

Augmented reality-guided laparoscopic tumour resection software



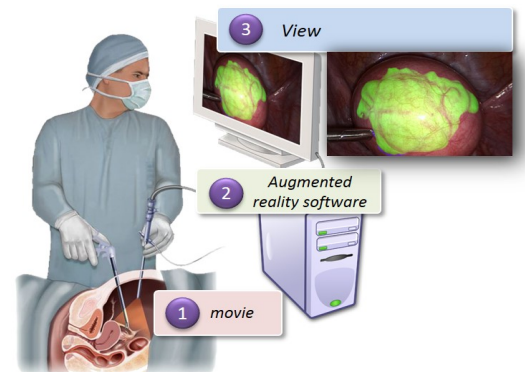
HEALTH
MEDTECH

IMPROVING PERFORMANCE AND SAFETY OF LAPAROSCOPY SURGERY

Our real-time augmented-reality (AR) guidance software coupled with monocular laparoscopes allows the surgeon to identify otherwise invisible anatomical structures for precise tumor localization and resection.

The technology consists in :

- 1 | Building of a segmented deformable model of the organ and its internal structures based of the preoperative radiological image
- 2 | Data recording to transform the model into the laparoscope's coordinate frame using live information from the laparoscope's image
- 3 | Real-time on-screen display of the augmented laparoscope's image in order to guide the surgeon



Competitive Advantages

- First imaging system capable of handling soft tissue deformation
- Real-time visualisation of hidden internal structures such as tumours and major vessels from preoperative radiological data
- Non invasive technology
- Non need of injected tracers
- Brings precision and safety to laparoscopic surgery on soft organs
- Reduces operating time
- Improves patient outcome

Development Status

- Operational C++ software (French and English versions)
- Ex-vivo tumour resection in porcine kidneys significantly improved as assessed with the positive margin rate across resected tumors (85,2% with AR software vs 41,9% without)
- Successfully tested by surgeons for laparoscopic resection of myomas
- Software currently adapted for kidney and liver surgery

Business Opportunities

- Technology easily applicable to most laparoscopic surgeries
- Potential use as training tool for surgeons
- Outperforms competition
- Facilitated regulatory approval process
- Short time-to-market anticipated

#Keywords

Laparoscopic surgery
Augmented reality
Software tool
Training tool

Research Team

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Partnership

Licensing

Intellectual Property

Software registration in 2015

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