Project Profile

STARLIT

Minimising treatment side effects to boost quality of life

The ITEA project STARLIT will develop technologies in radiation oncology to improve the quality of life for cancer survivors by improving treatment accuracy and minimising unintended doses to healthy tissue in image-guided radiation therapy.

ADDRESSING THE CHALLENGE

The rising incidence of cancer worldwide is expected to see an increase of 70% in new cases over the next two decades thereby creating strong demand for efficient treatment. With radiation oncology becoming increasingly successful and the mortality rate of several types of primary cancers falling, the need to minimise the side-effects of treatment, such as incontinence, development of other cancers or skin damage, is growing. STARLIT will address the industrialisation aspects for the next level of complexity and unmet needs in real-time image-guided therapy, enabling the further reduction of dose and patient visits, including maturing a harmonised multi-modal architecture for safety in the context of international standards (IEC).

PROPOSED SOLUTIONS

STARLIT will develop and validate architectures, interfaces, methods, usability and safety concepts, and quality assurance for functionally-integrated but 'independent' complex image-guided therapy systems providing motion-detection, adaptive dose planning based on real-time dose accumulation, and more precise treatment delivery. By bringing together a major RT supplier and major MRI supplier along with three clinical care providers and six SMEs, the consortium will develop technologies in radiation oncology to improve treatment accuracy and minimise unintended dose to healthy tissue in image-guided radiation therapy (IGRT). Technological innovations entail magnetic resonance imaging for 4D anatomy assessment to enable on-line treatment planning, real-time 4D dose accumulation, target tracking, and plan adaptation based on concurrent imaging of anatomy and biomarkers. Given the diversity of the application landscape, a consolidated architecture is required to enable rapid innovation in multiple areas involving SMEs. A STARLIT architecture that includes well-managed interfaces (APIs, data connections and shared user interface concepts) will be made available through licensing of proprietary solutions and provide different options for hardware deployment of high-performance computing, compatible with independent regulatory compliance paths for the different products.

PROJECTED RESULTS AND IMPACT

These innovations, which are largely related to embedded software, local hardware components and processing and visualisation software, will provide a unique proposition to establish a firm competitive position for the project partners. And by building capabilities on a single system-of-systems platform rapid and phased commercialisation of features will be facilitated. European industry will be well positioned to dominate the MR guided RT market segment, with projected top-line revenues of over €650m annually after 2020. Furthermore, the resulting shorter treatment episodes and the reduced side effects offer a real basis for increased confidence and less disruption for cancer patients and their families.
ITEA is a transnational and industry-driven R&D&I programme in the domain of software innovation. ITEA is a EUREKA Cluster programme, enabling a global and knowledgeable community of large industry, SMEs, start-ups, academia and customer organisations, to collaborate in funded projects that turn innovative ideas into new businesses, jobs, economic growth and benefits for society.

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