

IHI Call Days | Call 12

Dose verification in proton therapy: *vivid-pro*

Contact person name: Marcin Balcerzyk

Organisation Bioaraba Health Research Institute

E-mail: marcinwojciech.balcerzyk@bio-araba.eus

Link to the IHI brokerage platform:

- [Proposal sharing tool](#)
- [Participant profile](#)

Challenges and objectives

- **Problem:** lack of accurate, in vivo dose verification in proton therapy for high-grade glioma, which limits treatment precision, affects patient outcomes, and hinders adaptive radiotherapy and clinical innovation.
- **Topic 2 (SO2):** integrate fragmented health research and innovation efforts
- **High burden** of the disease for patients and society, G€ cost.

Your approach to solve the problem

- Accurate F-18 PET dose checks in proton therapy
 - improve glioma treatment,
 - enable adaptive protocols, and
 - increase survival rate.

Is your project suitable for IHI?

-  **Industry Sector Collaboration**
 - **Medical Devices & Imaging:** Development and deployment of the HANPET PET scanner by Oncovision.
 - **Software/ICT:** Integration of dose verification protocols into **RayStation** software by RaySearch Labs.
 - **Biotech & Clinical Research:** Involvement of clinical institutions (e.g., Biobizkaia HRI, Osakidetza, Bioaraba) in protocol validation, patient recruitment, and outcome monitoring.
-  **Public–Private Partnership**
 - **Public partners:** I3M CSIC (ES), PARTEC (NL), Osakidetza (ES-EUS) hospitals, Bioaraba and Biobizkaia health research institutes (ES).
 - **Private partners:** Oncovision (PET scanner manufacturing), RaySearch Labs (software development).
 - The project also includes **scientific societies** (e.g., SEFM) and aims for **CE-certification** under EU and Spanish regulations, indicating regulatory collaboration.

Outcomes and Impact

- **Outcomes:** The proposal expects to deliver **accurate in vivo dose verification** using F-18 PET imaging, improved treatment precision for high-grade glioma, CE-certified HANPET scanners, and enhanced survival and quality of life for patients.
- The project ensures **translation** by developing CE-certified PET scanners, validated clinical protocols, and integrating dose verification tools into RayStation software for routine clinical use.
- It strengthens EU health industry **competitiveness** by fostering public–private collaboration, advancing medical imaging technologies, and enabling commercialization of innovative PET-based dose verification tools.
- The proposal **benefits patients** by improving treatment accuracy, reducing toxicity, enabling adaptive radiotherapy, and supporting ethical, patient-centric care with better survival outcomes.



We have

Expertise

- **Medical Imaging & Instrumentation:** EP25382365 patent.
- **Clinical Research & Medical Physics.**
- **Software Integration.**
- **Scientific Societies:** SEFM and AECC.

Resources

- HANPET Scanner Prototype.
- Simulation Data:.
- Preclinical Models.
- Clinical Infrastructure.
- Ethical Approvals & Protocols.





We need

Expertise

- Clinical Trial Management
- Regulatory Affairs
- Health Data Analytics
- Ethics and Patient Advocacy

Resources

- Proton Therapy Centres
- Manufacturing Capacity
- Software Development Support
- Funding and Dissemination Channels

Additional information

- The method is patent-pending with EPO application: EP25382365
- Publication preprint at:
<https://doi.org/10.1101/2025.08.02.25332864>

