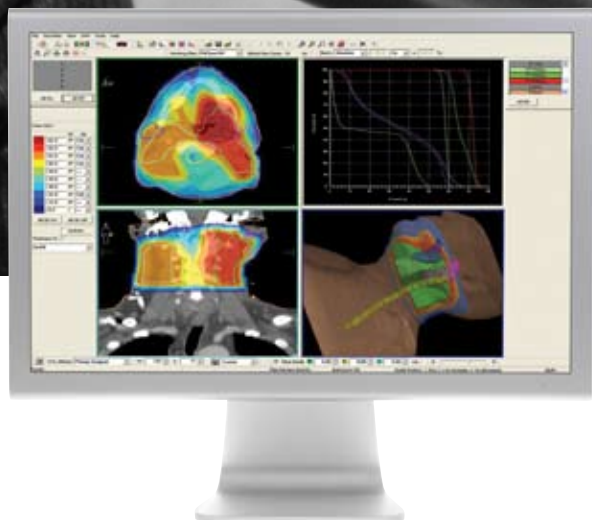


# Monaco<sup>®</sup>

STATE-OF-THE-ART PLANNING  
**STATE-OF-THE-ART PLANNING**



# Leading the Way...

## ...to better IMRT

The practice of IMRT has brought some challenges to your clinical team's time. Trial and error in IMRT treatment planning can devour time and energy. Fortunately, there is a new, more advanced way to master the art of creating inverse planning of IMRT plans.

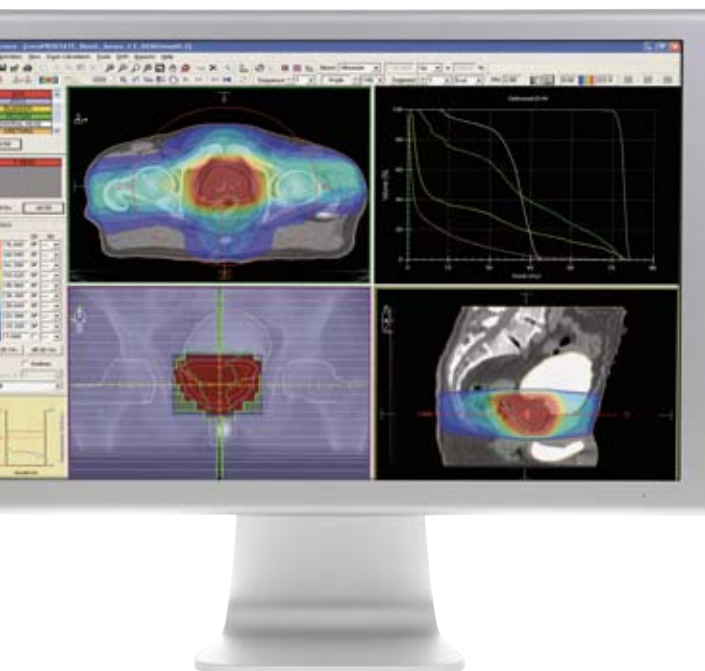
Monaco represents a fundamentally new approach to IMRT planning that brings innovative treatment planning concepts to the clinic. These concepts provide a unique approach and sophisticated set of tools to make planning easier, reproducible and clinically reliable. The result gives clinicians the power to provide a higher standard of patient care.

Monaco features innovative biological cost functions with multi-criterial constrained optimization, a powerful leaf-sequence optimizer, a robust Monte Carlo dose calculation algorithm included within the optimization and advanced optimization evaluation tools. This is the most advanced IMRT planning solution available today.

Monaco can also be used effectively in any clinical environment. As a vendor neutral IMRT planning platform, Monaco supports all major linear accelerators and connects to any information system (Record and Verify), including the Elekta Impac Software MOSAIQ® Electronic Medical Record.

Monaco includes the core features of the Focal platform and integrates with advanced multi-modality image fusion, segmentation and contouring, virtual simulation and plan review capabilities. With Monaco you have the state-of-the-art for IMRT planning.

## ...to new treatment technologies



With the addition of VMAT (Volumetric Modulated Arc Therapy) functionality, Monaco can optimize single or multiple non-coplanar arcs simultaneously, providing the flexibility and control needed for more complex treatment plans. Arc plans can be delivered with a single button push at the linear accelerator console. Gantry directions are automatically sorted, and all control points are seamlessly integrated into a single deliverable arc sequence.

Only Monaco offers the accurate XVMC Monte Carlo dose engine for a continuous arc calculation as a single beam, instead of being limited to dose approximations that occur with a large number of discrete (control point) gantry angle positions. Monaco supports comparison of segmental IMRT with VMAT plans to choose the most appropriate for every patient.

# VMAT

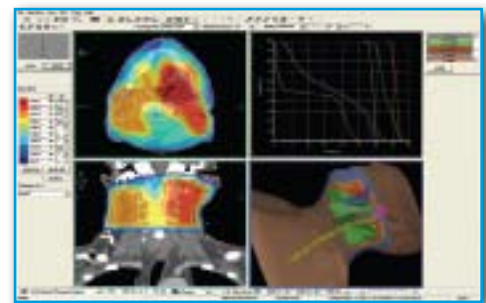


## Bring Monaco into your clinical practice



Our treatment planning software is enabling the practice of evidence-based medicine. Uniquely, we improve clinical efficiency by optimizing treatment planning and workflow processes, redefining the management of information to enhance personalized patient care.

- Increase Productivity
- Enhance Accuracy
- Experience Simplicity
- Improve Flexibility
- Utilize Connectivity



### ► Constrained Optimization

Constrained optimization ensures that the prescribed dose limits on Organs At Risk (OARs) and target overdose will be satisfied after optimization. A change in any one of the constraints in the Monaco prescription does not effect the other normal tissue constraints, only the dose to target(s). The prescription also allows for enhanced voxel controls to guide dose gradients between structures making further “technical” volumes unnecessary.



### ► Monte Carlo dose engine

Monaco uses a fast pencil beam dose engine during “ideal” fluence optimization that was created specifically for IMRT. The XVMC Monte Carlo dose engine – a unique feature - is used during the segment shape and weight optimization phase –Monte Carlo is the most accurate dose calculation currently available.



# A Reliable Partnership Produces an Innovative Product

Monaco originated from a collaboration between Elekta CMS Software and the Eberhard Karls University of Tuebingen (UKT) in Germany to commercialize the Hyperion project. The result is an advanced, IMRT planning system backed by the innovative research capabilities of a leading European University.

The collaboration continues to evolve and now includes support for VMAT and research into other emerging technologies.



## Solutions for IMRT Challenges

**Monaco offers solutions to these problems for the first time in radiation therapy:**

- Repetitive trial-and-error methods for determining the optimal plan
- Time and resource intensive processes to IMRT planning
- Multiple variables to manage the planning process including patient data, contours, and the optimization itself
- A generally non-intuitive IMRT planning process
- A lack of control over the “black box” optimization process

# Personalized Services

## *Beyond Standard Support*

Elekta CMS Software employ the largest, full-time staff of dedicated Radiation Treatment Planning professionals in the industry in the fields of research & development, and customer support. Our Physics Services for beam data modeling will enhance the Monaco user experience and create efficiencies in moving to clinical use status.

**When you select our solutions, you gain access to our entire team:**

- PhD and MS physicists
- PhD mathematicians
- CMDs and RTTs
- Professional software and hardware engineers

**Support activities include:**

- Global live and Web-Support
- Customer training conducted from RT professionals

### **Americas**

1.800.878.4CMS (4267)  
support@cmsrtp.com

### **Australia / New Zealand**

+61-2-9209-4507  
callcenter-australia@cmsrtp.com

### **China / Pacific Rim**

+86-215058-1041  
callcenter-china@cmsrtp.com

### **Europe / Middle East / Africa**

+49-761-88188-0  
callcenter-europe@cmsrtp.com

### **Japan**

+81-120-009-198  
callcenter-japan@cmsrtp.com

[www.cmsrtp.com](http://www.cmsrtp.com)

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**Corporate Head Office:**

Elekta AB (publ)  
Box 7593, SE-103 93 Stockholm, Sweden  
Tel +46 8 587 254 00  
Fax +46 8 587 255 00  
[info@elekta.com](mailto:info@elekta.com)

**Regional Sales, Marketing and Service:**

**North America**  
Atlanta, USA  
Tel +1 770 300 9725  
Fax +1 770 448 6338  
[info.america@elekta.com](mailto:info.america@elekta.com)

**Europe, Latin America,  
Africa, Middle East & India**  
Tel +44 1293 544 422  
Fax +44 1293 654 321  
[info.europe@elekta.com](mailto:info.europe@elekta.com)

**Asia Pacific**  
Hong Kong, China  
Tel +852 2891 2208  
Fax +852 2575 7133  
[info.asia@elekta.com](mailto:info.asia@elekta.com)

