

RAYPILOT®

Brings electromagnetic
TUMOR TRACKING FOR ANY LINAC



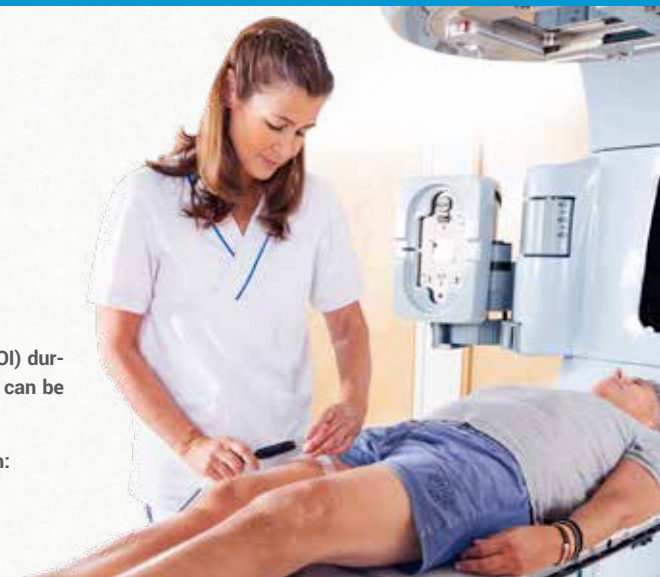
RAYPILOT®

A Plug & Treat® concept for REAL TIME RADIOTHERAPY

The RayPilot® system is designed to continuously localize a tumor or Region of Interest (ROI) during radiation therapy treatment. By using electromagnetic communication the ROI position can be tracked continuously without any need of additional ionizing radiation.

Future radiotherapy treatments must be fast and accurate, or as we say in the Micropos team:

- Tumor localization should be as easy as Plug and Treat®.



MICROPOS RAYPILOT® TUMOR TRACKING SYSTEM

Micropos has developed the RayPilot® system for high precision four dimensional radiotherapy, 4DRT. The system works as an add on to existing linear accelerators and offers highly precise targeting of the ROI throughout every fraction of the radiotherapy.

By knowing the exact position of the cancerous organ, at any moment, the treatment can be more precise and much less of the surrounding healthy tissue will be damaged.

The system consists of the RayPilot® receiving system which is placed on any existing treatment table, the RayPilot® transmitter that is placed in the region to be tracked and the RayPilot® software. The system is initially designed for use in the treatment of prostate cancer where precise and safe localization will dramatically increase the quality of the treatment. It can also speed up the set-up time for each patient for a more effective use of the radiotherapy equipment in general. After finalized treatment possible target movements can be followed up and analyzed.

The RayPilot® transmitter also has automatic patient identification and will soon also include an in-situ dosimeter. The intention is also to broaden the use of the system for both curative and palliative treatments in other tumor regions and in Gating- and Dynamic MLC applications.

BENEFITS

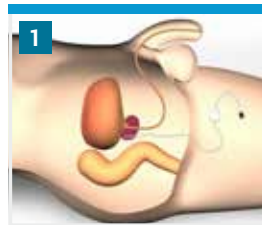
The Micropos RayPilot® system is a tool which gives oncology professionals continuous and objective control over the treatment volume during the entire radiotherapy session (4DRT). The system uses electromagnetic communication not ionizing radiation for positioning, thereby keeping the overall radiation dose delivered to the patient within the limits prescribed by the plan. The RayPilot® receiving system can be placed directly on any existing treatment table (carbon fibre compatible) and the RayPilot® transmitter is removed after the final treatment in order to minimize the risk of future implant problems such as migration and MRI disturbance.

THE RAYPILOT® SYSTEM GIVES YOU:

- › Tumor tracking and motion recording
- › Fast and objective patient set-up without X-ray
- › Carbon fibre couch compatibility
- › No foreign objects left after treatment
- › Possible MRI follow up
- › Easy access to the patient
- › Easy placement on the couch like other RT peripherals
- › Optional multi room installation
- › Automatic patient identification
- › In Situ Dosimetry*

* Work in progress

TO USE RAYPILOT®



1

PRE-TREATMENT

Insert the RayPilot® transmitter in the ROI to track before the CT and dose planning.



2

DURING TREATMENT

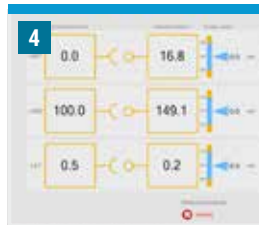
Position the RayPilot® receiving system on the treatment couch, place the patient in treatment position and connect the RayPilot® transmitter.



3

DURING TREATMENT

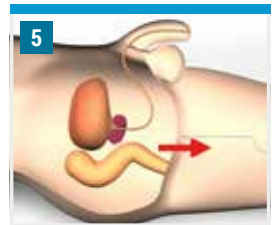
The RayPilot® transmitter sends out a positioning signal to the RayPilot® receiving system. Move the treatment table according to the instructions in order to put the ROI into the desired position.



4

DURING TREATMENT

The RayPilot® system tracks and record the ROI continuously during the radiotherapy session. A warning occurs if the ROI moves out of the predefined margin.



5

POST-TREATMENT

Remove the RayPilot® transmitter after the final treatment.

No foreign objects are left in the body.



“Why treat the size of an Orange when the target has the size of a Mandarine?”

Bo Lennernäs, M.D, Ph.D, Assoc.prof.



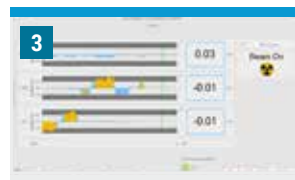
THE RAYPILOT® SYSTEM CONSISTS OF THREE PARTS:



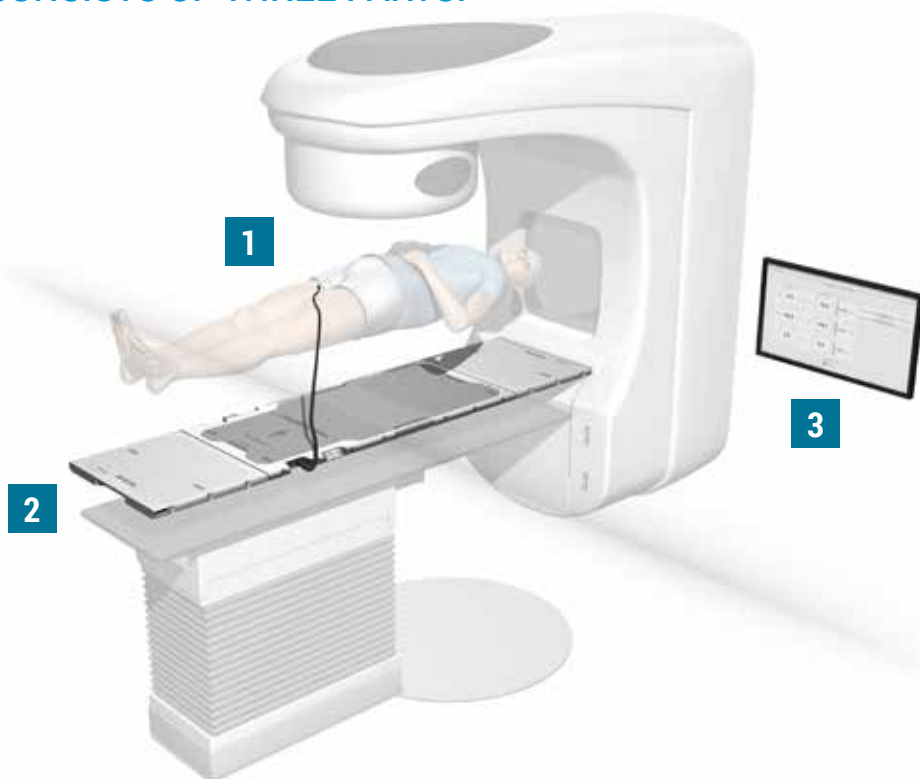
RAYPILOT® TRANSMITTER



RAYPILOT® RECEIVING SYSTEM



RAYPILOT® SOFTWARE



ABOUT MICROPUS MEDICAL

Micropus Medical was founded in 2003 by four physicians with long clinical experience in the field of radiation oncology. The founders are pioneers in both passive (gold) and electromagnetic fiducial markers in radiotherapy. The company has received several awards and grants from among others The Swedish Agency for Innovation Systems (Vinnova), the Swedish Business Development Agency (Nutek), the Venture Cup and the Innovation Cup.

There are around 40 scientific publications (posters, articles and oral) on the RayPilot® system on among others ESTRO, ASTRO, The Nordic Association for Clinical Physics meeting and The Annual Radiotherapy Weekend during 2005-2013. Articles are published in The Green Journal (Radiotherapy & Oncology) in 2009 and Acta Oncologica regarding the use of RayPilot® for Dynamic MultiLeaf Collimator tracking in 2011.

The RayPilot® system is in clinical use at European University Hospitals.

The RayPilot® system is CE certified, is protected by patents and is patent pending. Micropus Medical, RayPilot®, Plug & Treat® and For High Precision 4D Radiotherapy are all trademarks of Micropus Medical AB. Not available for sale within the United States, Work in progress.

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