ESFRI and the ESFRI Roadmap: an introduction

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EUROPPORTUNITIES

ESFRI

European Strategic Forum for Research Infrastructures

- **Mission**. support a coherent and strategy-led approach to policy-making on research infrastructures in Europe, and to facilitate multilateral initiatives leading to the better use and development of research infrastructures, at EU and international level

- **Composition**. ESFRI's delegates are nominated by the Research Ministers of the Member and Associate Countries, and include a representative of the Commission

- **Objective**. Overcoming the limits of European research caused by fragmented, national policies and providing Europe with the most up-to-date Research Infrastructures, responding to the rapidly evolving Science frontiers, advancing also the knowledge-based technologies and their extended use.

- **Tools**. ESFRI selects RI projects of pan-European interest on a European roadmap of Research Infrastructures: the ESFRI Roadmap.

- ESFRI acts as an advising body to the European Commission on RI matters

ESFRI Roadmap

The first ESFRI Roadmap was issued in 2006

- The current Roadmap (Roadmap 2016) includes 21 ESFRI projects and 29 ESFRI landmarks

  → "project" → implementation not yet completed (and for the newest projects on the Roadmap, not even started)
  → "landmark" → Operational RIs → status of "major element of competitiveness of the European Research Area" (and, as such, preserved)

- Categories of ESFRI projects: Energy, Environment, Health & Food, Physical sciences & engineering, Social & Cultural Innovation, E-infrastructures

- Roadmap is updated every 2 years

- RIs on the ESFRI Roadmap are recognized as "facilities, resources or services of a unique nature identified by European research communities to conduct top-level research activities in all fields".

- RIs entering the ESFRI Roadmap should be operational within the next 10 years, or they are taken out of the Roadmap

- Maximum 25 projects on the ESFRI Roadmap

What are the advantages of being listed on the ESFRI Roadmap

RIs listed on the ESFRI Roadmap benefits from:

- Acknowledgment at EU-level of their scientific importance and quality

- Support from the European Commission (e.g. INFRADEV calls → Preparatory Phases)

- Access (or easier access) to Structural Funds for the implementation of the RI

Applying to the ESFRI Roadmap: the Roadmap 2016 example

In 2014-2016, the ESFRI Roadmap selection process was organised in the following manner:

Dates	Event/Milestone/Deadline	Comments & Recommendations
September 25th 2014	ESFRI Roadmap update launch event, organised in Trieste, Italy	
November 2014 (see comment)	Issuance of the application package, composed of: • A 11-page questionnaire • Guidelines for applicants	November 2014 was the due date for issuing the questionnaire. In reality, the questionnaire was only made available later (January 2015).
March 31st 2015	Deadline for the online submission of proposals	Only 3 months to prepare the application (2018: 10 months)
July 17th 2015	List of additional questions from ESFRI + Invitation to hearings (see below)	After review by the ESFRI Implementation Group and the relevant ESFRI Strategic Work Group
September 15th 2015	Hearings in Brussels: project leaders (+ up to 2 project members)	
October 2015	Informal final ESFRI Roadmap update selection results communicated to project leaders	
March 8-11th 2016	Official results announced at an ESFRI Roadmap update 2016 event, in Amsterdam, Netherlands	

What are the questions asked in the ESFRI Roadmap update 2018 questionnaire?

The questions asked in the questionnaire address the following aspects of a RI project:

#	Subject	Key questions	Related topics
A.	**General Information**		
	ID card of the project	NAME, TYPE, CLASS, TIMELINE, ESTIMATED COSTS, HEADQUARTERS, WEBSITE, BACKGROUND, DESCRIPTION IMPLEMENTATION, POLITICAL SUPPORT A) LEAD COUNTRY/ENTITY B) PROSPECTIVE MEMBER COUNTRIES/ENTITIES C) INCLUSION IN NATIONAL RESEARCH INFRASTRUCTURE ROADMAP (-S) FINANCIAL COMMITMENT A) LEAD COUNTRY/ENTITY B) PROSPECTIVE MEMBER COUNTRIES/ENTITIES C) COVERAGE OF REAL AND ESTIMATED COSTS COORDINATOR PARTICIPANTS SCIENTIFIC DOMAIN	All
B.	**Scientific case**		
	Scientific impact	Does the RI project address a scientific challenge(s)/frontier(s) unaddressed or poorly addressed by current infrastructures/facilities? Can this scientific challenge/frontier be associated to one of the societal challenges identified by the European Union?	Demand analysis Conceptual Design Study Access policy Stakeholder involvement

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B.	**Scientific case**		
	Pan-European relevance	To what extent a European RI is more relevant than other forms of organisation to address the above-mentioned scientific challenge(s)/frontier(s)? To what extent addressing addressing the scientific challenge(s)/frontier(s) at European scale creates added value, compared to addressing it/them at a smaller scale?	European RI panorama European Research Area National Roadmaps
	Socio-economic impact	Granted the *raison d'être* of a RI is to produce excellent science, the contribution to Ris to produce growth and jobs is yet highly appreciated: how will the RI maximise its contribution to this objective?	Cost-Benefit Analysis
	E-needs	How will be data collected and produced by the RI be made available to users? Will the new RI seek support from existing e-infrastructures?	Open data policy E-infrastructures

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C.	**Implementation**		
	Stakeholder Commitment		
	User strategy & Access policy		
	Preparatory work	What is the current level of maturity of the project?	Conceptual Design Study Technical Design Report (only for very mature projects, unusual for ESFRI Roadmap candidates) Cost-Benefit Analysis (in particular Sustainability analysis)
	Planning	What is the implementation schedule for the new RI?	
	Governance and Management	How will the new RI be managed and governed?	
	HR policy		
	Finances	How will the new RI be financed? Is it sustainable? Does it generate revenues, and, if yes, how and how much?	
	Risks	Has a Risk Matrix been defined? What are the main risks identified? How will you mitigate them?	

What are the questions asked in the ESFRI Roadmap update 2018 questionnaire?

It is interesting to notice the changes of the ESFRI questionnaire 2018 vs. 2016:

- Stakeholder commitment becomes a more prominent subject

- Siting less prominent (question category has disappeared)

- Socio-economic impact is now part of the Scientific excellence (renamed Scientific case) section

Documentation required for an ESFRI Roadmap application (based on 2015 experience)

Mandatory

- Scientific Case Study (White Book)

- Conceptual Design Study

- Expressions of Commitment (Governments)

- Expressions of Political support (Governments, Funding Agencies)

- Memorandum of Understanding (Consortium partners)

Strongly advised

- Cost-Benefit Analysis

- Letters of Support (Peers, i.e. scientific/academic institutions)

- Letters of Support (Industrial users, public/private organisations)

Consider applying to the ESFRI Roadmap 2020?

- Are you confident that EuPRAXIA can be operational by 2030?

- What is the gap in the European RI landscape that EuPRAXIA is filling?

- Can you justify a critical mass of users?

- Have you agreed on an access policy?

- Have you firmed up the implementation and operational costs of such a RI?

- Have you completed a design/feasibility study?

- Have you planned a business case/delivery strategy?

- Can you obtain Expression of political Support (EoS) from the lead country?

- Can you obtain at least two additional EoS from Member States and Associated Countries signed by the national ministries responsible for Ris?

- As a (presumably) single-site RI, can you obtain an Expression of Commitment (EoC) from the lead country to financially contribute to the preparation and implementation phases?

- Will you have a proof of an inter-institutional and multi-lateral agreement, such as a Memorandum of Understanding (MoU) signed by the core RI project partners?

Access policy

In our view, the question of access comes second only to the scientific excellence (i.e. the ability of a RI to address better a scientific challenge/domain of importance). Why? Because, if RIs should be compared to businesses, access is what RIs "produce" and "offer on the [scientific] market". Without a sound "[scientific] offer", a RI will not produce any "added [scientific] value". ESFRI promotes RI projects that offer the best value added to scientists, and the access policy should be defined in such a way to maximise the quality of the scientific output.

Three types of access:

- Excellence-driven
- Market-driven
- Wide access

The different types can however be mixed. In our view, the "market-driven" access should be limited to 20% for most access to be reserved to scientific excellence (80%). Wide access is a by-word to describe access to data, be it digital or physical (e.g. biological/mineral sample repositories).

A sound access policy links access and financial contributions: in our view, it is a mistake to define the access policy independently from or with little consideration for financial sustainability.

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