Eclipse Feature Sheet

Innovative features streamline the treatment planning process so you can focus on what matters most—improving outcomes.

HyperArc™ high-definition radiation therapy introduces key technology and workflow features designed to enable more clinics to deliver stereotactic radiosurgery (SRS).

Continued enhancements are the result of Varian’s ongoing commitment to develop our technologies and remain a leader in oncology solutions. This drive toward excellence is reflected in Varian’s history of innovation and is a key component of our evolution.

Key features at a glance

- HyperArc™ high-definition radiation therapy*
- RapidPlan™ knowledge-based planning*
- Eclipse multi-criteria optimization (MCO)*
- RapidArc® radiotherapy technology volumetric arc planning*
- SmartSegmentation® knowledge-based contouring*
- DVH-based plan converter*
- Brachytherapy*
- Proton planning*

Contact your Varian representative to discuss these and other key features of Eclipse.
Key Features

Planning
• 2D, 3D, 4D, brachytherapy and electron planning
• Composite planning
• Field-in-field and forward planning techniques
• Compensator planning support
• DVH-based plan converter

Advanced planning
• HyperArc planning
• RapidPlan knowledge-based planning
• Eclipse multi-criteria optimization (MCO)
• RapidArc
• Halcyon™ system planning
• Intensity-modulated radiation therapy
• 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)
• Robust optimization
• Field-specific target
• Double/single scattering and ocular algorithm support
• Spot list editor and non-linear universal proton optimizer

Brachytherapy
• HDR, LDR, and PDR supported
• Film and 3D image-based planning
• TG-43 compliant
• 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

Contouring
• SmartSegmentation® knowledge-based contouring
• Auto SUV contouring
• Auto lung tumor segmentation
• Multi-modality contouring
• 4D dataset support
• MIP, AIP, and minIP image creation

Image registration
• Rigid and deformable image registration
• CT, MRI, CBCT, and PET registration support
• Divergence, Curl and Jacobian determinant registration evaluation tools

ADVANCED PLANNING. Multi-criteria optimization can be utilized to explore and visually evaluate the trade-offs between target coverage and healthy tissue sparing when different clinical criteria are varied for IMRT, VMAT and HyperArc plans.

PROTON PLANNING. 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.
Key Features

Dose calculation
- Acuros® XB advanced dose calculation algorithm for Monte Carlo equivalent photon dose calculation*
- Acuros® PT advanced dose calculation algorithm for Monte Carlo equivalent proton dose calculation*
- Acuros BV advanced dose calculation algorithm for Monte Carlo equivalent brachytherapy calculations*
- Graphics processing unit (GPU) enabled dose calculation
- Anisotropic analytical algorithm (AAA) dose calculation
- Electron Monte Carlo (eMC)
- Photon optimizer (PO) for IMRT and VMAT

Standardizing and streamlining workflow
- RapidPlan knowledge-based planning
- SmartSegmentation knowledge-based contouring
- Clinical protocols
- Optimization objective templates
- Planning templates

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‡

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

Scripting Application Programming Interface (API)
- C# scripting access to plans, DVH, dose, plans, structure sets, and image data
- Automate planning, dose calculation, optimization, and DVH estimation
- Visual scripting for easy script creation
- API research support
- Develop dose calculation and optimization algorithms

Connectivity
- Elekta linear accelerator support
- Siemens linear accelerator support
- Hitachi linear accelerator support
- IBA proton treatment support
- Sumitomo proton treatment support
- Mevion proton treatment support
- IHE-RO compliant
- RTOG Digital Imaging and Communication in Medicine (DICOM) export
<table>
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<th>Planner Desktop</th>
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* Purchasable options within the Eclipse treatment planning system
† Includes most rigid Varian applicators
‡ Not available for all linear accelerators

Specifications and prerequisites are subject to change without notice. Not all features, products 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. 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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