nanoScan® products are No.1 in the following:

- achieve the breakthrough 10,000 cps/MBq SPECT sensitivity
- 275 µm SPECT resolution measured with Derenzo phantom
- 700 µm PET resolution measured with Derenzo phantom
- quantification accuracy over 97% for SPECT & PET
- in-line SPECT/MRI multimodality system
- in-line PET/MRI multimodality system
MEDISO Medical Imaging Systems

Tradition in research and development

Mediso Medical Imaging Systems with headquarters in Budapest is a dynamic supplier of nuclear medicine and modern hybrid imaging techniques to healthcare and research institutes around the world. The company was founded in 1990 by experts of the leading research and manufacturing company of the region carrying on their proficiency in developing and producing nuclear equipment since 1960. At present Mediso continue its legacy in researching innovative medical imaging technologies and developing cutting edge preclinical and clinical imaging systems.

Latest awards

2012 - Frost & Sullivan 2012 European Preclinical Imaging New Product Innovation Award
2011 - Grand Prize of Innovation 2010
2008 - Frost & Sullivan 2008 European Medical Imaging Entrepreneurial Company of the Year Award
2006 - Grand Prize of Innovation 2006

Clinical diagnostic and CRO partners

Mediso have developed special partnership with pre-clinical imaging contract research organizations and leading molecular imaging centers in both preclinical and clinical domain around the world. Partnership with CROmed, Karolinska Institute, Semmelweis University in preclinical field and Scanomed, University of Debrecen Medical School and Hungarian National Institute of Neuroscience in clinical area represent vital drive to Mediso’s developments as well as invaluable feedback and better insight into users’ needs.

Customer focused support

Mediso-affiliated subsidiaries and world-wide distributor network with strong factory support ensure close contact with our customers and quick, professional response to their requests not only in technical but also in application related issues. We at Mediso are proud to serve physicians and researchers at more than 100 preclinical and 900 clinical system installations in 86 countries.

Pursuit of perfection in technology to serve perfection in science

Always eager to find an even better solution, Mediso constantly strive to develop the highest level medical imaging technologies possible.

We wish to serve the scientific community with our core value: supreme image quality with quantification.
**nanoScan® Family concept**

Unique versatility in molecular imaging modalities

**nanoScan®** - the four modality in vivo molecular imaging platform

Members of the **nanoScan®** Family combine the industry’s highest performing microscopy level of NM imaging supported by excellent MRI and CT performance.

The ultimate versatility and in-line combinations of the systems are based on common software, common animal handling platform and easy on-site upgrade possibility, thus fulfil all demands of your growing and long term research requirements.

With the **nanoScan®** Family Mediso designed a platform that can satisfy the increasing needs of any research institute with shared components and flexible upgrade possibilities. Exclusive features only from the Mediso **nanoScan®** Family:

- Two MRI and two CT based bimodal solutions
- Highest visible resolution in NM modalities: 275 µm SPECT and 700 µm PET
- Highest PET and SPECT quantification accuracy: over 97% in both modalities
- Dynamic list mode acquisition for both PET and SPECT
- Fulfilling low to high budget requirements with continuous on-site upgrade path
- Worldwide exclusive factory support throughout the equipment lifetime (guaranteed for more than 10 years for all systems including NanoSPECT/CT® and NanoPET™/CT)

**Various upgrade opportunities for existing **NanoSPECT/CT®** users**

Imaging facilities already using the world market leader **NanoSPECT/CT®** systems (manufactured by Mediso) - to be able to keep up with the pace of development of technology (like the **nanoScan®** Family) - are provided with the unique opportunity of upgrading onto the next level of multi-modality imaging.

**NanoSPECT/CT®** and NanoPET/CT™ are registered U.S. trademarks of Bioscan, Inc., which does not sponsor, authorize or endorse this site or any of MEDISO’s services or goods. There is no affiliation or relationship between Bioscan, Inc. and MEDISO.

**Benefits of joining the **nanoScan®** Family:**

- New patented** Tera-Tomo™ 3D SPECT on the fly Monte Carlo based multi-pinhole reconstruction
- Improved SPECT quantification accuracy by scatter and CT based attenuation correction
- List-mode SPECT acquisition and processing for heart, brain and other applications
- New patented** non-multiplexed M⁰ pinhole™ apertures for artifact-free imaging

**® patent pending**
nanoScan® Family

**SPECT**
- 275 µm visible resolution
- over 97% quantification accuracy
- up to 10,000 cps/MBq sensitivity by 100 pinholes

**MRI**
- 100 µm resolution
- 500 mT/M gradient
- maintenance free magnet

**CT**
- 30 µm resolution
- 80 W X-ray power
- ultra low dose acquisition protocol

**nanoScan® SPECT/MRI**

**nanoScan® SPECT/CT**

**CT**

**MRI**

**SPECT**

**PET**
1. MRI
MRI of a 30 g NuNu mouse with flank tumor xenograft imaged post i.v. injection of iron oxide particulate contrast agent using a T1-weighted GRE sequence, imaging duration 6.5 min.

2. PET/MRI
$^{18}$F-FDG PET in a 30 g NuNu mouse with flank tumor xenograft imaged in the last 10 minute frame of a 60 min. dynamic scan post i.v. injection of 4 MBq of radioactivity. MRI acquisition details as in image 1.

3. PET
$^{99m}$Tc biodistribution image in a 32 g mouse during a 5 minute scan, immediately after i.v. injection of 3.4 MBq of radioactivity. Vascular system is visible.

4. PET/CT
Gated cardiac PET/CT image of a 14 g Balb/c mouse injected with 6.7 MBq of $^{18}$F-FDG. 20 min. gated PET acquisition immediately post injection, heart rate was over 500 bpm. CT acquired with 55 kVp during 9 min. with real-time reconstruction.

5. CT
440 g Wistar rat, injected with a total of 6 mL of Visipaque human clinical X-ray contrast agent during continuous i.v. infusion, CT scan with 45 kVp, total CT duration 13.5 min. using real-time reconstruction.

6. SPECT/CT
23 g NuNu mouse, injected with 45.5 MBq of $^{99m}$Tc-Human Serum Albumin imaged for 30 minutes in SPECT 10 min. post injection. CT scan with 45 kVp, total CT duration 7.5 min. using real-time reconstruction.

7. SPECT
347 g Wistar rat, injected with 68.6 MBq of $^{99m}$Tc-Human Serum Albumin, imaged for 60 minutes in SPECT 5 minutes post injection.

8. SPECT/MRI
Transaxial plane view of 34 g mouse brain, injected with 2.4 MBq of $^{123}$I-NNC13-82431 compound, imaged for 30 minutes, 3h post injection. MRI acquisition: T2 weighted FSE.

1., 2. Images courtesy of Helmholtz-Zentrum Dresden-Rossendorf. 3., 4., 5., 6., 7., 8. Images courtesy of CROmed Ltd.

Cover page: SPECT/MRI, SPECT/CT images courtesy of CROmed Ltd., PET/CT image courtesy of Helmholtz-Zentrum Dresden-Rossendorf, PET/MRI image courtesy of Karolinska Institute

*“M2”* MRI from Aspect Imaging
Shared components

**Nucline™ 2.0 - all modality acquisition software**

- Common user friendly acquisition platform for all four modalities
- Integrates wide range of functionalities of acquisition, calibration, data management, reconstruction and visualization.
- DICOM standard images stored in DICOM server
- Flexible and easily customizable daily workflow protocols.

**Tera-Tomo™ 3D SPECT / PET - reconstruction software**

**Tera-Tomo™ 3D SPECT reconstruction principle with on the fly system matrix generation**

- Multi GPU based data reconstruction with multi-Teraflop Computing
- Wide range of corrections such as detector geometry, Monte Carlo DOI estimation, object attenuation and scatter, randoms, dead time and partial volume.
- Results are ultra-fast, quantitative and provide excellent visual quality reconstructed images.

**InterView™ FUSION - post processing and analysing software**

- Supports DICOM, Analyze 7.5, RAW import/export as well as exporting still images (DICOM SC, JPEG, PNG) and movies (AVI)
- Supports dual, triple and quadruple fusion of PET/SPECT/MRI/CT images
- Provides GPU accelerated 3D MIP, Volume Rendering and Surface Rendering Techniques.
- Multiple statistics of Time Activity Curve (TAC) can be derived from 4D dynamic PET and SPECT studies (with MS Excel compatible export)
Data Workflow / Workstations

MultiCell™ Animal Anesthesia / Imaging Chamber

- Multimodality imaging for PET+CT+SPECT+MRI modalities (full compatibility)
- Multipurpose 4D, 5D imaging applications by one-click connection
- Multiple mouse imaging in one scan (optional)
- Multifunction preparation station for the imaging cells

---

**Acquisition / Processing WS**
- Nucline™
- Tera-Tomo™ 3D SPECT
- Tera-Tomo™ Real time CT
- InterView™ FUSION

**Post-processing WS**
- InterView™ FUSION
- Tera-Tomo™ 3D SPECT
- Tera-Tomo™ Post CT
- Online archiving

**Tera-Tomo™ 3D PET - Real WS**
Tera-Tomo™ 3D PET "real" reconstruction

**Tera-Tomo™ 3D PET - Post WS**
Tera-Tomo™ 3D PET "post" reconstruction

---

**Release button**

**Automatic disattachment**

- Inhalation through tooth bar
- Head positioning by ear bars
- Anesthesia gas absorption by nose cone
- Temperature control by integrated hot-air channels
- Respiratory gating by breath sensor
86 countries
100+ preclinical systems
900+ clinical systems

Conformance Statement


Product design, development, production and services comply with EN ISO 13485 and EN ISO 14971.

Safety labels are attached to appropriate places on equipment and appear in all operation manuals.

The supplied software complies with DICOM standard.

The technical information provided here is not a detailed specification.

For details and up to date information please contact your local distributor or Mediso Medical Imaging Systems.

Trademarks:

Nuclife™, InterView™FUSION, Tera-Tomo™3D, M³pinhole™, MultiCell™, PrepaCell™ are trademarks of MEDISO Medical Imaging Systems.

nanoScan™ is registered trademark of MEDISO Medical Imaging Systems.

NanoPET™/CT is trademark, NanoSPECT/CT™ is registered trademark of Bioscan.

MEDISO Medical Imaging Systems
1022 Budapest, Alsótörökvész 14. Hungary
Phone: +36-1-399-3030
Fax.: +36-1-399-3040
E-mail: info@mediso.com
Web: www.mediso.com

MEDISO reserves the right to change data without notice © MEDISO 2013.

NSFB 08/13