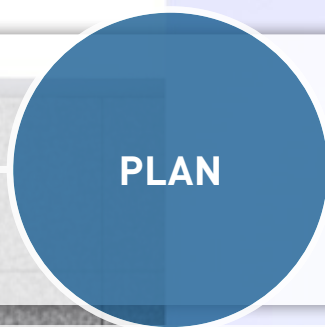




EVOLUTION IN 4D TREATMENT



Innovative 4D SIGRT Solution





Recent advances in treatment planning and delivery systems have led to consistently achieving optimal results. And now with the revolutionary Catalyst, you can get the same level of confidence when controlling the only remaining variable – the patient.

The Catalyst system is a revolutionary solution for **Surface Image Guided Radiation Therapy (SIGRT)**, coupled with application software optimized for workflow integration.

Catalyst offers a complete solution on 3D CRT, IMRT for online patient tracking before and during treatment delivery, thus ensuring the best possible therapeutic and palliative treatment outcome without non-prescribed doses.

CATALYST SUPPORTS THE CLINICAL WORKFLOW



PATIENT SETUP AND POSITIONING

Posture errors projected directly on to the patient's skin ensure a correct patient setup and a higher accuracy in the patient's position. With the posture error correction, time and effort for verification imaging can also be reduced.



INTRA-FRACTION MOTION DETECTION

With 3D intra-fraction motion detection the initial accurate position of the patient is maintained throughout the treatment and permits maximum dose delivery within the target.



RESPIRATORY GATING

Using the gating solution for both free breathing and deep inspiration breath hold (DIBH) with Audio Visual Coaching and the interface to Major radiotherapy suppliers enables the delivery of precisely-targeted radiation to moving tumors. This assures the most reproducible outcome and guarantees maximum patient safety.

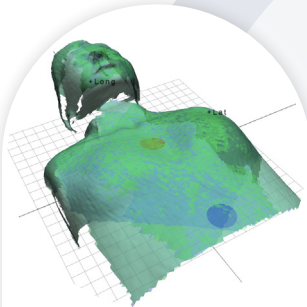


IN THE TREATMENT ROOM, THE SYSTEM PROVIDES THE FOLLOWING BENEFITS COMPARED TO OTHER SIGRT SOLUTIONS:

- Large patient surface coverage (1300x800x700mm)
- Interactive visual guidance via color map projected on patient body during setup.
- Correct any posture or positioning errors immediately.
- Absolute value calculation with baseline monitoring capability.
- Optional audio-visual coaching helps the patient follow optimal breathing patterns.
- No markers on or around the patient
- Dose-free motion management
- Multi-vendor interfaces have been developed to ensure a seamless clinical workflow, i.e. Varian TrueBeam, C-series; Elekta VersaHD, Infinity, Synergy.



**COLOR
BACKPROJECTION**



DIBH



INTEGRATION



QA



**VISUAL
COACHING**

* TrueBeam, C-Series are the trademarks of Varian Medical Systems, Inc. VersaHD, Infinity, Synergy are the trademarks of Elekta AB.

CLINICAL BENEFITS

The Innovative 4D SIGRT solution from C-RAD is an end-to-end treatment solution for radiation therapy. For Deep Inspiration Breath Hold treatment, it starts from the 4DCT simulation in the CT room and carries all the way through treatment, including posture correction and positioning, intra-fraction real-time motion monitoring, and gating treatment. It is possible to upgrade Catalyst to Catalyst HD.



High precision

- 1 mm accuracy
- Posture and position correction
- Reproducibility of breast position when DIBH treated
- Long-term stability with <math><0.3\text{ mm}</math> shift per month



High Efficiency

- Non-rigid algorithm avoids extra steps for ROI design
- Prompt posture correction with patented color map back projection
- Visual coaching to ensure a smooth gating delivery



Patient Safety

- Doseless and markerless
- Both posture and position correction
- Auto patient data retrieval
- Auto couch shift for position correction
- Auto beam control
- Double monitoring on intra-fraction motion and gating window

For more information please visit:

WWW.C-RAD.COM



REDEFINING PRECISION IN ADVANCED RADIATION THERAPY

SP-002-110429-001-02



SYSTEM DATA

Physical dimensions

- *Size (W x D x H):* 620 mm x 280 mm x 400 mm
- *Weight:* 16 kg (35 lbs)

Power

- *Input voltage:* 100 – 240 VAC
- *Frequency:* 47 – 63 Hz
- *Power consumption:* 1.8 A

Environment

- *Operating temperature:* +10 °C to +35 °C (50 °F to 95 °F)

Light projection

- *Wavelengths:* 405 nm (near-invisible violet), 528 nm (green), 624 nm (red)

Performance

- *Scan volume (X * Y * Z):* 800 mm x 1300 mm x 700 mm.
- *Measurement reproducibility:* 0.2 mm
- *Long-term stability:* 0.3 mm
- *Warm-up time:* 30 minutes
- *Scan speed:* Up to 80 complete 3D surfaces per second
- *Registration method:* Real-time, non-rigid with deformable models for computing 6 DOF isocentric shifts
- *Positioning accuracy:* Within 1 mm for rigid body
- *Motion detection accuracy:* Within 1 mm

*Full system data upon request

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