

RT
IMAGING.
AGILE
WORKFLOWS.

Radiotherapy Imaging Workflow Management

Mirada's radiotherapy software is used in leading radiation oncology centers worldwide to boost efficiency, accuracy and flexibility in therapy planning. Mirada's RTx™ and Workflow Box™ bring new levels of functionality, speed, precision and automation to the demanding therapy planning process. Mirada RT software is vendor-neutral and fits right in your current workflow regardless of the type of data and TPS.

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"Technology is a major part of our treatment and workflow improvement strategy. We chose Mirada because their contouring solution allows us the flexibility to push boundaries in research whilst using robust workflows we can trust in a clinical setting as well. With growing patient numbers and treatment complexity, increasing efficiency and flexibility whilst improving quality and precision has become imperative."

Dr. Peter Remeijer

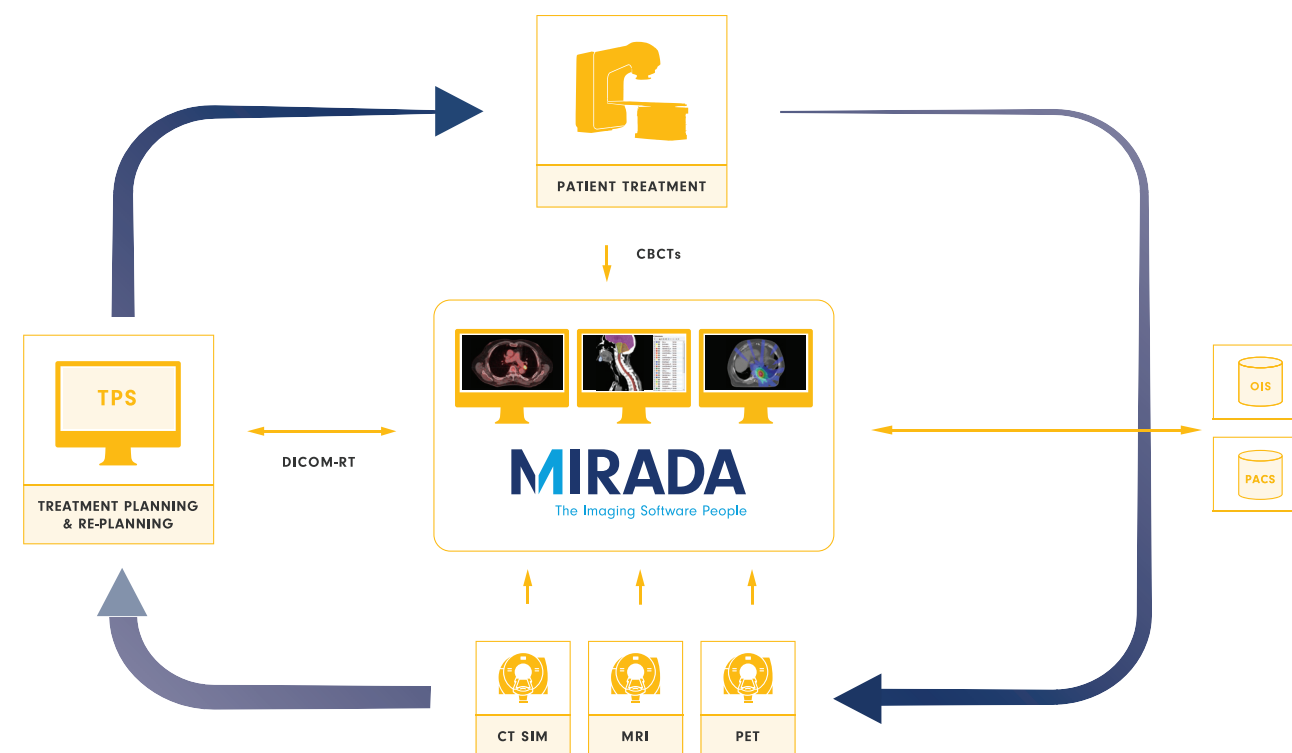
Dutch Cancer Institute
Antoni Van Leeuwen NKI

Adaptive Therapy Assessment

- Propagation of plans to daily cone beam CT
- Assessment of changes across fractions
- Quantified analysis for response assessment tracking

Retreatment Planning

- Dose deformation and accumulation
- Combine external beam and brachy plans
- DVH analysis
- Automated re-contouring



Patient Data Management

- DICOM and DICOM-RT storage
- DICOM query/retrieve
- User-friendly patient browsing
- MDT / tumor board case review

Organs-at-Risk Contouring

- Multi-atlas contouring
- Batch processing
- Customizable libraries

Image Registration

- Rigid and deformable fusion
- Anatomically plausible deformations
- Registration QA

Target Volume Contouring

- Contour on multiple imaging modalities
- Contour in any plane
- Contour on original acquisition images

“We have chosen Mirada as a partner to bring efficiency gains across all our sites with their automated contouring solutions, and to support the implementation of complex treatment protocols thanks to their multimodality image fusion platform. The flexibility of their software will facilitate the implementation in the existing clinical workflows of our different sites”

Farid Goudjil
Institut Curie, France

Efficiency

Mirada radiation therapy software helps increase efficiency for therapy protocols that require comprehensive imaging to aid planning.

Image Registration

With full automation, or as part of an interactive workflow, Mirada’s multi-modal image registration can match anatomical, functional and 4D imaging. Both rigid and deformable registration can be applied globally or to a user-defined region of interest. Finally, qualitative and quantitative options for checking the registration’s accuracy complete the registration workflow.

Target Volume Contouring

Building on the feedback from radiation oncologists over the last decade, Mirada’s applications provide radical time savings through patented workflows that are optimized for the contouring process. Image fusion allows you to perform contouring on multiple image modalities simultaneously, taking advantage of whichever provides the most useful information. Additionally, contouring can take place in any plane on any modality, whether oblique or aligned with the patient axes, and takes place in real-time across all modalities. 2D, 3D and 4D automated or semi-automated tools for contouring then remove the need to draw every contour by hand.

Organs-at-Risk Contouring

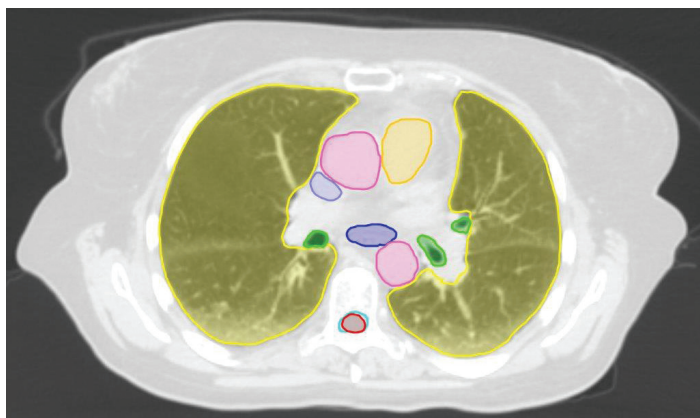
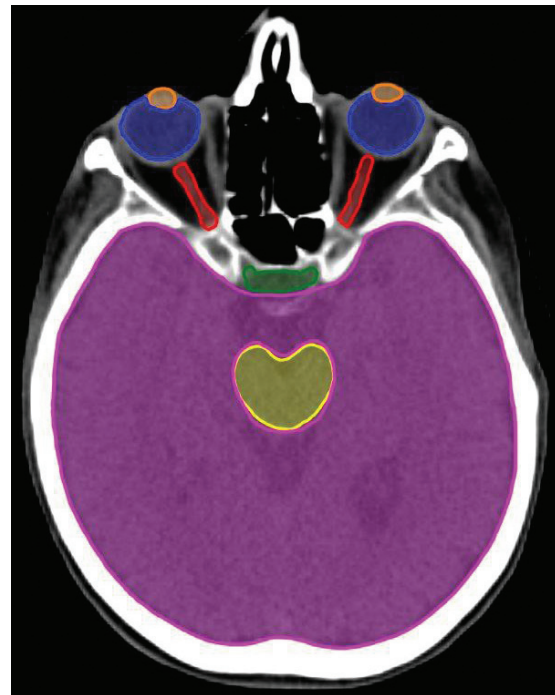
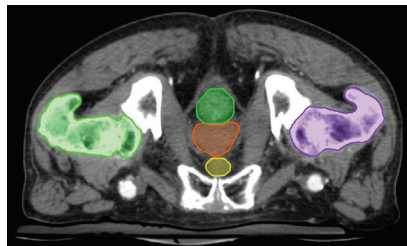
Workflow Box™ is radically different to traditional auto-contouring solutions, offering Zero-Click Contouring™ of organs-at-risk in addition to Mirada’s highly efficient, interactive contouring tools. By automatically contouring critical organs, WorkflowBox allows you to arrive at your workstation with a significant part of treatment planning already taken care of. Further, you can add cases to WorkflowBox’s library so that it can learn your contouring preferences.

Adaptive Therapy Assessment

Deciding, using a day of treatment cone beam CT (CBCT), whether a new treatment plan is required is usually a time-consuming process. With single-click propagation of structures and dose from a planning CT to any number of day of treatment CBCTs, RTx makes your assessment of treatment progress significantly quicker. Alongside registration and propagation, built-in response assessment tracking provides quantified analysis of dose coverage to support response-based adaptation and research protocols.

Retreatment Planning

By adapting previously drawn contours to a new planning CT, RTx dramatically reduces the effort of re-contouring organs-at-risk. This is then complemented by a single-click function that combines the previously delivered dose with the currently planned dose to assess the suitability of the updated treatment plan.



Accuracy

Mirada's multi-modal image registration technology enables accurate, precise and anatomically plausible registrations. The results add to exceptional treatment plans for your patients.

Deformable Image Registration (DIR)

Mirada's multi-modal image registration technology produces accurate, precise and anatomically plausible registrations. The results help to achieve exceptional treatment plans for your patients. Mirada's multi-modal deformable image registration engine is the result of almost two decades of scientific research and optimization based on clinical experience. By using a library of algorithms, registration is tailored by modality, ensuring accurate contouring and dose deformation and summation. A highly optimized derivative of optic flow is used to register CT scans to one another, whereas the algorithms for multi-modality registration use a mutual information approach, optimized for specific modality combinations.

Target Volume Contouring

Mirada's focus on image registration over the last two decades has led to one of the best image matching technologies for radiation oncology¹. It is through highly accurate registrations that Mirada allows you to easily take advantage of one modality while contouring on another.

"Multi-modality deformable registration is important to us as is CT-CT registration for dose warping; we thoroughly evaluated all the DIR options before purchasing Mirada."

John Fan, PHD

Edward Cancer Centre—Naperville, IL,
United States

Organs-at-Risk Contouring

The combination of Mirada's deformable image registration engine and its true multi-atlas technology provides industry leading accuracy for auto-contouring, including robustness to variations in patient anatomy. With Mirada, you can easily add your own cases to the atlas library so that the application can learn your contouring preferences.

Dose Deformation and Summation

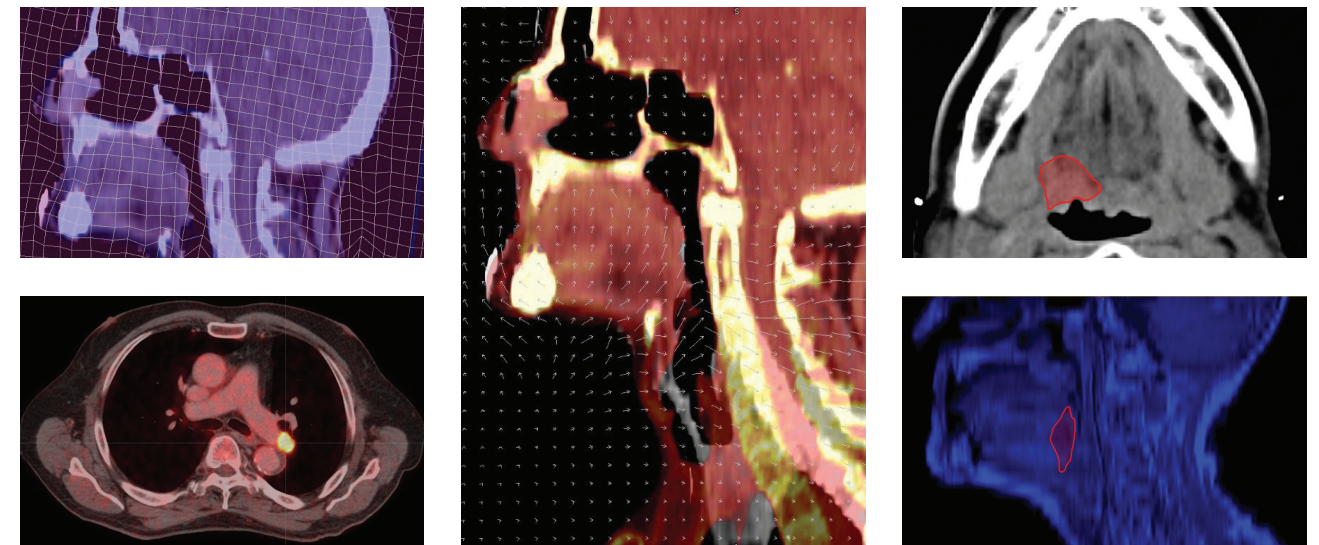
Assessing dose plans across time-points for adaptive therapy or re-treatment planning requires a registration algorithm that offers anatomically plausible deformations in low contrast regions. Mirada's deformable image registration engine uses a highly-optimized derivative of the optic flow approach, which is stable in such regions. Mirada RTx offers the deformation grid tools required to assess the deformation to ensure that the quality of the deformation is suitable for dose summation.

"We have chosen Mirada as strategic partner to develop multimodality imaging solutions because of the quality of their software, allowing rapid translation of novel techniques into our clinic while also providing the possibility to efficiently integrate workflows for the different treatment techniques that are available at our site"

Professor Marcel Van Herk

The Christie NHS Foundation Trust

1. Mirada registration was measured to be twice as accurate compared to other commercial systems, for cases where comparative results were available (Source: Validation of Mirada's CT Deformable Image Registration, mm4430-0)



Agility

Mirada's applications fit smoothly with your existing workflows, and we'll help you personalize your setup to suit your preferences.

Vendor Neutral Fit

All Mirada's radiotherapy applications are vendor-neutral, fitting easily into existing treatment planning workflows.

Scripting and Automation

Mirada offers comprehensive scripting and protocol templates that can be customized by users. These scripts can then be run with a single click, as can unlimited undo and redo steps. A range of automated and semi-automated tools then add to the efficiency gains already provided by Mirada's RTx application.

Customizable User Interface

Mirada RTx can be customized to help radiation oncologists contour target volumes in the quickest and most efficient way possible. While Mirada's RTx comes with default settings, you can fully customize the user interface, create standard report templates, and re-use existing hotkeys and layouts from your TPS, VSim, or other systems in the treatment planning process.

Patient Data Management and Unlimited Storage

Mirada's DBx database software provides a flexible, scalable and easy-to-use solution to manage treatment-planning-specific data. It offers storage management for all imaging and DICOM-RT data and allows query/retrieve of data from any DICOM location, be it a TPS, PACS or scanner. DBx also offers an intuitive user interface with which to browse patient data, view DICOM tags and anonymize patient data.

Service and Upgrades

Mirada Medical is committed to providing world-class customer service. We offer a dedicated telephone support line, as well as an email option to keep you in touch with our support staff. We are committed to providing you with rapid feedback to your enquiries. Our team of experienced clinical and technical specialists work together and will deal with you directly to ensure that you receive a swift resolution to any enquiry. Updates are routinely provided at no cost to our service customers to ensure you always have access to the latest products and features.

Training

We appreciate how important good training is in enabling you to make the most of your investment. Mirada's team of experienced training staff is available for on-site or remote training and will tailor a training package to suit your institution's needs and ensure all your staff are given comprehensive training.

"Mirada RTx has become an indispensable part of the treatment preparation workflow in our clinic. The software provides us with a ton of options for image registration and contouring, in a user-friendly environment which enables you to generate your own layouts and macros. Mirada employees are very communicative and helpful, offering support via online meetings when necessary. During live visits, they dive into our clinical workflows to be able to adapt the software to our specific needs."

Ellen Brunenberg

Department of Radiation Oncology, Radboudumc, Nijmegen,
The Netherlands

mirada-medical.com

Worldwide Headquarters

Mirada Medical Ltd.
Oxford Centre for Innovation
New Road, Oxford, OX1 1BY
United Kingdom

info@mirada-medical.com
+44 (0)1865 261410

USA Office

Mirada Medical USA, Inc.
999 18th Street, 2230S,
Denver, CO 80202
USA

info@mirada-medical.com
877.872.2617