

AUTONOMOUS ROBOT FOR PROSTATE BIOPSY & BRACHYTHERAPY



Keywords

- Prostate
- LDR Brachytherapy
- Robot Arm
- Loose Seed Procedure
- Supervision Software
- Treatment Planning Software
- Biopsy



Intellectual Property

Patent application:
FR 15 56702
Priority Date 2015 July the 16th.



Development Status

Laboratory Prototype tested on Phantom and anatomical subjects



Partnership

Licence to an industrial partner in capacity to obtain the CE Mark and/or FDA and to commercialise the product.

Technology

This technology is developed for Permanent or Low Dose Rate (LDR) Brachytherapy and prostate biopsy.

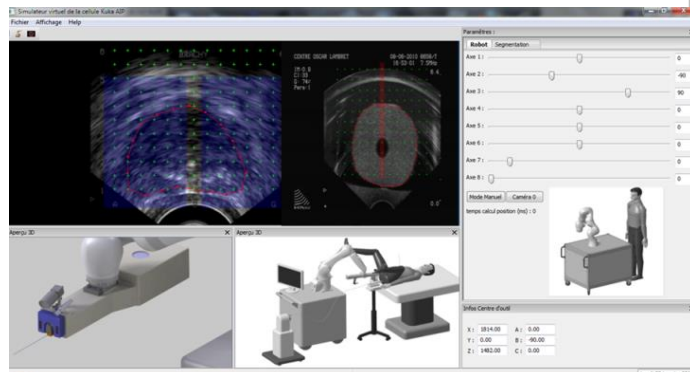
The autonomous robot performing treatment or diagnosis is composed of :

A robot arm:

- Low Space requirement
- Manual control available

An operating unit :

- Needle deviation sensor
- Position sensor
- Autocalibration of the device
- Loose seeds procedure
- Seeds magazine & loader



A supervision software

- A Treatment Planning System designed for robotized prostate LDR brachytherapy
- 2D or 3D endorectal ultrasound probe and monitor
- Graphical user interface and target real time imaging system

Benefits

Less Traumatic & invasive procedure

- Expected Low inflammation risk due to reduction of entry points

Safer procedure for patients :

- Accurate placement of needle (5mm) as well as conventional procedures
- Stabilisation of the prostate with two needles

Reliable : Multiple sensors, real-time analysis

Adaptable system to operating condition

Possibility to perform complex procedure with more accuracy, flexibility and control

No need of Perineal Template

- Significant reduction of perineal entry points (6 to 8 instead of up to 50)
- Multiple insertion angles decreasing risk of prostate deformation
- One needle per procedure

Faster procedure:

- Reduction of physician exposure to radio elements

Applications

- Prostate LDR Brachytherapy
- Prostate Biopsy

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