

EUROPEAN
PLASMA RESEARCH
ACCELERATOR WITH
EXCELLENCE IN
APPLICATIONS



EuPRAXIA Collaboration and its organisation

Antonio Falone / INFN-LNF / EuPRAXIA Outreach Workshop
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- EuPRAXIA Collaboration – organization overview
- Possible evolution

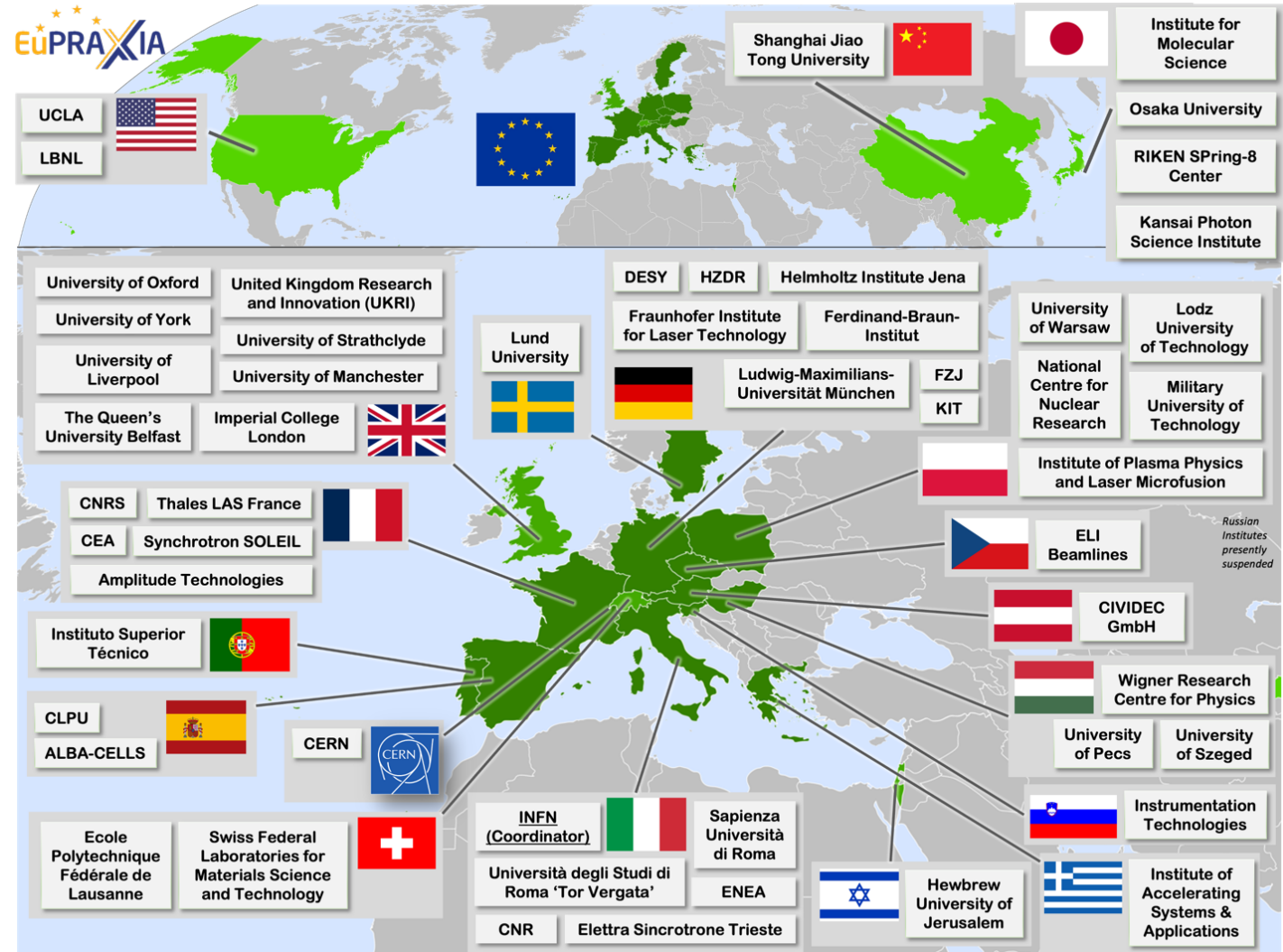
Membership extension strategy is a crucial part of the EuPRAXIA mission.

EuPRAXIA was born with a bottom up approach trying to coordinate the global effort in the field of laser-plasma accelerator, creating a wide collaboration.

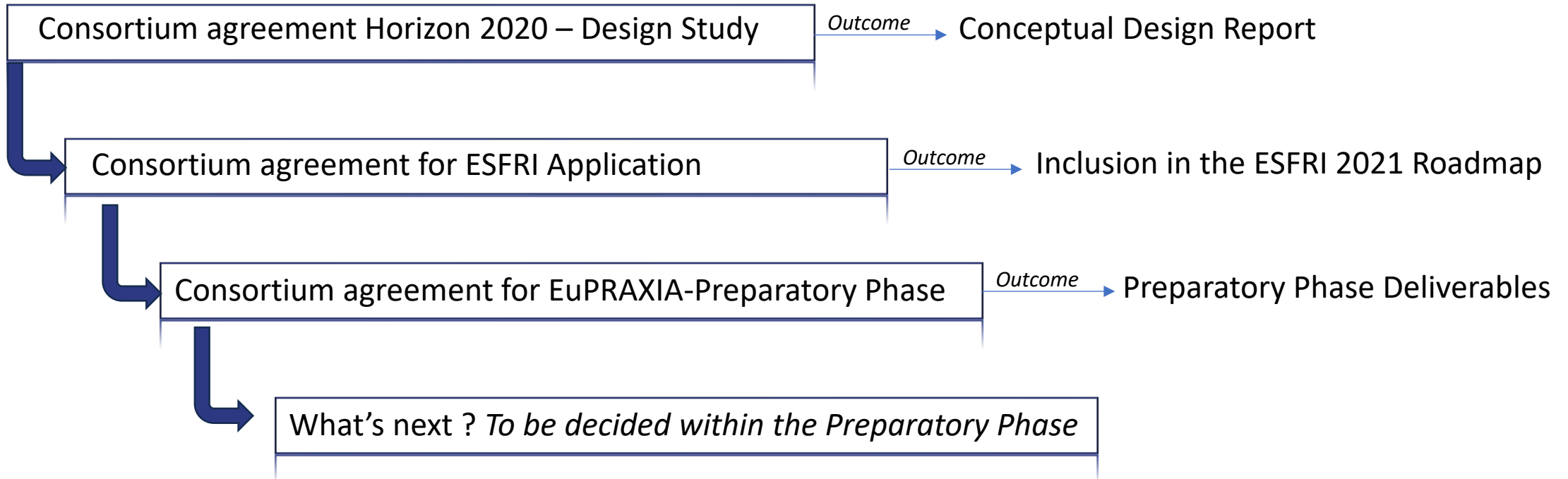
This was explicitly mentioned in the ESFRI Report when EuPRAXIA was included in the ESFRI 2021 Roadmap.

OVERALL CONCLUSIONS & RECOMMENDATIONS	
OVERALL FINDINGS	<input type="checkbox"/> LOW <input type="checkbox"/> MEDIUM <input checked="" type="checkbox"/> HIGH <input type="checkbox"/> VERY HIGH
<p>The general recommendation to EB will be to include EuPRAXIA in the ESFRI RoadMap 2021 with the following considerations:</p> <ul style="list-style-type: none"> Economic and financial sustainability is the most critical issue, pay attention to keep the balance between costs and available financial resources. Keep up efforts to establish an ERIC or other legal entity and find a strategy to broaden the membership with countries that are interested although not always having facilities themselves. It is recommended in the future to further develop and strengthen the open user strategy. EuPRAXIA will be competing for beam users with synchrotron and free electron laser facilities, which are numerous in Europe. Users from the fields of industry, biology, health & food, or cultural heritage will probably access the infrastructure later than the developer community, but it would be useful already early on to plan in more detail the strategy for their active participation and determine their specific needs. 	

- The EuPRAXIA Consortium today: **54 institutes** from **18 countries** plus CERN
- Included in the **ESFRI Road Map**



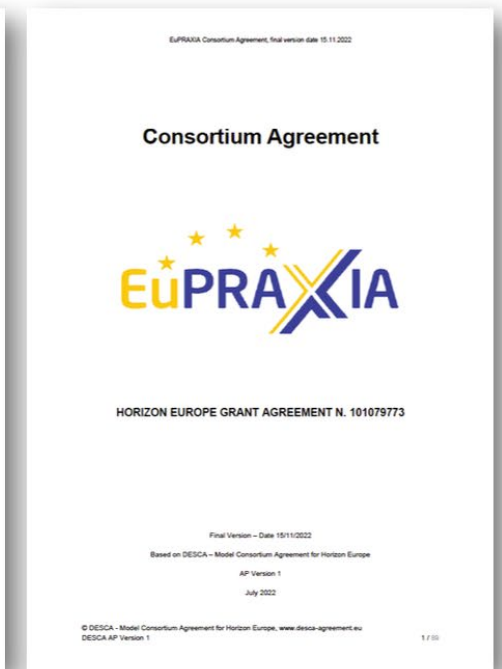
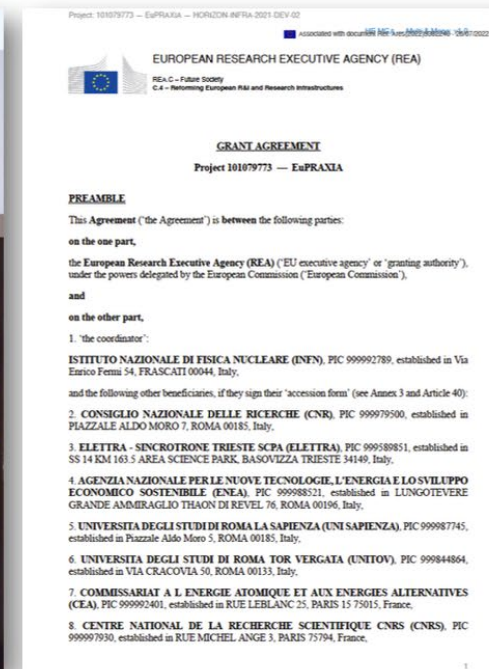
The overall collaboration have seen different governance models so far, based on the funding scheme associated at each stage.



Note that the collaboration is based so far on a voluntary agreement that does not lead to a creation of a new legal entity and it is made by purpose for the accomplishment of the project(s) according with the funding agency requirements.

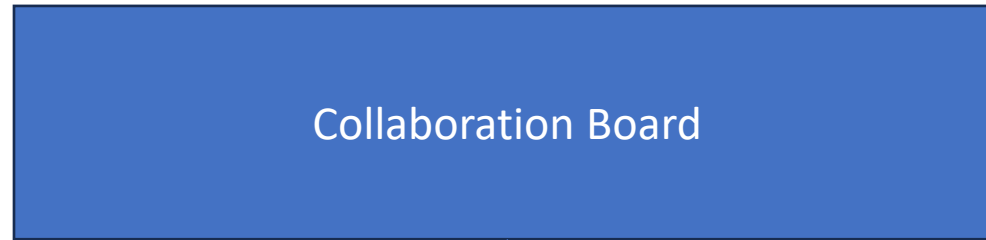
Three main documents rule the overall effort:

- **Grant Agreement** – Signed by Funding Agency (EU) and coordinator (INFN). Obligation towards the funding agency and project description (deliverables / milestones), rights and liabilities.
- **Consortium Agreement** – Signed by all the partner. Rules of the consortium, governance scheme, voting rights, rights and obligation of all the partners.
- **Conceptual Design Report** – Published in EPJ – Special topic as the outcome of the design study (Horizon 2020 grant) used as technical reference

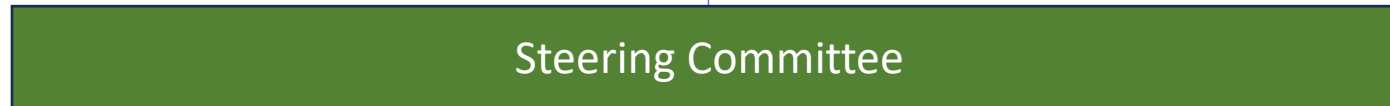
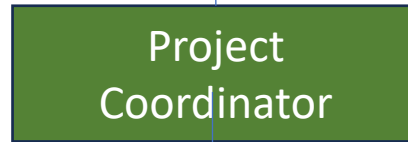


The project governance resembles the typical Horizon Europe DESCA model template. It consists of different layers and labor division.

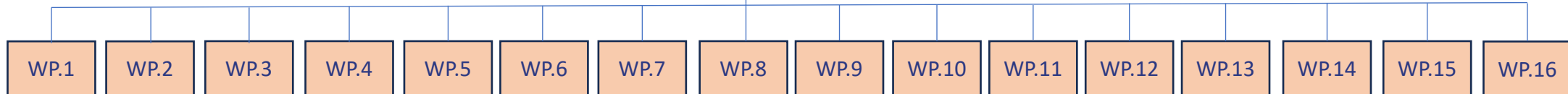
Decision making body



Executive body



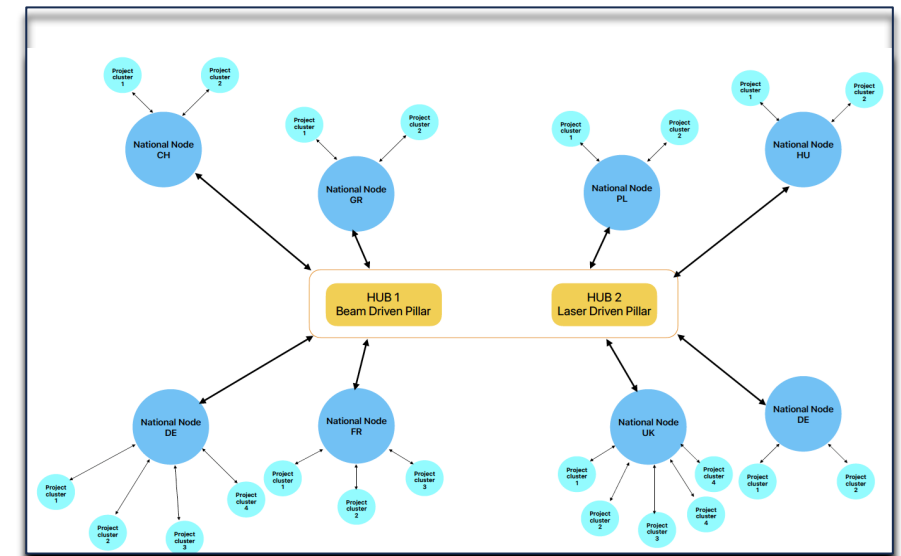
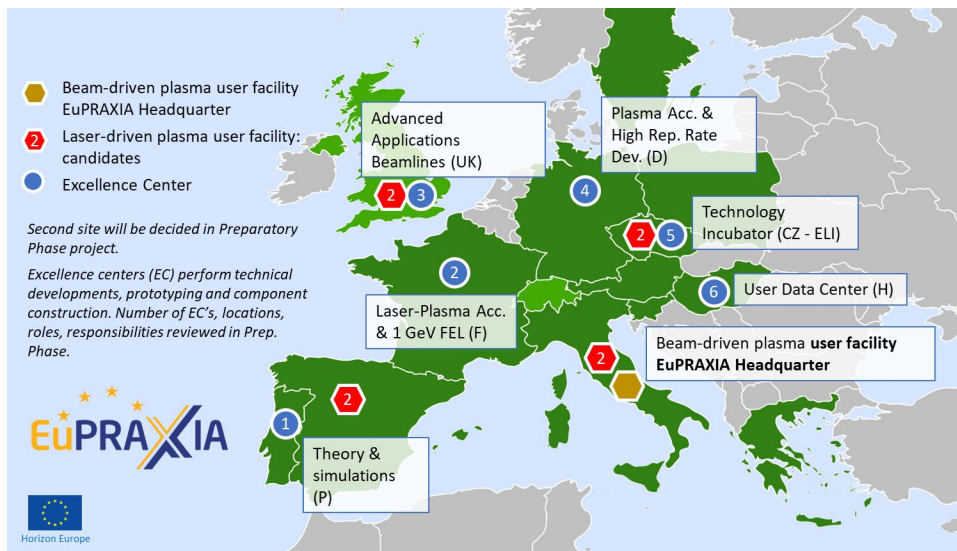
Operating body



As distributed RI EuPRAXIA is emerging as a pan-european initiatives. The EuPRAXIA collaboration is remarkable large (and it's growing) showing a great interest of the community in our initiative.

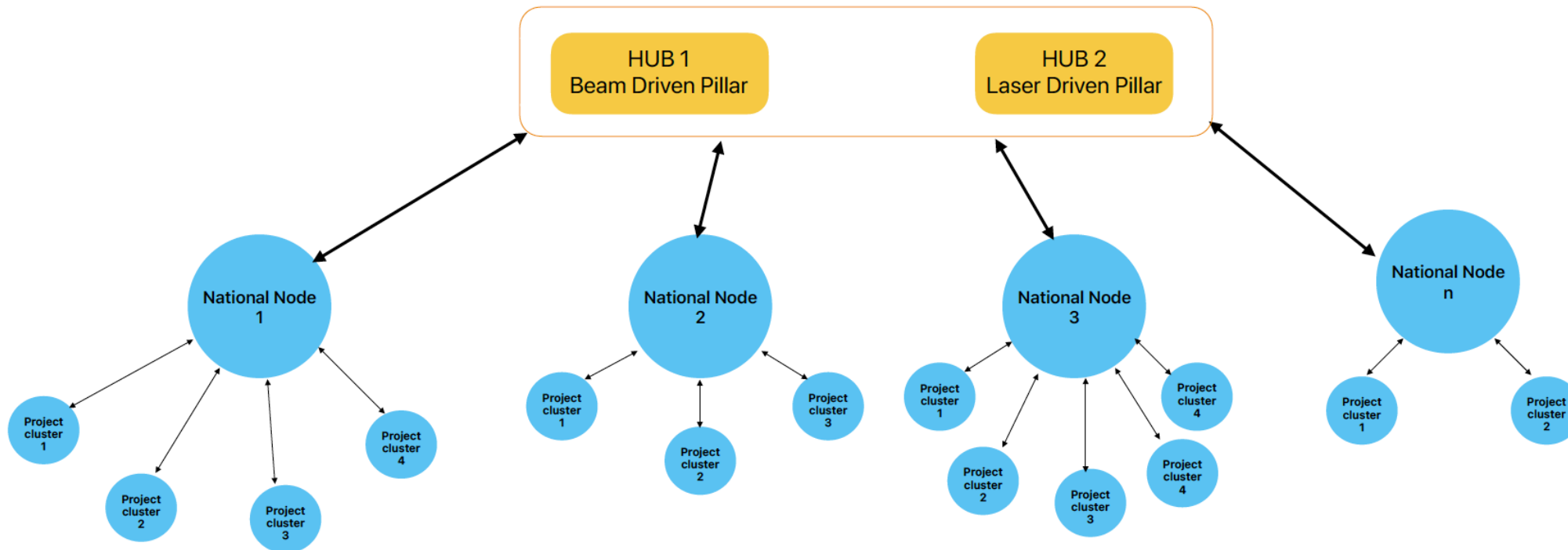
The foreseen architecture is structured in two main implementation pillars (so-called *Laser Driven* and *Beam Driven*) plus a set of National Nodes (a.k.a. Excellence Centers) and Project clusters.

The asymmetry between implementation hubs and national nodes (R&D and IK - contributors) has to be taken into consideration while considering the legal framework.

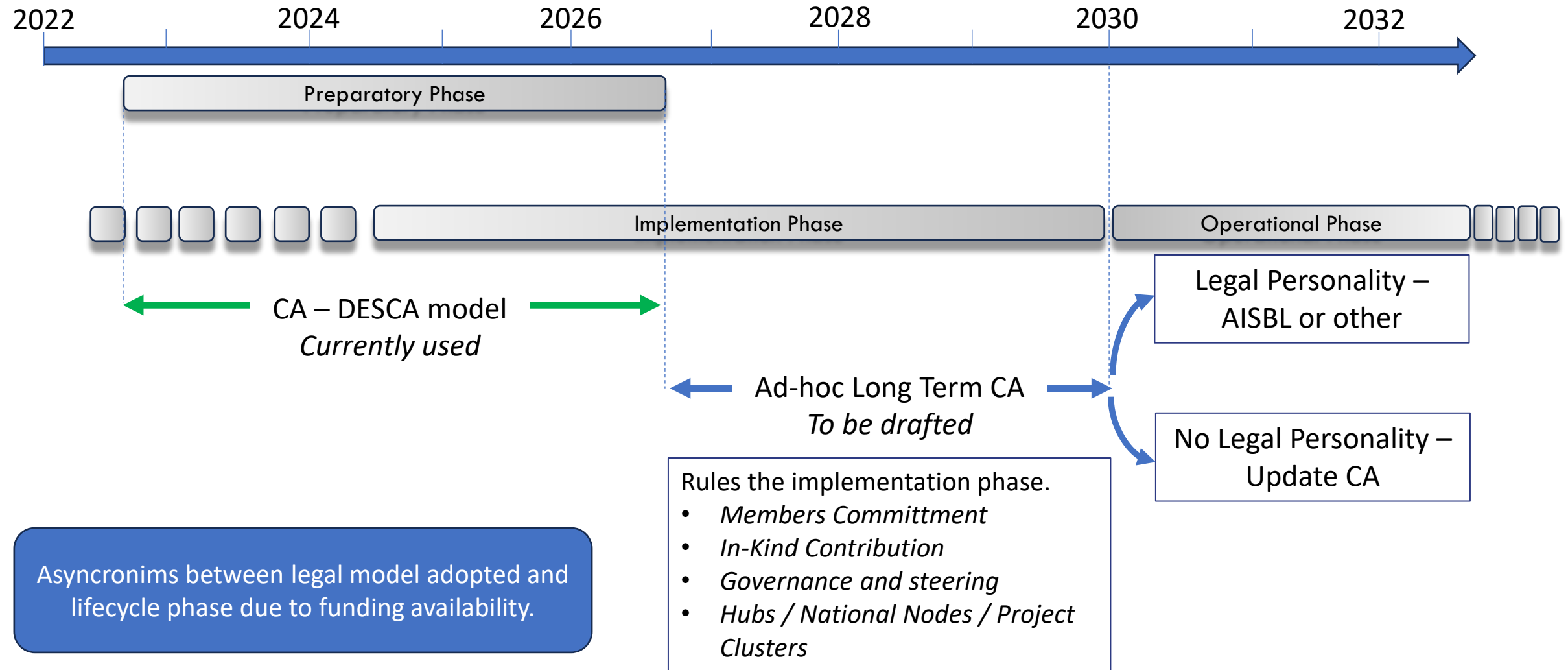


The proposed architecture of EuPRAXIA as Distributed Research Infrastructure is based on three levels :

- **2 Implementation sites** – Beam driven pillar (@INFN-LNF), Laser driven pillar (to be decided, bid-book is in progress).
- **National nodes** (Excellence Centers) – Coordinate the effort at National Level (R&D, IKC)
- **Project Cluster** – Perform the real work and contribution



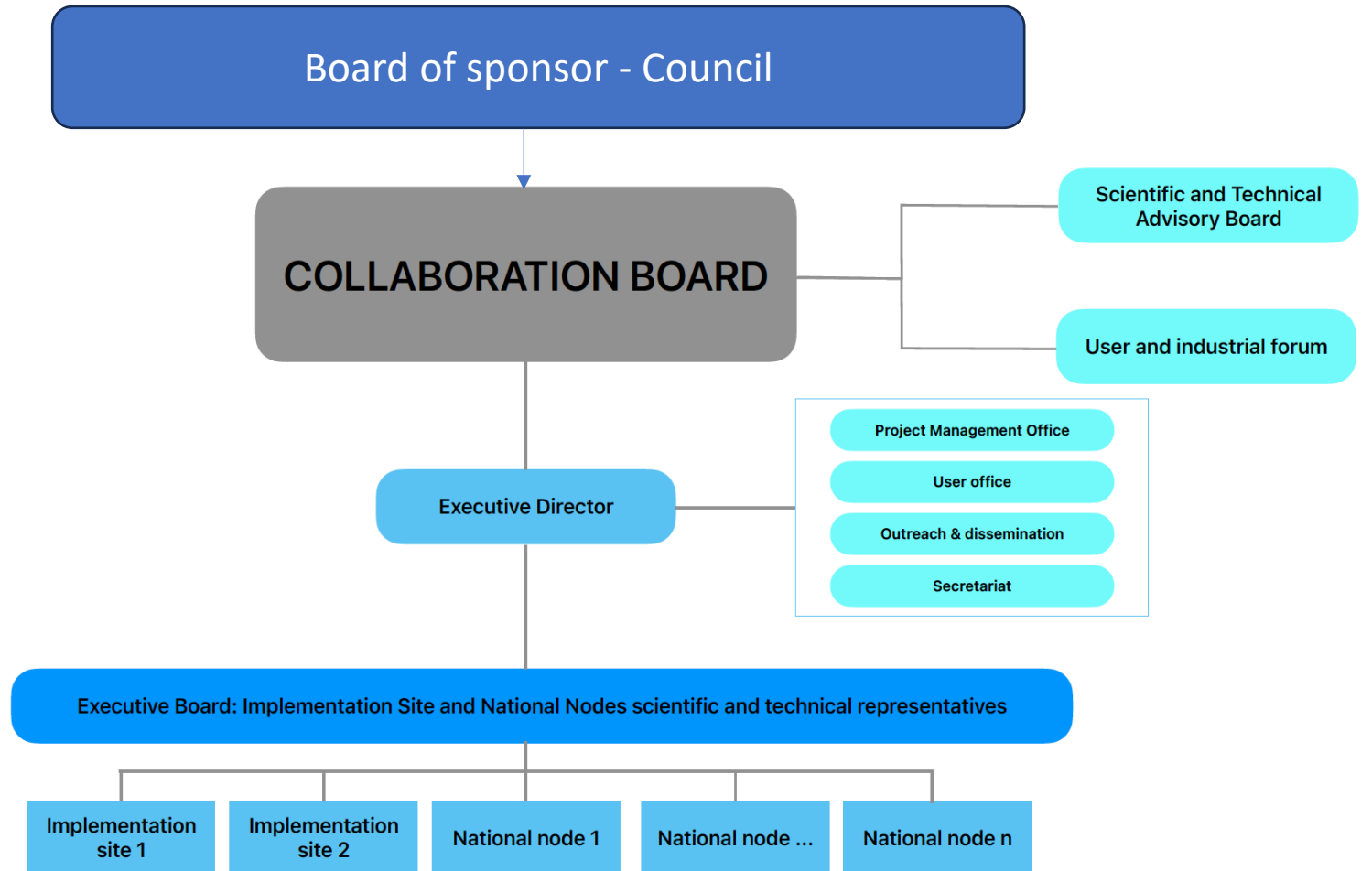
- At the moment the most reasonable scenario is to adopt a phasing approach that follows the maturity level of the implementation, and the funding scheme associated.
- The choice of a new legal entity provided with legal personality seems to be a bit immature at this stage, especially considering a funding model of the implementation phase largely based on National Funding.
- Also, assets ownership (and related operational costs) will remain under host institutions responsibility.
- A new legal entity will rule a set of topics that are mostly related to the operational phase:
 - User access
 - Upgrading
 - Training
 - Industrial collaboration
- On the other hand, this CA will end with the preparatory phase (2026) it is therefore mandatory to have a new CA properly designed for the implementation phase that would pave the way for further development.



IMPLEMENTATION PHASE – Consortium Agreement

- Lean & Agile Governance for fast and effective decision making process
- Fair representation of the members but some special emphasis on the implementation sites
- Voting rules to be determined
- Membership based on real contribution
- Modest common funds for general purposes (centralized PO office, outreach, training etc) – To be discussed
- Open Access approach to be adopted
- Membership extensions based on the WP.6 outcome

- Collaboration board as ultimate decision making body.
- Voting rules to be determined (PP outcome)
- Executive board which includes national nodes representatives, implementation sites representatives
- Several advisory boards
- Support office : PMO, User office, outreach etc...



Post IMPLEMENTATION PHASE – Why a new legal entity.

The creation of a new legal entity has been explicitly endorsed by ESFRI. Several advantages are clear:

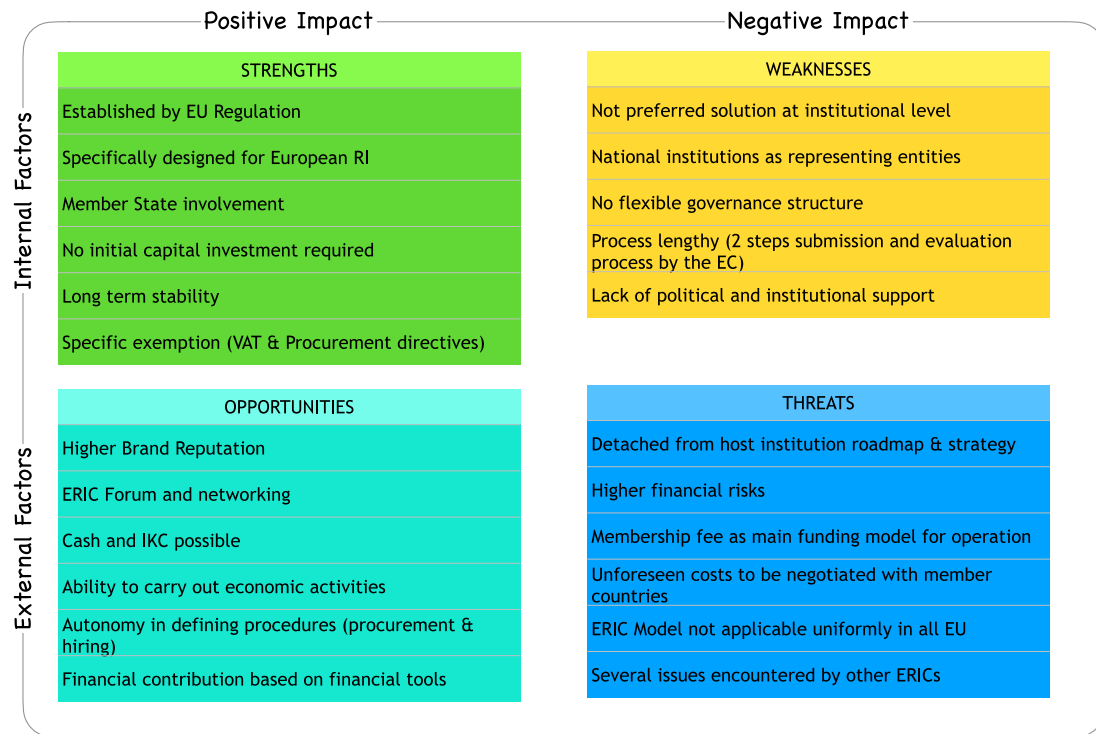
- It is the most appropriate way (if done correctly) to guarantee a long term sustainability.
- Provide a common and agreed strategy and long term vision
- Clear commitment from members
- Some advantages in terms of procurement and hiring (depending on the model).
- Ability to apply to EU calls directly (and not through institutions).
- Needs to be agreed by all the institutions and backed up at political level → Increase commitment
- Since the operations will be covered by host institutions and asset will remain in their property, the legal entity should act as an umbrella on the overall organization, coordinating user access, scientific strategy, upgrade and training.

Several models are available:

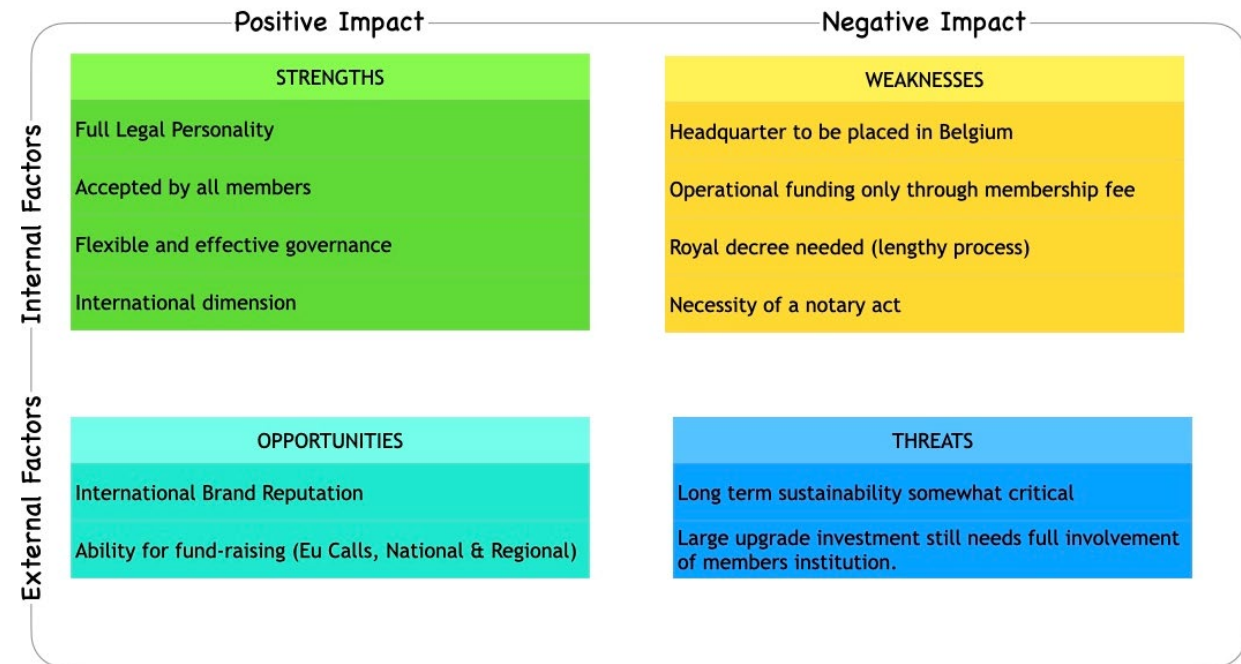
- **ERIC**
- **AISBL**
- LLC / GmbH / Societe Civil
- And many more.

New Legal Entity Options – SWOT analysis

European Research Infrastructure Consortium - ERIC



Association International sans but lucratif - AISBL



ERIC seems to be out of question. It does not seem adequate for the size and cost of EuPRAXIA plus some skepticism on the long term at political and institution level and additional membership issues not easy to resolve.

AISBL seems to be more attractive: less constraints in terms of governance and membership, apparently relatively easier to implement. The real implementation tricks have to be further investigated. Other similar facilities have adopted this framework (e.g. KM3NET).

Other legal framework might appear in the future.

Whatever legal framework will be chosen is crucially important that there's a super-committed institution (and country) to lead the whole collaboration.

Back up: if there's no agreement on the legal personality model a stronger Consortium agreement will be set up to govern the operational phase.

EuPRAXIA is and will remain a wide bottom-up initiative open to the world.

The involvement of new members is endorsed by ESFRI and it is in the interest of the EuPRAXIA community

Participation is welcome, based on scientific merit and effective contribution and added value

Exciting time ahead: the second half of the preparatory phase will better define the shape of the future EuPRAXIA, site 1 will start implementation and 2nd site will be chosen and ready to start. Plus a lot of R&D work will start to produce results.

More than ever a global effort is required!

Coordinator




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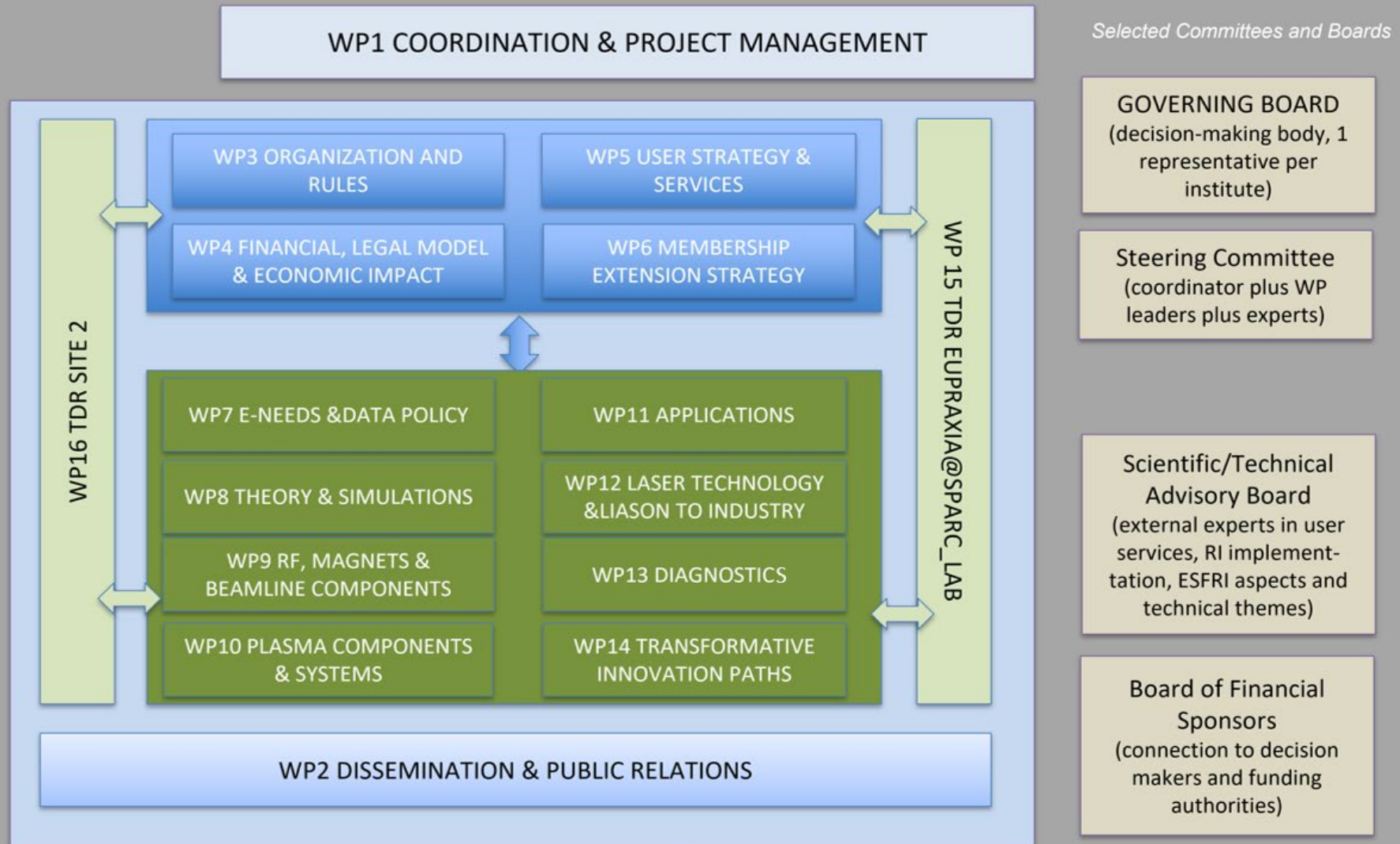
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- EuPRAXIA Preparatory Phase



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- EuPRAXIA Doctoral Network



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- EuAPS



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