

# The 2 Minute Guide



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**Consortium**

The FUSIMO and TRANS-FUSIMO consortium comprises 13 partners, led by Fraunhofer MEVIS, Institute for Medical Image Computing, Bremen, Germany.

# TRANS(FUSIMO)

FUSIMO has developed a planning system for MR guided focused ultrasound (MRgFUS) that copes with the challenges in the treatment of moving abdominal organs: motion due to breathing and shielding of the target by the rib cage. TRANS-FUSIMO will translate the FUSIMO demonstrator into a clinically applicable system spanning the full clinical workflow of planning, conducting and assessing as well as learning from the procedure.

## Aims

This will be a major step in making FUS treatment in the abdomen a competitive alternative to the surgical gold standard. A step that will bring focused ultrasound closer to becoming a safe and successful non-invasive procedure for tissue ablation in moving abdominal organs.

## Challenges of FUS Therapy



Heat transfer within the body



Movement of the target



Acoustic shielding of the target by the ribcage



The physiology of the organs



Energy deposition in the tissue



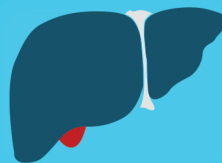
Vicinity of the target to risk structures

## How does it work?

The system consists of several models which describe biophysical processes and their interaction:

### Abdominal organ model

Simulate motion of target and relevant structures and its influence on ultrasound application.



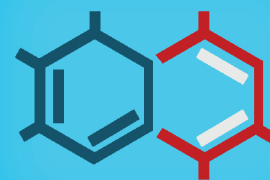
### Microscopic tissue model

Simulate direct heat ablation, energy distribution, tissue heating and cooling.



### Target organ or tumour model

Capture organ or tumour physiology, and organ/tumour reaction to therapy.



## Long-term impact

Higher quality treatment of the patients at lower financial demand for health insurance and social welfare.



Improving the treatment of cancer and metastases in a variety of organs and for a wide range of patients.

Reducing the estimated 1.7 million cancer related deaths in Europe each year.



Find out more about the project by visiting our website at [www.trans-fusimo.eu](http://www.trans-fusimo.eu)