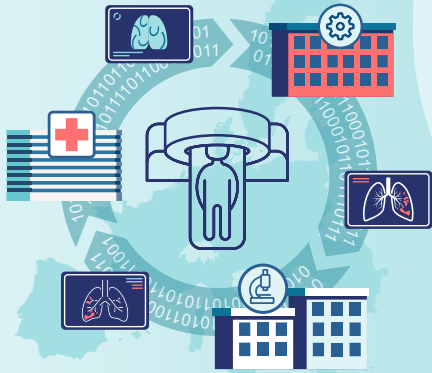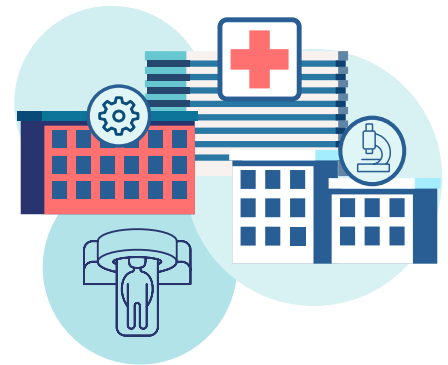European Commission

EUROPEAN CANCER IMAGING INITIATIVE

An EU state of the art platform to demonstrate the power
of Artificial Intelligence and digital technologies to beat cancer

#EUCancerImaging #EUCancerPlan #EUDigitalHealth #DigitalEU
December 2022

Artificial Intelligence is a **powerful tool** that can support **cancer detection, diagnosis and treatment.** The development of innovative digital solutions relies on data, including cancer imaging data. **Cancer imaging datasets exist but are scattered** among many repositories and clinical centres in Europe, and they are **currently not easily accessible to researchers and innovators.**

The objective of the European Cancer Imaging Initiative is to **deploy a federated infrastructure of cancer images** covering different cancer types, making them **available to clinicians, researchers and innovators.** It will allow for the development, benchmarking, testing and piloting of Artificial Intelligence-based technologies for cancer diagnosis and treatment.

The European Cancer Imaging Initiative will offer a **backbone for the next generation of cancer diagnostics and treatments.**

The European Cancer Imaging Initiative will:

Capitalize on the recent advances and successes of **Artificial Intelligence systems** in helping medical professionals to **detect and diagnose cancers**

Support the piloting and development of **innovative computer-aided solutions** to achieve **greater accuracy and reliability in cancer imaging** and **personalised care**, in line with the objectives of the Europe's Beating Cancer Plan

Showcase how medical images can be accessed, used and/or pooled while ensuring **a high level of ethics, trust, security and personal data protection** in full compliance with EU values and rules

The European Cancer Imaging Initiative is supported by a large-scale project on federated European infrastructure of cancer images data, EUCAIM

Funded under the Digital Europe Programme (around 18 MIO EU co-funding)

Providing a central hub that federates distributed nodes with cancer images (repositories, research infrastructures, and hospitals)

Supporting the creation of new cancer image datasets and further extension and interoperability of the existing ones, including through donation of data from citizens

EUCAIM (European Federation for Cancer Images) will:

Build on the work of the **"Artificial Intelligence for Health Imaging"** (AI4HI) Network of 5 large EU-funded projects on **big data and AI in cancer imaging**

Start with **21 clinical sites** from 12 countries

Connect at least **30 distributed data providers** from 15 countries by 2026

Cover **anonymized images** and annotations of common (e.g. breast, lung, prostate, colorectal) and rare (e.g. paediatric) cancers

Include **more than 100,000 cancer** cases by 2025

Deploy at least **50 Artificial Intelligence algorithms, AI tools** and **clinical prediction models** for researchers within the infrastructure

The European Cancer Imaging Initiative

brings together and adds value to **tools, technologies, stakeholders,** including links with the **AI Testing and Experimentation Facility for Healthcare** (TEF-Health) and the **European Digital Innovation Hubs** established under DIGITAL.

TIMELINE

2023
Design completed
- Requirements analysis
- Design
- Collaboration mechanisms
- Early release of the Data Federation Framework

2024
First version of platform
- Platform validated and populated for external production
- Data providers connected
- Prototype for federated learning
- Benchmarking platform

2025
Final release of platform
- Federated learning
- Final version of tools and services
- Federation of new cancer images databases through open calls
- Implementation of clinical use cases

2026
Full operation of federated repository
- Integration with other data infrastructures
- Piloting of the business model
- Legal and operational model finalized

2027
Expansion

Testing – experimentation – benchmarking – interoperability – ethics, trust, security – stakeholder engagement

For more information please visit: https://digital-strategy.ec.europa.eu/en/policies/cancer-imaging

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