Docket #: S07-063

Combining X-ray and External Respiratory Signals for Real-Time Target Position Estimation

Real-time internal target position estimation is of high interest in radiotherapy, particularly with the recent development of robotic, linear accelerator, DMLC and couch-based systems which can continuously align the radiation beam with the target. This work combines x-ray and external respiratory monitoring sources to estimate real-time target position, facilitating highly accurate radiation delivery.

Applications

- To develop an algorithm to combine x-ray and external respiratory monitoring sources for estimating real-time target position.

Advantages

- No current system exists in radiotherapy to estimate internal position from a single x-ray imager and an optical system.

Publications

- Cho B, Suh Y, Dieterich S and Keall P J, "A monoscopic method for real-time tumour tracking using combined occasional x-ray imaging and continuous respiratory monitoring," *Phys Med Biol 53 2837-55, 2008.*

Patents

- Published Application: 20080281192
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