Voximetry Torch

Dosimetry-Guided Radiopharmaceutical Therapy (RPT) assessment software with GPU-accelerated, full Monte Carlo dose calculation.

https://example.com/1762583716453

Overview

Voximetry Torch is a commercial, FDA 510(k) cleared software solution designed for Dosimetry-Guided Radiopharmaceutical Therapy (DG-RPT) assessment. It moves beyond traditional population-based models to provide personalized, patient-specific treatment planning by calculating absorbed radiation dose to tumors and critical structures.

Key Capabilities and Technology:

At its core, Torch utilizes a proprietary **GPU-accelerated full Monte Carlo (MC) radiation transport algorithm** to perform highly accurate, voxel-based dose calculations in a matter of seconds. This speed and accuracy are crucial for routine clinical use in busy environments.

Automated Workflow: Torch simplifies the complex dosimetry process with an automated, semi-automated, or manual 5-step workflow:

Import Images: Accepts DICOM images (SPECT/CT, PET/CT, RTStruct) and automatically extracts patient/radionuclide data.
Create ROIs: Performs automatic rigid and deformable image registration to align voxels across multiple time points, with tools for manual adjustment.
Integrate Activity: Provides kinetic modeling tools to estimate radiopharmaceutical distribution over time, using the Akaike Information Criterion (AIC) to find the best-fit function.
Calculate Dose: Executes the GPU-accelerated full Monte Carlo dose calculation for all photons and electrons.
Evaluate Dose: Presents results using Dose Volume Histograms (DVHs), ROI dose statistics, and dose cloud visualization, with the ability to export dose volumes as DICOM RT Dose.
Target Users & Use Cases: Torch is intended for clinicians in Nuclear Medicine, Radiation Oncology, and Interventional Radiology departments. Its primary use case is to provide the quantitative imaging biomarker needed to enable personalized RPT treatments for patients indicated for FDA-approved theranostic treatments (e.g., Prostate, Lymphoma, Thyroid, Liver, and Neuroendocrine tumors). The company also offers professional dosimetry services, leveraging the software remotely to minimize the need for in-house staff and capital investment for clinics.

Key Features

- GPU-Accelerated Full Monte Carlo Dose Calculation

- Voxel-Based Dosimetry

- Automated 5-Step Dosimetry Workflow

- Rigid and Deformable Image Registration

- Pharmacokinetic Modeling (Time Integrated Activity)

- Dose Volume Histograms (DVHs) and Dose Cloud Visualization

- DICOM RT Dose Export

Pricing

Model: subscription

Available via a subscription model. The company also offers professional dosimetry services as an alternative to software purchase.

Target Company Size: medium, enterprise

Integrations

Siemens syngo.via Digital Marketplace, Flywheel (for secure data management), DICOM (Import/Export)

Compliance & Certifications

FDA 510(k)