IMPACT
Personalising, industrialising and optimising healthcare

**ADDRESSING THE CHALLENGE**
Global healthcare systems are focused on improving patient outcome and cost efficiency, but do so in the face of growing demand and declining staff capacity. In the United States alone, roughly 1000 people die every day through preventable medical error. Meanwhile, inefficiencies cost EUR 100 billion per year worldwide. Personalised treatment planning, industrialised treatment and workflow optimisation are necessary steps forward, but require a shift from evidence-based to intelligence-based healthcare.

**PROPOSED SOLUTIONS**
IMPACT (Intelligence based iMprovement of Personalised treatment And Clinical workflow support) will promote automatic data collection and Artificial Intelligence throughout the complete clinical pathway. Building upon previous ITEA projects, various innovations will be developed by a consortium of providers of medical imaging hardware and software, medical display and communications solutions and visualisation, integration and supporting tools. IMPACT’s use cases will focus on oncology and cardiology, which suffer from unpredictable patient trajectories and fragmented data repositories. IMPACT will combat this, for instance, through the simultaneous usage of multiple imaging features and Machine Learning analysis of the results, which has been shown to provide more accurate definitions of tumour subtypes. IMPACT’s main outcomes can be summarised as follows. For personalised treatment planning, aggregated data repositories will provide an overview of a patient’s entire medical record. Smart Mechanic Devices and image guidance will lead to industrialised treatment, allowing surgeons to perform less invasively. Finally, workflow optimisation partners will create real-time intelligent dashboards and data presentation solutions. By leveraging advancements in data intelligence technology, medical workflow robotics and real-time imaging navigation, the underutilised field of radiomics (converting digital medical images into mineable data) will also be developed.

**PROJECTED RESULTS AND IMPACT**
The predicted increase in healthcare efficiency is enormous: whereas clinical business analyses now take days or weeks to manually combine data, IMPACT’s Clinical Business Information System (CBIS) should run analyses in less than five minutes. As for the patient experience, MRI scanning times should be reduced by 50% and liver surgery accuracies improved by 20%. This is just a taste of what intelligence-based healthcare can achieve, with the global healthcare IT market expected to be worth USD 280.25 billion by 2021.
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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