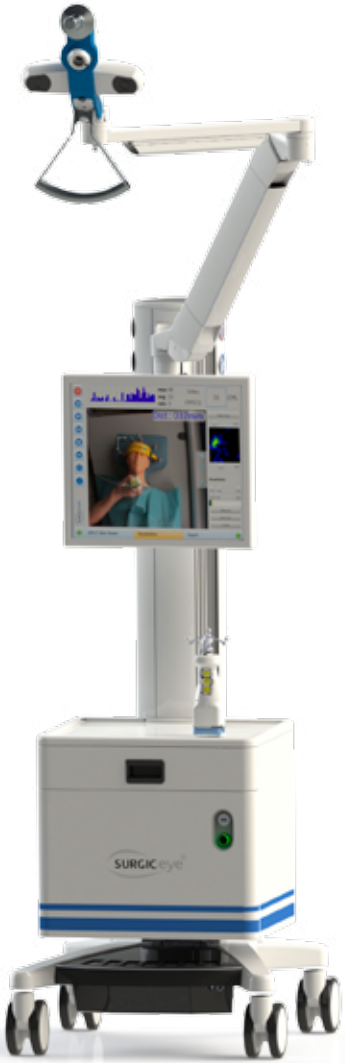
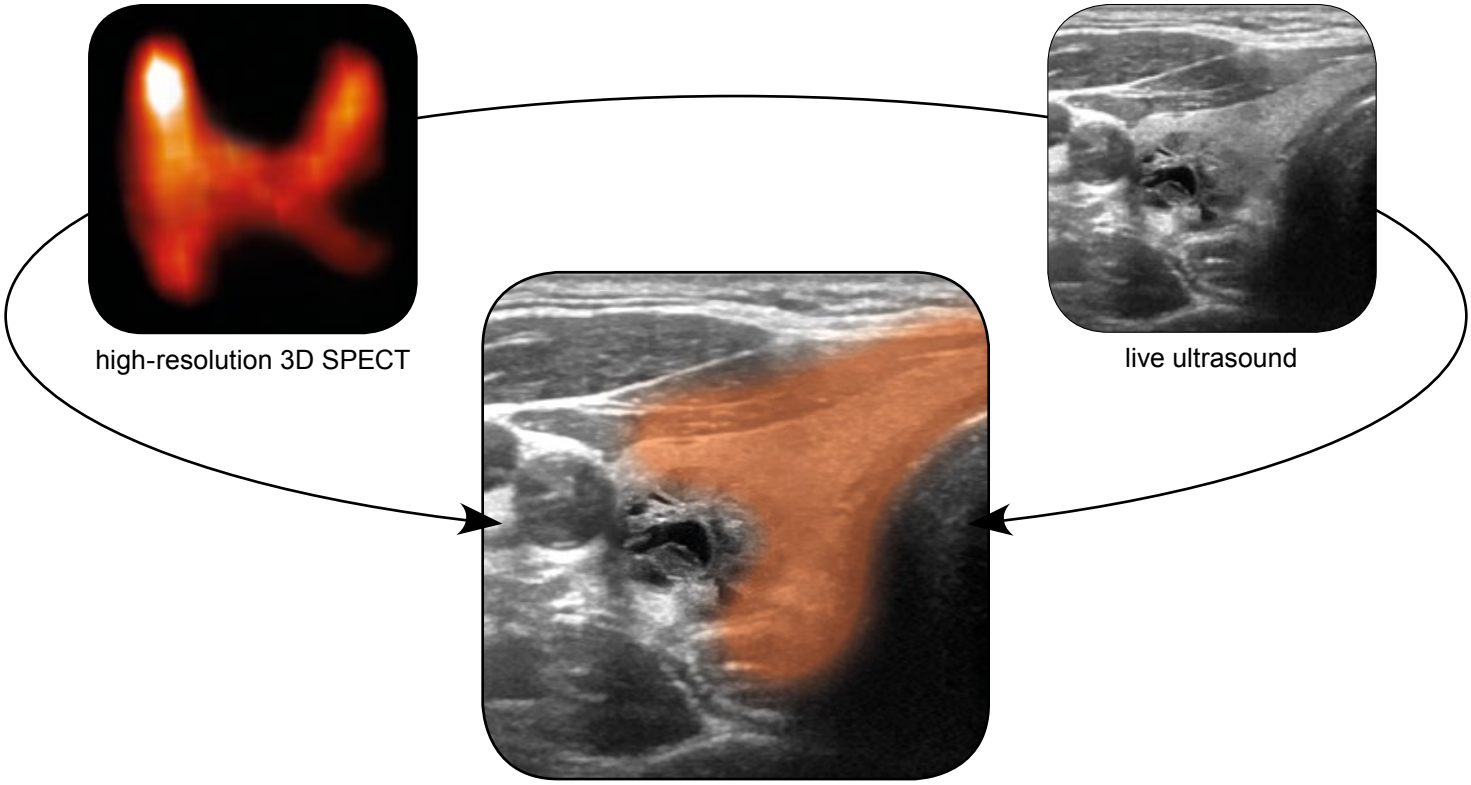
declipse®SPECT Imaging Probe

Worldwide first registration-free
ultrasound fusion with
high-resolution 3D SPECT images





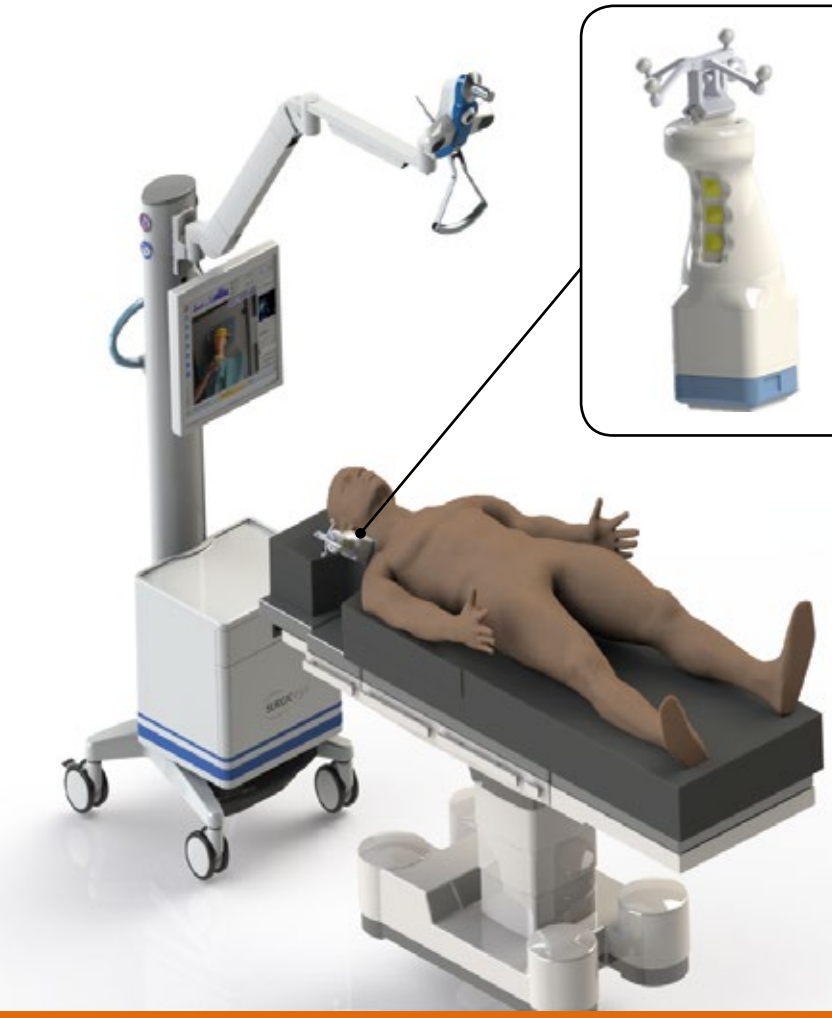
„Hybrid imaging has opened new frontiers for Nuclear Medicine diagnostics and is displacing completely stand-alone PET and SPECT imaging. The introduction of declipse®SPECT Imaging Probe as the first flexible hybrid imaging system is a further break through by making it possible to bring hybrid imaging to every single Nuclear Medicine practice.“

Dr. Martin Freesmeyer
Head of Department of Nuclear Medicine
University Hospital Jena, Germany

declipse®SPECT Imaging Probe

High-resolution 3D SPECT imaging:

The declipse®SPECT Imaging Probe is a highly sensitive handheld gamma detector combined with an optical navigation solution. By scanning around the region of interest, data is captured and used to reconstruct a high-resolution 3D SPECT image. This 3D image is overlayed on a real time video image of the patient or on an ultrasound plane. This enables an intuitive placement of the radioactive lesions/nodules in the context of anatomy and thus an improved differential diagnosis in a one-stop procedure.



Handheld Imaging Probe:

- CZT (CdZnTe)
- Minimal distance to the patient
- 16x16 detector matrix
- 2.5mm x 2.5mm pixels
- 5% energy resolution
- Co-57, I-123, Tc-99m
- LEHR or LEHS collimator

Thyroid diagnostics application

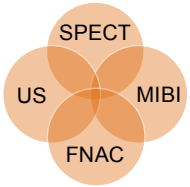
Thyroid nodules are very common. Thyroid cancer is not.
We provide the best tools for thyroid cancer diagnosis to reduce the number of thyroid surgeries.

Dorsal nodules:

Resolve thyroid nodules unseen by planar scintigraphy. Nodules that are covered by healthy thyroid tissue or hot structures cannot be resolved in planar imaging. The depth information provided by the declipse®SPECT Imaging Probe allows resolving deep structures, hidden to conventional imaging.

Multinodular goiter:

The high-resolution and depth information of the declipse®SPECT Imaging Probe provides a precise display of radioactive distribution in the ultrasound plane. This exact matching of nodules in ultrasound and SPECT image data can help you make better decisions by seeing hot and cold areas on your live ultrasound image.



Better differential diagnosis:

The accurate registration of ultrasound and SPECT images allows a better differential diagnosis of thyroid nodules. Ultrasound characteristics like shape, echo, Doppler and elastography can easily be combined with FNAC samples and metabolic information for each nodule individually. The declipse®SPECT Imaging Probe can also be used for MIBI imaging.

Guidance for FNAC and/or MW/HIFU ablation:

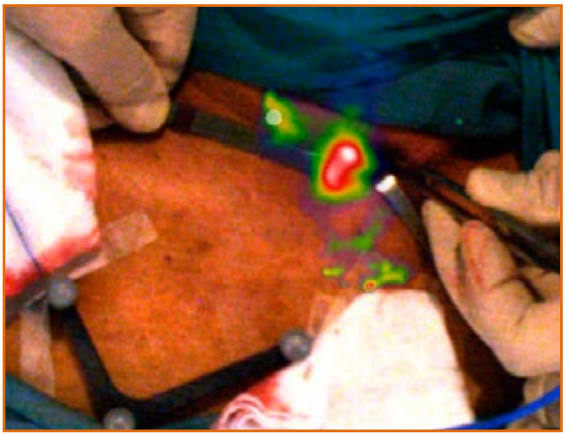
The declipse®SPECT Imaging Probe ultrasound fusion can help you avoid hot structures when performing FNAC and/or MW/HIFU ablation and guide you to suspicious nodules.

Reference:
Freesmeyer M, Opfermann T, Winkens T.: Hybrid Integration of Real-time US and Freehand SPECT: Proof of Concept in Patients with Thyroid Diseases. Radiology. 2014 Jan 16

Further applications

Hyperparathyroidism:

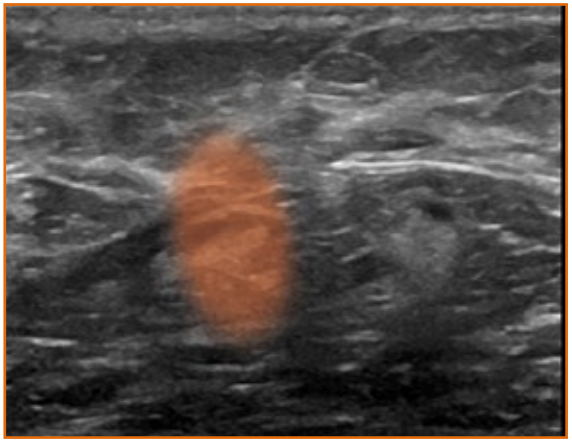
The declipse®SPECT Imaging Probe system can be used for preoperative imaging as well as intraoperative navigation of hyperfunctional parathyroid glands.
In addition to the conventional pre-operative ultrasound examination the fusion of ultrasound and SPECT images can contribute to the differential diagnosis for cases where ultrasound and scintigraphy alone are not conclusive.
Furthermore the declipse®SPECT Imaging Probe can provide a precise localization in the context of anatomy during surgery. This is particular useful in secondary surgeries and in case of ectopic glands.



intraoperative guidance

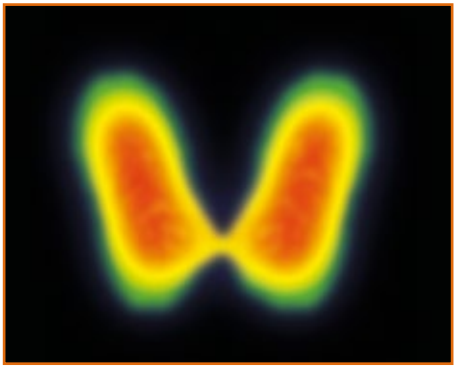
Sentinel lymph node biopsy:

The augmentation of the declipse®SPECT Imaging Probe high-resolution images on ultrasound enables both detailed analysis of the sentinel nodes or an ultrasound-guided needle biopsy. Sentinel lymph nodes can also be imaged in real-time using the live 2D image provided by the handeld imaging probe. Moreover the system can be exended to the full functionality of the declipse®SPECT Open Surgery system providing depth measurements and navigation during surgery.



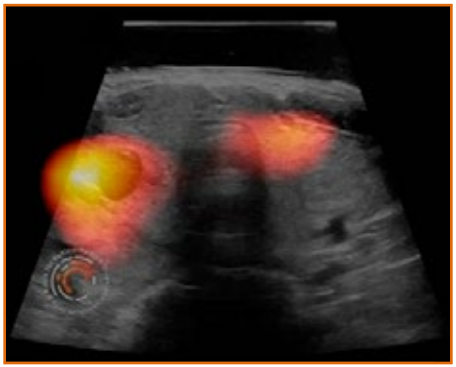
preoperative US fusion

Features to support your routine:



High-resolution 3D SPECT images:

Due to its freehand nature the declipse®SPECT Imaging Probe is capable of scanning directly on the surface which results in an increase in image resolution.

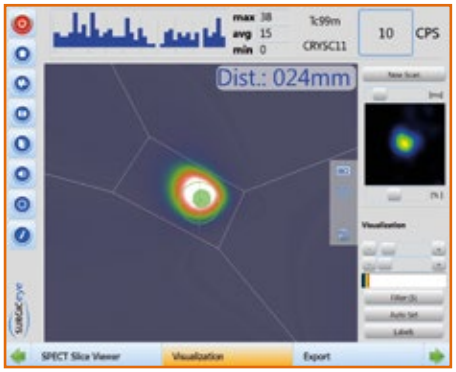


Registration-free ultrasound fusion:

By construction, calibration, and external referencing the SPECT image generated by declipse®SPECT Imaging Probe is co-registered and overlaid on the ultrasound plane without any interaction of the user.

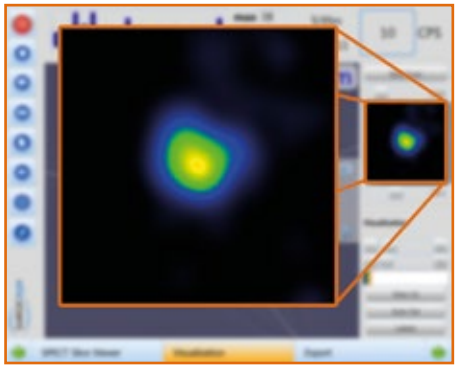
Real-time augmentation on video camera:

For intuitive orientation, the projection of SPECT image is overlaid on a live video image of the patient featuring augmented reality visualization.



Navigation and depth measurements:

The hybrid 3D imaging features metric measurements in the dataset and localization of structures in 3D.



Live 2D image:

Anytime during the SPECT and ultrasound procedures you can view the live 2D image of the handeld gamma detector.

Loading of preoperative SPECT/CT and PET/CT data:

Existing datasets can be loaded and compared as well as registered for visualization, localization and bedside interpretation using the navigation features.

Beyond Molecular Imaging

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declipse®SPECT Imaging Probe
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Recommendations of this flyer are subject to be validated by the user with your national guidelines

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