

Advancing Precision Medicine for Europe's Cancer Patients with AI-powered Imaging

ESIRF EUROPEAN SOCIETY
OF RADIOLOGY

A Thematic
Network led by
the European
Society of
Radiology



/ Background

**Large
burden of
cancer on
society.**

**2.7 million
in 2020
(EU)**

Europe accounts for
**1/10th of the world
population but 25%
of global cancer
cases**

In 2020, 2.7 million EU
citizens diagnosed
with cancer

**25% lives
lost by
2035**

If **no action
taken**, estimated
**increase of lives lost
to cancer by over
25% by 2035**,
making cancer
the **leading cause
of death in Europe**

**AI-powered
precision
medicine** holds
tremendous
**promise in
advancing
cancer care** and
**reducing the
burden** of this
disease **on
individuals and
society**

**AI-powered
precision
medicine** builds
upon **significant
advancements**
in both **oncology
and AI**, leading
**to more
personalised
and effective
treatment
strategies.**

/ Policy Context

Our Thematic Network builds upon EU health policy priorities and takes into account the new legislation related to AI and digital health.

Europe's Beating Cancer Plan – the EU's new approach to cancer prevention, treatment and care

The European Cancer Imaging Initiative is one of the flagships of Europe's Beating Cancer Plan



EU's Digital Decade Policy (infrastructure development, capacity building, ehealth)

Prevention
Addressing key risk factors

Early detection
Improving access, quality, diagnostics

Diagnosis and treatment
Ensuring integrated, comprehensive care

Quality of life
Improving support, rehabilitation, integration

- / Aim: to make the most of the potential of data and digital technologies such as AI to combat cancer
- / Implemented by **EUCAIM**, the **Cancer Image Europe** project
EUCAIM provides a robust, trustworthy platform for researchers, clinicians, and innovators to access diverse cancer images, enabling the benchmarking, testing, and piloting of AI-driven technologies to advance cancer diagnosis and treatment.

EU's digital health policies

- / AI Act
- / European Health Data Space (EHDS)

/ Cancer Image Europe

Our Thematic Network will work in close partnership with EUCAIM – Cancer Image Europe

What EUCAIM will deliver

- / Atlas of >60 million annotated cancer images and >100,000 patients.
- / A continuously growing Infrastructure based on observational studies at hospitals, from >21 clinical sites at >12 countries (DWH and screening programmes).
- / An AI platform to develop reproducible image-based decision support models in oncology.
- / Impact on Clinical Pathways in Radiology and Oncology: growing evidence-based use of imaging biomarkers and imaging panels identifying the right treatment to the right patients, in many different oncologic situations.
- / Align with policy makers on the role of European Health Data Space (EHDS); AI Legislation; Ethical, Legal, and Social Implications (ELSI); and Sustainability initiatives such as EDIC.

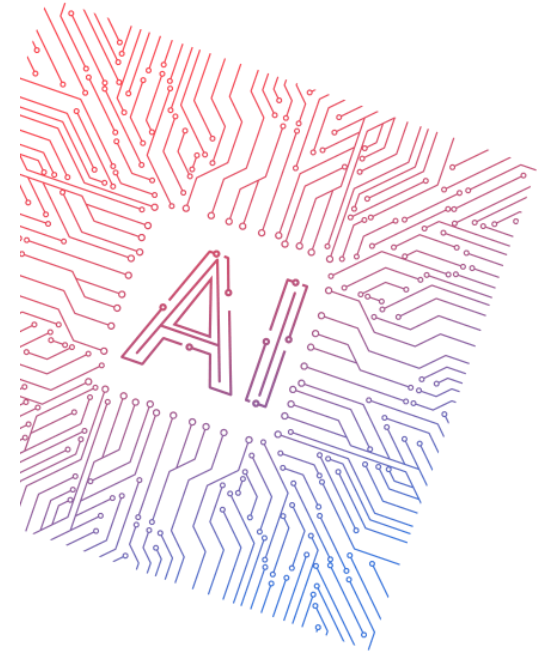


/ Vision

Our Thematic Network will work with health stakeholders to

- / achieve better integration of AI-powered imaging with other diagnostic tools and data
- / bring integrated diagnostics into the clinic
- / contribute to the full implementation of Europe's Beating Cancer Plan, the EU Cancer Mission and digital health in Europe.

You as health stakeholders are invited to join the discussion, share good practices as well as hurdles encountered in the uptake of AI-based solutions and integrated approaches in the cancer care continuum and to jointly define recommendations and actions needed to move forward.



/ Objectives 1/2

- / discuss with health stakeholders how AI-powered cancer care can be brought to Europe's patients,
- / take Cancer Image Europe as an example,
- / follow a holistic approach, including other types of data and infrastructures,
- / discuss what is needed to fully leverage the complementary strengths of AI algorithms and diverse diagnostic data sources to develop accurate clinical prediction models of outcome with integrated data to enhance treatment decision-making, improve patients' outcome and advance precision oncology approaches,
- / discuss the benefits/role of EUCAIM and linkage with other data infrastructures and Health Data Access Bodies,
- / highlight the need to link siloed health data from different sources,
- / promote deployment and uptake of these infrastructures by Member States,

/ Objectives 2/2

- / collect, discuss and analyse good practice examples as well as hurdles encountered
- / discuss pathways to clinical validation of AI-solutions and develop recommendations how to transfer AI-solutions into clinical practice guidelines,
- / involve patient representatives in the development of the joint statement to consider suggestions for patient engagement strategies to build trust in AI-powered cancer care and ensure accessibility,
- / identify education and training needs of the relevant health workforce to ensure adequate digital upskilling and provide related recommendations,
- / discuss the impact of the AI Act and EHDS on AI-powered integrated diagnostics in cancer care and related R&I, and identify topics where guidance for implementation at Member State level is needed to avoid fragmented approaches, as well as the need for further legislative action at EU level,
- / develop recommendations for future EU actions, including topic suggestions for the 10th Framework Programme.

/ Roadmap towards implementation

- / set up a multidisciplinary, inclusive network of stakeholders
- / introductory webinar on EUCAIM focusing on interoperability and integration with other data types,
- / educational activity on HTA and quality assurance of AI solutions in cancer care,
- / focus meetings to collect and share best practices,
- / meeting with patients and patient representatives to discuss their specific needs/concerns and input,
- / webinars to discuss, develop, review the joint statement,
- / involve you as Thematic Network stakeholders in the planning of a policy/stakeholder event planned by ESR/EUCAIM to be held in Brussels in Q1 2025 to collect input

> **Key Deliverable:
Joint Statement
by November
2024**

> **Health
stakeholders:
Join our
Network and
have your say!**

/ Invited stakeholders

European medical/scientific societies



Other European health stakeholders



European patient associations/groups



/ Invited stakeholders

European industry associations



Consortium members of relevant projects



Leading comprehensive cancer centres and universities in Europe



L'ONCOLOGIA ITALIANA È NATA QUI



/ EUCAIM Partners and stakeholders


EUROPEAN INSTITUTE FOR BIOMEDICAL IMAGING RESEARCH


Instituto de Investigación Sanitaria La Fe

Beneficiaries: **65**
 Affiliated Entities: **10**
 Associated Partner: **1**

Partners: 76

Stakeholders: 22+140


EURO BIOIMAGING


UNIVERSITAT POLITÈCNICA DE VALÈNCIA


eatris
 European infrastructure for translational medicine


BBMRI
 Biobanking and Biomolecular Resources Research Infrastructure


dkfz.
 GERMAN CANCER RESEARCH CENTER IN THE HELMHOLTZ ASSOCIATION


UNIVERSITAT DE VALÈNCIA


S2 GRUPO


UPPSALA UNIVERSITET


National Research Council of Italy


CSIC
 CONSEJO SUPERIOR DE INVESTIGACIONES CIENTÍFICAS


HOSPITAL BIOMEDICU VIRGEN DEL ROCÍO


sciensano


GHU Porto


NETHERLANDS CANCER INSTITUTE
 ANTONIE VAN LEEUWENHOEK


Maastricht University


region västerbotten


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Gemelli


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CRG
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ARISTOTLE UNIVERSITY OF THESSALONIKI


UNIVERSITAT DE BARCELONA


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i3 Instituto de Salud Carlos III


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FORTH
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li.u LINKÖPING UNIVERSITY


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Centro Hospitalar Universidade do Porto


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OWKIN


ΕΛΛΗΝΙΚΗ ΑΝΤΙΚΑΡΚΙΝΙΚΗ ΕΤΑΙΡΕΙΑ HELLENIC CANCER SOCIETY


German Oncology Center


IQVIA


LIMICS


Technical University of Munich


COCIR
 Associação Oncologia


bahia software


SYNLAB


Medexprim


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Quibim


EMBL


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MATICAL INNOVATION


VINNOVA
 Sweden's Innovation Agency


INCISIVE


UNE
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EUPHA
 EUROPEAN UNION PUBLIC HEALTH ASSOCIATION


EuSoMI


FEAM
 Federation of European Academies of Medicine


ESTRO
 European Society for Radiotherapy & Oncology


TIMELEX


EORTC
 European Organization for Research and Treatment of Cancer
 The future of cancer therapy


universität wien


EANM
 European Association of Nuclear Medicine


PRIMAGE
 Medical Imaging Artificial Intelligence Childhood cancer research


PoCAncer-I


ESOI
 European Society of Oncologic Imaging


TEHDAS


chameleon


ESRF
 EUROPEAN SOCIETY OF RADIOLOGY


EUCAN IMAGE


EACR
 European Association for Cancer Research


ACR
 AMERICAN COLLEGE OF RADIOLOGY


european cancer organization


TILBURG UNIVERSITY


HSH HEALTH DATA HUB


NAKO NATIONALE KOHORTE


European Commission


ESRF EUROPEAN SOCIETY OF RADIOLOGY


EUCAIM
 CANCER IMAGE EUROPE

Thank you!

Let's work together to leverage the potential of AI and improve cancer care for Europe's patients