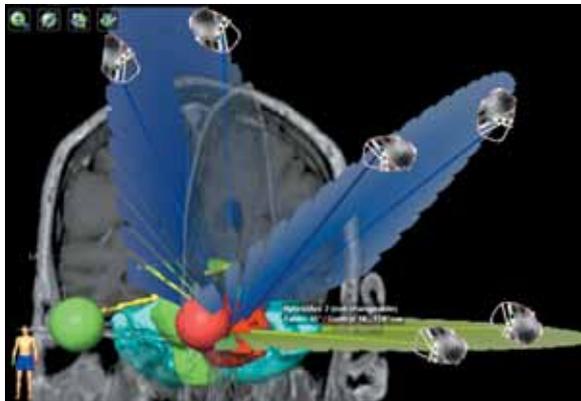


# HYBRIDARC<sup>TM</sup> RADIO SURGERY

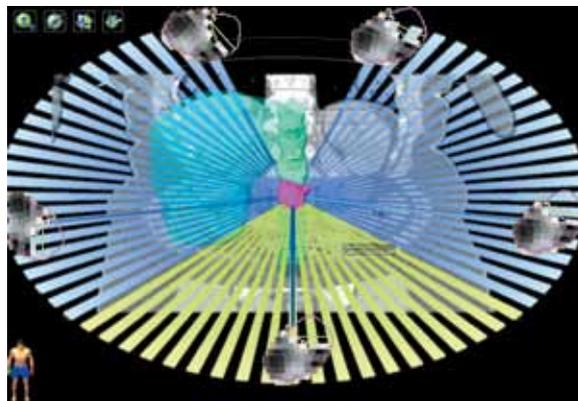
HybridArc<sup>TM</sup> intelligently combines two proven, conformal treatment methods for radiosurgery with automated and optimized blending—in seconds—of modulated dynamic conformal arcs and discrete IMRT technology.

## CRANIAL



Non-Coplanar Arcs

## SPINE



Coplanar Arcs

## EXPANDED CAPABILITIES

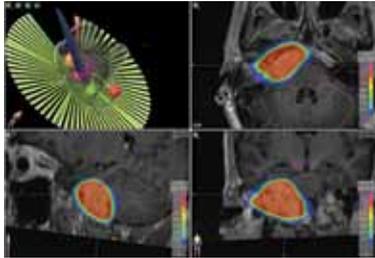
As part of the iPlan<sup>®</sup> family of planning and treatment software, HybridArc enables rotational volumetric dose shaping and streamlines both simple and complex treatment planning. Flexible integration makes HybridArc ideal for both the latest advancements in linac technology, as well as established linear accelerators.\*

With zero-downtime installation and licensing flexibility, HybridArc authorizes multiple linacs to perform optimized volumetric arc therapies with straightforward implementation and quality assurance.

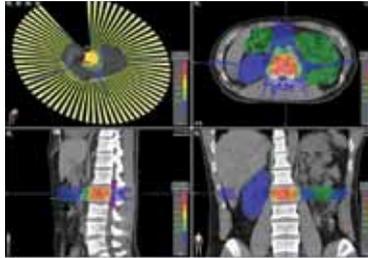
## DUAL STAGE OPTIMIZATION

- › Increases target dose homogeneity and at-risk organ protection through arc and beam fluence optimization
- › Streamlines integration of dose-constraint penalization and automated leaf sequencing
- › Flexibly weights arcs and beams for optimized coplanar and non-coplanar arc dose delivery
- › Shapes dose for concave regions and large structures through discrete dose painting capability
- › Automates selection of arc quantity and length and IMRT beam quantity for immediate results

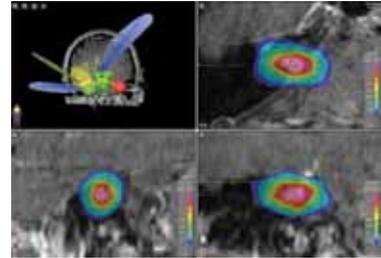
\* Requires linac with dynamic arc and IMRT capabilities

**CLINICAL POSSIBILITIES**


SRS Planning: Granuloma



SRS Planning: Spine Metastasis



Functional SRT Planning: Acoustic Neuroma

Designed for accurate dose calculations for small fields and optimized for treatments performed in one-to-five fractions, HybridArc maximizes target dose conformity while minimizing exposure to normal tissue. HybridArc benefits from the strengths of DPL (Dynamically Penalized Likelihood) algorithm, one of the fastest optimization methods available, to optimize both the arc component and IMRT fluences. Depending on case complexity, the result is either a variation of enhanced Dynamic Conformal Arc (eDCA) therapy—with apertures modulated at individual gantry positions—or a variation of IMAT, through eDCA and IMRT.

**CLINICAL OUTLOOK**

“For the majority of cases, we found that HybridArc improved conformity over both IMRT and dynamic arc plans. The use of aperture optimization for the arc segments did appear to be efficacious in this regard.”

JAMES ROBAR, PhD, Medical Physicist Nova Scotia Cancer Centre, Dalhousie University, Halifax, Canada

“We tested the dosimetric accuracy of HybridArc for various clinical sites and found outstanding results especially with Monte Carlo.”

ANNA PETOUKHOVA, PhD, Medical Physicist Radiotherapy Centre West, The Hague, The Netherlands

“HybridArc planning allows for fast integration of optimized dynamic conformal arcs and IMRT, resulting in superior dosimetry compared to the use of dynamic conformal arcs alone.”

FRANK J. LAGERWAARD, MD, PhD, Radiation Oncologist VUMC Amsterdam, The Netherlands

