



IFIGENEIA

Innovative Facility for Isotope GENeration
with Efficient Ion Accelerator

IFIGENEIA General presentation



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IFIGENEIA Presentation

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Project overview

- › Project title: Innovative Facility for Isotope GENeration with Efficient Ion Accelerator
- › Acronym: IFIGENEIA
- › Programme: Horizon Europe – WIDERA-2023-ACCESS-07
- › Duration: March 2025 – February 2029 (48 months)
- › Total Budget: €6,000,000
- › Coordinator: Aristotle University of Thessaloniki (AUTH), Greece
- › Project motto: „IFIGENEIA: Scientific knowledge for the health of tomorrow.“



Our Goals

Implement Linear Accelerator (LINAC) technology in Europe to improve healthcare by:

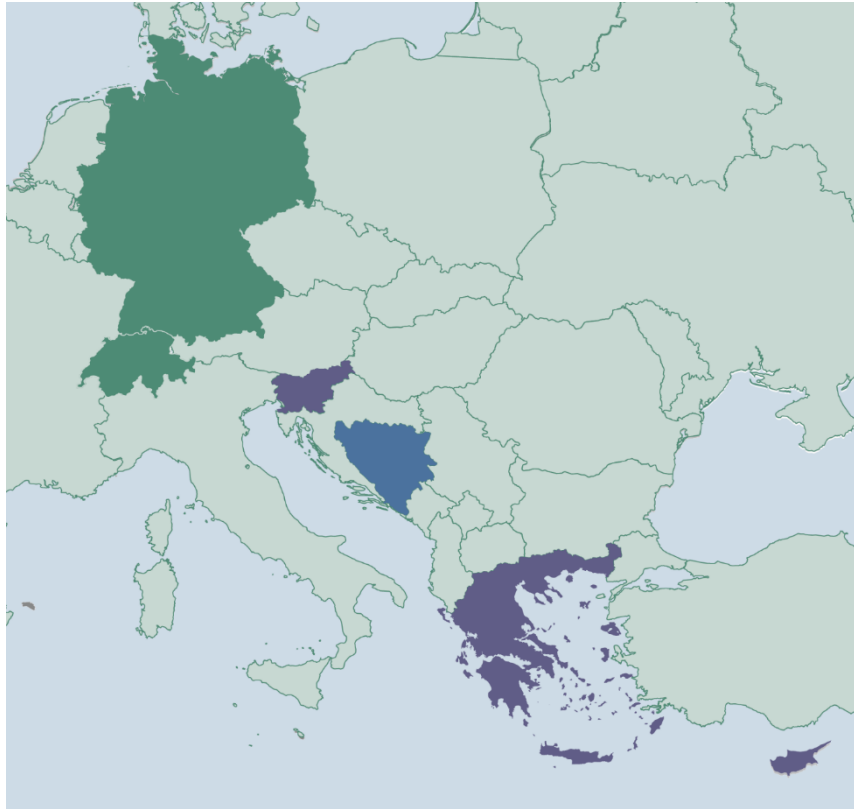
- › Designing sustainable facilities for radionuclide therapy, diagnostics, and theranostics.
- › Establishing Centres of Excellence in Greece, Slovenia, and Cyprus to operate LINAC facilities that produce a wide range of medical radioisotopes.
- › Strengthening collaboration between science, industry, and healthcare.

Key Activities

- › Technical design and safety studies for a unique LINAC facility targeting to societal and medical applications in Europe.
- › Design and develop laboratory infrastructure fully compatible with current Good Manufacturing Practices (cGMP) for production of a wide range of mainstream and emerging radiopharmaceuticals.
- › Tailor training programs, exploiting innovative virtual training tools, and support researcher exchanges to build technical capacity across Europe, via inclusive participation, mentoring and regional collaboration.
- › Create an investment strategy and plan towards the sustainable future of the LINAC Excellence Hubs.
- › Communicate project outcomes and share knowledge widely through targeted dissemination efforts.
- › Define and prioritize a LINAC-based portfolio of diagnostic, therapeutic, and theranostic radionuclides to meet the current and future needs of the Balkan region.



Geographical Focus



Main Hubs

Greece	LINAC design, Beam dynamic studies, Beam parameters and HW specifications, Safety and radiation protection requirements, Small scale LINAC prototype, Pilot in health and culture.
Slovenia	Controls, Lab condition development, Isotopes identification, Ligands investigation, Pilot pre-clinical studies.
Cyprus	Exploitation Strategies, Business Plan, Investment Plan, Private Equity.

Mentorship for Western Balkans

Bosnia and Herzegovina	Support for future excellence hubs: Mentoring activities, Knowledge transfer.
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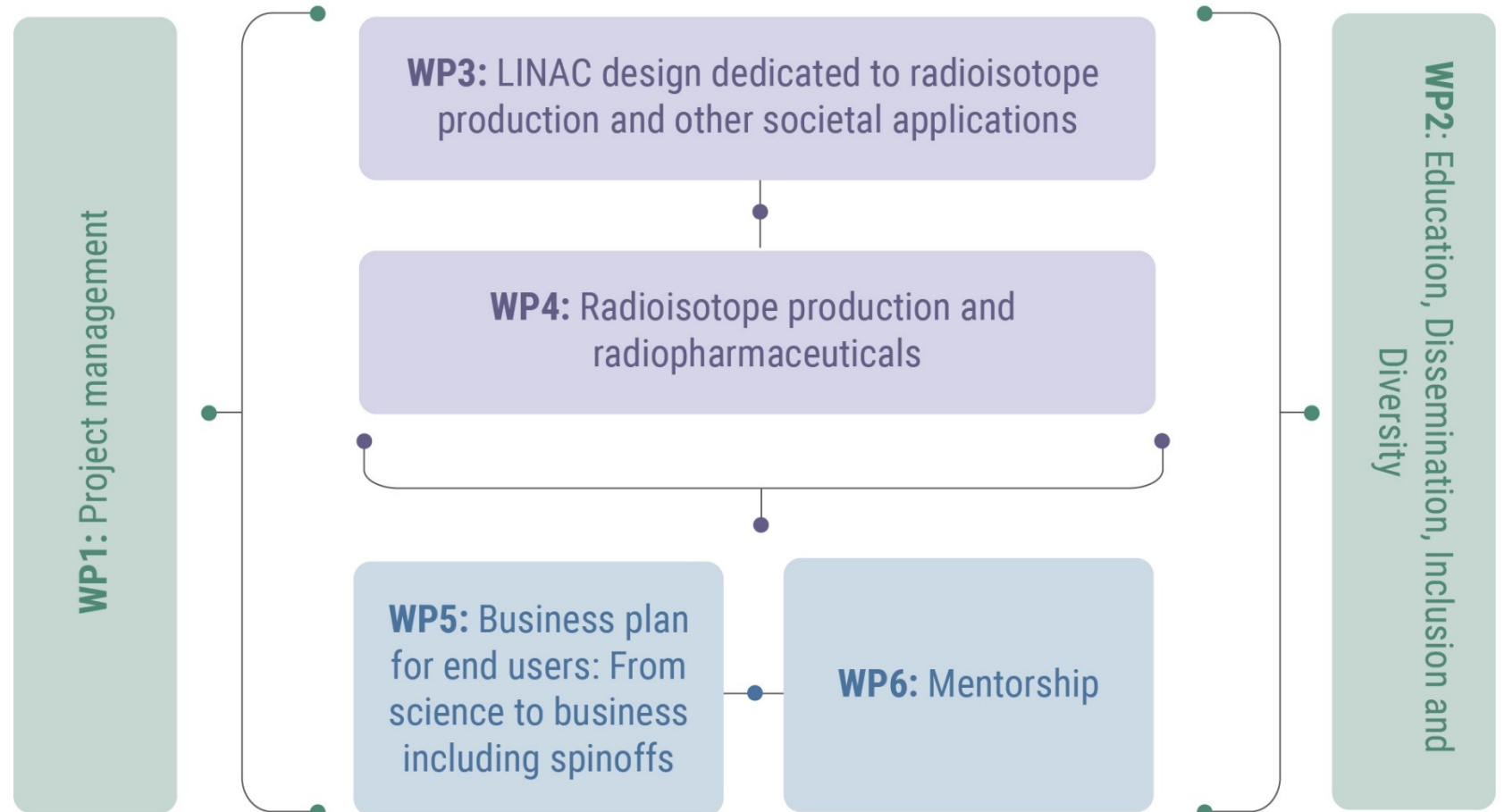
International collaboration

CERN, DKFZ, GSI Ensuring scientific excellence and regional impact.



IFIGENEIA Work Packages

- WP1 Leader:
Aristotle University of
Thessaloniki
- WP2 Leader:
Jožef Stefan Institute
- WP3 Leader:
Aristotle University of
Thessaloniki
- WP4 Leader:
University of Ljubljana
- WP5 Leader:
RTD TALOS Limited
- WP6 Leader:
University of Cyprus



Gantt Chart



The Concept



Motivation and Current Status



Cyclotrons



Nuclear Reactors

In Europe, more than 10 million people each year need nuclear medicine procedures for diagnosis or treatment. At the moment, cyclotrons and aging nuclear reactors are the only sources of the radioisotopes needed to make radiopharmaceuticals, but both have well-known limitations.

The IFIGENEIA Project

Our project introduces advanced LINAC technology as a complementary approach to cyclotrons and nuclear reactors, offering a safer, more flexible, and sustainable way to make a wide range of radioisotopes.

By designing modern production facilities and establishing Excellence Hubs in Greece, Slovenia, and Cyprus, we aim to strengthen regional capabilities and ensure patients across Europe can access life-saving treatments without delays.

Through new laboratories, virtual training tools, and strong partnerships between science, healthcare, and industry, this initiative will help build a more resilient and innovative radiopharmaceutical landscape for the future.

Our Vision

Introduce the Linear Accelerator technology in Europe to provide access to diagnostic, targeted therapies and theranostic radiopharmaceuticals.

A LINAC system designed for the production of a wide range of medical radioisotopes, including:

- **Diagnostic isotopes** (for imaging),
- **Therapeutic isotopes** (for treatment),
- **Theranostic isotopes** (for both diagnosis and therapy),
- **Generator-produced isotopes,**
- **Other emerging medical isotopes.**

1. To generate multiple medical isotopes simultaneously, creating a sustainable supply at commercial scale to support next-generation cancer diagnostics and therapies.
2. A compact and sustainable facility, designed with advanced shielding and safety standards, located close to hospitals for direct patient benefit.
3. Multipurpose facility (Cultural heritage and industrial applications, irradiation facility for clinical tests).
4. In the long term, the facility could evolve to include proton therapy (>50 MeV), broadening its impact in cancer treatment.



The IFIGENEIA Team





Connect with us

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 <https://ifigeneia.eu/>

 <https://www.linkedin.com/company/ifigeneia/>

Thank you for your attention



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