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Sommario/riassunto	This thesis focuses on a novel radio-guided surgery technique for complete tumor resections. It describes all aspects of the intraoperative probe, as well as testing and simulation of the novel technique. The presentation develops the technique from the initial idea to realistic feasibility studies that have been the subject of a press release of the American Society of Nuclear Medicine. Just a year after completing this work, the technique has now been tested for the first time on a meningioma patient, confirming all of the predictions made in this thesis.