

**EUROPEAN
PLASMA RESEARCH
ACCELERATOR WITH
EXCELLENCE IN
APPLICATIONS**



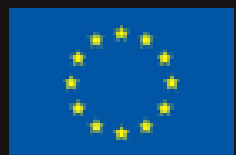
WP.3 - Governance & Organization

WP.4 - Legal Framework, Financial Model & Socio-economic impact

EuPRAXIA - PP Technical Review 15/07/2025

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the European Union**

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The primary objective of WP3 is to develop the organisational model of EuPRAXIA to ensure a sound and timely execution of tasks when the RI will be operational. For this purpose, WP3 will develop an organisational model.

Milestones:

- WP3-MLS3.1 Benchmark of comparable RI organisational models (M18)
- WP3-MLS3.2 Organisational requirements: requirements for internal procedures and tasks (M28)
- WP3-MLS3.3 Responsibilities breakdown (M32)

Deliverables

- WP3-DLV3.1 Report (R) on the decision for the 2nd site (M18)
- WP3-DLV3.2 Report on the distributed RI Concept, including organization and rules (M42)

DONE

- WP3-DVL3.1 Criteria and methodology for 2nd site selection 04/2024
- WP3-MLS3.1 Benchmark of comparable RI organisational models 04/2024
- WP3-DVL3.2 Report on the decision on the 2nd site 10/2024
- WP3-MLS3.2 Organisational requirements: requirements for internal procedures and tasks 04/2025
- WP3-MLS3.3 Responsibilities breakdown 6/2025

Main focus on 2nd site selection process

The previous steps towards and the methodology for a collegiate decision on the second site have been described in deliverable report D3.1.

A series of preparatory workshops and meetings have been set up:

- June 5–7, 2023: In person workshop at Rome, <https://agenda.infn.it/event/35633/>
- June 14, 2023: Summary session and iteration per Zoom, <https://agenda.infn.it/event/36630/>
- July 4, 2023: Restricted iteration of most affected WP's in EuPRAXIA-PP, <https://agenda.infn.it/event/36705/>
- Sept 18–22, 2023 In person meeting at EAAC, <https://agenda.infn.it/event/35577/timetable/#20230919.detailed>

WP3 has organized, with the help of WP1, WP4, and WP16, visits to the candidate sites in 2023 and 2024.

- July 3–4, 2023: First WG3 meeting and site visit in CNR, Pisa, <https://agenda.infn.it/event/36705/>
- October 2, 2023: Second WG3 meeting and site visit in ELI-Beamlines , Dolni Brezany, <https://agenda.infn.it/event/37465/>
- Dec 4, 2023: Third WG3 meeting and site visit in CLPU, Salamanca, <https://agenda.infn.it/event/38719/>
- Feb 13–14, 2024: Fourth WG3 meeting

To allow for a fair comparison of the proposed sites for EuPRAXIA's laser-based implementation, the four candidates are asked to prepare a short document, called "bid-book".

Panel members:

- Ralph Assmann (GSI): former EuPRAXIA-PP project leader
- Pierluigi Campana (INFN): EuPRAXIA-PP project leader
- Massimo Ferrario (INFN): head of SPARC_LAB (1st site)
- Antonio Falone (INFN): WP4 co-coordinator
- Andrea Ghigo (INFN): WP3 co-coordinator
- Arnd Specka (CNRS): WP3 co-coordinator
- Giancarlo Gatti (CLPU, Salamanca)
- Leo Gizzi (CNR, Pisa)
- Alexander Molodzhentsev (ELI BL, Prague)
- Rajeev Pattathil (EPAC, Rutherford Lab, Didcot)

After evaluating the proposals in a collaborative process, the panel report was submitted to the Collaboration Board.

The Collaboration Board has designated the **ELI-ERIC** Laboratory in Prague (@ELI-Beamlines) as the laser-based site of EuPRAXIA Research Infrastructure.

Work package number	4	Lead beneficiary				INFN	
Work package title	Financial and legal model. Economic impact.						
Participant number	1	24	26				
Short name of participant	INFN	CERN	IASA				
Person months per part.:	48 (+6)	0 (+2)	0 (+8)				
Start month	1			End month	48		

Financial Model

WP4 will evaluate the funding models of similar research infrastructure, identify sources of funds relevant for EuPRAXIA at local, national and European level, update the EuPRAXIA budget (cost of assets, human resources, services, data) and evaluate the cost of services to users and internal services. It will review revenues and funding sources and it will assist WP1 in the negotiations with the Board of Financial Sponsors.

Legal Framework

WP4 will review the legal frameworks of comparable research infrastructures in Europe, determine legal requirements to establish EUPRAXIA RI governance and management, review legal aspects for procurement and recruitment, develop legal model statutes and agreements. It will also assist WP5 in drafting the EuPRAXIA Terms of Services and Service Level Agreements (or equivalent).

Socio-Economic Impact

WP4 will define a strategy to assess the socio-economic impact, using relevant indicators and metrics. Asses the potential outcome and define a strategy to maximize them. The socio-economic indicator should follow the best practices and tailored to the EuPRAXIA case.

Deliverables

D4.1 – Report on benchmark of financial and legal model of comparable RI - M12



D4.2 – Cost implementation and service preliminary assessment - M24 (postponed at M28)



D4.3 – EuPRAXIA socio-economic impact assessment – M40



D4.4 – Report on final EuPRAXIA financial and legal model, including RI governance and management – M48



Milestones

M4.1 – Report on legal requirements from partner – M18



M4.2 – Approval by the collaboration board of drafts of legal and financial packages – M36



M4.3 – Approval by the Board of Financial Sponsors of the legal and financial packages – M40

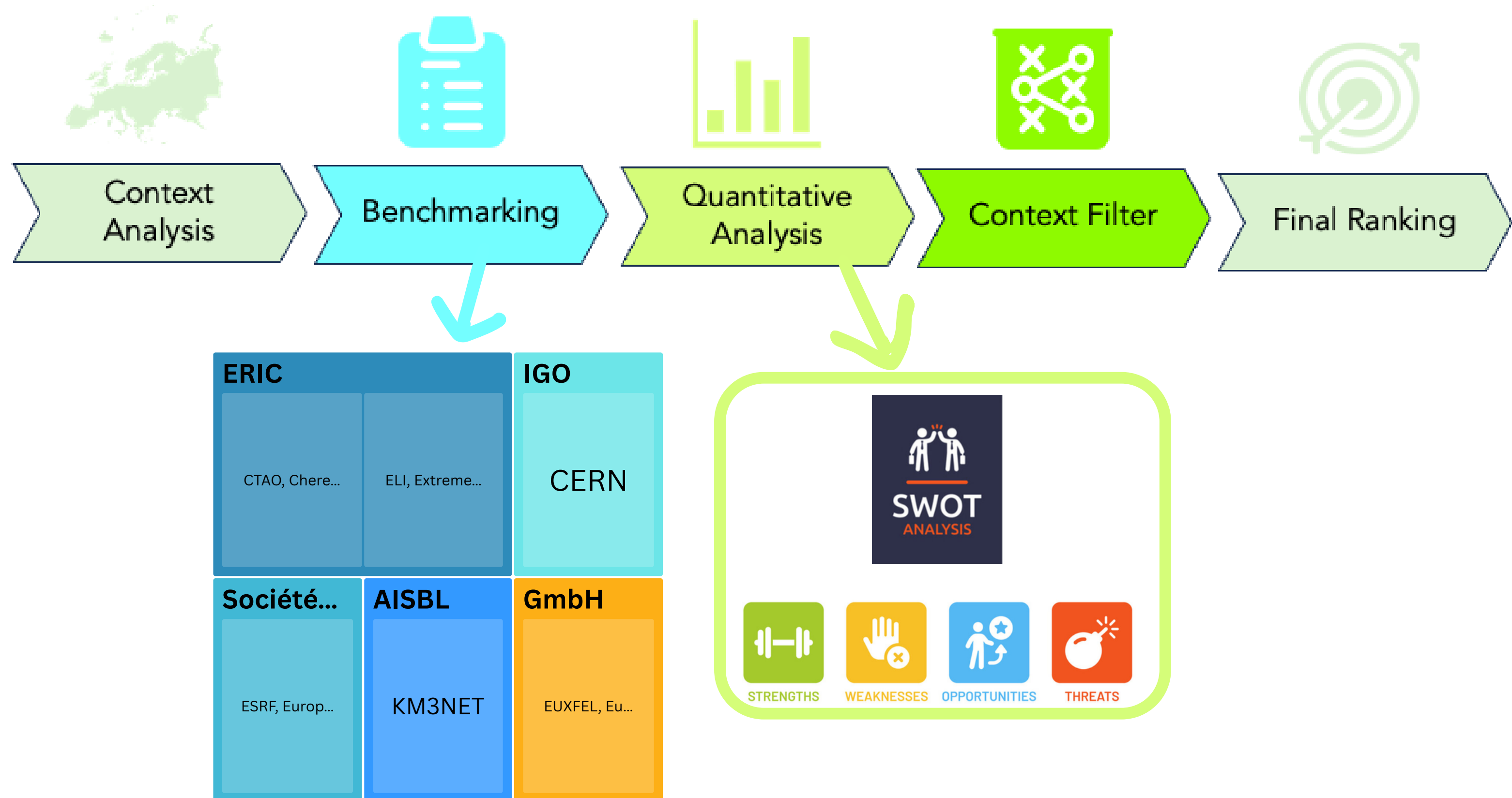


Deliverables and milestones have been produced on time.

D4.3 is in preparation with the support of a consultant company for socio-economic studies


M4.2 is in preparation and will be presented at the next annual meeting to the whole collaboration

Identification of a suitable methodology to select the most appropriate legal framework

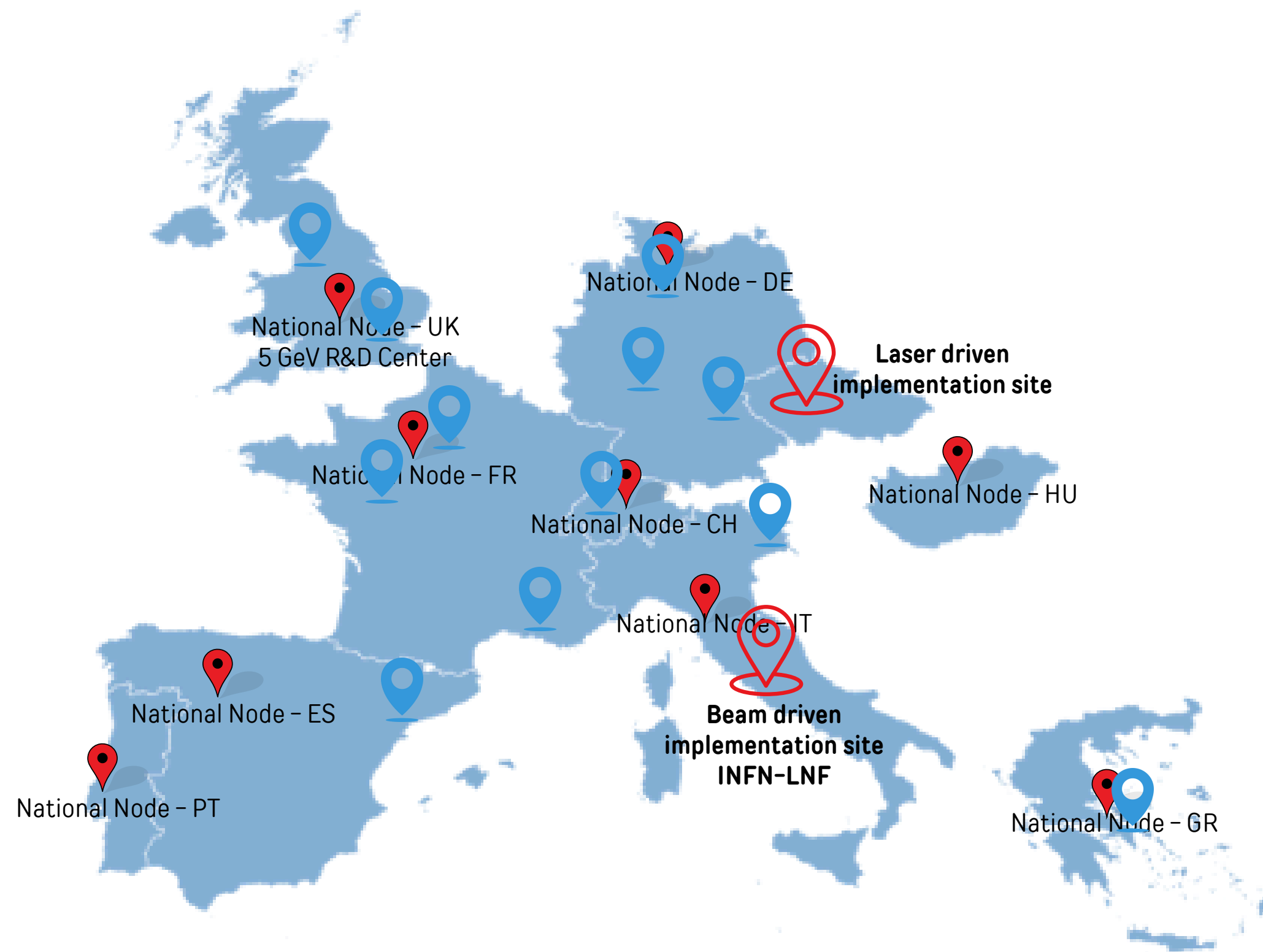


Context Analysis - Boundary Conditions - Distributed Infrastructure Concept

 2 Implementation Pillars
@ INFN – LNF & @ ELI-ERIC

 Several National Nodes. Roles
to be fully defined

 Project Clusters



Why a legal entity?

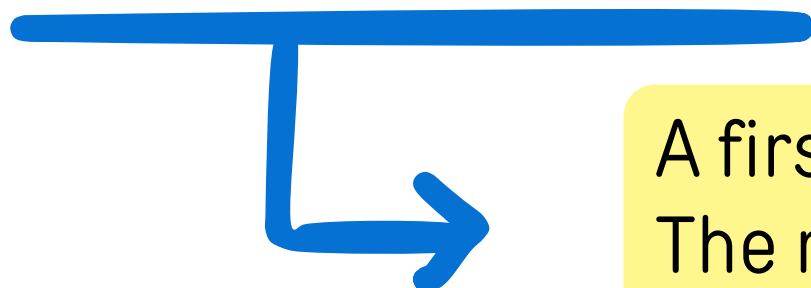
- Possibility to apply for EU grant as a stand-alone organization (without going through agreements within different institutes).
- Reinforce the overall collaboration and strengthen the credibility of the plasma accelerator community
- Act as reference body for R&D and user application in the field of plasma accelerator / high power laser / conventional Linac.
- Serves as hub for training and personnell exchange
- Optimize resources for other activities (e.g. outreach, dissemination, industrial relationships)
- Provide a unified strategic roadmap for the (vast) field of application of plasma based accelerator

and which one?

- After benchmarking / SWOT analysis and stakeholder engagement :
 - ERIC too heavy and not favorable by a set of stakeholder
 - AISBL might be a good choice (general consensus and agreement)

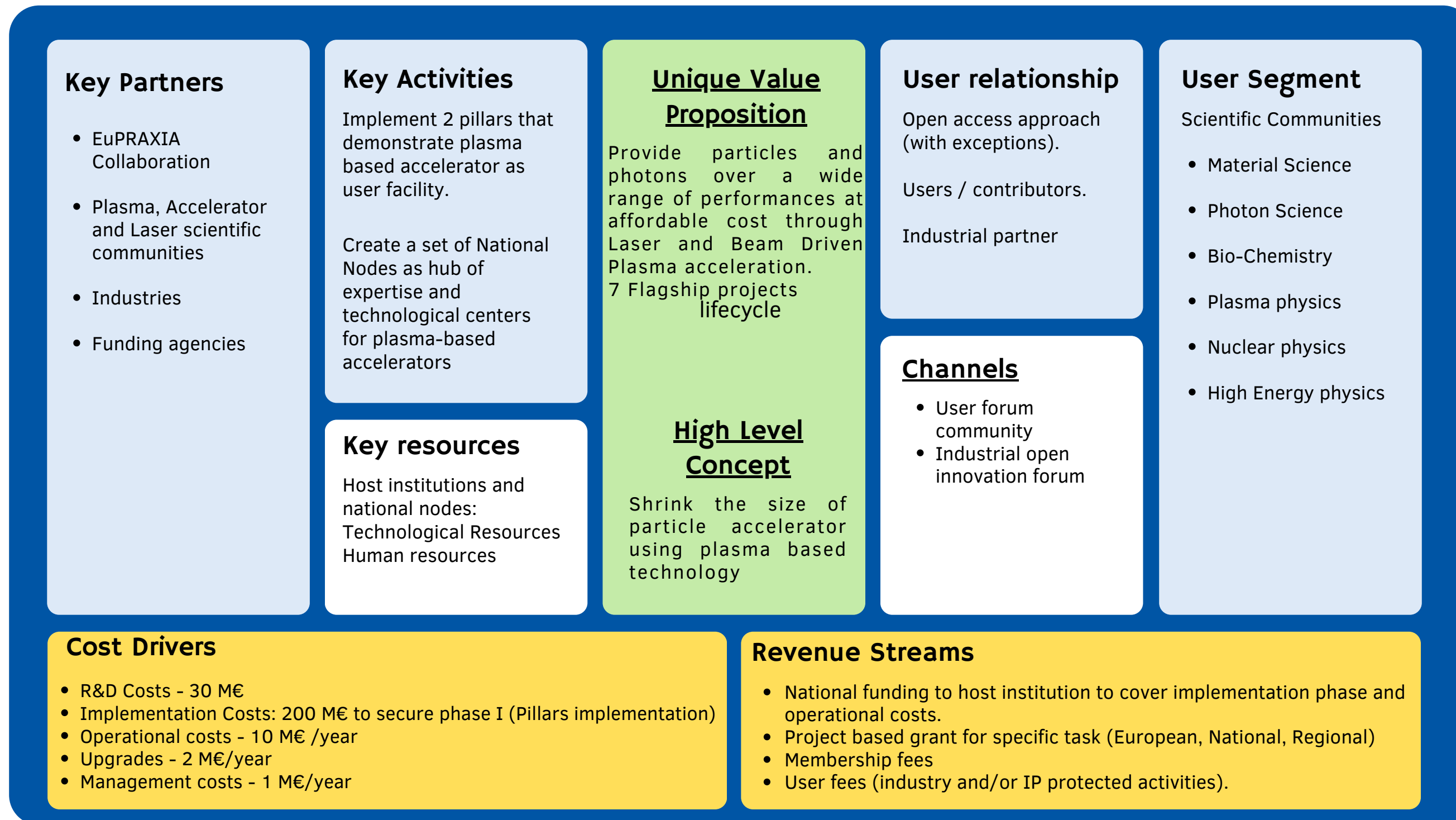
LE Requirements

- Light and agile framework, easy to establish and widely accepted by a large number of institute
- Lean and effective governance that represents fairly the collaboration (community) but emphasizes at the same time the role of the implementation sites and national nodes.
- Act as a general coordination umbrella, leaving the technical and scientific development to the host institutions.
- Have membership fees affordable but at the same time that guarantee a minimum financial basis for grant application
- Have a recognized international “branding”.



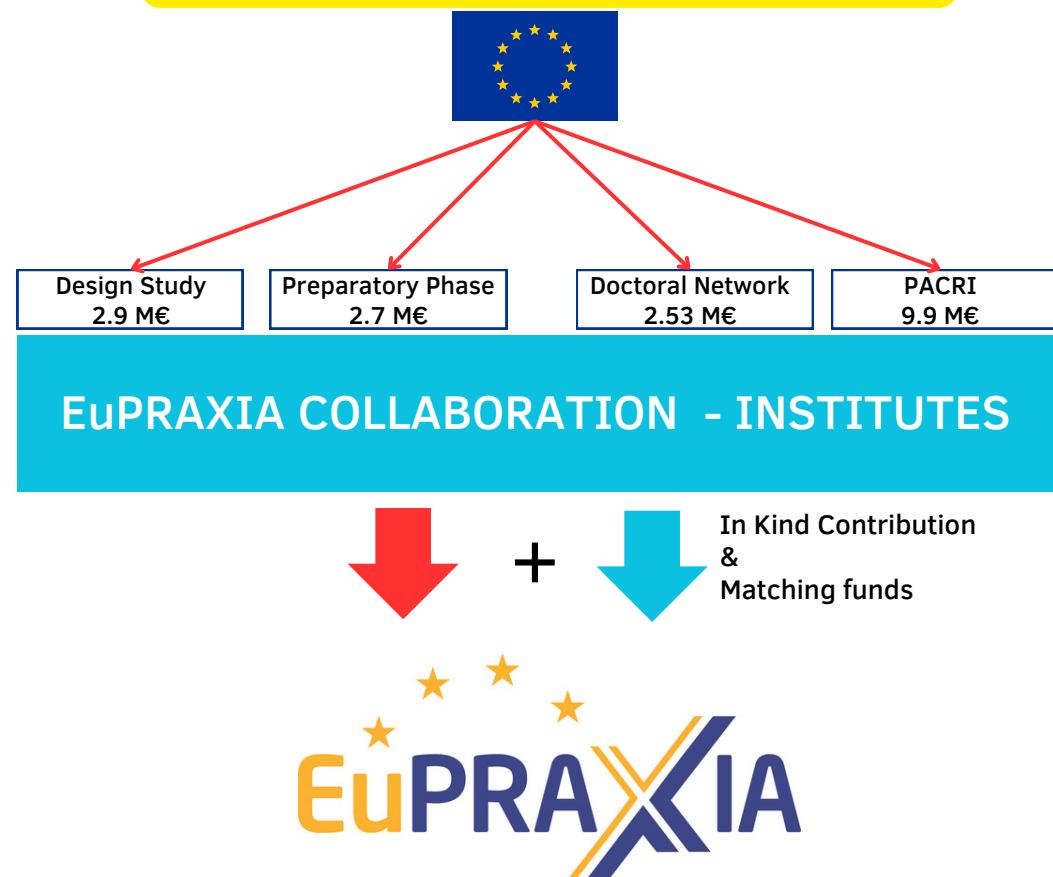
A first benchmarking has been done during the first half of the preparatory phase. The most suitable solution at the moment is an AISBL, but we leave the door open for other solutions (provided they fulfill the requirements)

Financial model follows the RI lifecycle. At each phase funding requirements are needed. For the implementation and operational phase a **business model canva** has been adopted.

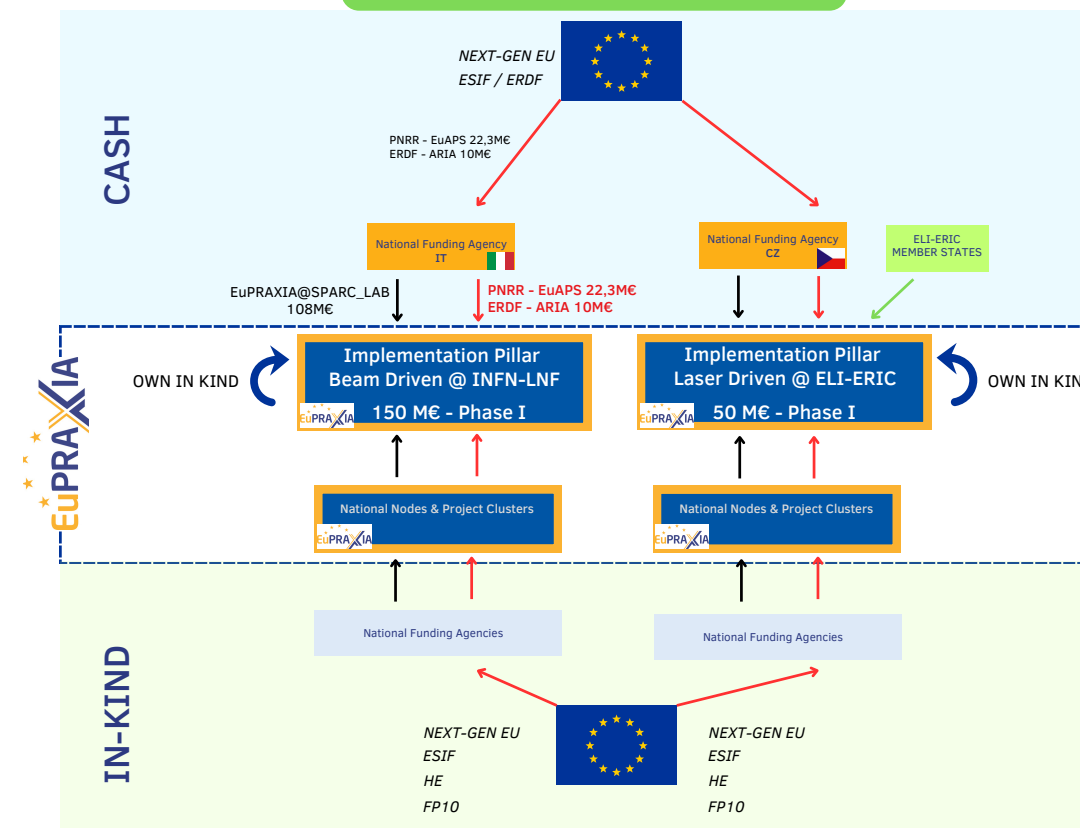




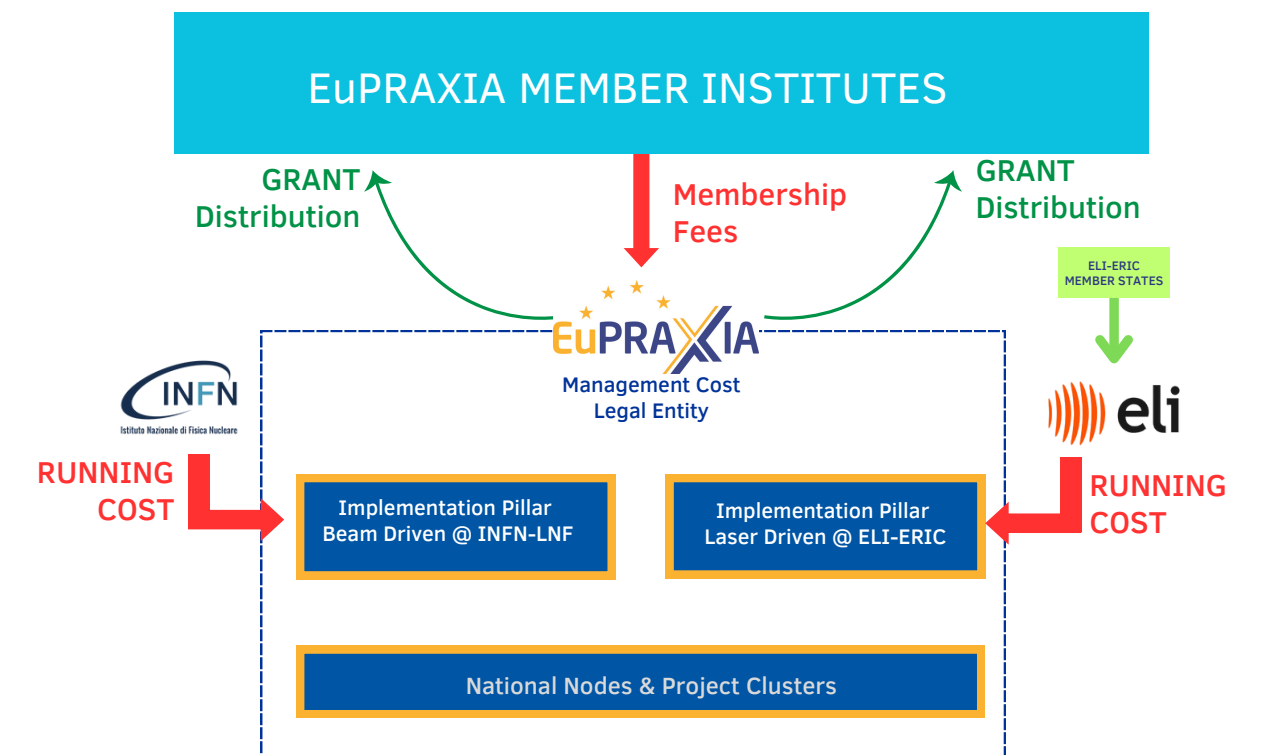
DESIGN / R&D / PREPARATORY PHASE

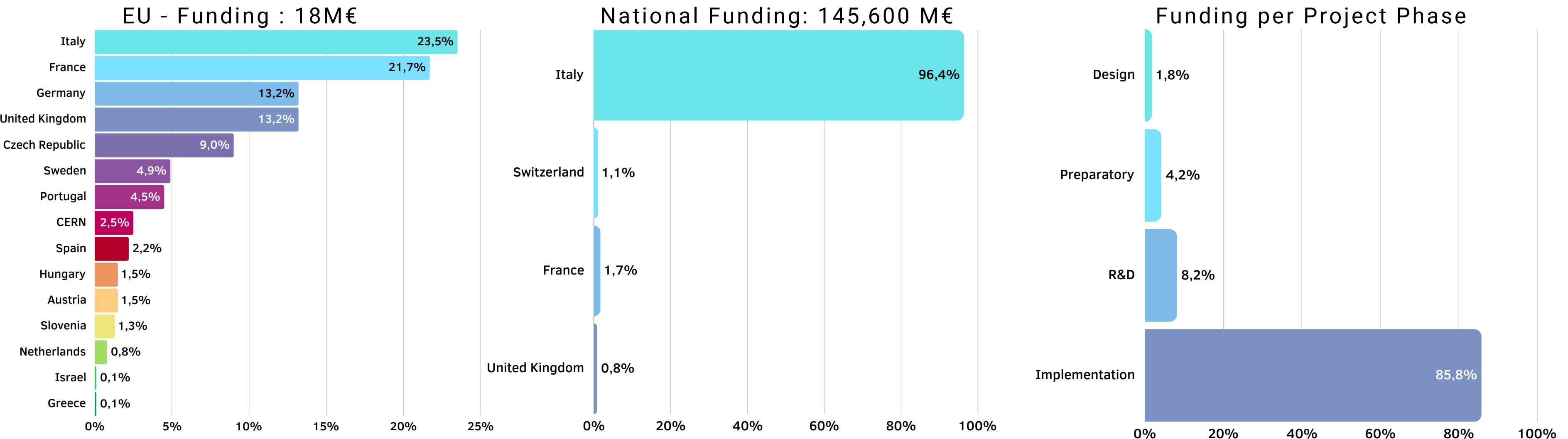


IMPLEMENTATION PHASE



OPERATIONAL PHASE





TOTAL FUNDING RAISED: 163 M€

Upcoming call:

Horizon Europe INFRA-DEV for early implementation phase (1.5M€)

Cost Estimation

- Beam driven implementation pillar @ INFN-LNF is at advanced stage – Technical Design Report about to be delivered.
- Comprehensive cost-estimation analysis assessed by an external cost&schedule review committee
- Similar approach is being adopted for the 2nd Site @ ELI-ERIC
- Estimation of the running cost is done.
- Estimation of the running cost for the legal entity must be assessed (next grant)

Functional Area	Cost estimated (M€)
Injector	10,999
Low Energy Linac (X-Band)	9,596
Bunch Compressor	1,180
High Energy Linac (X-Band)	9,761
Plasma Module	2,222
Tot Linac	33,758
AQUA Undulators	12,062
AQUA Beamlines	7,096
Tot AQUA FEL lines	19,158
Transverse Elements	3,940
Tot Machine	56,856
Building	51,578
Cooling & HVAC (Hi-tech utilities)	6
TOTAL	114,438

Direct Scientific Impact

Measure the RI's contribution to scientific advancement, including publications, patents, and new knowledge creation.

Technological Innovation:

Analyze how the RI fosters innovation, including technology transfer, collaboration with industry, and the development of new products, services, and processes.

Economic Growth

Evaluate the economic benefits generated, such as job creation direct and indirect, business opportunities, and GDP growth linked to the RI's presence.

Human Capital Development:

Assess the RI's contribution to education, training, and the development of high-skilled personnel.

Societal Impact

Include non-market effects, such as environmental sustainability, and contribution to solving societal challenges.

Environmental impact

Assess best practice to minimize carbon footprint and strategy to tackle environmental issues

For each impact area relevant quantitative indicators must be chosen for example:

- Scientific output: Number of publications, citations, and patents.
- Innovation: Number of collaborations, technology transfer agreements, and spinoff companies.
- Economic indicators: Direct and indirect jobs created, investment attracted, and regional economic performance.
- Education and training: Number of trained individuals, professional mobility, and skill improvements. Number of master thesis and PhD.
- Societal benefits: Improvements in environment, or cultural aspects.


- The 2nd half of the preparatory phase will be devoted to consolidate the main results and to drive the collaboration towards the approval of the last deliverables
- Preparation of upcoming deliverables and milestones
- Preparation of the upcoming INFRA-DEV grant “pre-implementation phase”

HORIZON-INFRA-2025-01-DEV-02





This grant must be seen in continuity with the preparatory phase, implementing, upgrading and consolidating the preparatory phase results and addressing challenges and topics still to be matured.

The most important aspects (among others) to be addressed are:

- Finalization of the legal framework and related documents (SLA, statute, by laws, IKC etc.)
- Finalization and consolidation of the concept of National Nodes
- Definition of the governance and its rules
- Definition of the financial and business plan for operational phase.

General information		
Programme Horizon Europe (HORIZON)		
Call Research Infrastructures 2025 (HORIZON-INFRA-2025-01)		
Type of action HORIZON-CSA HORIZON Coordination and Support Actions	Type of MGA HORIZON Lump Sum Grant [HORIZON-AG-LS]	 Open For Submission
Deadline model single-stage	Opening date 06 May 2025	Deadline date 18 September 2025 17:00:00 Brussels time

HORIZON-INFRA-2025-01-DEV-02: Early phase implementation of ESFRI Projects that entered the ESFRI Roadmap in 2021

 TYPE OF ACTION	 INDICATIVE BUDGET	 OTHER CONDITIONS	 TIMING
<ul style="list-style-type: none"> • Coordination and Support Action (CSA) 	<ul style="list-style-type: none"> • EUR 16.5 million • Expected EU contribution per project: EUR 1 - 1.5 million 	<ul style="list-style-type: none"> • Indicative number of projects expected to be funded: 11 • Eligible costs will take the form of a lump sum 	<ul style="list-style-type: none"> • Call opening: 15 May 2025 • Deadline: 18 September 2025



Coordinator

