RECOMMENDATIONS FOR THE EXPLOITATION OF RESEARCH INFRASTRUCTURES IN HORIZON EUROPE

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RECOMMENDATIONS FOR THE EXPLOITATION OF RESEARCH INFRASTRUCTURES IN HORIZON EUROPE

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Contents

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RESEARCH INFRASTRUCTURES

Executive Summary

The document intends to provide recommendations for exploiting Research Infrastructures in Horizon Europe (HE), suggesting measures for the various aspects of the new Research Programme.

The present document, edited in the frame of the related APRE members Working Group, intends to provide recommendations for exploiting Research Infrastructures in Horizon Europe (HE).

The first section of the document is devoted to the UE Framework Programmes: on one side, Horizon Europe, and the opportunities it can offer to the Research Infrastructures. On the other, the analysis of the participation rate of the Research Infrastructures (taking the already established ERICs as a sample) in all Pillars of Horizon2020 Programme can represent a reliable benchmarking element.

The key idea is to identify key areas of intervention to propose specific measures for promoting the participation of the Research Infrastructures in all areas of the new Horizon Europe Programme.

Research Infrastructures have played a key role in Horizon 2020 for the consolidation of the European Research Area; this could continue promoting policy actions able to leverage their potential and impact. In particular, the document addresses the relevance that Research Infrastructures have in implementing the Open Science and International Cooperation policies.

On a more operational level, the active promotion of Research Infrastructures in HE can be implemented through specific provisions in the Rules for Participation concerning both legal and financial aspects. Actions for facilitating indirect participation are also explored. The document sets different suggested measures for the various aspects of the new Research Programme. Such recommendations will be disseminated to different targets such as the National Contact Points for HE, National Delegates for HE, the EC and (Directorates and Units) ESFRI, Experts groups, etc...

The document is the final product of a job that took place in 3 phases:

1st Phase – Analysis (Information Gathering). The working group participants cooperated in the analysis and information gathering related to the Research Infrastructures environment (ERIC, ESFRI, Horizon Europe Strategi Plan, ESFRI White Paper, etc.)

2nd Phase – Document writing Planning. The Working Group moderators together with the editorial coordinator planned in which every detail the document is filled. This comprises of the total number of topics involved in the documentation, number of Technical Writers involved in the activity, tentative time spent in writing, time spent to review the documents by different parties, and more.

3rd Phase – Review and finalization. The working groups participants gave their feedback and final suggestions on the document produced.

SETTING UP THE SCENE

In this chapter

» **Horizon Europe**

» **Targeted Research Infrastructures**

» **Participation in numbers**

Chapter 01
Setting up the scene

1.1 Horizon Europe

Horizon Europe is the largest transnational programme ever supporting research and innovation. The new EU research and innovation programme will have a budget of around €95.5 billion for 2021-2027 (current prices). It will promote excellence and provide valuable support to top researchers and innovators to drive the systemic changes needed to ensure a green, healthy and resilient Europe.

Figure 1: Structure of Horizon Europe[1]

The programme is mainly organized in three "Pillars", where the Research Infrastructures can play a strategic role and promote effective and efficient use of resources and investments.

Pillar 1 "Excellent Science" supports the creation and diffusion of high-quality knowledge skills, technologies and solutions to global challenges.

In particular, this Pillar – through dedicated calls for proposals- endows Europe with world-class sustainable Research Infrastructures, which are open and accessible to the best researchers from Europe and beyond. In doing so, the potential of the infrastructures to support scientific advance and innovation and enable open science will be enhanced.

Within Pillar I, Research Infrastructures will continue to extend the frontiers of knowledge by providing state of the art services to research and innovation communities, thus contributing to the

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[1] https://ec.europa.eu/info/horizon-europe_en

Chapter 01
Setting up the scene

objectives of the clusters and missions supported in Horizon Europe. Supporting research infrastructures at the EU level reduces fragmentation in the landscape of national and regional infrastructures, strengthens the European Research Area, and avoids duplication of efforts and maximizing impact.

The same Pillar will drive scientific excellence through the European Research Council (ERC) to enable our most excellent researchers to push the frontiers of knowledge to tackle our economic and social challenges. The Marie Skłodowska-Curie Actions, in Pillar I will help the best talents, young researchers, to expand on their knowledge and skills.

Through **Pillar 2**, **"Global Challenges and European industrial competitiveness"**, the programme will support collaborative research relating to our societal challenges and reinforce technological and industrial capacities through thematic clusters that address the full spectrum of global challenges. For example, Horizon Europe's Climate, Energy and Mobility cluster and the Digital, Industry and Space cluster will scale up R&I resources in climate-related domains and ensures that European enterprises have access to the technologies and data they need. Quantum Research will be prioritized in the latter, thereby expanding the European scientific leadership and excellence in quantum technologies. The cluster "Culture, Creativity and Inclusive Society" has been reinforced, supporting research and innovation in the cultural and creative sectors, cultural heritage, building cultural heritage collaborative space, and humanities and arts. The "Health cluster" will tackle challenges such as: the coronavirus pandemic, the extension of clinical trials, innovative protective measures, virology, vaccines, treatments and diagnostics, and the translation of research findings into public health policy measures.

As scientific data and services providers, the strategic role of the Research Infrastructures is embedded in all clusters.

Additionally, through **Pillar 3**, **"Innovative Europe"**, the programme will introduce new features such as the European Innovation Council (EIC). The EIC, which is already running in a pilot phase, will receive over €10 billion in the budget to support emerging and breakthrough innovations by small and medium-sized enterprises (SMEs), start-ups, and midcaps. It will complement the European Institute of Innovation and Technology (EIT). European innovation ecosystems will be boosted by connecting with regional and national innovation actors.

Research Infrastructures are indeed enablers of innovation, both for public and private research.

Chapter 01

RESEARCH INFRASTRUCTURES

Horizon Europe also foresees a horizontal programme, "Widening participation and strengthening the ERA," to include measures to support cooperation in the European Research Area and to contribute to reducing the R&D gap within the EU. It is divided into two sections:

1. Widening Participation and Spreading Excellence
2. Reforming and enhancing the European R&I System

The funding activities in the programme component "Widening Participation and Spreading Excellence" are primarily aimed at target countries whose performance in research and innovation is below the EU average.

European Partnerships

European Partnerships[2] are initiatives in which the EU and private and/or public partners commit to jointly support the development and implementation of a programme of research and innovation activities, including market, regulatory or policy uptake.
There are three different types of European Partnerships within Horizon Europe:

- **1. Co-programmed European Partnerships**: These are partnerships between the Commission and private and/or public partners. They are based on memoranda of understanding and/or contractual arrangements.
- **2. Co-funded European Partnerships using a programme co-fund action**: Partnerships involving EU countries, with research funders and other public authorities at the consortium's core.
- **3. Institutionalised European Partnerships**: These are partnerships in research and innovation between the Union, EU Member States and/or industry.

So far, there are 49 candidate partnerships. The majority is established under the thematic clusters 1 – Health; 4 – Digital, industry and space; Cluster 5 – Climate, energy and mobility; Cluster 6 – Food, bioeconomy, natural resources, agriculture and environment. Nevertheless, they are present in pillars I (partnerships within research infrastructures) and II (partnerships on innovation ecosystems) as well.

Research Infrastructures represent an innovative tool foreseen in the Orientations towards the first Strategic Plan for Horizon Europe and are of huge interest for the Research Infrastructures, where they can have a crucial role. European Partnerships under Horizon Europe set up a more strategic,

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[2] Orientations towards the first Strategic Plan for Horizon Europe

RESEARCH INFRASTRUCTURES

Chapter 01

Setting up the scene

coherent and impact-oriented approach by focusing partnerships on the delivery of EU priorities and putting increased emphasis on synergies between partnerships and other initiatives at the EU, national or local level.

EU Missions

A mission is a portfolio of actions across disciplines intended to achieve a bold and inspirational, and measurable goal within a set timeframe, with impact for society and policymaking and relevance for a significant part of the European population and a wide range of European citizens.
Horizon Europe defines mission characteristics and elements of governance and five mission areas:

- Adaptation to climate change, including societal transformation;
- Cancer;
- Healthy oceans, seas, coastal & inland waters;
- Climate-neutral & smart cities;
- Soil health & food.

In the spotlight: NextGeneration EU

The HE budget has received a top-up (currently estimated at 5B€) from the NextGeneration EU programme. **NextGeneration EU** is a €750 billion temporary recovery instrument that reinforces the Multiannual Financial Framework 2021-2027 of the EU. Together, both instruments become the largest stimulus package ever financed through the EU budget. A total of €1.8 trillion will help rebuild a post-COVID-19 Europe. It will be a greener, more digital and more resilient Europe. More than 50% of the budget will support modernisation through different means such as research and innovation (via Horizon Europe), fair climate and digital transitions (via the Just Transition Fund and the Digital Europe Programme), and preparedness, recovery and resilience, via the Recovery and Resilience Facility, rescEU and a new health programme, EU4Health.

1.2 Targeted Research Infrastructures

According to the ESFRI definition, **Research Infrastructures are**:
"Facilities, resources or services of a unique nature, identified by European research communities to conduct and to support top-level research activities in their domains. They include major scientific equipment – or sets of instruments; knowledge-based resources like collections, archives and scientific data; e-Infrastructures, such as data and computing systems and communication networks; and any other tools that are essential to achieve excellence in research and innovation[3]."

For the scope of the document, the Research Infrastructures considered are those with an international constituency. The following list provides an example of this assumption:

- Legally established Research Infrastructures (ERICs[4] , Foundations, Asbl…)
- Research Infrastructures having a formally agreed governance,
- Networks (INFRAIAs, Design Phases)

The figure[5] below gives a visual, albeit incomplete, representation of the different Research Infrastructures considering the ESFRI lifecycle.
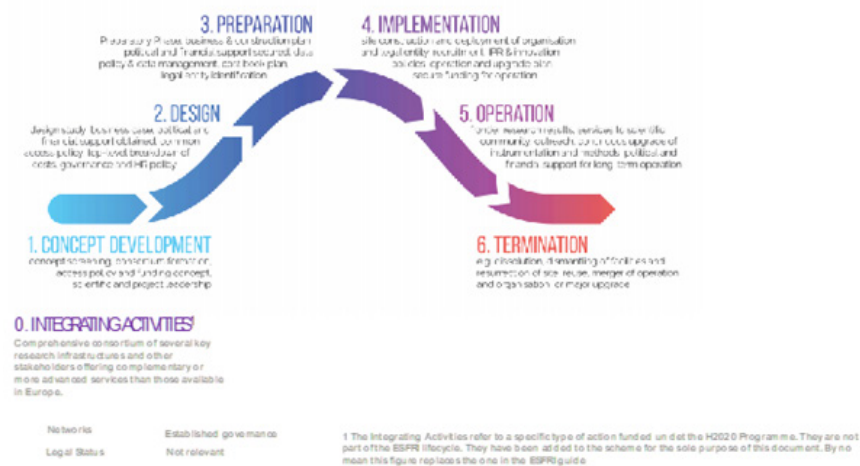

Figure 2: ESFRI Lifecycle (modified representation)

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[3] ESFRI Roadmap 2018. Strategy Report on Research Infrastructures

[4] ERIC stays for European Research Infrastructure Consortium

[5] The Figure has been modified for the purpose of this document. By no means it is intended to replace, update or change the original picture available here

Chapter 01

Setting up the scene

1.2.1 Legally established Research Infrastructures

Different legal models can be adopted to establish a Research Infrastructure[6]:

- **International**: notably IGOs - Inter-Governmental Organisations are composed primarily of sovereign states or other intergovernmental organisations. IGOs are established by intergovernmental agreements following the process of ratification by states lawful representatives (i.e., governments). These intergovernmental agreements, also known as treaties, provide IGO with an international legal personality and create the space for lawfully run activities. Examples of Research Infrastructures established as IGO: CERN, EMBL, ESA, ESO and ILL

- **European**:
  - *ERIC - European Research Infrastructure Consortium*. An ERIC is a full legal entity under European Union law[7]. With a membership of at least one European Union member state and two EU member or associated states, it has legal personality and full legal capacity recognised in all Member States. So far, 22[8] ERICs have been established.
  - *Consortium*: e.g., CA Consortium agreement: EUELIXIR, SIOS.

- **National**:
  - *Limited liability companies*:
    - Germany: GmbH Gesellschaft für beschränkte Haftung, e.g., European X-FEL, INFRAFRONTIER (before becoming ERIC).
    - United Kingdom: Ltd Private limited Company, e.g., EIBIR, SKA organisation, INSTRUCT Academic Services Limited (Before becoming ERIC).
    - Sweden: AB Aktiebolag, e.g., ESS AB (Before becoming ERIC).
    - France: Societé Civile, e.g. ESRF.

  - *Associations*: e.g., AISBL (Association Internationale sans but lucrative) that is the international non-profit association established under the Belgian Law, carried by the international nature of its purpose and recognised by Royal Decree, e.g., PRACE, ELI, EuroGOOS, EUFAR, LTER, LASERLAB-EUROPE.

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[6] The legal models of the Research Infrastructures listed below are not exhaustive and are subject to update

[7] The Community legal framework for a European Research Infrastructure Consortium (ERIC) entered into force on 28 August 2009, with the Council Regulation (EC) n. 723/2009. This specific legal form is designed to facilitate the joint establishment and operation of Research Infrastructures of European interest.

[8] The ERIC landscape is available here

- *Foundations*:
    - Germany: Stiftung des bürgerlichen Rechts, e.g., DESY.
    - Netherlands: Stichting, e.g., EGI foundation.

1.2.2 Research Infrastructures having a formally agreed governance

As an illustrative yet incomplete example, we can refer to:

- ESFRI Projects have been successfully evaluated by the ESFRI Implementation Group (IG) regarding their level of maturity and capacity to move towards implementation and ESFRI Landmarks in specific cases identified by the Forum.
    - E.g., Projects 2016, which have successfully completed the Preparatory Phase.
    - E.g., Projects 2010 specific cases identified by the Forum.

- Consortia, having submitted the ERIC Step 1 application

1.2.3 Networks

By "network", we understand a set of nodes or a group of independent organisations that cooperate as decentralised, team-based, distributed structures and are bottom-up proposed thematic networks in H2020. Networks couple together with other autonomous organisations under some coordination to reach the same goals. In this document, we mainly refer to the networks based on the following H2020 schemes:

- **INFRAIA** (Integrating and opening research infrastructures of European interests). These networks aim to gather fragmented Research Infrastructures and mobilise a comprehensive consortium of several key research infrastructures in a given field and other stakeholders. INFRAIAs operate to provide trans-national and virtual access to the involved facilities, to improve the services the infrastructures offer (including access procedures and interfaces) as well as the cooperation among Research Infrastructures, scientific communities, industry and other stakeholders.

- **Design Studies** (Development and long-term sustainability of new pan-European research infrastructures). The aim of these networks is to support the conceptual and technical design for new research infrastructures which are of a clear European dimension and interest.

Chapter 01
Setting up the scene

1.3 Participation in numbers

To quantify the direct and indirect participation of Research Infrastructures in the European Commission Actions, we have analysed the participation of the ERIC (as defined in paragraph 2.1) in terms of budget and participation in the different Pillars in the Horizon 2020 projects.

The following data have been collected:

- number of EU funded projects in which ERIC have participated as Coordinators
- number of EU funded projects in which ERIC have participated as partners
- NET EU Contribution at ERIC in Horizon 2020 Programme divided per thematic priority

The number of participations in EU projects provides essential data on the involvement of Research Infrastructures in the project initiatives. In particular, we have observed that in the seven years of the H2020 programme, the Research Infrastructures have participated in 208 projects as partners and only in 29 projects as coordinators. Figure 3 below shows the number of projects granted to each RI.
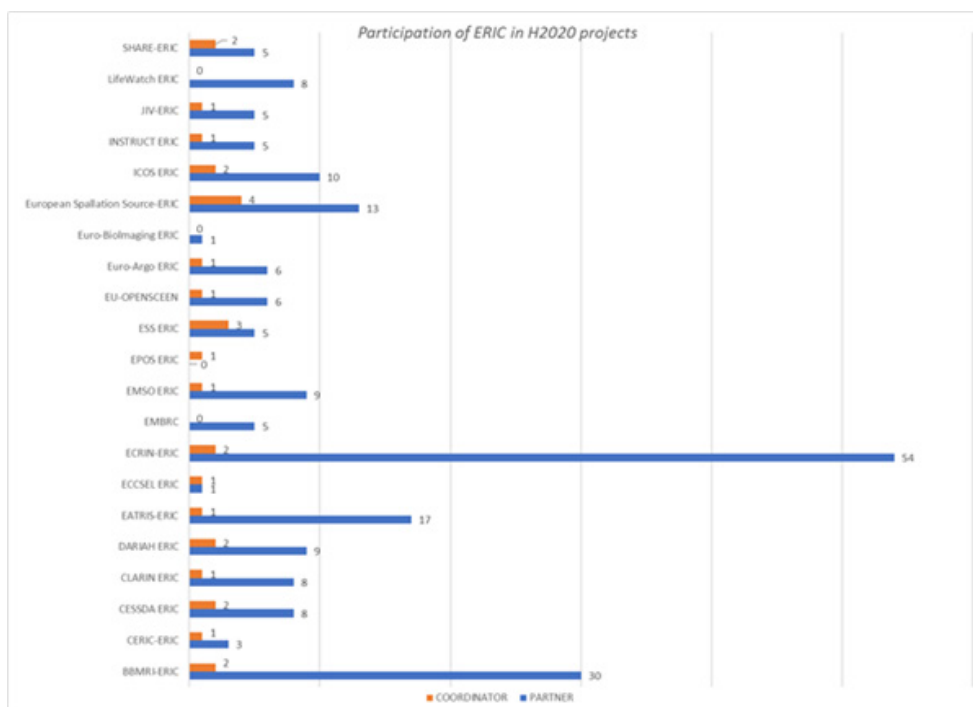

Figure 3: Participation of ERIC in H2020 projects

Chapter 01

Setting up the scene

The RI with the highest participation as a partner is ECRIN with 54 projects, followed by BBMRI with 30 projects and EATRIS with 17 projects, European Spallation Source-ERIC with 13 projects and ICOS ERIC with ten projects. The remaining 16 Research Infrastructures (out of 21 ERIC participating in the H2020 programme) have registered lower participation with less than ten projects for the whole programme period.

The Research Infrastructures with the highest participation as coordinator are European Spallation Source-ERIC with four projects and ESS ERIC with three projects. BBMRI, CESSDA ERIC, DARIAH ERIC, ECRIN ERIC, ICOS ERIC and SHARE-ERIC have coordinated two projects in the last programme. 10 Research Infrastructures out of 21 have coordinated only one project, whereas 3 Research Infrastructures did not coordinate any projects (EMBRC, Euro-BioImaging ERIC and LifeWatch ERIC).

Regarding the participation of Research Infrastructures in the different Pillars, data shows that the net EU Contribution received by the Research Infrastructures in Pillar 1 "Excellence Science" accounts for 95,41 million euro. In contrast, Pillar 2 "Industrial leadership" and Pillar 3 "Societal Challenges" respectively account for 1,68 and 25,05 million euro, as described in figure 4.
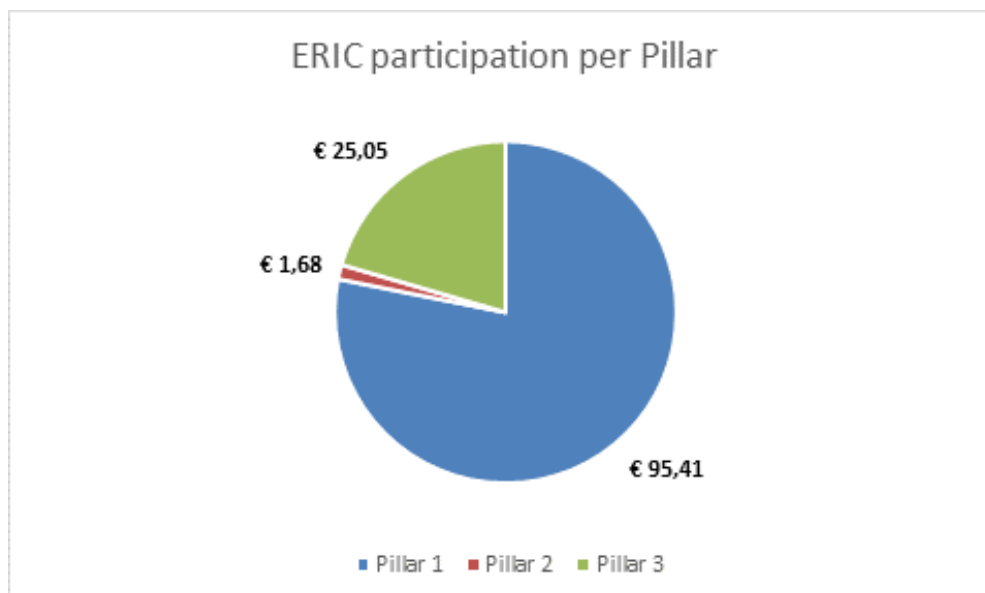

Figure 4: ERIC participation per Pillar (data in M€)

RESEARCH INFRASTRUCTURES

Chapter 01

Setting up the scene

Figure 5 shows the net EU Contribution received by the Research Infrastructures in each Programme. The highest net EU Contribution in Horizon 2020 Programme in Pillar 1 is registered in the thematic priority INFRA - Research Infrastructures with 95,15 million euro, as the programme, is addressed explicitly to Research Infrastructures. In the same Pillar, 0,26 million euro were destined to the programme Marie Sklodowska-Curie actions.

Within Pillar 2, Research Infrastructures participated in the following thematic priorities: LEIFT-ICT - Information and Communication Technologies (receiving 0,42 million euro), LEIT-ADVMAT - Advanced materials (receiving 0,88 million euro) and LEIT-SPACE – SPACE (receiving 0,38 million euro).

Within Pillar 3, Research Infrastructures participated in the thematic priority "Food security, sustainable agriculture and forestry", receiving 2,43 million euro and "Climate action, environment, resource efficiency & raw materials" (1,04 million euro).

Minimal participation is also registered in the specific objective 'Spreading excellence & widening participation with a net EU contribution of 0,88 million euro.

To conclude, data show that the second significant participation of Research Infrastructures, beyond the INFRA thematic priority, is registered in the "Health, demographic change & wellbeing programme" with a net contribution of 21,58 million euro.
As a result, these data highlight that the Biomedical Research Infrastructures are involved in the highest number of EU funded projects, as both coordinator and partners. Thus, they received the highest net EU contribution.
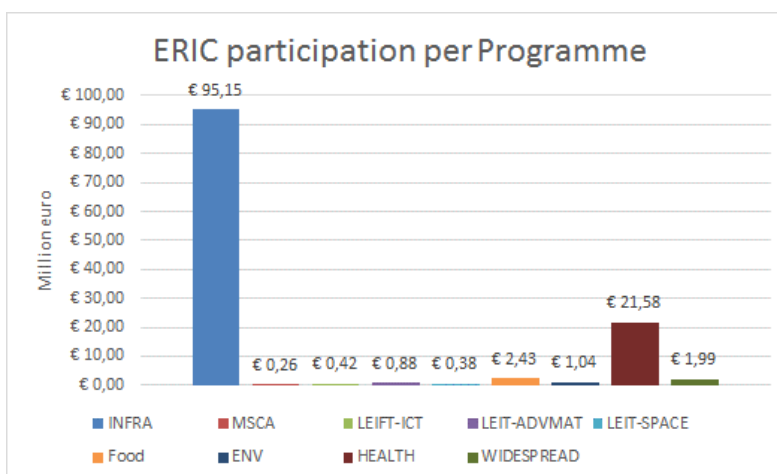

Figure 5: ERIC participation per Programme (data in M€)

Notes

STRATEGIES FOR THE PROMOTION OF RESEARCH INFRASTRUCTURES

In this chapter

» **Policy**

» **Direct participation**

» **Indirect participation**

Chapter 02

Strategies for the promotion of Research Infrastructures

2.1 Policy

Since 2000, significant progress has been made in achieving the ERA European Research Area objectives. The coordination and pooling of resources to jointly addressing common challenges through research programmes is a reality. Progress has also been made in removing geographical and cultural barriers to researchers' mobility in Europe. Lastly, the Open Science initiatives have enhanced access to open, free of charge, re-usable scientific information. Indeed, the Horizon 2020 Programme, the Open Science policy and the increase of the strategic role of the international cooperation acted as key enablers for ERA consolidation.

It is notable the horizontal role played by Research Infrastructures in these three enablers, not only with the exploitation of Research Infrastructures in Pillar I of Horizon 2020 Programme but also with their natural tendency to collaborate among Countries inside and outside Europe as well as with their already established experience with Open Science Practices such as Fair Data.

2.1.1 The role of Research Infrastructure in the implementation of Horizon Europe

Research Infrastructures will contribute to achieving the four key strategic orientations through excellent state of the art services, knowledge, and tools to address societal challenges, ensure evidence-based policymaking and help the industry strengthen its knowledge base and technical know-how. Their use will be stimulated across the different pillars of Horizon Europe and within the European Partnerships. Through the European Open Science Cloud (EOSC) and the European Data Infrastructure (EDI), researchers involved in Horizon Europe activities will be able to access and process most of the data generated and collected by Research Infrastructures (see 2.1.2 The role of Research Infrastructure in the Open Science Practices).

Suggested measure: **THE ROLE OF THE HORIZON EUROPE PROGRAMME COMMITTEES**

The role of the Horizon Europe Programme Committees is to interact with the European Commission in preparing the implementation of the Horizon Europe Work Programmes.
A structured and continuous exchange between the so-called Thematic Committees and the Research Infrastructures Committee could support the process of the overall implementation of Horizon Europe, such as:
a) ensure that calls for proposals in thematic Work Programmes could benefit from Rese-

Chapter 02

Strategies for the promotion of Research Infrastructures

arch Infrastructures (see paragraphs 2.2 and 2.3 for the different types of participation).
d) Keep the National Representatives in the thematic Programme Committee updated on the development of European Roadmap(s) for Research Infrastructures and the services available for the research and innovation Community at large.

2.1.2 The role of Research Infrastructure in the Open Science Practices

Open science is about how research is carried out, disseminated, deployed and transformed by digital tools and networks. By providing unlimited, barrier-free, open access to research outputs, Open science makes scientific processes more efficient, transparent and responsive to societal challenges. Open Science is becoming the modus operandi for carrying out research and innovation by sharing knowledge, data and tools as early as possible in open collaboration with all relevant knowledge actors and society. Following the principle "as open as possible, as closed as necessary", the practices of Open Science increase the quality and impact of research and innovation and lead to more excellent responsiveness to societal challenges.

Research Infrastructures can support the adoption of Open Science practices by exchanging good practices and tools, development of guidance and training, implementation of institutional changes, and consolidation of evidence on impacts. Indeed, Research Infrastructures already started being Open Science compliant and may provide tools and good practices.

Suggested measure: **RESEARCH DATA MANAGEMENT**

Following the Research data management definition Horizon Europe funded projects will have to deposit research data, preferably in a research data repository. In addition, projects will have to take measures to enable third parties to access their research data and, at the same time, provide information via the chosen repository about the tools available to the beneficiaries that are needed to validate the results.
One straightforward and effective way of doing this is to promote the role of Research Infrastructures as pre-identified reliable archives, FAIR compliant, linked to the EOSC and

Chapter 02

Strategies for the promotion of Research Infrastructures

scientific domain specific.

By encouraging this practice, repository managers will enable data owners to incorporate their research data into the Research Infrastructure for discoverability and utilizing possible value-added services provided by the infrastructure's portal.

Many Research Infrastructures are on their way towards long-term interoperability among research infrastructures and with the EOSC, and structured metadata is of benefit to individual data repositories and the scholarly community at large.

2.1.3 The role of Research Infrastructure in the International Cooperation

Research Infrastructures are crucial elements of any research and innovation strategy, both at national and international levels, and although the definition of "Research Infrastructure" varies from one context to another. International cooperation of Research Infrastructures is a key element for progress in sharing and coordinating efforts. This issue has been at the centre of high-level science-policy discussion for many years and in many different international landscapes.

For example, in the framework of The Organisation for Economic Co-operation and Development (OECD), the Global Science Forum (GSF) was established in 1992 as the 'Mega-science Forum' to act as a venue for OECD members and relevant partner countries to discuss issues relating to large-scale international Research Infrastructures. The GSF mandate was revised and expanded in 1994 to provide analysis and advice to governments concerning international science collaboration. At the first G8 Science Ministers' Meeting, held on June 15th, 2008, in Okinawa, the Science Ministers decided to better structure such dialogue by establishing the Group of Senior Officials on Global Research Infrastructures[9] (GSO on GRI). The Carnegie Group of G8 + 05 Science Advisers established a Group of Senior Officials (GSO) on Global Research Infrastructures to reach a common understanding on matters such as governance, funding and management of large-scale research infrastructures. The European Commission is a member of the GSO group.

This Group promotes the sharing of information and facilitates international cooperation in the planning and development of Global Research Infrastructures.

At a regional scale, Research Infrastructures are also an essential part of the European Union Research and Innovation Policy, as a specific line item under the HORIZON EUROPE (2021-2027). Con-

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[9] https://www.gsogri.org/

RESEARCH INFRASTRUCTURES

Chapter 02

Strategies for the promotion of Research Infrastructures

sidering the crucial contribution of Research Infrastructures to the development of the European Research Area, in 2002, the European Council established a dedicated Forum to support a coherent and strategy-lead approach to policymaking for Research Infrastructures, to facilitate multilateral initiatives leading to better use and development Research Infrastructures at the EU and international level. The European Strategy Forum on Research Infrastructures (ESFRI) is represented by one delegate per European Union Member State and Associated Countries and a European Commission representative.

Suggested measure: **THE SCIENCE AND TECHNOLOGY COOPERATION AGREEMENT**

In the framework of bilateral cooperation between the EC and the concerned third country(ies), the Research Infrastructures can play a leading role in the "Science and Technology Cooperation Agreement". Indeed, sharing information on European research infrastructure priorities and prioritisation processes; identifying areas of the potential benefit that could be achieved through sharing of best practices; including a representative list of GRIs open to global cooperation of interest to new partners could be a building block of enhanced international cooperation and external Science and Technology Relations.
Joint initiatives specifically addressing Research Infrastructures could be implemented as a part of these negotiations.

2.2 Direct participation

Direct participation refers to Research Infrastructures participating in the action.

2.2.1 Involvement

According to the current version[10] of the Horizon Europe General Model Grant Agreement, the direct participation of Research Infrastructures could be as follows:

- **Beneficiaries** (BEN) — The signatories of this Agreement (either directly or through an accession form).

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[10] Horizon Europe (HORIZON) Euratom Research and Training Programme (EURATOM), General Model Grant Agreement. (HE MGA — Multi & Mono), Version 1.0 DRAFT 25 February 2021

- **Affiliated entities** (AE) — Entities affiliated to a beneficiary within the meaning of Article 187 of EU Financial Regulation 2018/1046, which participate in the action with similar rights and obligations as the beneficiaries (obligation to implement action tasks and right to charge costs and claim contributions).
- **Associated partners** (AP) — Entities that participate in the action but without the right to charge costs or claim contributions.

Suggested measure: **AFFILIATED ENTITIES**

The category of "Affiliated Entities" should include the types of Research Infrastructures listed in 1.2 as the necessary legal link is embedded in their legal form. In addition, consortia having submitted the ERIC step1 application can be considered "affiliated entities" where the Application defines a framework cooperation agreement.

2.2.2 Evaluation

In Horizon Europe, if admissible and eligible, the proposals will be evaluated and ranked against the following award criteria, depending on the type of action: Excellence, Impact, Quality and efficiency of the implementation. For proposals with the same score within a single budget envelope (except for the first stage of two-stage submissions), a method to establish the priority order will be determined, considering the objectives of the specific topic.

Suggested measure: **REWARDING MECHANISM**

In the case of Direct Participation, the evaluation criteria could embed a rewarding mechanism for those proposals involving Research Infrastructures in the consortium, both as beneficiary or affiliated. It implies that these Research Infrastructures should be those legally established, see category 1.2.1.
If necessary, any further prioritisation will take into consideration based on the participation of RI as prioritisation factors among others, in order: such as the size of EU budget allocated to SMEs, gender balance, etc., among others.

RESEARCH INFRASTRUCTURES

Chapter 02

Strategies for the promotion of Research Infrastructures

2.3 Indirect participation

2.3.1 Evaluation

As stated in paragraph 2.2.2, the award criteria of Horizon Europe are: Excellence, Impact, Quality and efficiency of the implementation. For proposals with the same score within a single budget envelope (except for the first stage of two-stage submissions), a method to establish the priority order will be determined, considering the objectives of the specific topic.

Suggested measure: **EVALUATION CRITERIA**

The evaluation criteria could foresee an additional rewarding mechanism for those proposals planning to access services provided by Research Infrastructures for their research activities in the Indirect participation feature. In this case, Research Infrastructures as defined in 2.1, 2.2 and 2.3 are concerned. Indeed, the access services can be offered notwithstanding the existence of a legal entity.

2.3.2 Costs

Measures for promoting the active participation (both direct and indirect) of RI can also be related to costs. This could be a mean to make the research infrastructure services more appealing for private participants, thus stimulating the cooperation between the RIS and the industry.

Suggested measure: **REIMBURSEMENT**

Proposals foreseeing the use of Research Infrastructures' services should allocate some budget in case the services are not free of charge. Such costs should be reimbursed at 100% for all types of participants: private or public organisations, as well as for all types of Horizon Europe funded actions.

RESEARCH INFRASTRUCTURES

2.3.3 Conditions

Research Infrastructures will ensure specific and favourable conditions for services used by successful proposals funded under HE. Research Infrastructures able to provide services will give priority to access requests from HE funded projects, having already planned the activity in the proposal phase (for further details, see paragraph 2.1.1).

Suggested measure: **ACCESS SERVICES FOR HE CONSORTIA**

Regarding the ranking list of the access calls published by the RI, the requests coming from a HE consortium should undergo the feasibility assessment but be exempted from the scientific evaluation since external experts have already evaluated the scientific excellence. Furthermore, in the available services for each Research Infrastructure, potential additional TNAs requested by a HE consortium should be accepted. In this case, the service provider might charge access costs to the requesting consortium.

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RESEARCH INFRASTRUCTURES

CONCLUSIONS

Conclusions

The support measures to RI participation in Horizon Europe can be referred to **3 main aspects**:

- Policy
- Possibility
- Opportunity

Each aspect can be linked to a specific area of intervention: **Policy**, **Direct Participation** and **Indirect Participation**.

A primary requirement for the exploitation of Research Infrastructures in the European Research Area (ERA) is their involvement in the policy process of the European Framework Programme for Research and Innovation elaboration so that they can become actors rather than being just enablers. A formal role in the comitology and experts' groups could bring an added value to the strategy setting in the different scientific domains.

In the broad context of EU policies, **two significant axes** have been considered in this document: **the Open Science** and **the International Cooperation**.
As for the implementation of Open Science policy and practices, Research Infrastructures' role is two-fold; both for the tools they can make available to the research communities and as capacity building and knowledge provider. As far as International Cooperation is concerned, it is recommended that the Cooperation Agreements include Research Infrastructures as a stable item of the negotiation.

There is space for **improving the regulatory participation of RI in Horizon Europe** through a set of actions related to their "Direct Participation" (possibility). Still, it should also be desirable to create favourable conditions for increasing the mutual attractiveness between Research Infrastructures and their scientific communities (opportunity) to facilitate the "Indirect Participation".

The three suggested areas of intervention (Policy, Direct and Indirect Participation) described in the document are tackling different actors and phases of the new Research Programme and should be promoted accordingly. To this extent, the recommendations are addressed to, e.g. the National Delegates for HE, the EC and (Directorates and Units) ESFRI, Experts groups.

RESEARCH INFRASTRUCTURES

GLOSSARY - ACRONYMS

EC	European Commission
ERA	European Research Area
ERIC	European Research Infrastructure Consortium
FAIR	Findable Accessible Interoperable Reusable
HE	Horizon Europe
RI	Research Infrastructure
WP	Work Package
CA	Consortium Agreement
GA	Grant Agreement
ESFRI	The European Strategy Forum on Research Infrastructures

Notes

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