

# The LapAssistant

## A Navigation System for Minimally Invasive Surgery and Intraoperative Update of preoperative Planning Data

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Heidelberg Innovation Forum  
Business Ideas from IT Research  
„IT for Medical Technology and Healthcare“



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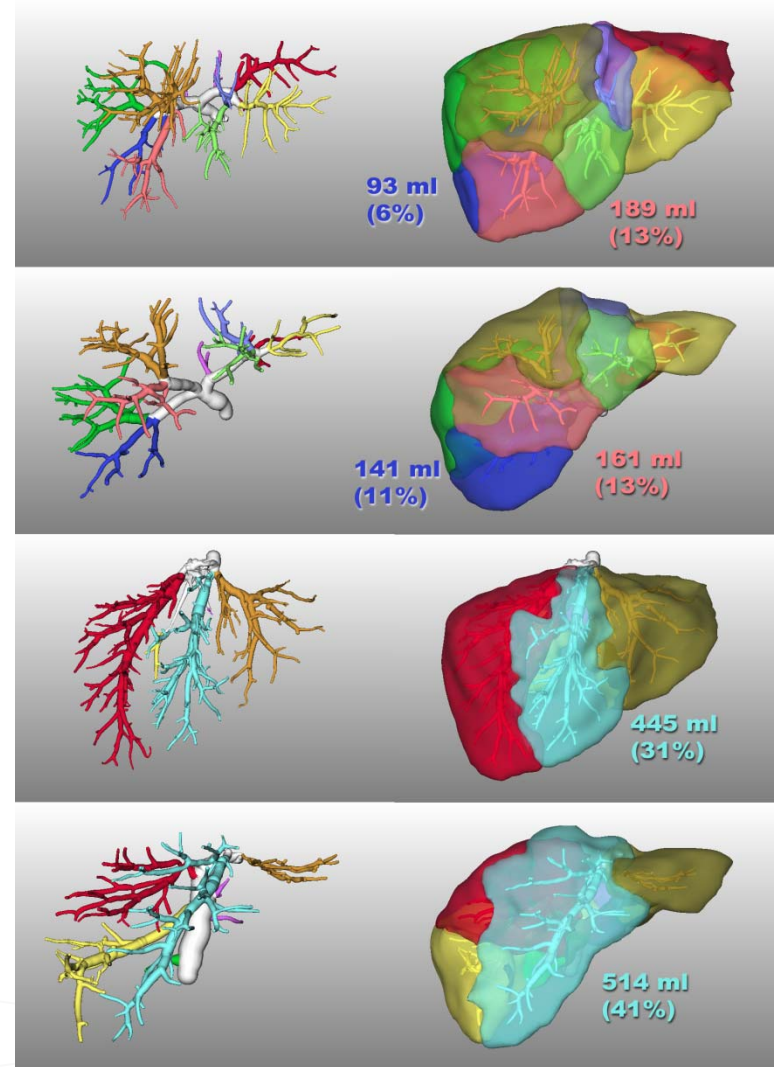


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# 3D-Visualisation 1995 - 2007



Radtke A et al., Am J Transpl (2007)

# *The Medical Problem*

- MIC Standard Surgical Procedure  
e.g. Gallbladder, Colorectal Diseases
- Rare in Liver, Lung and Pancreatic Surgery
- Due to Complex Anatomy and  
Vessel Architecture
- MIC needs 3D Visualisation  
Transfer and Update of Planning Data  
Navigation Technology



# FUSION

*FUture Environment for Gentle Liver Surgery Using  
Image-Guided Planning and Intra-Operative Navigation*



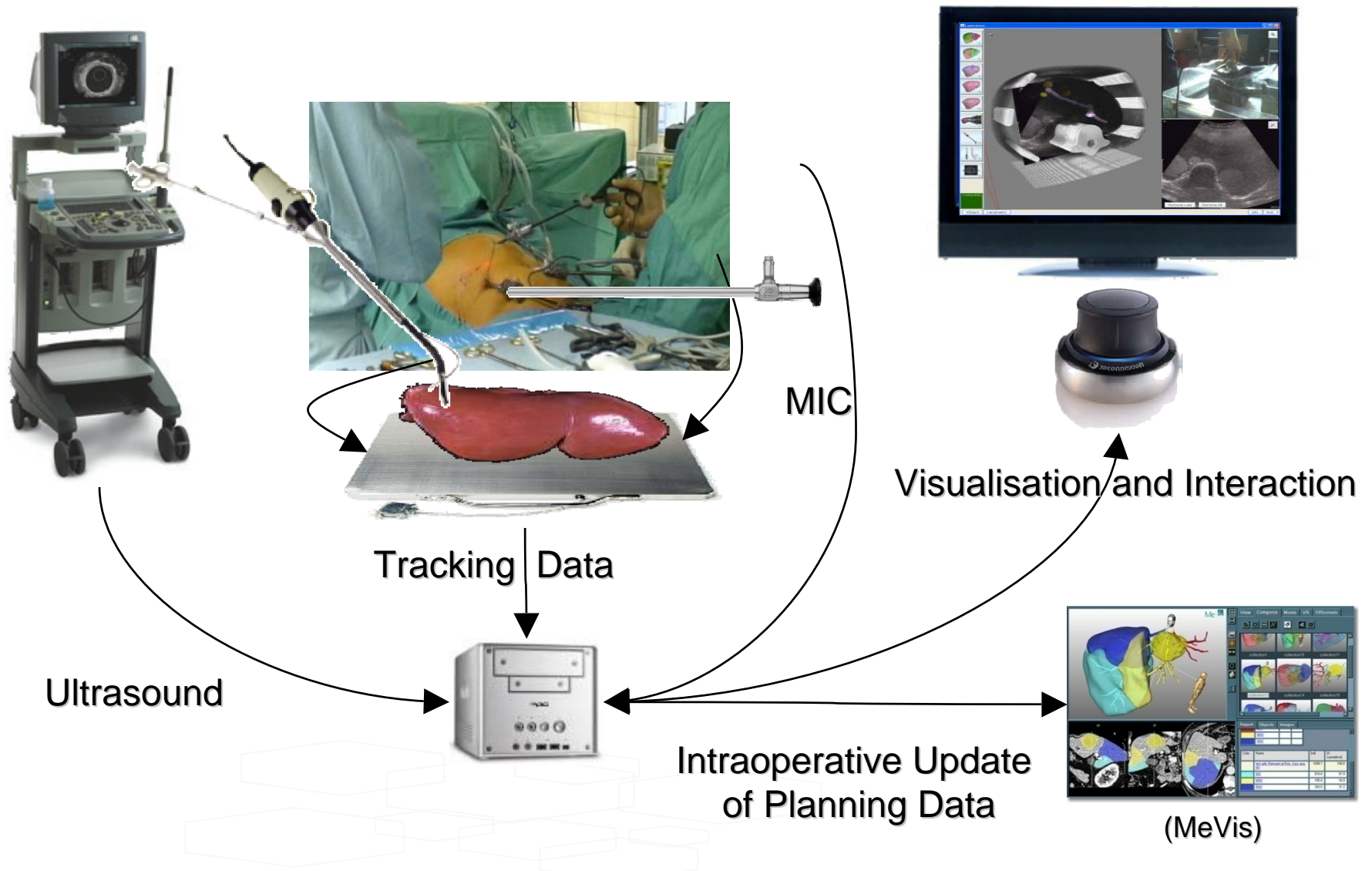
# *Surgical Need for updated Intraoperative Visualisation and Navigation*

## Example Liver Surgery

- 50.000 cases per year (Germany)
- <2 % Minimal Invasive Procedures
- Increasing interest of surgeons and patients



# Interfaces of LapAssistent<sup>®</sup>



# *State-of-the-Art: LapAssistent®*

- First functional prototype tests
- Ongoing CE-Certification
- Multicenter Study Laparoscopic Liver Surgery  
ProNaviC  
German Surgical Study Network, Heidelberg



# *Our Key Knowledge*

- Intraoperative update of planning data
- Navigation of MIC-Equipment
- Visualization of intraoperative szenario



# System Connection

Planning

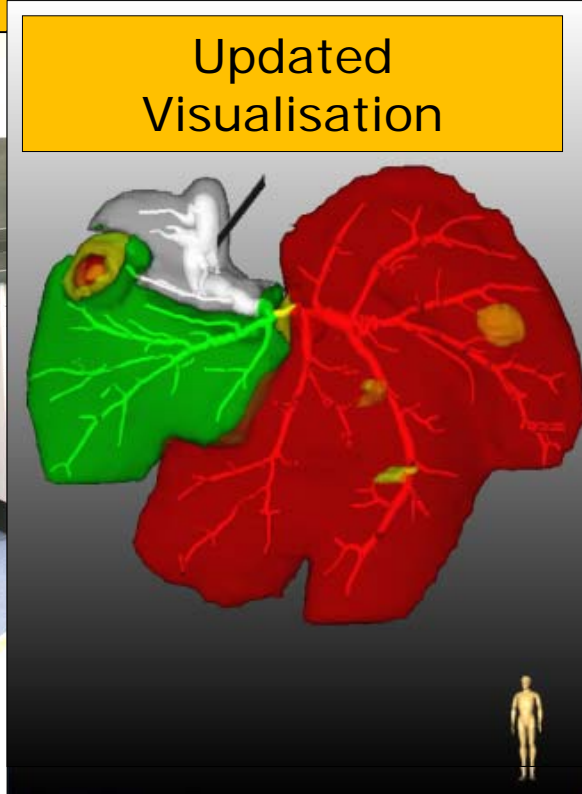
Navigation Systems

Updated Planning Data

New Target Position

Updated Visualisation

Navigation System



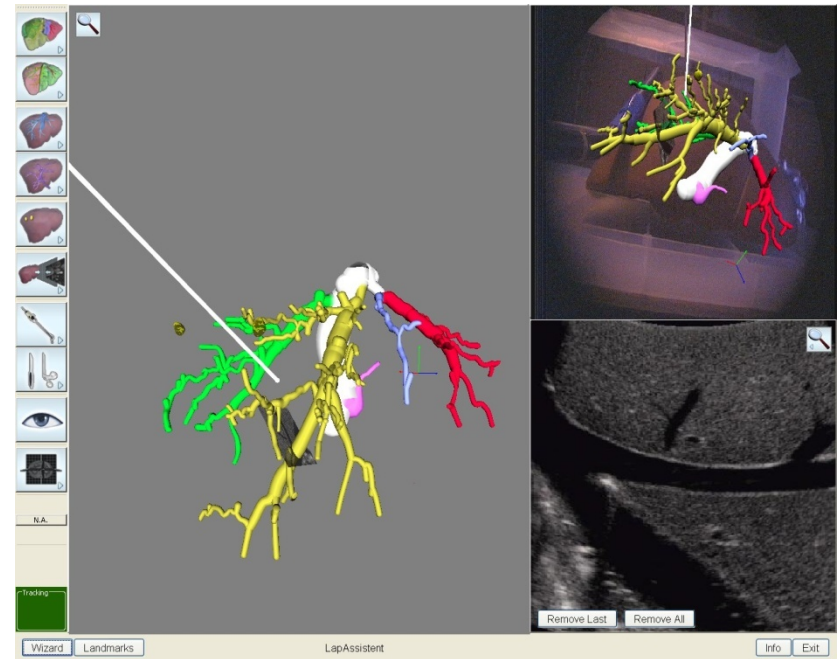
# Where do we go?

## Technical aspects

- More accurate registration and visualization
- Augmented reality

## Medical aspects

- Further clinical evaluation
- Higher number of minimal invasive procedures



# *Business Idea - LapAssistent©*

## Current field of application

- Liver

## Potential future applications

- Abdominal
- Thoracic
- Pancreatic
- Vascular
- Interventional



# *Business Idea - LapAssistent©*

## Potential cost savings

- Independence from different OR-environments
- Shorter hospital stay
- Earlier return to work
- Outstanding property for hospitals



# *Business Idea - LapAssistent©*

Potential Buyers/Licencees/Investors:

- Medical industry for minimal invasive surgery
- Ultrasound companies
- Surgical Training Centers
- Hospitals

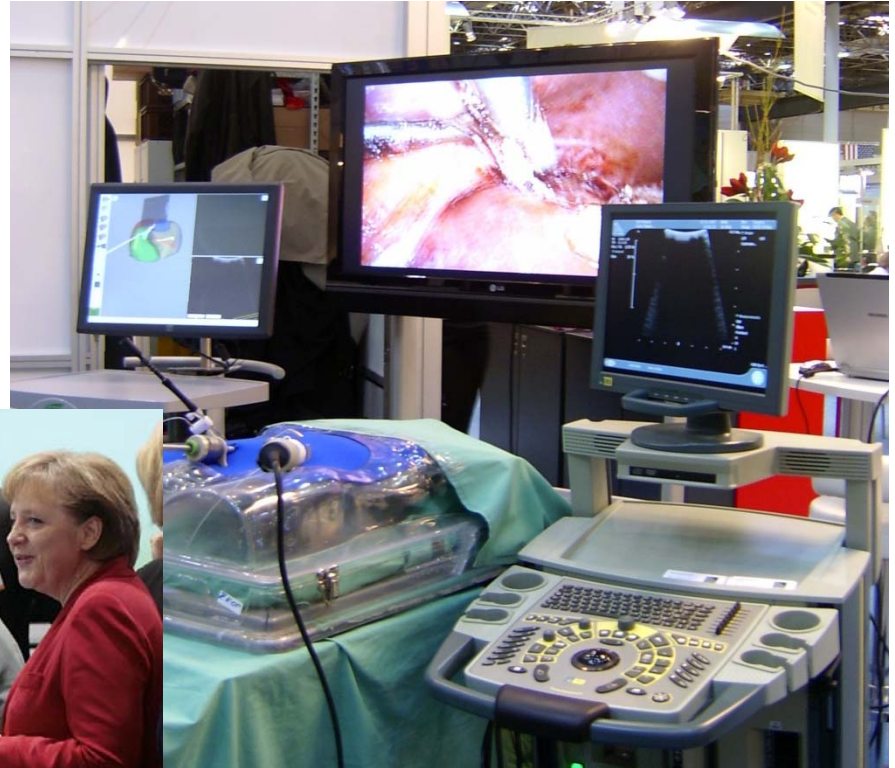


## *What are we looking for*

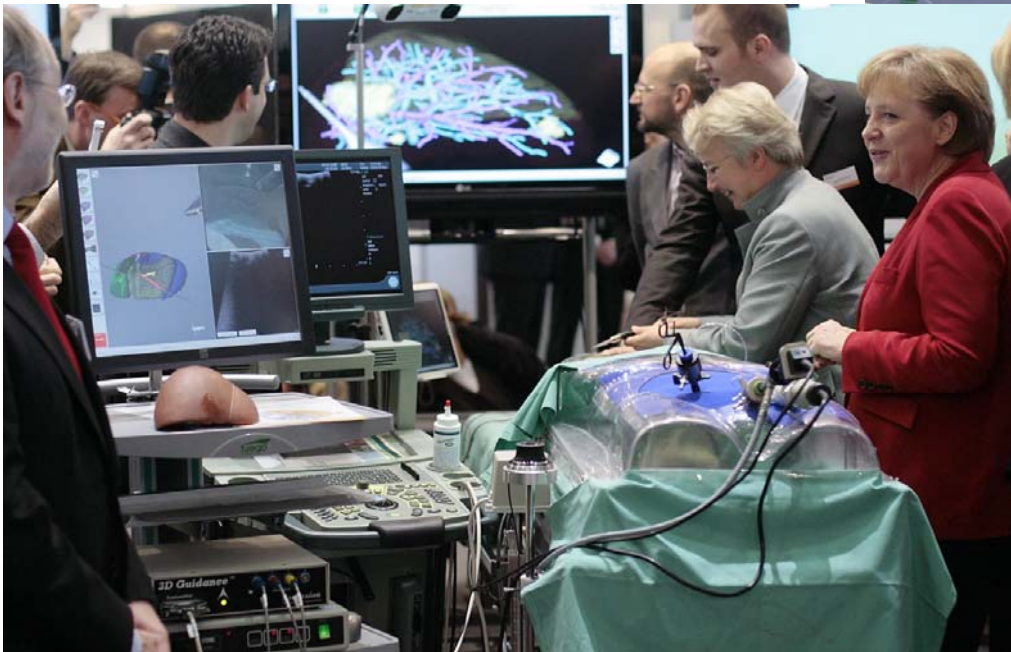
- Partners for development of further organ modules
- Bring our system to market
  
- Required time per module: 1.5-2 Years
- Required investment per module: 500 T€ -1 Mio €



# Medica 2007/ CeBIT 2008



MEDICA 2007



CeBIT 2008 (Photo: Reuters)



**Thank you for your Attention!**