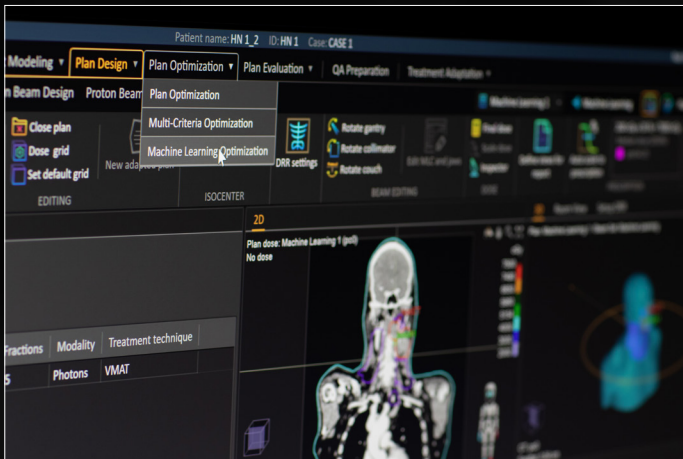


RAYSTATION 8B IS HERE. SEE WHAT'S NEW!

RayStation® 8B* is the latest release of RaySearch's innovative radiation therapy treatment planning system (TPS). RayStation brings many groundbreaking advances, including some highly anticipated automation applications including machine learning and deep learning, the first-ever machine learning applications in a TPS. Other major news in RayStation 8B include a new module for evaluation of robustness of treatment plans and photon Monte Carlo dose.



MACHINE LEARNING

FASTER AND SMARTER TREATMENT PLANNING

RaySearch already has a strong focus on automation and the machine learning features bring this to a new level. Through machine learning, smarter and faster software is created. Automatic treatment plan generation* and deep-learning organ segmentation* are the first applications released in RayStation. These groundbreaking features, developed by RaySearch's in-house machine learning department, and in collaboration with Princess Margaret Cancer Centre in Canada when it comes to the planning application, will help improve efficiency and consistency in the clinic.

AN INDEPENDENT MACHINE LEARNING FRAMEWORK

The machine learning model deployment process is independent from the RayStation version. This means that machine learning models provided by RaySearch will be added continuously and customers won't need to wait for a new release to access them. Clinics will also be able to train their own models for both segmentation and planning as well as share models with other clinics. The nature of machine learning makes it possible to share models without the inclusion of personal data and thus creates unique opportunities of knowledge sharing between cancer centers.

KEY FEATURES

- Generate contours of organs in 45 seconds with deep neural networks models
- Generate personalized treatment plans within minutes
- Benefit from trained models from leading cancer clinics**
- Train your own models**
- Share models with other clinics**

* Subject to regulatory clearance in some markets.

** Not available in RayStation 8B. To be released separately.

GENERAL PLANNING NEWS

ROBUST EVALUATION

In the new dedicated robust evaluation module, you can easily define groups of scenarios based on uncertainties in patient setup and density interpretation of CT and evaluate them simultaneously.

KEY FEATURES

- Evaluate all scenario DVHs simultaneously
- Evaluate clinical goals over all scenarios
- View single scenario doses, as well as aggregated dose measures over all scenarios, e.g. voxelwise minimum or maximum, in the 2D patient views

MONTE CARLO DOSE ENGINE

Improvements for photon planning include a Monte Carlo dose engine.*

The Monte Carlo dose algorithm brings improved accuracy and it utilizes the GPU to enable fast dose computation. The dose for a dual arc VMAT plan can be computed in less than 60 seconds, which is at least one order of magnitude faster than any other system on the market. The Monte Carlo dose engine can be used also during optimization.

DELIVERABLE MCO FOR VMAT

Introduced in this release is the segment-based optimization mode using sliding window VMAT sequencing, where Pareto plans are generated by direct machine parameter optimization. The deliverable plan is created by control point interpolation, leading to a generally high level of agreement between the navigated dose and the dose of the deliverable plan. The new optimization mode is supported for Elekta Agility and Elekta MLCi2.

OTHER NEWS

- Improved auto-modelling of photon beam qualities
- Beam MU rounding will enhance support for LINACs that require MU to be set with a certain number of decimals
- Possibility to export electron plans in a DICOM format directly readable by Mosaicq

*Subject to regulatory clearance in some markets.



PARTICLE THERAPY NEWS

BORON NEUTRON CAPTURE THERAPY

RayStation now supports planning of boron neutron capture therapy (BNCT). BNCT is a unique type of radiation therapy that enables targeting of cancer at the cellular level. RayStation provides tools for specification of planned blood boron concentration, definition of BNCT specific RBE models, and computation of four physical dose components and an RBE dose. BNCT planning in RayStation is developed together with Sumitomo Heavy Industries, Ltd and Neutron Therapeutics, Inc.

MEVION HYPERSCAN, LAYER-BY-LAYER COLLIMATION

RayStation 8B also adds support for collimation of individual energy layers with the Adaptive Aperture™ of the Mevion S250i HYPERSCAN proton therapy system.

OTHER NEWS

- RBE handling for protons, with support for constant factor RBE models
- Improved proton PBS pencil beam subspot parametrization
- Improved handling of minimum spot weight in optimization
- Snout rotation for PBS protons