

# Improving staging through machine learning based on multiparametric imaging: a collaborative platform

**HOST INSTITUTION:** Siemens Healthcare GmbH

Siemens Healthcare GmbH develops innovations that support better patient outcomes with greater efficiencies, giving providers the confidence they need to meet the clinical, operational and financial challenges of a changing healthcare landscape. As a global leader in medical imaging, laboratory diagnostics, and healthcare information technology, we have a keen understanding of the entire patient care continuum—from prevention and early detection to diagnosis and treatment. The company is headquartered in Erlangen, Germany. Siemens Healthcare GmbH operates as a subsidiary of Siemens AG.



## **DESCRIPTION OF THE PROJECT (ESR12 - Nicolò Capobianco)**

The ESR will develop a set of machine learning tools for collaboration across institutions that allow (1) systematic annotation of multimodality data (CT, MR, PET, SPECT); (2) integration of non-imaging data; (3) methods of standardizing data across patient datasets; and (4) sharing the pool of annotated data among research groups. In this phase the research goals will be focused on the methods of standardization, artefact identification and consistency checking between datasets and between sites, in order to enable broader and more reliable use. The second goal of the project is application of the framework to prostate cancer, as an illustration of the power of the platform.