

# EUREKA NETWORK PROJECT XamFlow Nr. 9126

## SPEEDING UP MICRO-CT SCANNING

**A Eurostars project has resulted in an innovative software system for 3D scanning being developed to support a range of industries from medicine to material science.**

Micro-computed tomography or «micro-CT» is x-ray imaging in 3D, by the same method used in hospital CT (or «CAT») scans, but on a small scale with massively increased resolution. It enables scientists and engineers to see inside structures and reveal hidden secrets.

Micro-CT imaging is opening up a world of opportunities across industries. Now the EUREKA funded project Xamflow has developed an innovative software application that makes micro-CT examinations more efficient and less labour intensive than before.

«Micro-CT scanning started with human biological materials, but nowadays anything can be scanned, synthetic materials, small animals, food, minerals, and fossils for example,» says Tor Hildebrand owner of project partner Imacomp AB based in Sweden.

«Companies want to check the internal structure of their products without having to destroy their samples,» Hildebrand explains, «with micro-CT scanning, you can check the microstructures in bone, porosity of food, and search for micro anomalies inside materials».

Typically scanning using micro-computed tomography is a complicated process that requires the scanning of multiple samples.

«The whole process is complex, time-consuming and involves many manual steps,» explains Hildebrand, «there is a lot of switching between applications and tools, slowing the process down and increasing costs and sources of errors,» he adds.

Because of this complexity the project needed to bring together a consortium of partners with a range of different specialisations.

«We needed a company that knew the scanning process, a company that developed the hardware, a company that knew how to analyse the images, a company that could build the whole backend system, and a web developer.

We were able to find a team of five different companies and institutes and bring them together to start this project,» says Hildebrand. Lucid Concepts AG based in Switzerland handled the visualization and the image-processing framework.

The Swedish companies ImaComp AB and Capenta AB in Sweden were responsible for the architecture of the full system and the web application development, respectively.

Two Universities, the KTH Royal Institute of Technology in Stockholm and the University of Applied Sciences HSR in Rapperswil, Switzerland supported with clinical analysis and distributed image processing.

Finally, Scanco Medical AG based in Switzerland developed the imaging

hardware. «It was a diverse team of people and specialities this helped us to stay focussed and motivated throughout the project,» says Hildebrand.

At its heart, the Xamflow platform is, in fact, a tool for automating complex workflows. Workflow automation is a growing market as businesses look for ways to streamline their processes to save time and money.

“«The funding allowed us to bring together a team of specialists from across Europe not once but twice that will bring real benefit to medicine and other industries.»

Once the system has been fully developed and is ready for commercialisation, it can be modified to support different domains and customer needs.

«Once we have the system ready for sale we can provide specialised modules to help organisations to solve their complex examination problems,» explains Hildebrand.

Now that the project is finished Xamflow is moving into a beta test phase with first users having access to the system to give feedback and comments.

The international cooperation was invaluable to the success of Xamflow.

### MAIN PARTNER

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### TOTAL R&D INVESTMENT

€416,635 million

### DURATION

January 2015 to March 2017

### COUNTRIES & NATIONAL FUNDING BODIES

 Swiss Commission of Technology and Innovation KTI

 VINOVA

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