



SYNCHRONY®

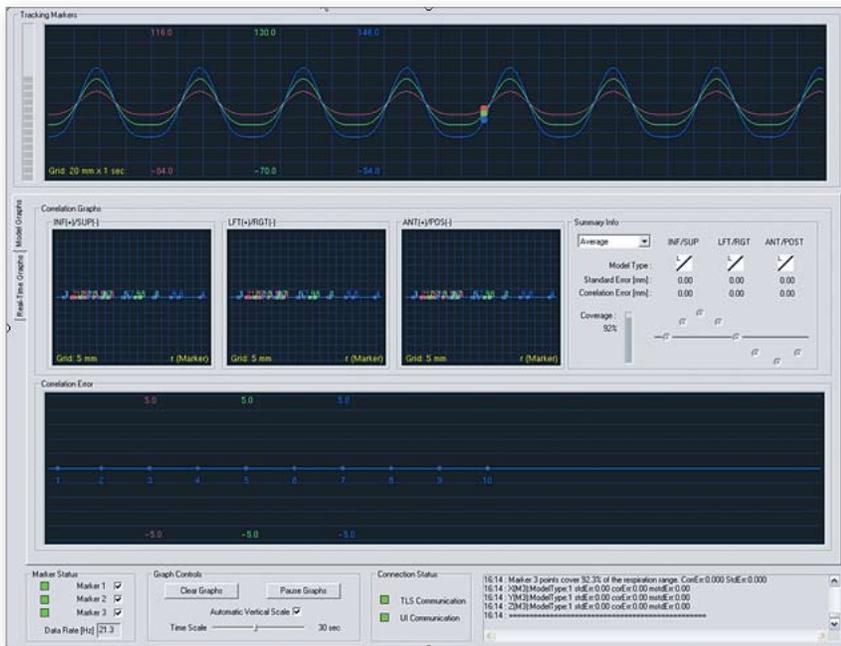
RESPIRATORY TRACKING SYSTEM



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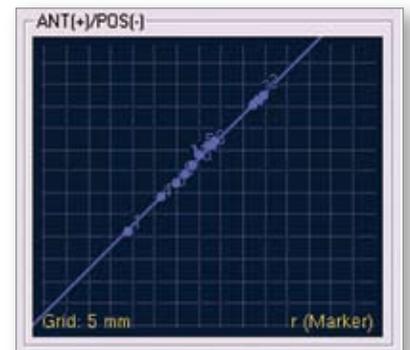
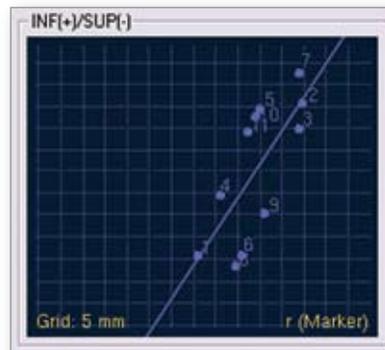
CyberKnife®
Synchrony®

SYNCHRONY® RESPIRATORY TRACKING SYSTEM



The Synchrony System tracks respiration in real time and automatically adjusts to any changes in the patient's breathing pattern.

Correlation Model is able to accurately track curvilinear target motions in addition to linear motion.



The Synchrony® Respiratory Tracking System is the first and only technology to continuously synchronize beam delivery to the motion of the tumor, allowing clinicians to significantly reduce delivery margins while eliminating the need for gating or breath-holding techniques. With the Synchrony System, physicians no longer have to add significant planning margins to compensate for moving targets, thus providing unparalleled healthy tissue preservation.

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The patient breathes normally while the CyberKnife System delivers highly collimated beams to the moving target.

Clinical Benefits

The Synchrony System allows clinicians, for the first time, to treat complex moving tumors with the targeting accuracy required for radiosurgery. Benefits include:

- Delivered beams move in real-time with 3D target motion
- Dose delivered continuously throughout the breathing cycle
- Requires less than 1.5 mm CTV to PTV margin expansion
- Minimized irradiation of healthy tissue or critical structures
- Elimination of impractical and time-consuming gating and breath-holding techniques
- Direct tumor tracking allows for completely non-invasive, fiducial-free treatments with select patients*

** When used in conjunction with Xsight® Lung Tracking System. Applies to tumors of specific size and location.*

How the Synchrony System works

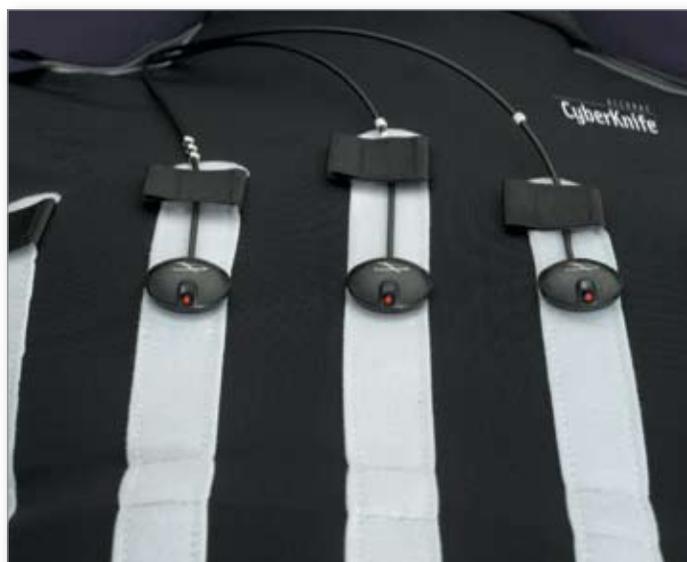
Using state-of-the-art sensing technology, the Synchrony System monitors and tracks the patient's respiratory motion in real time. Leveraging the CyberKnife System's high-precision image guidance capabilities, the Synchrony System correlates tumor motion with respiratory motion, dynamically directing the linear accelerator to deliver highly accurate radiation beams to moving tumors. The Synchrony System constantly updates its correlation model with each new X-ray image, automatically correcting for any changes in the patient's breathing patterns.

The custom-designed Synchrony Vest and Tracking Markers allow for simplified patient setup and marker placement, especially for multi-fraction treatments where the Vest and Markers rarely need to be adjusted on subsequent treatments. Patients breathe normally in complete comfort throughout treatment delivery.

SYNCHRONY® RESPIRATORY TRACKING SYSTEM



*Synchrony Camera Array
monitors respiratory
motion in real-time.*



*Custom designed Synchrony Vest
and fiber optic Tracking Markers.*

Expanding accurate radiosurgery treatment to all tumors that move with respiration:

- Lung
- Pancreas
- Liver
- Kidney
- Other abdominal/thoracic

A multi-center study reported targeting centroid accuracy better than 1.5mm. *(Data on file)*

In summary, the Synchrony Respiratory Tracking System is revolutionary in that it enables, for the first time, real-time tracking, detecting and correcting for tumors that move with respiration, automatically accounting for any patient movements or changes in respiration.



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The CyberKnife System and CyberKnife options may not be available in some countries. For a complete list of CyberKnife Systems and options available, please contact Accuray at sales@accuray.com.



A COMPLETE ROBOTIC RADIOSURGERY SYSTEM

The Accuray CyberKnife® System allows clinicians to provide patients with more accurate treatments and an improved quality of life:

Synchrony® Respiratory Tracking System–

Continuously synchronizes beam delivery to the motion of the tumor, allowing clinicians to significantly reduce margins while eliminating the need for gating or breath-holding techniques.

Xsight® Lung Tracking System–Tracks the movement of the lung tumors directly, without fiducials, with accuracy, reliability and self-adjusting repeatability.

Xsight Spine Tracking System–Eliminates the need for surgical implantation of fiducials by using the bony anatomy of the spine to automatically locate and track tumors with sub-millimeter accuracy.

Iris™ Variable Aperture Collimator–

Using tungsten leaves to rapidly manipulate beam geometry, the Iris Collimator enables treatments of unrivaled conformality and unparalleled preservation of healthy tissue.

Xchange™ Robotic Collimator Changer–

Automatically exchanges collimator sizes, allowing for highly conformal treatments to be delivered more efficiently.

RoboCouch® Patient Positioning System–

Robotically aligns patients accurately with six degrees of freedom, reducing patient setup times and enabling faster treatments.

Linear Accelerator–Light weight 6MV X-band linear accelerator with an output of 800 MU/min, accurately delivers highly collimated beams of radiation providing superior conformality when treating patients.

MultiPlan® Treatment Planning System–

This intuitive workflow-based workstation designed for radiosurgery, enables the creation of plans that have excellent conformality and coverage with steep dose gradients.

Sequential Optimization–With our user-defined, sequentially prioritized planning objectives, treatment plans are custom tailored to the unique clinical characteristics of each patient.

4D Treatment Optimization and Planning System–

Takes into account not only the movement of the target but also the movement and deformation of the surrounding tissue.

Monte Carlo Dose Calculation–Often considered the gold standard dose calculation, the CyberKnife System's Monte Carlo Dose Calculation produces results in minutes compared to what typically requires hours or days with other systems.

CYBERKNIFE® SYSTEM HIGHLIGHTS

- **Continual image guidance**

Without the need for staff intervention or treatment interruption, the CyberKnife's revolutionary image guidance technology continuously works in concert with the treatment delivery system to automatically track, detect and correct—managing even the slightest target movements throughout the entire treatment.

- **Flexible robotic maneuverability**

Driven by continual imaging and intelligent motion corrections, the CyberKnife's robotic manipulator automatically positions the linear accelerator to an unprecedented range of positions—allowing for access to virtually any tumor from any direction.

- **Dynamic motion targeting**

With constant updates of target position throughout the respiratory cycle, the CyberKnife System delivers beams synchronized in real-time to targets that move with respiration while adapting to changes in breathing patterns—delivering highly conformal radiation with considerably smaller margins and unprecedented accuracy.

- **Unrivaled dose conformality**

Unconstrained by clockwise/counter-clockwise gantry rotations, the robotic mobility of the CyberKnife System delivers diverse non-coplanar and non-isocentric treatments to precisely sculpt radiosurgical doses to the unique contours of the target.

ACCURAY INCORPORATED

Our Business Begins with Patients™

Accuray's philosophy, *Our Business Begins with Patients™*, drives the company's commitment to advancing the field of robotic radiosurgery through innovation, while also establishing its products as the standard of care.

Accuray's success is measured by the success of its customers in delivering the most advanced care to their patients. Medical institutions worldwide have expanded their clinical programs using Accuray's CyberKnife® Robotic Radiosurgery System by treating patients that may have been considered untreatable, while building a more comprehensive oncology practice.

To this end, Accuray has developed collaborative partnerships with clinicians, researchers and patients. These partnerships help educate clinicians and patients on the benefits of robotic radiosurgery, enabling Accuray to refine and upgrade its technology based on user and patient feedback. This feedback allows Accuray to develop innovative programs that improve clinician's success while differentiating Accuray from traditional medical device companies.

The result, the CyberKnife Robotic Radiosurgery System, a pain-free treatment alternative for patients that eliminates invasive surgery and results in a significantly improved quality of life for cancer patients the world over.



ACCURAY®

Our Business Begins with Patients™

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