DUTCH-GERMAN ALLIANCE TO TACKLE CANCER

An IT company in Germany teamed with a Dutch clinic to give doctors and researchers a new tool in the battle against cancer.

Radiotherapy treatment for cancer has improved over the years, but it is still traumatic for patients because of the way it damages good tissue while targeting the tumours. Doctors and researchers want to refine doses of radiotherapy and improve the diagnosis and treatment of cancer patients, which is why the software SeDI, developed through Eurostars, is so encouraging.

SeDI uses Semantic Web approach for carrying out better image searches, which was first developed by the inventor of the World Wide Web, Tim Berners-Lee.

“We are the first people to apply the techniques for treating big data to medical data,” says Peter Feltens, SeDI’s project coordinator and the managing director of SOHARD Software. Semantic Web techniques teach computer systems to retrieve data in a more sophisticated way than just a straightforward word search, so that the system would understand, for instance, when humans are searching for Blackberry the brand rather than pictures of the fruit.

Project SeDI was born when SOHARD developed a prototype for making semantic searches for medical images like MRI scans and X-rays. It caught the attention of medical physicist Andre Dekker at the MAASTRO Clinic in Maastricht, who tested it. He quickly spotted the potential for improving searches within clinical data across hospitals and countries.

“With their clinical expertise and our software background we were the perfect match,” said Feltens.

Dekker’s team showed the software developers the quantity of images stored by oncology departments around the world, but that their department wouldn’t be able to access data in Australia or even in another Dutch hospital. They developed ways to allow clinical data from patients to be merged with analytic results. Their method allowed for precise searches like: “Display all patients with a bronchial carcinoma bigger than 50 cm²”.

In the field of radiotherapy, effective searches are particularly useful since numerous images are stored during a patient’s treatment. The MAASTRO clinic now uses SeDI to search for data stored relating to tumour volumes and the doses of radiotherapy given. “The availability of this important information helps us to make more accurate clinical decisions for cancer patients,” says Professor Dekker.

SOHARD is now preparing to sell the system to other clinics and is optimistic it will see returns from the intellectual property developed on the project. “We couldn’t have financed this endeavour with all the developers we dedicated to the software development without the grant we received from EUROSTARS”, says Feltens.