

HDR Surface Brachytherapy

Adaptiiv's enhanced algorithms allow users to automatically design a patient-specific applicator and 3D print it, resulting in hollow catheter trajectories with a constant user-defined stand-off and separation distances. **This customizable module provides a superior tool for optimizing and delivering the prescribed dose to patients compared to other common techniques.**

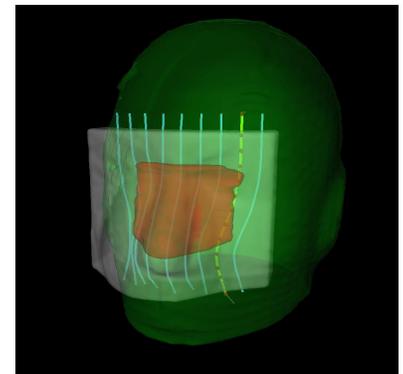


Key Benefits

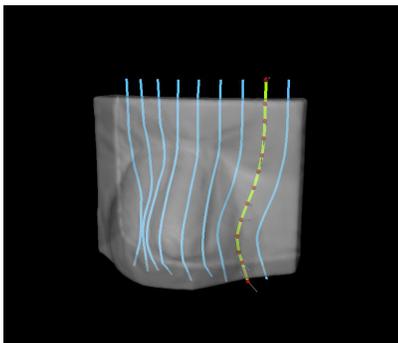
- Point and click software functions enable the user to create customizable catheter trajectories that are specific to the patient's anatomy and treatment plan.
- The module's algorithm allows users to quickly and confidently create patient-specific applicators using tools which allow superior planning and delivery of the prescribed dose to patients compared to other existing methods.
- The only regulated solution that allows users to customize an applicator and seamlessly import the new applicator design back into the brachytherapy treatment planning system to conduct dose validation.
- Adaptiiv eliminates the need for multiple, 3rd party software solutions that require excessive design time, can't be easily verified in your TPS, and do not have regulatory clearance.
- Software optimization eliminates time-consuming and labor-intensive manual fabrication methods, replacing the need for expensive applicators (i.e. Freiburg Flap).

New Features in Software Release v3.0

- **Brachytherapy 3D Structure Visualization**
 - 3D viewing of the PTV and OARs (or other underlying structures) when planning and creating custom brachytherapy tunnels.
- **Enhancements to Brachytherapy Tunnel Generation**
 - Enhancements made to the generation of brachytherapy tunnels such as the softening of entrance/exit points for easier catheter placement, stopping a tunnel midway through a trajectory, better tunnel positioning on highly curved surfaces, and numbering of tunnels.



A 3D view of the brachytherapy applicator, PTV (in red), and underlying structures.



Complex iterations to applicator design can be achieved through point and click capabilities.

“The limitations of using wax are worse in brachytherapy cases due to the added complexity of embedding the catheters - it can be difficult to verify both the distance from the surface and the spacing between catheters. Fabrication is also extremely time consuming and can be done only by the most experienced staff.

The Adaptiiv solution addresses all of these problems and will increase our capacity to use surface brachytherapy.”

THE CLATTERBRIDGE CANCER CENTRE
LIVERPOOL, UNITED KINGDOM

Clinical Benefits

| | Radiation Oncologist | Medical Physicist | Radiation Therapist / Dosimetrist | Administrator |
|--|--|--|---|---|
| Patient Consult | Highlight/ demonstrate use of innovative technology to improve reproducibility and accuracy during treatment delivery. | | | Highlight/ demonstrate use of innovative technology to promote center's modern approach to treatment. |
| Applicator Design and CT Simulation | Improves patient comfort through a simplified, faster setup during CT simulation and treatment. | <ul style="list-style-type: none"> - Automated applicator design. - User-defined input specific to each patient. - Increased accuracy, safety, and reproducibility of design. | <ul style="list-style-type: none"> - Automated applicator design. - User-defined input specific to each patient. - Increased accuracy, safety, and reproducibility of design. - Improves patient comfort through simplified, faster setup during CT simulation and treatment. | <ul style="list-style-type: none"> - 3D printed applicator meets requirements for existing CPT codes, can be billed as a patient-specific complex device. - Eliminate need to fabricate applicator in the CT suite thereby increasing capacity. |
| Treatment Planning | <ul style="list-style-type: none"> - Built-in tools for superior optimization of the RT treatment plan in TPS. - Larger potential for OAR sparing. | <ul style="list-style-type: none"> - User defined stand-off, separation, tunnel radius and minimum radius of trajectory curvature allow for superior optimization of the RT treatment plan in TPS. - Larger potential for OAR sparing. | | Seamless integration with existing TPS means faster and cheaper setup. |
| Plan Quality Assurance | | <ul style="list-style-type: none"> - Dedicated tools for plan QA. - Modified DICOM RT structure is easily exported back to TPS for dose verification. - Scanning of 3D printed applicator on a patient for set-up verification / TPS verification purposes. | | |
| Applicator Fabrication | Time efficient and increased throughput. | <ul style="list-style-type: none"> - Improved efficiency, accuracy, safety and reproducibility of fabrication. - Decreased labor requirements. | | <ul style="list-style-type: none"> - Improved efficiency. - Increased throughput. - Cost savings. |