### Eclipse™ Treatment Planning System

#### New Features and Enhancements for Versions 13 and 13.5

<table>
<thead>
<tr>
<th>Standard</th>
<th>New Feature/Enhancement Description</th>
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| **Planning Enhancements** | New optimization user interface adds additional feature support with intensity-modulated radiation therapy (IMRT) and RapidArc® planning  
• Dose displayed on orthogonal plane during optimization  
• Support for gEUD objectives  
• Siemens mARC support |
|                   | Plan uncertainty parameters evaluation tool  
• Calculate impact of patient setup error, target motion, or calibration curve error on dose to target and organs at risk |
|                   | Phantom creation tool allows easy generation of box or cylinder phantoms for plan QA. |
|                   | Support for Calypso® compatible Qfix™ kVue™ couchtop |
|                   | Expanded support for Siemens linacs  
• mARC VMAT planning (burst mode only)  
• Unflat (UF) planning support  
• TT-A couch support |
|                   | Support for Elekta Agility™ 160 MLC |
| **Contouring Enhancements** | Controlled structure terminology  
• Consistent nomenclature for all regions of interest (ROIs)  
• Enables effective data mining and exchange of knowledge models |
|                   | New contouring workspace  
• Consistent contouring tools across all contouring and registration modules  
• Automatic interpolation and extrapolation  
• Supports contouring on rotated planes  
• Supports contouring on non-axial images |
|                   | Enhanced 4D image support  
• Ability to create MIP, AvelP, and MiniP from 4D dataset  
• Accumulation of structures to create ITV  
• 4D movie in contouring and external beam  
• 4D structure propagation  
  - Rigid – Standard  
  - Deformable – SmartSegmentation™ knowledge-based contouring or SmartAdapt contouring and deformable registration required  
• Ability to import and view respiratory amplitude distribution  
• 4D volume statistic for evaluation of center of mass and volume changes |
|                   | Anatomy atlas available in contouring (SmartSegmentation knowledge-based contouring required) |
|                   | New Calypso® beacon detection tool |
| **SmartSegmentation Enhancements** | New user interface  
• Improved search options  
• Ability to select different segmentation algorithms  
• Similarity score indicating best possible match between clinical case and expert case |
|                   | Additional atlas cases  
• Lung, rectum, prone breast, nasopharynx, tonsil, base of tongue, hypopharynx, larynx |
|                   | New lung tumor semi-automatic segmentation tool  
• Quickly creates 3D volumetric contour |
| Algorithm Enhancements | Acuros® XB advanced dose calculation improvements  
• Out of field dose calculation improvements  
• Gold material support  
• FFF support for Siemens  

AAA improvements  
• Flattening filter free (FFF) support for Siemens  
• Support of point dose calculation  

Acuros® BV advanced dose calculation enhancements  
• Supports TG-186 guidelines  
• TG-186 compliant for Varian sources  
• View absorbed dose as to material or water  

Photon optimizer  
• Automatic normal tissue objective (NTO) is now supported for static gantry IMRT optimization  
• Mean dose objectives are now supported for static gantry IMRT  
• Improved method for calculating fluence gradient in static field IMRT improves optimization of plans with opposing beams  

Proton Enhancements | New optimizer – nonlinear proton optimizer (NUPO)  
• Reduces startup and total optimization times  
• Supports adding objectives during optimization  
• Basic machine limits are accounted for during optimization  
• Support for line scanning sub-technique  

Proton convolution superposition (PCS)  
• Support for MLC layer stacking on Sumitomo machines  
• Support for uniform scanning sub-technique for Sumitomo beam lines  
• Support for modulated scanning sub-techniques for Sumitomo beam lines  
• Support for dose calculation for modulated scanning fields with an aperture  

API Scripting Enhancements | APIs expanded to contouring, registration, SmartAdapt, and portal dosimetry workspaces  

Enhanced Eclipse™ scripting API for research users  
• Write access to structures and plans  
• Run dose calculation  
• Script the optimizer  
• Calculate dose volume histogram (DVH) estimates  
• Script VMAT optimization  
• Script the new photon optimizer with new mean dose and gEUD optimization objectives  

Access to DVH estimates with Eclipse scripting API  

General | Portal dose calculation (PDC) supports a 43 x 43 imager  

Purchasable Option | New Feature/Enhancement Description  
RapidPlan™ Knowledge-based Planning | Provides the clinician with the ability to use the dose and patient anatomy information from their database of previously treated patients to create models that reflect preferred treatment methodologies and protocols.  

Specifications are subject to change without notice. Not all features or products are available in all markets.