A new international research programme targeting the accurate prognosis and precise treatment of prostate cancer will be coordinated by FORTH

A big European research project on developing new software tools for the accurate prognosis and precise treatment of prostate cancer, will be coordinated by Prof. Manolis Tsiknakis, Affiliated Professor at the Institute of Computer Science (ICS) of FORTH. The project "***ProCAncer-I: An AI Platform integrating imaging data and models, supporting precision care through prostate cancer's continuum***" is funded by the European Commission within the **Horizon 2020** Research and Innovation program, with a total amount of 10 million euros for a 4-year time period, of which 1.4 million euros will specifically fund the research activities at FORTH.

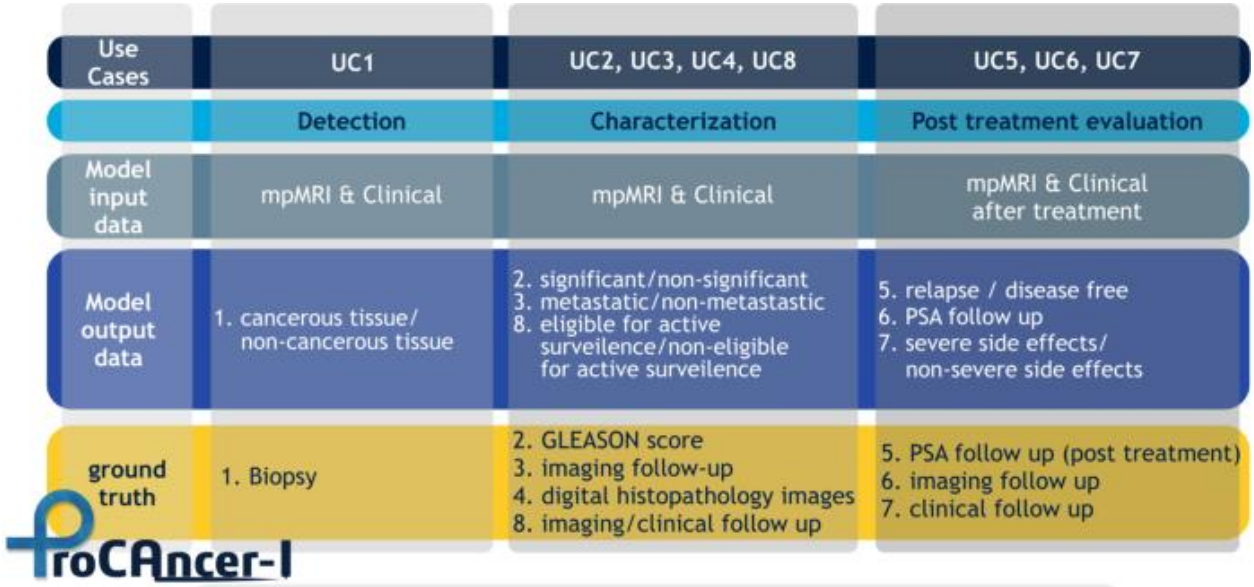
In Europe, prostate cancer (PCa) is the second most frequent type of cancer in men and the third most lethal. Current clinical practices, are often leading to overdiagnosis and overtreatment of indolent tumors, and suffer from lack of precision, thus calling for advanced AI models to go beyond current SoA by deciphering non-intuitive, high-level medical image patterns, and increase performance in discriminating indolent from aggressive disease, early predicting recurrence and detecting metastases or predicting effectiveness of therapies, e.g. prediction of toxicity.

The objective of the "**ProCAncer-I**" is to develop advanced artificial intelligence models to address unmet clinical needs along the care continuum, i.e. from early diagnosis, to the prediction of metastases and prediction of response to treatment. To achieve this, partners will generate a large interoperable repository of health images and a scalable high performance computing platform hosting the largest collection of PCa multiparametric Magnetic Resonance Images, but also histological and clinical data to be used for developing robust PCa AI models. To ensure the rapid clinical implementation of the models developed, the project's partners will robustly monitor performance, accuracy and reproducibility in the context of well-designed prospective evaluation studies.

The ProCAncer-I project brings together 20 partners from 12 different countries from Europe and other countries (i.e. Center for Machine Learning, Harvard University, US and Hacettepe University, Turkey), including PCa centers of reference, world leaders in AI and innovative SMEs, with recognized expertise in their respective domains, with the objective to design, develop and sustain a cloud based, secure European Image Infrastructure, with tools and services for data handling. The platform that will be developed will host the largest collection of PCa multi-parametric (mp)MRI, anonymized image data worldwide (more than 17,000 cases and more than 1.5 million images), based on data donorship, in line with EU legislation (GDPR).

From FORTH, the Computational BioMedicine Laboratory of the Institute of Computer Science, headed by Associate Professor Costas Marias, and the Unit of Medical Technology and Intelligent Information Systems of the Institute of Molecular Biology and Biotechnology, directed by Prof. Dimitris Fotiadis, will participate in the ProCAncer-I project. Dr. Nikolaos Papanikolaou from the Champalimaud Foundation in Portugal is the scientific coordinator of ProCAncer-I.

More information you can find at: https://www.procancer-i.eu/



UC1 - Detection of prostate cancer with high accuracy both in peripheral and transitional zone
UC2 - Characterization of cancer according to its biological aggressiveness into clinically significant and non-significant disease
UC3 - Identification of patients with metastatic prostate cancer as early as possible
UC4 - Radiologic - Histopathologic correlation to provide biology-based validation of AI models
UC5 - Prediction of the risk of disease recurrence
UC6 - Prediction of treatment response in case of radiation therapy
UC7 - Prediction of post radical prostatectomy and/or Radiation-induced urinary toxicity
UC8 - AI-powered patient stratification for enrollment in Active Surveillance programs