

## ECLIPSE TREATMENT PLANNING SYSTEM FEATURE SHEET

The rich functionality and efficiency of the Eclipse™ treatment planning system helps simplify modern radiation therapy planning for all standard treatment modalities, including 3D conformal, volumetric modulated arc therapy (VMAT), brachytherapy, electron and proton therapy. Eclipse allows clinicians to efficiently create and verify the best treatment plans for their patients.

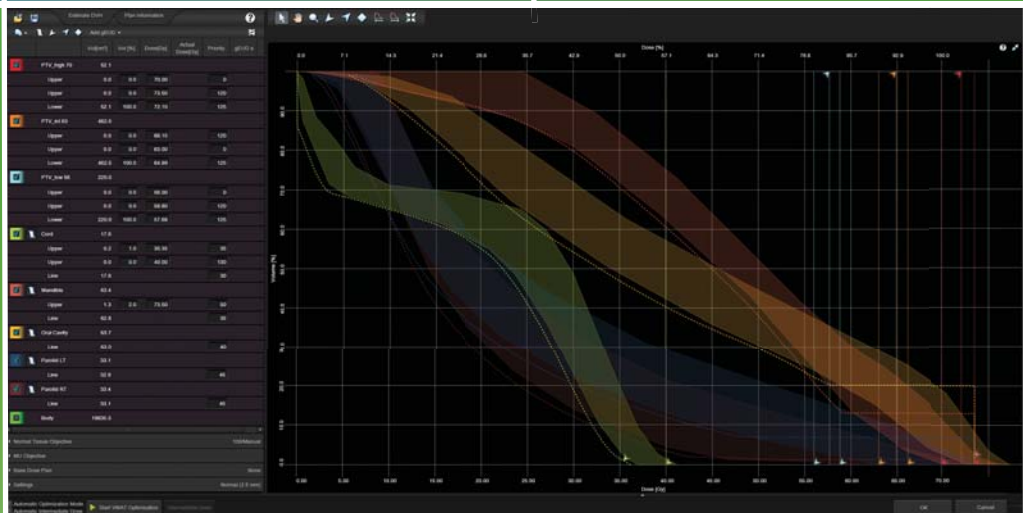
### Quality

#### KEY FEATURES OF ECLIPSE INCLUDE:

- RapidPlan™ knowledge-based planning\*
- RapidArc® radiotherapy technology volumetric arc planning\*
- SmartSegmentation® knowledge-based contouring\*
- SmartAdapt\*
- DVH-based plan converter\*
- Brachytherapy\*
- Proton planning\*

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Contact your Varian representative to discuss these and other key features of Eclipse.  
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### Consistency



DVH estimate for a three-target PTV of the pharynx.

RapidPlan knowledge-based planning provides innovative software that helps you leverage existing clinical knowledge to create quality plans, quickly and consistently.

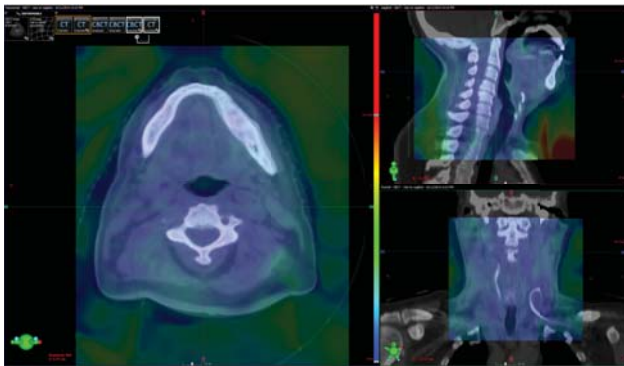
# FEATURES

## Contouring

- SmartSegmentation knowledge-based contouring
- Auto SUV contouring
- Auto lung tumor segmentation
- Multi-modality contouring
- 4D dataset support
- Advanced Boolean operations
- MIP, AIP, and minIP image creation

## Image registration

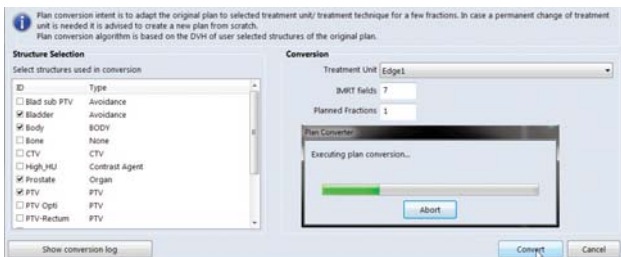
- CT, MRI, CBCT, and PET registration support
- SmartAdapt deformable registration software



CT to CBCT deformable registration for adaptive planning.

## Planning

- 2D, 3D, 4D, and electron planning
- Composite planning
- Field in field and forward planning techniques
- Compensator planning support
- DVH-based plan converter
- Beam angle optimization
- Conformal optimization



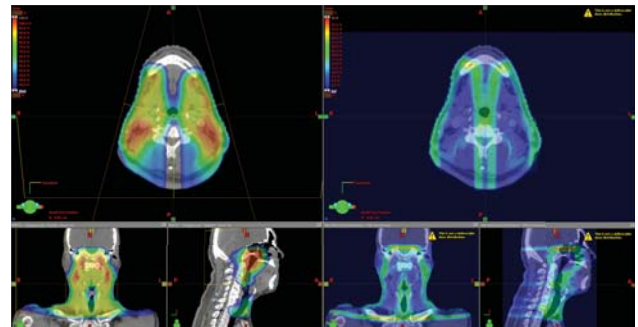
DVH-based plan converter minimizes the impact on patients and clinical resources when a treatment unit unexpectedly goes off line. A new plan can be quickly created based on the DVH of the originally approved plan, saving time and the need for patients to miss treatments.

## Advanced planning

- RapidPlan knowledge-based planning
- RapidArc with multi-arc capabilities
- Intensity-modulated radiation therapy (IMRT) utilizing sliding window, large field, and step-and-shoot techniques
- Multi-vendor volumetric modulated arc therapy (VMAT) and IMRT planning
- Plan robustness evaluation
- Biological optimization
- Conformal arc planning

## Proton planning

- Intensity-modulated proton therapy (IMPT) proven technology, multi- and single-field optimization
- Double/single scattering and ocular algorithm support
- Robust evaluation
- Spot list editor and non-linear universal proton optimizer



The Max-Min dose evaluation window used to evaluate the robustness of an IMPT plan. The left image displays the reference IMPT plan, and the right image indicates the Max-Min dose evaluation. The blue color wash designates the robust dose distribution, and the green to red color wash represents the uncertainty region for the initial dose distribution.

## Plan evaluation

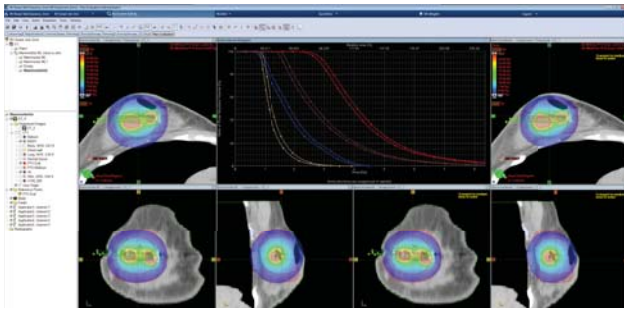
- Side-by-side plan comparison
- Multi-structure, multi-plan DVH comparison
- Plan summation/subtraction for brachy and external beam plans
- Multiple planning modality comparison
- Biological evaluation
- Electronic plan approval

## Brachytherapy

- HDR, LDR, and PDR supported
- Film and 3D image-based planning
- TG-43 compliant, all isotopes supported
- TG-186 compliant for Varian sources (Acuros® BV advanced dose calculation)
- Plan templates and clinical protocols
- Solid applicator library\*\*
- Automatic catheter extraction from 3D data sets
- Manual (Dose Shaper™ graphical interactive optimization) and automatic (AVOL) dose optimization

## Dose calculation

- Distributed processing with parallel calculation of fields, dynamic arc control points, and Monte Carlo batches
- Acuros® XB advanced dose calculation algorithm for Monte Carlo equivalent photon calculations
- Acuros® BV advanced dose calculation algorithm for Monte Carlo equivalent brachy calculations
- Anisotropic Analytical Algorithm (AAA) dose calculation
- Electron Monte Carlo



Using Acuros BV calculations with a BrachyVision™ plan offers Monte Carlo-like accuracy in a clinically acceptable amount of time.

## Physics

- Automated process based on measured data
- Comparison tools as recommended by TG-53
- Electronic data approval

## Quality Assurance

- Portal Dosimetry calculation for RapidArc and IMRT fields on PortalVision™ MV imaging system
- Verification plans for water tanks or phantoms
- Water equivalent depth/distance measurement
- Pre-configured data for Portal Dosimetry algorithm configuration\*\*\*

## Scripting Application Programming Interface (API)

- C# scripting access to plans, DVH engine, dose, structure sets, image data, and voxels
- Eclipse scripting API for research users to automate planning, script dose calculations, optimization, and DVH estimation
- API research support
- Develop dose calculation and optimization algorithms

## Standardizing and streamlining workflow

- Clinical protocols
- Optimization objective templates
- Planning templates

## Connectivity

- Elekta linear accelerator support
- Siemens® linear accelerator support
- IBA proton treatment support
- Sumitomo proton treatment support
- Mevion proton treatment support
- Hitachi proton treatment support
- IHE-RO compliant
- RTOG Digital Imaging and Communications in Medicine (DICOM) export



Eclipse adheres to DICOM communication protocols for data transfer. Using the DICOM export feature in Eclipse, the clinician can quickly export images, DICOM RT structures, dose, and plan information to other DICOM-compliant systems. The user-friendly interface provides details on the type and number of files exported to allow easier troubleshooting should a particular item fail to export.

OPTIONS MATRIX	ADVANCED PLANNER DESKTOP	PLANNER DESKTOP	PHYSICIAN'S DESKTOP
Eclipse Database License	•	•	•
Standard Planning Software	•	•	•
2D & 3D Photon Dose Calculation	•	•	N/A
3D Proton Dose Calculation	0	0	N/A
4D Planning & Image Support	•	•	•
2D Brachytherapy Dose Calculation	•	•	N/A
3D Brachytherapy Dose Calculation	•	0	N/A
RapidPlan knowledge-based planning	0	0	N/A
Conformal Arc Planning	•	0	N/A
IMRT Planning	•	0	N/A
RapidArc Planning	0	0	N/A
Elekta Volumetric Modulated Arc Therapy (VMAT)	0	0	N/A
Siemens mArc	0	0	N/A
Biological Optimization	0	0	N/A
Biological Evaluation	0	0	0
Conformal Optimization	0	0	N/A
SmartSegmentation Knowledge-Based Contouring	0	0	0
SmartAdapt	0	0	0
DVH-based Plan Converter	0	0	N/A
Portal Dose Calculation	0	0	N/A
Electron Monte Carlo	•	•	N/A
Acuros XB Advanced Dose Calculation	0	0	N/A
Acuros BV Advanced Dose Calculation	0	0	N/A
Eclipse Scripting API	•	•	•
DICOM RT/ DICOM Print	•	•	•
	•	0	N/A
	Standard Feature	Purchasable Options	Not Available

\* Purchasable options within the Eclipse treatment planning system

\*\*\* Not available for all linear accelerators

\*\* Includes most rigid Varian applicators

Not all features or options are available in all markets.

### Intended Use Summary

The Eclipse treatment planning system (Eclipse TPS) is used to plan radiotherapy treatments for patients with malignant or benign diseases. Eclipse TPS is used to plan external beam irradiation with photon, electron and proton beams, as well as for brachytherapy treatments. In addition, the Eclipse Proton Eye algorithm is specifically indicated for planning proton treatment of neoplasms of the eye. Eclipse should only be used by qualified medical professionals.

RapidPlan knowledge-based planning and its models are not intended to replace clinical decisions, provide medical advice or endorse any particular radiation plan or treatment procedure. The patient's medical professionals are solely responsible for and must rely on their professional clinical judgment when deciding how to plan and provide radiation therapy.

SmartSegmentation® knowledge-based contouring provides a combined atlas and model-based approach for automated and manual segmentation of structures including target volumes and organs at risk to support the radiation therapy treatment planning process.

The specific expert cases, commentary, and other information provided here are intended to provide scientific background and informative examples, and are not intended to provide medical advice or an endorsement of any particular radiation contouring or treatment procedure. The radiation oncology healthcare team is solely responsible for deciding whether a patient is a candidate for radiation therapy and how to provide and contour radiation therapy.

### Safety

Radiation treatments may cause side effects, which, in some cases, may be serious. Severity can vary depending on the part of the body being treated. Side effects are related to the type of treatments delivered and should be discussed between the clinician and the patient.



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