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Description

The goal of EuCanImage is to build a highly secure, federated and large-scale European cancer imaging platform, with capabilities that will greatly enhance the potential of artificial intelligence (AI) in oncology. Firstly, the EuCanImage platform will be populated with a completely new data resource totaling over 25,000 single subjects, which will allow to investigate unmet clinical needs like never before, such as for the detection of small liver lesions and metastases of colorectal cancer, or for estimating molecular subtypes of breast tumours and pathological complete response. Secondly, the cancer imaging platform, built by leveraging the well-established Euro-Bioimaging infrastructure, will be cross-linked to biological and health repositories through the European Genome-phenome Archive, allowing to develop multi-scale AI solutions that integrate organ-level, molecular and other clinical predictors into dense patient-specific cancer fingerprints. To deliver this platform, the consortium will build upon several key European initiatives in data sharing for personalised medicine research, including EUCANCA (cancer genomics and health data sharing), euCanSHare (cardiac imaging and omics data sharing) and EUCAN-Connect (federated data analytics). Furthermore, to foster international cooperation and leverage existing success stories, the consortium comprises the coordinators of The Cancer Imaging Archive (TCIA), the US cancer imaging repository funded by the National Cancer Institute. This will allow EuCanImage to leverage a unique 10-year long experience in cancer imaging storage, anonymisation, curation and management. Finally, a close collaboration between world renowned clinical, radiomics, AI and legal experts within the consortium and beyond will establish well-needed guidelines for AI development and validation named FUTURE, for delivering Fair, Universal, Traceable, Usable, Robust and Explainable decision support systems for future cancer care.

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