

DYNATRAC.

The virtual eye on isocenter.

One of the biggest challenges in terms of managing dynamics in radiation therapy treatments such as IMRT, SRS, IGRT and Adaptive RT is the patient:

- The patient has to be repositioned on the

treatment table according to the CT setup, often several times

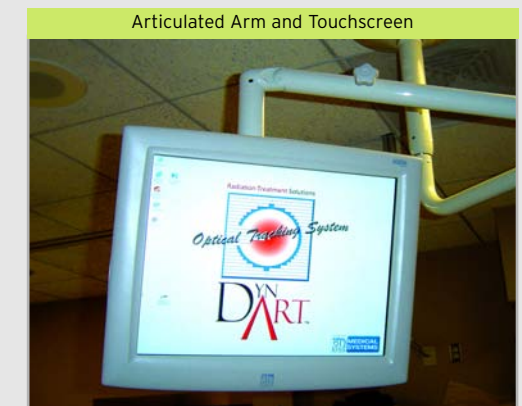
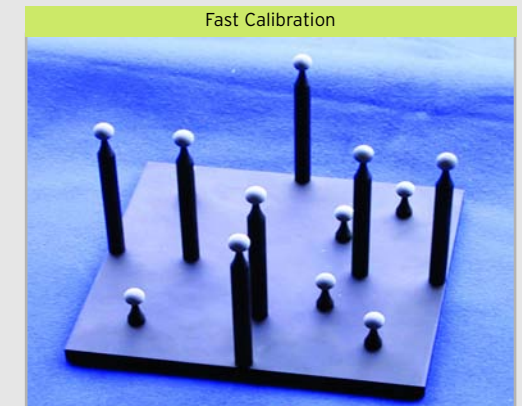
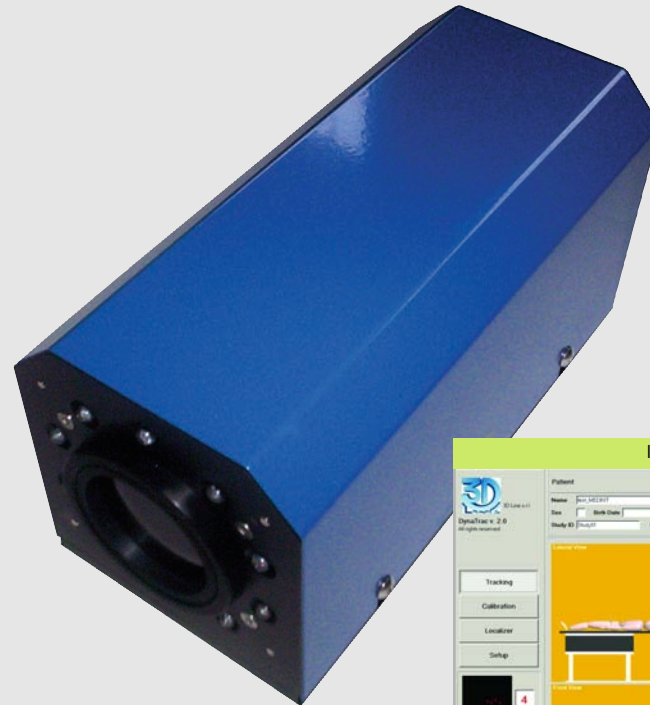
- The patient moves (in-)voluntarily on the treatment table.

To overcome these challenges 3D Line medi-

cal Systems has developed DYNATRACK, an infrared based optical tracking system that allows for fast, accurate and safe patient positioning and tracking. For more confidence in inter- and intra-treatment accuracy.

MAIN FEATURES & BENEFITS

- Real time tracking
- 3 cameras for
 - Precision
 - Redundancy
- Automatic marker detection
- Real-time calculation of deviation between current and planned position
- Passive infrared marker
- Precision less than 1mm
- Highest inter- and intra-treatment accuracy
- Highest reproducibility
- Faster and more precise patient setup for
 - reduced setup time
 - improved treatment quality
 - patient comfort
- DICOM RT for easy integration into your existing environment (by SCT ERGO++ module)



SAFETY

Treatment safety is improved by tracking the patient real-time during the treatment, allowing to stop treatment in case of unacceptable patient movement. Verification other positioning devices such as room lasers as additional safety and QA.



PRECISION

Highest precision in daily patient setup due to submillimetric precision of cameras. DynaTRACK accuracy is far below 1mm and therefore significantly superior to eg the combination of room-lasers and skin marks.



SPEED

Higher accuracy provided and less time required for daily patient setup. Dynatrack indicating directions of needed corrections by arrows, for translations and rotations.

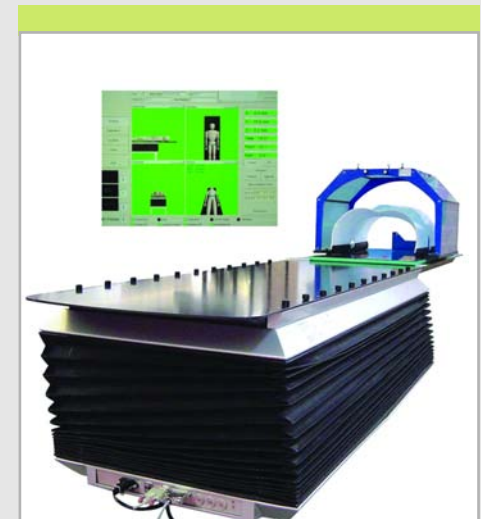
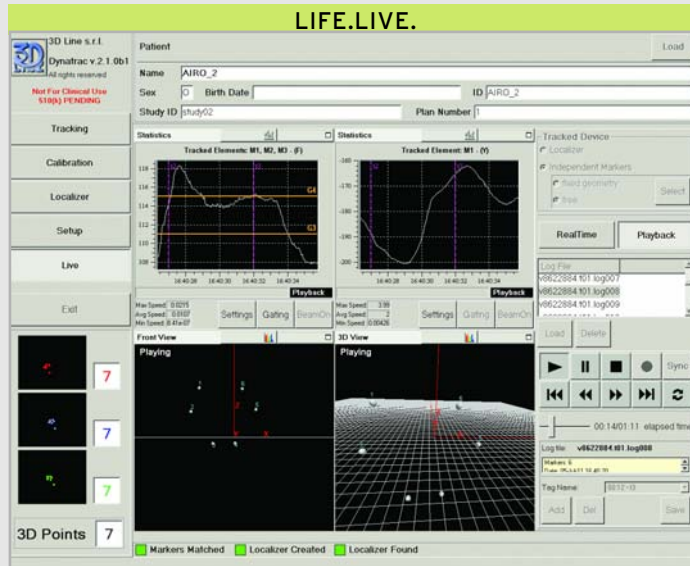


DYNATRAC

ORGAN MOTION ANALYSIS: *

Proceeding in our philosophy of dynamic techniques our innovative development team - in cooperation with our clinical partners - has realized a new module for the DynaTRACK solution: LIFE.LIVE.

This module enables one to detect and analyse patient as well as marker movements. The system does correlate them to the internal organ motion in order to allow for Adaptive Radiotherapy.



For a fully automated workflow of precise patient setup 3D Line Medical Systems has incorporated a Robotic targeting couch. This couch is the only available today that can compensate for all 6 degrees of freedom: X,Y,Z and pitch,

yaw and roll fully automatic! Overcoming such major drawbacks as couch sag or patient rotation improves the quality of modern radiation therapy techniques such as SRS/ SRT, IMRT, IGRT tremendously.

* Works in Progress