ESFRI

European Strategy Forum
on Research Infrastructures

ESFRI

POSITION PAPER ON FRAMEWORK PROGRAM 10

November 2024

INTRODUCTION[1]

European Research Infrastructures (RIs) encompass infrastructures for research and innovation that bolster European Union (EU) competitiveness and advance the European Research Area (ERA) by

- producing excellent research and innovation,
- driving industrial competitiveness,
- contributing to job creation, economic growth and (strategic) open autonomy,
- enhancing the welfare and wellbeing of EU citizens,
- serve as vital sources of data and expertise that inform policymaking and tackle complex societal challenges.

Moreover, they play a crucial role in supporting collaborative research, are strong magnets for talent, and bolster Europe's scientific influence and sovereignty. RIs are at the core of the knowledge triangle of research, education and innovation, and therefore play a vital role in advancement of knowledge, the promotion of open science, and the efficiency of the research and innovation environment.

To tap into its full potential RIs must be seen and enhanced as strategic assets in policy making and across borders of sectoral domains to contribute to the European strategic agenda and the full realisation of the European Research Area. Therefore, RIs should be considered not only as a cross-cutting element of the Framework Programme for Research and Innovation (FP10) but of the entire EU endeavour.

The European Strategy Forum on Research Infrastructures (ESFRI) was established as a central platform for strategic thinking and collaboration in policies on research infrastructures, contributing to Europe's competitiveness in the global scientific landscape. In line with ESFRI´s mandate, we present our view on some of the strategic aspects that FP10 should include.

[1] The views outlined in this position paper do not pre-empt individual country positions in the upcoming negotiations for the FP10 and the Multi-annual Financial Framework (MFF).

KEY MESSAGES

Research Infrastructures as a capacity building layer pervading FP10

Research Infrastructures are beacons of excellence that provide a fundamental scaffold for all FP10 supported activities, from breakthrough discoveries in excellent science to disruptive technologies for a strong and innovative Europe, RIs are a main tool to address global challenges and booster European industrial competitiveness. A crosscutting strategy for research and technology infrastructures in FP10 is well justified and shall be devised as a horizontal capacity building activity bridging the entire architecture of the upcoming FP10. Such an integrative approach is necessary to ensure that all researchers can fully benefit from RI services and expertise by easily accessing the existing research infrastructures and operating in a free, open and supportive environment. This crucial role bridging together all FP10 supported activities should be properly acknowledged and matched with the corresponding financial resources in the coming FP10.

Holistic view of the infrastructure ecosystem

The rich European environment of research and technology infrastructures has to be approached as an ecosystem where the boundaries between data-intensive, digital, research-oriented or technology-driven infrastructures are diffuse and ever moving. And while each of these infrastructures have, and should continue to have, unique roles, strengths, capabilities, needs or potential users, the various kinds of research, technology, data or e-infrastructures in Europe form an intrinsically interconnected and continuous ecosystem. Importantly, the continuous ecosystem of infrastructures needs to be supported by a continuous funding ecosystem that prevents that the funding of one particular facet of the interconnected research and technology ecosystem is done at the expense of the others. The future FP10 should be strengthened and complemented with additional funding streams beyond traditional research funding (e.g. EU policy industrial instruments).

At the same time, FP10 should avoid promoting the creation of silos that would be detrimental for the holistic approach that this interconnected ecosystem needs and move to find commonalities. This must be reflected by a strategic governance, which by applying a holistic view and accompanied by adequate and coordinated funding streams, including those from other national and European sources, will then facilitate a coherent and effective development of the entire European research and innovation ecosystem. To avoid further risks of fragmentation, the focus in the next period should be the consolidation and stronger cooperation of this rich ecosystem, with emphasis on new initiatives through RI already in place.

Research infrastructures as a policy tool for European integration and international cooperation

Research infrastructures have over time developed into powerful instruments fostering not only European integration, but supporting also international cooperation and becoming practical tools and a demonstration of real science diplomacy. A paramount example would be the collaboration within Europe and across continents for data gathering where internationally-linked data infrastructures collect and curate data and samples from different countries, required to solve complex challenges such as climate change, biodiversity and public health. This role should be further promoted by also considering RIs as a policy tool for European integration, international cooperation and attracting the best talents.

Sustainable transnational access by European and third countries to European Research Infrastructures is one of the most effective ways to support international research, open science and innovation cooperation but must be done hand in hand with the defense of our shared values and ensuring security and European sovereignty. Therefore, FP10 should contain the means for supporting secure transnational access (including financial support). The needed actions include setting up standardised access modes to RI services that will facilitate sharing scientific knowledge and European values, the adoption of FAIRness standards, the promotion of research security, and a robust internationalisation program, bolstering the EU's positioning in the global arena. While promoting international cooperation, we should also bolster European integration. Stronger efforts and concrete financial instruments are needed in the new FP10 to enable access to the existing RIs by MS/AC - with emphasis to widening countries - and third countries to ensure equal opportunities and a more balanced European Research Area.

Future sustainability of the Research Infrastructure Ecosystem

The challenge of ensuring long-term sustainability of RIs is very complex in nature. In addition to scientific excellence as an indisputable key element, long-term sustainability requires an adequate legal and financial framework, an environmental strategy and must be embedded in a supportive, policy-driven environment to be successful. Given the breadth and depth of benefits that RIs bring to European society it is very important that FP10 extends the use of co-funding instruments as for example the EU Partnerships programme to increase the overall funding of RIs and contribute to the financial sustainability of RIs.

The use of co-funding instruments can be applied with surgical precision to aspects of RIs that represent a small percentage of the total budget but that have a multiplying factor with a bolstering effect in the overall impact of RIs. Also, a consolidation of the infrastructure landscape should be part of this process and it is essential to ensure a well-functioning European infrastructure landscape. Furthermore, given the impact of RIs beyond science (e.g. weather forecast, security, digital or green transition, among others) joint actions, including the co-funding of RIs, with other European agencies in addition to R&D could be envisaged.

To this end, FP10 should continue to foster the development, enhancement, and consolidation of the outstanding pan-European infrastructure landscape, while also supporting its expansion where necessary. Efforts should focus on seizing new opportunities and ensuring broad coverage across various research domains, with a key priority being the provision of support for operational costs. In this context, to increase sustainability ESFRI proposes the use of joint actions, including co-funding instruments, within FP10 to support the following objectives, among others, in adequate alignment to accompanying national measures:

- Provide support for infrastructures to contribute and adjust to European competitiveness and the green and digital transitions (for example for connection between infrastructures, AI, EOSC and quality assurance of FAIR research data).
- Provide support to facilitate the clustering of RIs needed to tackle the complex problems and challenges that the EU is facing and the need for consolidation of the infrastructure landscape to bolster excellence and to keep it sustainable in the long run. In order to promote this collaboration and avoid fragmentation and duplication of efforts, scientific, technical and financial incentives should be laid out for stable collaboration mechanisms between RIs.

- Provide support for the consolidation of the RI landscape at a national level, necessary to increase the overall technological readiness of MS/AC (capacity building in industry and personnel), the breeding ground for excellent science and avant-garde technology.
- Provide support for the identification and development of opportunities to facilitate transnational access to Research Infrastructures within various programmes under FP10, with particular emphasis to ensure access in widening countries. For example, designing a model with other EU programmes to support access to Research Infrastructures.
- Provide support to bolster the role of RIs in education and professional career development that goes well beyond RIs since RIs are talent pools with highly qualified personnel that can feed other professional fields. Collaborating with the MSCA program and the COST actions to create co-funding calls to complement the development of training and education activities.
- Provide support to ensure that Europe will build infrastructures for the next generation in Europe. If new infrastructures are considered, Europe should become the preferred building site. Europe should be seen as a relatively fast developer of excellent infrastructure because of the availability of expertise, knowledge and talent. The financial, legal and other framework conditions should contribute to this.
- Minor upgrades (for research, to increase technology transfer or to bolster RIs use by industry).
- Training and up-skilling of RI technical staff for optimal functioning of RIs.
- ESFRI projects advancing towards their implementation phase and/or starting their operation.