preclinical SPECT/MRI imaging system at the World Molecular Imaging Congress (WMIC), 2012, in Dublin, Ireland.

"The nanoScan® SPECT/MRI system integrates our proprietary and patented M³-pinhole™ technology and Tera-Tomo™ 3D SPECT reconstruction algorithm with the integrated compact cryogen-free high-performance MRI system from Aspect Imaging" says **István Bagaméry**, founder and CEO of Mediso. "This unique innovative integrated system delivers twice the sensitivity and volumetric resolution than the previously manufactured system and enables ultrafast quantitative dynamic imaging that is unfounded in the preclinical imaging field."

At the heart of the SPECT component is the proprietary M³-pinhole™ technology. Unlike analogue detectors used in previous generation, new fully digital detectors break down the former limitations on sensitivity, resolution and artefact-free imaging. The active surface and thickness of the SPECT crystals have been increased by 50% on all four heads and the larger useful field of view is perfectly covered by rectangular projections. Multiplexing of pinhole projections is avoided by applying 100 pinholes enabling imaging that is free from artefacts that traditionally originated from overlapping.

In addition to the conventional helical scanning schemes, the increased number of projections per detector head allows true stationary acquisitions without any rotation or table movements.



Raw data is acquired and stored in full list mode format supporting flexible processing and ultrafast dynamic imaging. Quantitative results are delivered by the proprietary and patented* Tera-Tomo™ 3D SPECT multi-GPU based reconstruction algorithm, including MRI-based attenuation and scatter corrections. Ultra-high resolution, artefact-free images are generated by 3D iterative algorithm based on on-the-fly Monte Carlo detector modeling with all physical corrections enabling quantification over the complete field of view. Resolution-booster™ is another novel design concept for the entire detection system that ensures the optimal alignment of the pinhole projections to the sensor (PMT) matrix that achieves 275 µm resolution confirmed by Derenzo phantom measurement.

The compact shielded MRI platform from Aspect Imaging utilizes a high-performance 1T magnet with powerful gradients and no external magnetic fringe field. High spatial resolution of up to 100 µm together with superb soft tissue contrast result in exquisite 3D anatomical/morphological imaging. The permanent magnet platform provides a maintenance-free, easy-to-use MRI solution with a small footprint and with easy, rapid installation. It is optimized to perform fast, high-throughput imaging across a variety of applications and preclinical studies without the need of any special expertise.

“The high resolution capability and ease of use of the Aspect Imaging M2™ platform perfectly complements Mediso’s cutting edge nanoScan technology,” says Uri Rapoport, Aspect Imaging’s Founder and CEO. “The combination of high-resolution SPECT and high-performance compact MRI will provide significant benefit to academic and pharmaceutical researchers who are looking for additional flexibility and performance from their translational imaging tools”. Aspect Imaging has placed significant resources and MR expertise to support the M2 compact high-performance MRI system which is manufactured for and sold to Mediso as a key component of its nanoScan® platform. Aspect has a long term commitment to maintain a full development and support team at its headquarters in Shoham, Israel that actively works on the M2 platform.

The nanoScan® SPECT/MRI is perfectly suited as a powerful multi-modality solution for quantified imaging in the following preclinical application areas: oncology and tumor biology, regenerative medicine, receptor studies in neuroscience, inflammation and immunology, infectious diseases, animal model development, phenotyping and development of radiotracers and contrast agents.

The first nanoScan® SPECT/MRI system is being evaluated in the Nanobiotechnology and In vivo Imaging Centre jointly operated by Semmelweis University and CROmed Ltd. The nanoScan® SPECT/MRI is the optimal imaging choice for whose research requires the finest radiotracer imaging technology along with the robust support and co-registration with high-resolution MRI images. “The combined nanoScan® SPECT/MRI provides a fascinating novel method to characterise circulating molecules with long biological half-life without limits in soft tissue contrast and volumetric resolution”, says Dr Domokos Mathe, CEO of CROmed.

The nanoScan® SPECT/MRI in-line multimodality pre-clinical imager is developed, manufactured and distributed by Mediso worldwide and can be seen at the World Molecular Imaging Congress (WMIC) in Dublin, Ireland at Mediso’s booth #217.

*Patents for the M³-pinhole™ and Tera-Tomo™ technologies are pending.

About Mediso Ltd.:

Mediso is one of the World's largest suppliers of various medical diagnostic and research purpose, single and multimodality imaging devices. The company was founded in 1990 by experts in the largest research and manufacturing company in Europe which has been engaged of nuclear equipment development and production since 1960.

Currently Mediso offers 4 imaging modalities - SPECT, PET, CT, MRI - for professionals working in laboratories and nuclear medicine departments.

Mediso products are sold worldwide directly and through a network of distributors. There are more than 1000 imaging systems operating in more than 85 countries around the world.

Mediso offers two multi-modality lines:

The current flagship of the **preclinical line** is the first member of the nanoScan® product family, the fully integrated in-line nanoScan® PET/MRI imager. With the introduction of two new members in 2012, the SPECT/MRI and the SPECT/CT, the nanoScan® family has quickly become a powerful, versatile four modality imaging platform.

Dominant member of the **clinical line** is the AnyScan® SPECT-CT-PET system, which is currently the only triple modality human diagnostic equipment and offers the most advanced SPECT detector technology, beside a full PET ring and a diagnostic CT.

For more information, please visit the Mediso web site at www.mediso.com.

For further information about the nanoScan® product family and Mediso, please contact:

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