

ERIC Forum Implementation Project

Final policy brief - 1

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Executive summary

This deliverable presents the first ERIC Forum Policy Brief that focuses on funding models for access to ERIC multinational/transnational services. It also describes the drafting procedure for the production of this brief, the dissemination that is foreseen and the lessons learned by performing this task. The full brief can be found in Annex I, and is also publicly available via the ERIC Forum website (https://www.eric-forum.eu/wp-content/uploads/2020/09/ERIC-Forum_Policy-Brief.pdf).

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Background

The objective of WP6 is to prepare regular ERIC Forum seminar discussions where national, European and international science policymakers, funding agencies, ERIC governance bodies, research institutions and representatives of the research communities meet to jointly address science policy issues. The aim is to discuss both science policy aspects (distribution of roles between the researchers / users and the ERICs, funding of ERIC-supported projects, large scale cooperation and authorship, etc.) and technological & innovation topics of common interest (data, technological and innovative developments). These briefs and the dialogue around their preparation intend to showcase the achievements of the ERIC community, and more importantly to boost the strategic impact of the ERICs in the European Research Area.

The first policy brief focuses on a policy issue that is crucial for all ERICs, the funding models for access to ERIC multinational/transnational services. It presents an overview of the current situation and an in-depth analysis of the funding instruments that allow ERICs to provide access to their high-quality services and to support multinational research. The brief showcases ERICs' experience and provides outlooks for the use of national funding schemes, ERA-Net and European Joint Programme (EJP) mechanisms, regional funds for cross-border projects, the European Research Council (ERC) funding scheme, Horizon 2020 and Public-Private Partnerships (with a special outlook on Horizon Europe), the Transnational Access schemes and the funding mechanisms for short-term mobility and fellowships.

The recommendations put forth in the brief, reflect the exchanges that the Forum held with the relevant stakeholders through a dedicated policy seminar, held on September 14-15, 2020. These recommendations are directed to the funding bodies at a national, regional and European level who support the operations of the ERICs and access to their services. The brief also provides insight into ERICs and other RIs for the optimal use of existing funding instruments, and for the advancement of their visibility in the research communities.

This brief is the first of three that will be produced within the ERIC Forum Implementation project.

Approaches (Methods)

As reported in deliverable 6.1 and 6.2 (and the first annual report), during the first two quarters of 2019, WP6 created a Forward Looking Task Force (FLTF) that would identify the key scientific policy issues and produce the science policy reports on an annual basis. The FLTF is composed of representatives from 22 partner ERICs and ERICs-to-be and it undertook the responsibility of drafting the first policy brief. The topic for this brief was selected through an email consultation, based on a shortlist of pre-identified topics that had been discussed in past ERIC Forum meetings.

The rationale for selecting "*Funding models for access to ERIC multinational / transnational services*" as the first topic was the following: The ERICs were created as pan-European instruments boosting scientific excellence by providing access to services, facilities, expertise, samples or data for the entire European research community. Due to the broad diversity in the mission of the ERICs and in the nature of access and services, the needs in terms of funding for projects supported by the ERICs are highly variable. But the need

for funding mechanisms that are able to support transnational or multinational projects and/or access, remains a common denominator.

Raising funders' awareness of the complexity of the existing models, through an in-depth analysis, discussion and recommendations is critical to boost the scientific potential of the ERICs, as limitations in the funding of ERIC-supported projects is now seen as a bottleneck restricting their potential impact on Europe's scientific competitiveness.

The FLTF began drafting the policy brief in July 2019 in a collaborative manner. The general outline for the policy report was defined, and the specific funding mechanisms that would be addressed were selected. Based on a series of use cases, the first ERIC Forum science policy report illustrates the diversity of funding models and the different challenges encountered by the ERICs when accessing these funding schemes. The members of the FLTF also proposed a first series of recommendations of how the mechanisms could evolve to provide better access for ERICs, but also on how ERICs could make better use of the existing mechanisms.

A full draft of the policy report was consolidated by ECRIN in October 2019 (Draft 1) and disseminated to all ERICs for a first round of feedback. A dedicated teleconference was held in November 2019 with the FLTF to discuss feedback and changes that should be integrated into a second version of the brief. This second version (Draft 2) would be discussed at the first ERIC Forum Seminar, which was to be held back-to-back with the 2020 ERIC Forum meeting.

The ERIC Forum Meeting took place on 5-6 February 2020, in Brussels. Unfortunately, due to parallel meetings, it was impossible to invite some of the key stakeholders for a full day meeting as initially planned. However, the opportunity to make a preliminary presentation of the policy report to representatives of the ERIC and RI committees was nevertheless seized, and a working dinner was organized on the evening of February 5th, at the Renaissance Hotel in Brussels. Attendees included representatives from the ERICs, ERIC Committee, ESFRI, and the European Commission. Presentations were made by JIVE, LIFEWATCH, INSTRUCT and ECRIN on their current models for funding access to their services, followed by a general discussion. Recommendations and overall feedback from the working dinner were integrated into a third version of the policy brief (Draft 3).

It was then foreseen to organize a face-to-face seminar, spanning over a day and a half in the second quarter of 2020. With the arrival of the COVID-19 epidemic, the organization of the seminar was put temporarily on hold. It was finally determined, through consensus within the FLTF that it would be best to organize the seminar online and to hold it on the 14-15 of September, 2020, prior to the Research and Innovation days.

Over 130 people registered to participate in the ERIC Forum Policy Seminar, including representatives from the ERICs and stakeholders, as well as representatives from other Research Infrastructures. The Forum was honored with the participation of the Director General of Research and Innovation from the European Commission, Jean-Eric Paquet, and the Head of the Research Infrastructures Unit, Johannes Klumpers. Stakeholders also included representatives of national funding agencies, ESFRI delegates, representatives of regional funding bodies, European Commission. The seminar was divided into dedicated breakout sessions

where funding schemes were discussed (see full agenda in Appendix I). In each session one or more ERICs shared their experience with a given funding scheme. Their presentation was followed by the stakeholder perspective on the corresponding scheme, and an open discussion was then held, focusing on potential recommendations and opportunities for the evolution of the mechanism. Prior to the seminar, all participants had received Draft 3 of the policy brief. The breakout sessions were followed by a common session for conclusions, where a general discussion took place on all potential recommendations and next steps.

Following the seminar, all the feedback and jointly identified recommendations were integrated into the final version of the brief, along with written feedback that was shared by ERIC representatives beyond the FLTF. The final version of the brief was published online, via the ERIC Forum website on the 24th of September 2020 (https://www.eric-forum.eu/wp-content/uploads/2020/09/ERIC-Forum_Policy-Brief.pdf). One day prior, a “one pager” was also released (see Appendix II). This one-page document summarized the key messages and main recommendations put forth in the brief. It is also publicly available on the Forum’s website (<https://www.eric-forum.eu/2020/09/23/eric-forum-policy-brief-overview/>). The publication of the brief was announced through social media via the ERIC Forum’s accounts (Twitter and LinkedIn), and was also announced through the discussions at the Research and Innovation days.

Results

The full policy brief can be found in Appendix III.

The drafting of the first policy brief of the ERIC Forum not only allowed the Forum to present its position to stakeholders on a key policy issue at a pivotal time. This exercise also created an opportunity for ERICs to improve their mutual knowledge and understanding. Exploring the different funding models and the use that ERICs have made of the existing funding schemes, allowed ERICs to better comprehend their diversity and their common challenges. It also showcased the ability of the Forum to work in a collaborative manner on key policy issues.

This first drafting exercise set the framework for the drafting of future policy briefs. It allowed the FLTF to identify the potential obstacles that can exist in a collaborative drafting process, mainly the complexity of setting up several working groups and finding suitable times for working meetings. Given the current context, and the evolution of the COVID-19 epidemic, it is likely that the second policy brief will be presented and discussed in a virtual seminar. The lessons learned from the organization of the first policy seminar in a virtual format will be integrated into the planning of the second one.

Discussion and Conclusions

The general objectives laid out for WP6 were achieved with the production of the first policy brief. Nevertheless, an important delay was incurred. The initiation of the drafting process was delayed itself, as the inclusive process of selection of the topic took considerable time. The FLTF had to be established prior to the

selection of the topic, and each ERIC required time to select the representatives that would participate in this task. Furthermore, the initial intent of organizing the policy seminar back-to-back with the ERIC Forum meeting, with the intent of maximizing the use of resources, was not possible in 2020. With the arrival of the COVID-19 epidemic, greater delays were incurred. The open discussion with the stakeholders and the joint definition of recommendations was essential for the policy brief, and in the initial months of the epidemic there was hope that a face-to-face seminar could still be programmed for the summer of 2020. As the epidemic evolved, it became clear that the seminar would have to be transformed into an online event.

The Policy Seminar was successful in hosting an open discussion between ERICs and stakeholders, that led to the consolidation of the policy brief. As previously cited, the lessons learned from the drafting of the first brief, and the organization of the first policy seminar will be integrated into the production of the second policy brief.

Next Steps

As defined in the policy brief, a dedicated working group will be created within the ERIC Forum to continue the discussions on funding mechanisms that support and boost the ERICs. The policy brief itself will be used as a communication tool by the Forum and the individual ERICs to communicate with funding bodies at a national, regional and European level in order to maintain the open dialogue on the evolution of funding mechanisms and the optimal use of ERICs.

Within the context of the ERIC Forum Implementation Project, two more policy briefs will be written. The topics of these briefs will be of common interest to all ERICs. The selection process for the second policy brief has been reported in deliverables 6.2, and the process for the third and final brief will be reported in deliverable 6.3.

Appendix I – Agenda of the ERIC Forum Policy Seminar

ERIC Forum Policy Seminar

Funding mechanisms for access to ERIC transnational services

14-15 September, 2020
ONLINE – GoToTraining Platform

AGENDA

BACKGROUND

Within the framework of the ERIC Forum project (Grant Agreement n°823798) the ERIC Forum will prepare on a yearly basis, policy briefs that will address topics that are of relevance to all of its members and that contribute to strengthening the ERA. The briefs will be presented and discussed at yearly policy seminars that will gather key stakeholders. The seminars will also be the opportunity to present the Technical and Innovation Reports, also produced within the framework of the ERIC Forum project.

This first seminar will focus on the brief entitled “Funding models for access to ERIC transnational services” and will bring together representatives of main funding bodies and ERICs to jointly identify opportunities and build recommendations to optimize the funding mechanisms for research projects requiring ERIC services.

DAY 1 – 14 SEPTEMBER, 2020

BLOCK 1 – Introduction (11h00-11h45 CET)	
TOPIC - TIME	DESCRIPTION
Welcome Words 10 min	<p>Welcome words to the audience and introduction to the Forum. John Womersley – European Spallation Source Director – ERIC Forum Chair</p> <p>Introduction to the ERIC Forum Implementation Project and the Seminar. Francesco Florindi – BBMRI Strategy and Partnership manager– ERIC Forum Implementation Project Coordinator</p>
Opening remarks 15 min	<p>Principles of the Future Policy context for Research Infrastructures and ERICs</p> <p>Jean-Eric Paquet - Director General – Research and Innovation – European Commission</p>
Introduction – Policy Brief 1 15 min	<p>Presentation of the policy brief – context, content, objectives and main questions to be addressed through the seminar</p> <p>Jacques Demotes – ECRIN Director</p>
Program layout 5 min	<p>Overview of the seminar’s program and content; online platform technical tips.</p> <p>Paula Garcia – ECRIN Project Manager</p>
Join through personalised link provided via email (GoTo Training platform).	

BLOCK 2 – Breakout sessions – two parallel sessions (13h00-14h30)

TOPIC - TIME	DESCRIPTION
Session A <u>National Funding Schemes + ERA-Nets and EJP</u> <u>Join online room:</u> https://www.gotomeet.me/LW-ERIC	<p>In-depth discussion on the access of ERICs to national funding schemes (national funding, cross-border funding, “common pot”), ERA-Nets and EJPs.</p> <p><u>Session chair:</u> Allen Weeks – ELI-Laser Director <u>Session rapporteur:</u> Paula Garcia – ECRIN Project Manager</p> <p><u>ERIC presentations (20 min):</u></p> <ul style="list-style-type: none"> - European Spallation Source – Ute Günsenheimer - Head of External Relations & EU Projects - EATRIS – Anne-Charlotte Fauvel - Head of EU Affairs <p><u>Stakeholder perspective (25 min):</u></p> <ul style="list-style-type: none"> - Czech Technology Agency - Táňa Perglová/Kristina Nehilčová – ERA-Net co-fund management - DLR Germany - Hella Lichtenberg — Scientific Officer - Secretariat of ERA-NET Neuron <p><u>Discussion (40 min)</u></p> <p><u>Concluding remarks (5 min)</u></p>
Session B <u>Regional Funds – Technical and Innovation Report</u> <u>Join online room:</u> https://www.gotomeet.me/ictoffice	<p>In-depth discussion on access of ERICs regional funding schemes.</p> <p><u>Session chair:</u> Octavi Quintana Trias, PRIMA Foundation Director, former Director of Health Research DG - European Commission <u>Session rapporteurs:</u> LifeWatch CEO & CTO, and Golbahar Pahlavan – ECRIN</p> <p><u>ERIC presentations (40 min):</u></p> <ul style="list-style-type: none"> - Presentation of the Technical and Innovation Report on “<i>Creating synergies between ERICs and the (Regional) Research and Innovation Strategies for Smart Specialisation – RIS3</i>” and LifeWatch ERIC case study - Christos Arvanitidis (CEO) & Juan Miguel González Aranda (CTO) - ELI-Laser - Florian Gliksohn - Deputy Director - EMSO - Maria Incoronata Fredella, Paola Materia, Juan José Dañobeitia (CEO) <p><u>Stakeholder perspective (20 min):</u></p> <ul style="list-style-type: none"> - ESFRI/ERIC - ESIF synergies - Octavi Quintana Trias - RIS3 and RIs synergies - Karel Haegeman – Joint Research Center - European Commission <p><u>Discussion (25 min)</u></p> <p><u>Concluding remarks (5 min)</u></p>

BLOCK 3 – Breakout Sessions – two parallel sessions and one plenary session (11h00 – 12h30)	
TOPIC - TIME	DESCRIPTION
Session C (11h00 – 12h15) <u>ERC Funding + Horizon Europe and PPP</u> Join online room: https://www.gotomeet.me/LW-ERIC	<p>In depth discussion on access of ERICs to ERC funding, lessons from Horizon 2020 and outlooks for Horizon Europe and Public Private Partnerships.</p> <p><u>Session chair:</u> Anton Ussi – EATRIS Operations and Finance Director <u>Session rapporteur:</u> Anne-Charlotte Fauvel – EATRIS Head of EU Affairs</p> <p><u>ERIC presentations (25 min):</u></p> <ul style="list-style-type: none"> - DARIAH – Jennifer Edmond - President of the Board of Directors - ECRIN – Jacques Demotes – Director General <p><u>Stakeholder perspective (20 min)</u></p> <ul style="list-style-type: none"> - Innovative Medicines Initiative (IMI) – Pierre Meulien – Executive Director <p><u>Discussion (25 min)</u></p> <p><u>Concluding remarks (5 min)</u></p>
Session D (11h00 – 12h15) <u>TNA + Short term mobility and fellowships</u> Join online room: https://www.gotomeet.me/ictoffice	<p>In depth discussion on the access of ERICs to TransNational Access mechanism and the outlooks for the future of this mechanism, and other opportunities for short term mobility and fellowships.</p> <p><u>Session chair:</u> Susan Daenke – INSTRUCT Coordinator <u>Session rapporteur:</u> Wolfgang Fecke – EU Openscreen Director General</p> <p><u>ERIC presentation (15 min):</u></p> <ul style="list-style-type: none"> - JIVE – Francisco Colomer - Director <p><u>Stakeholder perspective (15 min):</u></p> <ul style="list-style-type: none"> - ESFRI – Inmaculada Figueroa – ESFRI Vice-Chair <p><u>Discussion (40 min)</u></p> <p><u>Concluding remarks (5 min)</u></p>
Plenary Session (12h15 – 12h30) Join online room: https://www.gotomeet.me/LW-ERIC	<p>Research Infrastructures and ERICs in the ERA and Horizon Europe with an eye to TNA.</p> <p>Johannes Klumpers – Head of Unit “Research and Industrial Infrastructures” - European Commission</p>

BLOCK 4 – Next Steps and conclusions (13h30 – 14h30)	
TOPIC - TIME	DESCRIPTION
Summary of conclusions of all parallel sessions	Summary of conclusions of the parallel sessions (20 min) Paula Garcia – ECRIN Project Manager
ERIC Forum Moving Forward	General discussion on the recommendations (30 min) <u>Session chair:</u> Jacques Demotes – ECRIN Director General ; contributions from chairs from parallel sessions
Closing Words	Closing remarks (10 min) John Womersley – European Spallation Source Director – ERIC Forum Chair
Join online room: https://www.gotomeet.me/LW-ERIC	

Appendix II – One-pager

Funding models for access to ERIC multinational / transnational services: Key recommendations

Over the course of the past decade, European Research Infrastructure Consortia (ERICs) have become key instruments for cutting-edge science that provide solutions to today's major socio-economic and environmental challenges, underpinning the development of the European Research Area (ERA) and fostering multinational and transnational cooperation. Funding from diverse schemes, together with the invaluable contributions of ERIC member countries, have allowed ERICs to deliver access to services, facilities, samples and data across Europe. With the future of the ERA at our doorstep, ERICs must continue to evolve and expand their outreach, while upholding the highest standards of scientific excellence. Funding schemes that can sustainably provide resources in sufficient volumes will be essential.

As funding mechanisms evolve, the following recommendations can be highlighted:

- ❖ ERICs should be fully eligible and be recognized by national funding agencies, and cross-border funding from national funding agencies should be promoted;
- ❖ ERICs and funding bodies at all levels can join efforts to improve ERICs visibility and attractiveness. Funding bodies should actively refer applicants to ERICs, encouraging and providing incentives for their use;
- ❖ Transnational Access mechanisms must be safeguarded, and expanded to support ERIC consolidation, respond to specific challenges, develop research communities and provide a flexible budget for sustainable access for competitive projects;
- ❖ Simplification of the application and financial processes for distributed RIs in Horizon funding can help to overcome bureaucratic hurdles and boost the visibility of ERICs;
- ❖ Dialogue and collaboration among national, regional and European funding bodies must be strengthened to ensure the alignment of strategies and the synergic use of resources.

A continuous and open dialogue between ERICs and all funding bodies is required to identify and adopt solutions that will lead to the optimized and sustained use of ERICs. A dedicated working group will be created within the ERIC Forum to continue exploring these questions and reflect on pragmatic solutions.

The collaboration between the EU Commission and the Member States in the continued evolution of the ERIC Regulation, is also required to define and optimise the funding volume and mechanisms supporting the broad variety of ERIC operations models. A sustained effort from ERICs in their evaluation and assessment of their funding models will contribute to a fruitful and productive dialogue.

The ERIC Forum, through its dedicated working group and through all of its members, will continue to play an active role in improving the visibility of ERICs and in maintaining an open and sustainable dialogue with the European Commission, with ESFRI, and with the national public funding bodies. It will strive to contribute to the international recognition and the competitive edge of European Research Infrastructure landscape, strengthening Europe's global position in research and innovation, and improving the life of European citizens.

Appendix III – Policy brief 1

ERIC Forum Policy Brief

Funding Models for Access to ERIC Multinational/ Transnational Services

September 2020

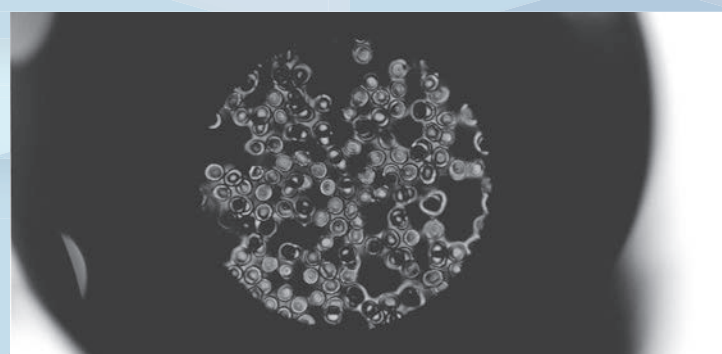
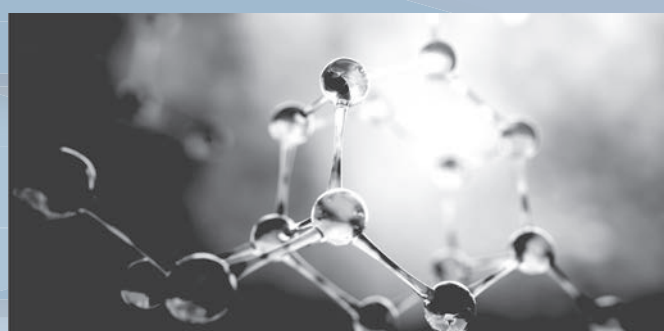


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EXECUTIVE SUMMARY

The European Research Infrastructure Consortia (ERIC) are multinational, intergovernmental organizations, either single-sited or distributed, designed as Pan-European instruments to boost scientific excellence by establishing and operating research infrastructures which provide access to services, facilities, samples or data for European research communities. Today more than 20 ERICs, spanning diverse research areas, work hand in hand with Europe's leading researchers to produce cutting-edge science to address Europe's main challenges. The ERIC Forum brings together the community of ERICs and preparatory ERICs, to strengthen operations by sharing best practices, and to strategically contribute to the development of ERIC related policies.

ERICs are diverse in the fields of research they develop and support, their missions, their distributed or single-sited organisation, their construction and operation costs, and in the nature of access and services they provide. However, they are all designed as instruments that foster European integration through the provision of multinational or transnational services, avoiding duplication and unlocking scientific potential.

Their needs in terms of funding for operations and specific ERIC supported projects are highly variable. Nevertheless, a common denominator is the need for funding mechanisms able to support transnational or multinational projects and/or access. National and multinational funding bodies (including the EU) are instrumental for exploiting the full potential of ERICs for the benefit of Europe's research ecosystem. Appropriate mechanisms and a sufficient volume of funding for operations and for projects requesting services from ERICs are of the utmost importance for delivering high and sustainable impact.

This policy brief presents an overview of the current situation and an in-depth analysis of the funding instruments that allow ERICs to provide access to their high-quality services and to support multinational groundbreaking research. The brief showcases ERICs' experience and provides outlooks for the use of national funding schemes, ERA-Net and European Joint Programme (EJP) mechanisms, regional funds for cross-border projects, the European Research Council (ERC) funding scheme, Horizon 2020 and Public-Private Partnerships (with a special outlook on Horizon Europe), the Transnational Access schemes and the funding mechanisms for short-term mobility and fellowships.

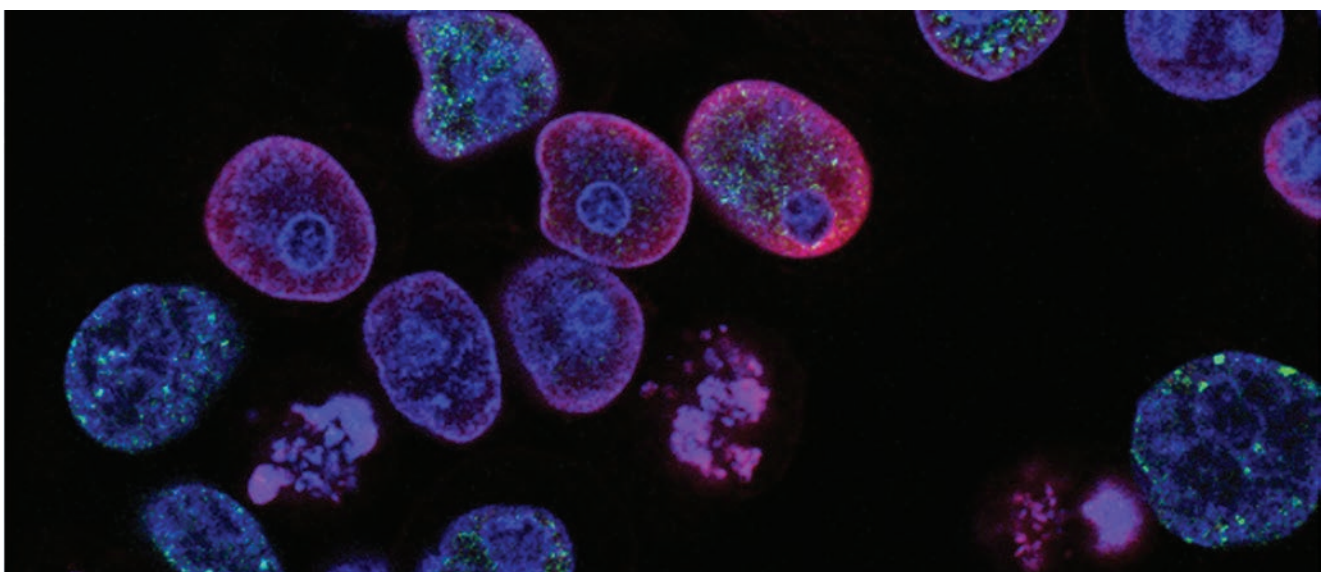
The existing barriers for ERIC eligibility and recognition by national funding agencies and, consequently, for ERA-Net calls, have reduced opportunities for cohesive cross-border cooperation. Eligibility and full recognition of ERICs by Member States is therefore essential, as is cross-border funding for ERICs and their national nodes. Co-funding from the EU budget could also be explored to support cross-border or multinational ERIC services. ERICs have successfully supported regional development and competitiveness through the use of regional funding schemes, and will strive to further their engagement in Smart Specialisation Strategies.

A regional funding mechanism able to fund ERICs beyond the region and support the international dimensions of regional projects, would create bridges and enhance the international network of the region while providing high-level expertise and resources.

The launch of Horizon Europe provides an opportunity for the adaptation of grant application and financial processes to the specificities of ERICs, evolving towards a seamless integration of ERICs' headquarters and national nodes. Transnational access (TNA) mechanisms have proven to be essential in allowing ERICs to provide unique services to research communities for little or no cost, and therefore must be safeguarded. As this mechanism evolves, it can expand its support to the early stages of service provision, while also becoming a stable instrument for sustainable transnational access for all European researchers. Furthermore, a joint approach of ERICs and funding bodies to boost ERIC visibility, increasing their attractiveness for potential users, can lead to a broader and more efficient use of ERICs.

Given the diversity of the ERICs and the complexity of their service provision mechanisms, there is no one-size-fits-all solution, and funding mechanisms must be carefully adapted to the long-term operational needs of each individual ERIC. A continuous and open dialogue between ERICs and all funding bodies is required to identify and adopt solutions that will lead to the optimized and sustained use of ERICs.

This brief is the product of months of collaborative analysis of the ERIC Forum and of consultation with relevant stakeholders. The recommendations put forth in this policy brief, reflect the exchange of the Forum with funding bodies, and present the opportunities that have been jointly identified. These recommendations are directed to the funding bodies at a national, regional and European level who support the operation of the ERICs and access to their services, and aim to stimulate a stronger dialogue and more efficient synergies between funding sources. This brief also provides insight into ERICs and other RIs for the optimal use of existing funding instruments, and for the advancement of their visibility in the research communities.



INTRODUCTION

Today, access to cutting-edge technologies and methodologies are critical for scientific competitiveness in every research community. However, Research Infrastructures (RI) represent a very significant investment for individual countries. Therefore, the concept of Pan-European RIs has been promoted as a key contribution to the creation of the European Research Area (ERA), with the Member States and the European Commission joining forces to build and operate instruments accessible to the whole scientific community. Pan-European integration of RIs results in strong synergies with a major impact on Europe's research ecosystem by sharing costs, avoiding duplication, enabling cross-fertilization, unlocking scientific potential and combining expertise.

Composed of representatives of EU Member and Associated countries, the European Strategy Forum on Research Infrastructures (ESFRI) was created in the early 2000's to develop a common strategy and establish priorities in terms of new Research Infrastructures of Pan-European interest. ESFRI-roadmap projects cover a very broad spectrum of scientific instruments, in any scientific discipline, whose mission is to develop and offer researchers leading-edge technological and methodological support, regardless of their country of origin.

The legal framework for the European Research Infrastructure Consortium (ERIC) legal status was defined in Council Regulation (EC) No 723/2009 of 25 June 2009¹ (amended in 2013²) and the creation of an ERIC results from a complex interplay between the European Union and the Member States. The first ERICs were created in 2011, from exemplary ESFRI-roadmap projects who were granted the ERIC status, and from initiatives beyond the ESFRI Roadmap. Since 2016, a growing number of ERICs have been reaching maturity and have been recognized as 'ESFRI landmarks' in the European research ecosystem

The ERICs are multinational, intergovernmental organizations, establishing and operating either single-sited or distributed research infrastructures. They are designed as Pan-European instruments boosting scientific excellence by developing and providing access to services, facilities, samples or data for European research communities. They already have an exceptional impact on Europe's research ecosystem as they

- unlock Europe's scientific potential by enabling transnational access;
- support multinational cooperation projects;
- allow cost-sharing for construction, operation and maintenance;
- avoid unnecessary duplication of efforts;
- enable cross-fertilization across countries and across disciplines, as common instruments (eg. the European Open Science Cloud (EOSC)) are used by multiple research infrastructures;
- promote quality in data and reproducibility in the analytics generated;
- promote interoperable data standards, data reuse and data sharing;
- facilitate the sharing of best research practice, technology and methodology across Europe;
- promote scientific excellence in Europe in any scientific discipline, boosting Europe's scientific competitiveness and attractiveness for innovation projects;
- enable a global reach, as the leading-edge for international cooperation.

¹ Council Regulation (EC) No 723/2009 of 25 June 2009 on the Community legal framework for a European Research Infrastructure Consortium (ERIC). Accessed on 17 September 2019 at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32009R0723>

² Council Regulation (EU) No 1261/2013 of 2 December 2013 amending Regulation (EC) No 723/2009 concerning the Community legal framework for a European Research Infrastructures Consortium (ERIC) - <https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1464858864496&uri=CELEX%3A32013R1261>

In recent years, ERICs have come together to share common practices and experiences in the implementation of the ERIC regulation. This led to the creation in 2017 of the ERIC Forum, which brings together all ERICs and preparatory ERICs, to strengthen the operations, and strategically contribute to the development of ERIC related policies. In this spirit, the ERIC Forum has identified topics of fundamental importance and will address them in a series of policy briefs.

National and multinational funding bodies (including the Horizon Europe programme) must consider the impact of ERICs on Europe's research ecosystem to fully benefit from the potential arising from these research instruments. Due to the broad diversity in the missions of ERICs and the nature of access and services they provide, the needs in terms of funding for projects supported by ERICs are highly variable. However, a common denominator is the need for funding mechanisms able to support transnational or multinational projects and/or access, and the sustainable development of capacities.

This policy brief addresses this topic in depth. Although intrinsically linked, the funding for designing and building the infrastructures are addressed only in terms of the importance of long term planning for sustainable access delivery. The diversity of funding schemes that ERICs rely on to support research projects and develop their services and their specificities are presented, highlighting areas for opportunities. This brief is the product of months of collaborative analysis of the ERIC Forum and consultations with relevant stakeholders. The recommendations put forth, reflect the exchange of the Forum with funding bodies, and present the opportunities that have been jointly identified. These recommendations are directed to funding bodies at a national, regional and European level who support ERICs and the access to their services. They aim to stimulate a stronger dialogue and more efficient synergies between funding sources. This brief also provides insight into ERICs and other RIs for the optimal use of existing funding instruments, and for the advancement of their visibility in the research communities.



Funding ERIC Services and Access

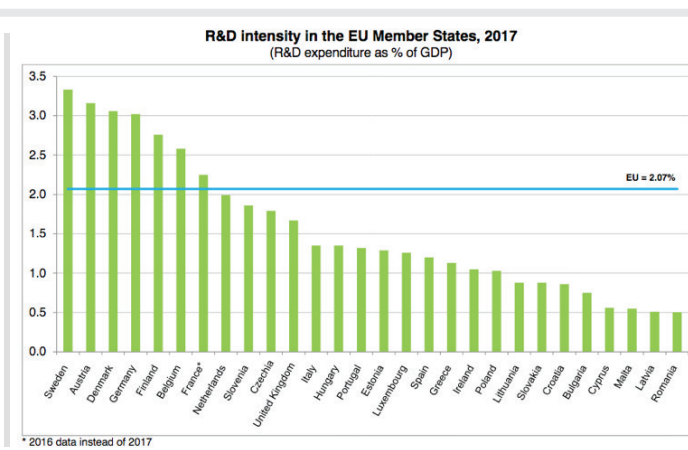
Today ERICs rely on diverse funding instruments to operate, provide access to their services, and support transnational research projects. They have identified and developed internal and external mechanisms that allow them to provide services to projects as efficiently as possible while ensuring scientific excellence is upheld. These mechanisms have also allowed ERICs to strengthen and develop their services. The following subchapters present an overview of the main funding mechanisms that allow ERICs to support research across the ERA, providing physical, remote or virtual access to samples, data, equipment and facilities; locally or transnationally, either with or without direct payment.

I - NATIONAL FUNDING SCHEMES

As stated in paragraph 5 of the ERIC Regulation's recital³, the ERIC framework “complements other legal forms existing under national, international or Community law,” thus allowing for efficient management of RIs, which are international not only in terms of their research activities but also in terms of their legal and administrative setup. According to the European Commission, the advantages of having such a framework in place are as follows:

- “A legal capacity recognised in all EU countries,
- Flexibility to adapt to specific requirements of each infrastructure,
- A faster process than creating an international organisation,
- Exemptions from VAT and excise duty.”⁴

The EU supports RIs not only by adopting pan-European policies and legislation such as the ERIC Regulation but also by funding research and development (R&D) activities in various scientific disciplines. The EU Member States play a key role in financing RIs as well. Figure 1 shows R&D expenditure of each Member State as a percentage of its Gross Domestic Product (GDP). Five out of the seven countries which are above the EU average have a statutory seat of an ERIC on their territory.



Recognition and eligibility of ERICs for national funding grants enhance their accessibility and boosts their attractiveness. It also contributes to a more efficient and synergic action of national funding streams with other European sources. It is of crucial importance that ERICs are allowed to benefit not only from EU Framework Programmes but also from national funding streams available in all Member States to continue broadening services and support.

³ Council Regulation (EC) No 723/2009 of 25 June 2009 on the Community legal framework for a European Research Infrastructure Consortium (ERIC). Accessed on 17 September 2019 at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32009R0723>

⁴ European Research Infrastructure Consortium (ERIC). What ERIC is, related documents, requirements and guidelines. Accessed on 17 September 2019 at: https://ec.europa.eu/info/research-and-innovation/strategy/european-research-infrastructures/eric_en

ERIC recognition in Member States

Throughout the first decade of the ERIC Regulation's existence, twenty-one RIs have acquired the status of an ERIC. An ERIC has to have at least three EU Member States as members (Art. 9.2). Associated countries, third countries, and intergovernmental organisations may also become members (Art. 9.1).

The existing ERICs have their statutory seat in ten different EU or European Economic Area (EEA) countries, namely: Austria (1), Finland (1), France (4), Germany (3), Italy (3), the Netherlands (4), Norway (2), Spain (1), Sweden (1), and the United Kingdom (2).

Article 7.2 confirms the full legal capacity of an ERIC and its right to conclude contracts under the law of each of its Member States: ***“An ERIC shall have in each Member State the most extensive legal capacity accorded to legal entities under the law of that Member State. It may, in particular, acquire, own and dispose of movable, immovable and intellectual property, conclude contracts and be a party to legal proceedings.”*** In other words, the Article implies that while an ERIC has its statutory seat in just one country, the legal entity of an ERIC should be recognised in all of its Member States. Importantly, this recognition should also cover public research and innovation funding bodies.

ERICs and National funding strategies

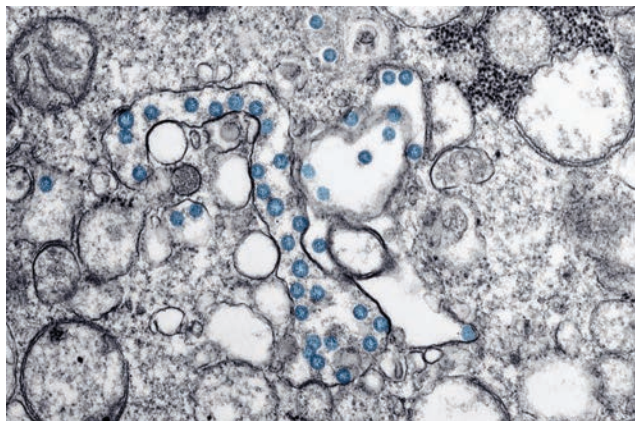
The first ERIC was established in 2011. However, the legal framework is still relatively new and the national authorities in countries which are members of an ERIC are not always familiar with the fundamental principles of the framework.

As a result, the funding bodies in countries where ERICs have their seat or in countries which are members of an ERIC have challenged ERICs' eligibility for national research and innovation funding. Consequently, whenever ERICs engage with them and apply for funding, they have to invest significant efforts to prove their eligibility. The lack of a harmonized position from authorities regarding the status of ERICs, i.e. whether to recognise it as a national research institute or an international research organisation, limits opportunities for funding in ERIC member countries.

In order for ERICs to fulfil their role as RIs of European interest that enable excellent science, drive innovation, and generate socio-economic impact across the ERA, they need to be able to collaborate with academic and industrial users in all Member States. A national strategy for ERICs would enable them to tap into national public funding streams to support projects, in addition to the dedicated RI budget lines. Such a coordinated approach would help to fuel the EU's innovation potential, advance European R&D, allow ERICs to ensure sustainable access delivery, and to contribute to the success of research and innovation missions identified by the European Commission.

At a national level, stimulating the use of RIs could help national universities and institutions to reduce costs in redundant equipment, would make them avoid unnecessary investment in existing data, services and facilities that are already present in ERICs, and would build national capacities by training researchers on how to best implement cutting-edge technologies.

Furthermore, the ERIC framework was set up, amongst other reasons, to provide a robust framework that would replace the fragmented structure of rules governing RIs on the European level.



The framework was introduced to facilitate the implementation of ERICs' activities. This issue is of utmost importance for enhancing ERICs' outreach. By guaranteeing ERICs' eligibility for national funding, the EU Member States would significantly boost cross-border, multidisciplinary research and increase the organisational strength of the ERICs.

Recommendations

Much has been accomplished by the EU and its Member States over the last decade, to strengthen the European Research Area. The creation of the ERIC legal framework and the establishment of twenty-one ERICs are both commendable achievements. In order to exploit the R&D potential of ERICs and allow them to serve as state-of-the-art instruments used by researchers to advance excellence in science, there is a need to safeguard ERICs' eligibility for participation in national and international platforms, and to promote cross-border funding from national funding bodies. All Member State national funding agencies should consider the ERICs (and their national nodes) eligible for funding, and ERIC Regulation could be amended to reflect this concept. National funding grants would be coherent and complementary to Member States' contributions to ERICs central budgets and can be the catalyst for enhanced impact. Furthermore, cross-border funding would boost scientific excellence and data quality through multinational cooperation and access to leading-edge technology. It is an investment for which the outcome benefits citizens and society, even when research is conducted outside the funding country. The active support of the European Commission and the European Strategy Forum on Research Infrastructures (ESFRI) in informing national funding agencies and authorities on ERICs, their status and their potential, would ensure a coordinated and balanced way forward.

II - ERA-NET AND EJP MECHANISMS

Co-funding schemes and the research landscape

ERA-NETs are co-funding instruments designed to support public-public partnerships in the preparation, establishment of networking structures, design, implementation, and general coordination of joint activities. This instrument has mainly 'topped-up' funding for single joint calls and transnational research and innovation in selected areas with high European added-value and relevance. The EJP Co-fund also contributes with supplementary funding in key selected areas identified within the framework of Horizon 2020/Europe. EJP networks must gather a minimum of five legal entities from Member States to address research, coordination, networking, training, or demonstration and dissemination activities in targeted areas.

The participation in an ERA-NET allows the country/region to link its research programme to the ones of other Member States/countries and participate in joint activities, in particular, the funding of transnational research projects through a 'virtual common pot'. The implementation of transnational research programmes based on an international peer review evaluation process contributes to raising the quality of research, increases the level of funding for challenges which no Member States can tackle alone, and avoids the duplication of research funding. The ERA-NETs allow Member States to apply national funding rules. They are however encouraged to harmonize rules and implementation modalities of the joint calls and actions.

ERICs' participation in ERA-NET's

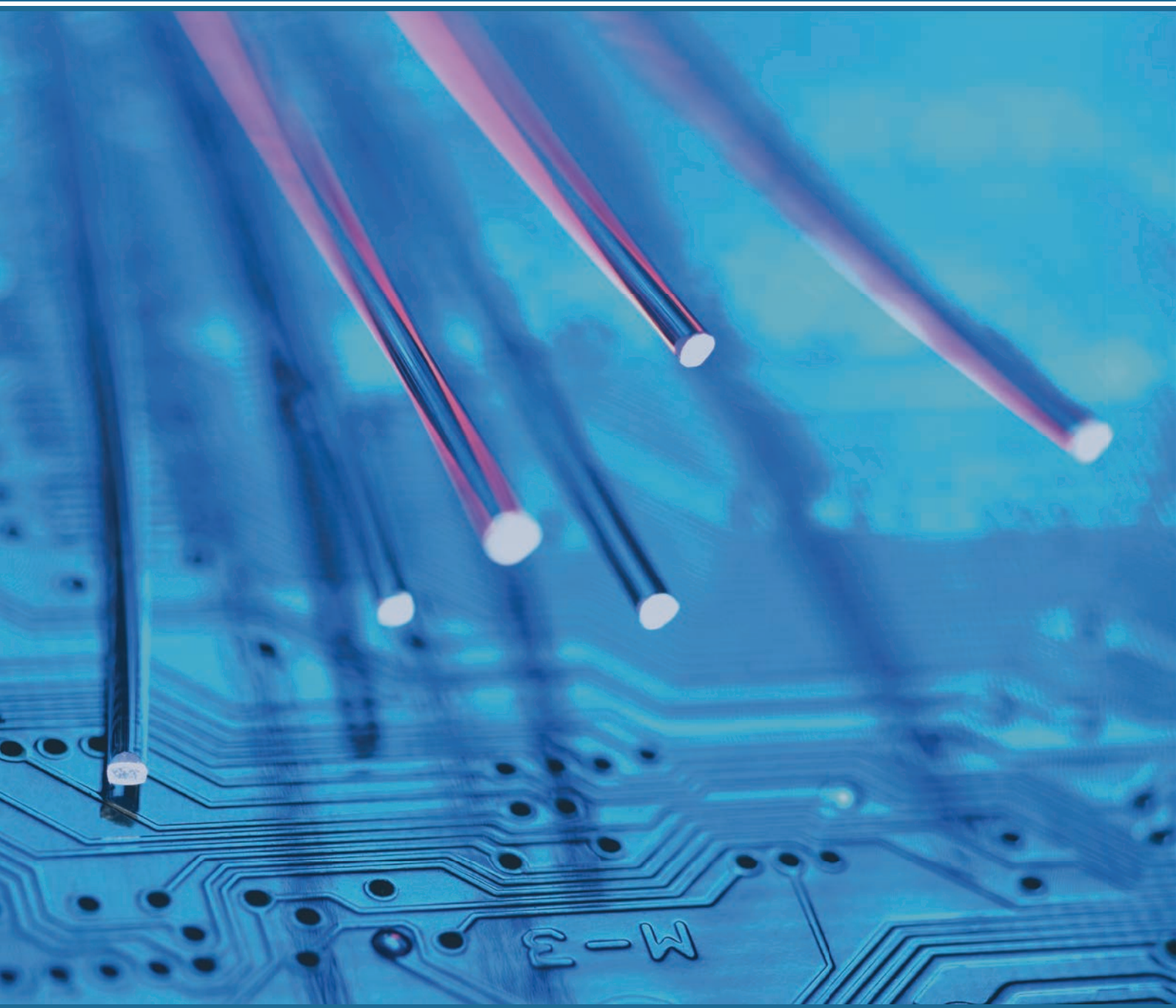
Recently, following the work in the CORBEL project in the field of life-sciences and health, several ERA-NETs and Joint Programming Initiatives (JPI) have begun to encourage the use of ERICs in their calls for funding. The call description would include a list of relevant RIs that candidates could engage with to strengthen their proposals. However, the description in those calls remains limited to the name of the RI and the link to their website and does not provide indications to the researchers about the services the RI can offer in the context of the call and how they could access it. In most cases no contact point is provided. Hence, this has not translated into a substantial increase in requests for support. In addition, ERA-NETs focus on specific scientific domains, and ERA-NET mechanisms are missing for many of the research fields covered by the ERICs.

The participation of ERICs in ERA-NETs has thus far been limited due to the eligibility criteria of certain national funding bodies. Most often, if an ERIC is interested in joining a consortium, the location of the host country will determine which eligibility criteria apply. This renders the preparation of the proposal much more complex and leads the ERIC to the challenges described in Section I of this policy brief. **If the country of the ERIC's headquarters does not participate in the ERA-NET, the ERIC must resort to using its own budget (in-kind partner) or must join the consortium as a subcontractor of a partner based in another country** (provided the funder of that country allows subcontracting). Other more stringent criteria may also limit ERICs' opportunities, such as requiring that research be carried out on the beneficiary's premises and/or have the presence of researchers on their payrolls.

Recommendations

ERA-NETs were created to implement transnational projects that bring together scientific talent and excellence from diverse countries. ERICs, as Pan-European instruments, can offer services and expertise that correspond and complement the transnational nature of ERA-Net funded projects. As discussed in Section I, increased flexibility in eligibility criteria of national funding agencies would be key in overcoming current restrictions. It could open the possibility for ERICs to join consortia affiliated to any country participating in the programme if that country is a member of the ERIC, not only the host country where its headquarters reside. Collecting information from relevant ERICs as calls for proposals are being prepared, to disseminate more relevant information to applicants on how ERICs can support researchers would also be of great added value. This information and the contact information of each ERIC could be included in an FAQ for the call. Initiatives that bring together relevant ERICs and user communities to exchange around key thematic areas within the framework of co-funding calls, such as symposia or workshops, should be promoted.

A complementary mechanism in the future co-funding instruments within European Partnerships could be a dedicated line of funding, managed by the co-fund's secretariat to support RI access in successful proposals. This dedicated funding line could derive either from the combination of national funds or alternatively from the EU Cofund mechanism when relevant. ERICs would therefore not be considered as "national entities" that are attached to a single country and would not have to abide by national eligibility criteria. To create more efficient synergies among national and European funding mechanisms, and harmonizing actions, it may also be envisaged that rules for eligibility of future co-funding schemes fully align with those of Horizon Europe rules and regulations.



III - ERDF FUNDS FOR CROSS-BORDER PROJECTS AND RI DEVELOPMENT

Regional funding mechanisms

There are multiple avenues for regions to invest in RIs. The foremost is through capital investment in the RIs for buildings and equipment, for the construction and upgrading of facilities and in certain cases, to access RIs and their services. One key instrument for regional support are the European Structural Funds (e.g. European Regional Development Funds (ERDF)). Similarly, regions can invest in human resources to ensure, or increase, the capacity of a platform to service local enterprises. The European Social Funds (ESF, part of the European Structural and Innovation Funds (ESIF)) can also be deployed in this context. ESF can be used to enhance, improve, and build up the capacities of scientific communities (new technicians) or the quality of human resources in public sector institutions (business development, incubation, and consolidation) that will serve local enterprises, supporting high-technology training provided by RIs. Their knowledge and enhanced skills provide more efficient or better quality services for local businesses and the research community.

Interreg (e.g. POCTEP, SUDOE, ATLANTIC ARC, and MED programmes) funding is a mechanism for improving inter-regional collaboration in the European Union. The funding is connected to ERDF and is therefore heavily geared towards tangible and measurable outputs. This funding is particularly interesting for connecting regional players, such as companies, local/regional authorities, researchers, RIs, and science parks, to create joint activities, particular developments with commercial objectives, and to build stakeholder engagement.

ERICs in a regional context – success stories and opportunities

Research infrastructures provide significant support to research and innovation across Europe but also have a considerable impact on the regions where they are embedded. RIs are at the centre of the quadruple helix⁶, connecting academic research, industry, civil society, and public administration as well as media. They provide the backbone for innovation involving not only scientific and technological communities of practice but also decision makers and citizens in general terms⁷.

Regionally, the impact of RIs is principally on local industries that benefit from proximity and therefore privileged access to the RI. This provides a boost to the local innovation ecosystem and a competitive edge to the region. Furthermore, the construction of infrastructure sites provides local employment and opportunity.

Finally, there are important opportunities for local industry, contributing to the technological development of the site, and developing long-standing collaborations. RIs thus generate a significant local socio-economic impact and, as such, provide an incentive to regions to entice RIs to set-up in their territory, or if already present, to invest financially in them.

6 Pór, G. (2005). "Liberating the Innovation Value of the Communities of Practice". Knowledge Economics: Emerging Principles, Practices and Policies. Tartu University Press.
7 Hildreth, P., Kimble, C. (2004). Knowledge Networks: Innovation through Communities of Practice. Idea Group Publishing.

Moreover, there is a tight relationship between these research-focused inter-organisational knowledge systems and their local environment, making them valuable assets when thinking about territorial competitiveness considering a multi-level (European, National, Regional), trans-regional, trans-national and trans-boundary perspectives⁸.

Recently, a number of regions have expressed interest and willingness to be part of such a process. Several regions of Eastern and Southern Europe (e.g. Puglia, Italy; Porto, Portugal; Andalusia, Canary Islands & Galicia, Spain; and Crete, Greece), have included the construction or upgrade of existing RIs in their Regional Strategies for Smart Specialization (RIS3), with the aim to mobilize the Structural Funds allocated to them. The result of these experiences, as shown in the publication “Making a joint use of EU-FUNDS: Opportunities and challenges associated to European Research Infrastructures”⁹, led to the establishment of interesting innovative methodologies for the use of ERDF for the construction and consolidation of ERICs (i.e. LifeWatch ERIC).

Another approach to facilitate regional access for SMEs and thereby encourage the use of RIs, is to create an access fund for the use of the RI. This is particularly interesting as it essentially enables SMEs and Start-Ups that may have limited financial capabilities, i.e. those that are likely to benefit most from access to equipment and expertise they do not possess and cannot afford, to benefit from the RI (this is currently the case for the Basque Country Region in Spain for EMBRC-ERIC).

Recommendations

ERICs have already demonstrated impact on local research and innovation, and Smart Specialization Strategies (S3) offer niches where ERICs can add real benefit to their local stakeholders. Based on these niches, a regional and interregional dialogue can be established to identify needs and support in achieving local agendas. The Interreg projects also offer many opportunities, as they create real change at the local level that is only achievable with the involvement of the regional authorities. Interreg projects can be used to effectively link regions with similar interests and sectors, and use the RIs to contribute to regional development, improving the regions' competitive edge, and solving particular bottlenecks for their S3 priority sectors.

Indeed, regional funding is particularly useful for concrete, tangible projects with industry and government that deliver new products or services based on local strengths or specifically tailored to the local needs.

⁸ Carlsson, S. A. (2003). “Knowledge managing and knowledge management systems in inter-organizational networks”. Knowledge and Process Management, 10, pp. 194-206.

⁹ González-Aranda J.M., Sánchez-Gimeno B., Ballester F., Migueis R., Basset A., Escacena-Ortega D. (2014), “Making a joint use of EU-FUNDS: Opportunities and challenges associated to European Research Infrastructures”. ATAS proceedings “Renaissance of the region of Southern Europe” 20th APDR Congress. July 2014. ISBN 978-989-8780-01-0.

RIs are important both for the progress of European excellence in science and innovation as well as for the development of the Regional and Innovation Strategies for Smart Specialization (RIS3), as catalysts of economic growth, high-quality employment and transnational cooperation. RIs are important targets for both European regional research, technology development and innovation policies and can subsequently reinforce Social & Cohesion policies. In order to broaden their regional contribution, regional funding could allow companies and researchers that are based in the region to use the funds to access RIs outside of the region, provided that the activities would contribute to the objectives of the Cohesion policy. This would enable access to knowledge and resources that are not available at a local level and enhance the development of local capacities. Furthermore, ensuring that regional projects integrate an "international dimension" has proven essential to regional development and insertion. Allowing ERICs beyond the region to be eligible for funding, to support the "international dimension" can contribute to building bridges and enhancing the international network of the region while providing expertise and resources of the highest level.

Consequently, it is essential for RIs to perform a periodic assessment of the impact of international cooperation processes related to the development of RIs, focusing on a multilevel and transregional analysis of the return of investment for the regional economies, which can either be expressed through tangible- (e.g., employment creation) or non-tangible indicators (e.g., how to build the backbone environmental & ICT researchers communities of practice in a complementary way).¹⁰ In essence, this is related to the assessment of the mobilization of the socioeconomic activity, supported by the huge "social capital" potential¹¹ of the involved European regions.

Finally, effective and frequent dialogue between ERICs and regional representatives is essential. The participation and involvement of regional representatives in RI governance should be envisioned, as it helps to ensure better coordination between local and RI strategies. Regions and RIs should engage as early as possible in the establishment of the RIs to ensure they meet local needs and expectations. The mapping between the attributes and assets of the RIs and the needs of the Regions should be performed as soon as possible and an open two-way dialogue should be maintained throughout the consolidation of the ERIC and into its operational life.

¹⁰ González-Aranda J.M., Rodríguez-Clemente R., Lozano S. (2008). "A Case Study of Communities of Practice and ICT Tools in Knowledge Management on International Cooperation in Science and Technology Research". WEBIST (2) 2008: ISBN 978-989-8111-27-2, pp. 415-422.

¹¹ Pasimeni, P., Boisard A.S., Arvanitis R., González-Aranda J.M., Rodríguez-Clemente R. (2007). "Towards a Euro-Mediterranean Innovation Space (EMIS): Ideas for Research and Policy Making". Contributed paper for the 2007 Conference on Corporate R&D (CONCORD) R&D in the economy.



IV - ERC FUNDING SCHEME

The European Research Council grants

The European Research Council (ERC) funding scheme is a key, excellence-based instrument that researchers in all fields of science and humanities, from across the globe, can use to finance their research. In Horizon 2020 its budget was €13 billion and this budget could increase within Horizon Europe.

The ERC offers 5 different grant schemes, in particular:

- Starting Grants – support early career researchers (2-7 years after PhD) to start working independently to realise their potential as a research leader;
- Consolidator Grants – target scientists with research experience of 7-12 years after the PhD and wanting to consolidate their experience;
- Advanced Grants – supporting leading Principal Researchers to pursue ground-breaking and high-risk projects;
- Synergy Grants – support a group of 2-4 Principal Investigators to work together to tackle ambitious research problems;
- Proof of Concept – reserved to ERC grant-holders who want to explore the commercial or societal potential of their work and bridge the gap between research and first stage of a marketable innovation.

Furthermore, an additional budget (1€ million) can be made available for Advanced Grants to cover equipment costs or access to large facilities¹². Recognition and full eligibility of ERICs as large access facilities, within these grants, could incentivise the uptake of ERIC use, bringing added value to the grantee's endeavours.

All the grant awards can be used by researchers to finance access to Research Infrastructures. This may be especially beneficial to awardees of Starting and Consolidator grants as these researchers may still be lacking key instrumentation or technical expertise to solve their ambitious research questions. Access to ERICs can also be key for the success of the other grant-holders, who may need to go beyond their expertise gathered over the years, crossing boundaries into interdisciplinary research.

ERICs and ERC funding

Currently Research Infrastructures – especially ERICs – have limited visibility within the research community. As a consequence, ERC grant-holders may not be aware of the opportunities RIs can offer, missing the chance to exploit their research's full potential. The European Charter for Access to Research Infrastructures¹³ states: "just as public infrastructures are key to civil society, Research Infrastructures are the backbone of scientific communities". More can be done to increase RIs' visibility as enablers of excellent research, especially when the policy and funding instruments allowing access to Research Infrastructures are already in place.

¹² "Advanced Grants may be awarded up to € 2.5 million for a period of 5 years. (pro rata for projects of shorter duration). However, an additional € 1 million can be made available to cover eligible "start-up" costs for researchers moving from a third country to the EU or an associated country and/or the purchase of major equipment and/or access to large facilities and/or other major experimental and field work costs" <https://erc.europa.eu/funding/advanced-grants>
¹³ https://ec.europa.eu/research/infrastructures/pdf/2016_charterforaccessto-ris.pdf

Recommendations

Recognition and full eligibility of ERICs as large access facilities for ERC grants are paramount. Greater visibility of RIs and their positive impact can contribute to higher integration of RIs and the strengthening of the proposals that are submitted to the ERC. Greater efforts must be made to simplify and distil the presentation of RIs, focusing on the domains covered by RIs rather than technical details. Promotional material for whole domains have already been produced in the cluster projects CORBEL (ESFRI Biological and Medical RIs) and ENVRI+ (Environmental Research Infrastructures), which could be distributed to ERC applicants, as well as the ERIC Forum brochure. Furthermore, the following ERC platforms could be highly successful in promoting RI impact: the ERC website, the ERC work programmes, the ERC Model Grant Agreement. In addition, examples of ERCs using RIs should be compiled and a limited number of success stories promoted to demonstrate ERICs' ability to support high-level science.

Finally, due to the significant equipment budgets available to ERC grantees, RIs and particularly the distributed RIs, should focus on promoting their unique and rare facilities and services, as these are likely to be more attractive to the applicants, and cannot easily be purchased by grantees. Starting and Consolidator Grants for younger applicants tend to provide fewer opportunities and lower equipment budgets than the Advanced Grants. Therefore, grantees from these schemes, could greatly benefit from access and support from the ERICs.

A joint effort by the ERIC Forum and the ERC could be developed, to promote stronger cooperation between the ERC and RIs. Both ERC and ERICs represent excellence in science and their alliance would be synergic, ensuring ERC grantees have access to highly qualified and operational RIs. These efforts could also be extrapolated to the Enhanced European Innovation Council (EIC) programmes. Extensive use of ERIC services by grantees would contribute to expanding ERICs' potential while engraining the practice of RI use at all levels of researchers' careers.

This joint effort would be beneficial to all partners involved: the Research Infrastructures will be used more extensively by the research community and supported in fulfilling their potential; co-creation opportunities would emerge out of such a collaborative effort; the ERC grant-holders may have more opportunities to realise their scientific project, benefitting their career, the advancement of knowledge and ultimately society at large; and the funders will see the impact of their investments – in both excellent research and Research Infrastructures – being maximised.

V - The European Research and Innovation Framework and Private-Public Partnership (PPP) cooperation programmes

Horizon 2020 and the Private-Public Partnerships

Horizon 2020 (H2020) has been the biggest EU research and innovation programme yet, with nearly €80 billion of funding available over seven years (2014 to 2020) – in addition to the private and national public investment that these funds attract. It is the financial instrument for the implementation of the Innovation Union, a Europe 2020 flagship initiative aimed at securing Europe's global competitiveness. It has been seen as a means to drive economic growth and create jobs. Its goal was to ensure that Europe produces world-class science and technology, removes barriers to innovation and makes it easier for the public and private sectors to work together in delivering solutions to big challenges faced by our society. By coupling research and innovation, Horizon 2020 has helped to achieve this with its emphasis on excellent science, industrial leadership and tackling societal challenges.

Although certain structural changes are foreseen, the objective of the next EU research & innovation investment programme (Horizon Europe-2021-2027 with a proposed budget of € 80,9 billion) is to strengthen the EU's scientific and technological capacity and the European Research Area (ERA), to boost Europe's innovation capacity, competitiveness and labour, to deliver on citizens' priorities and sustain the socio-economic model and values through its four pillars.

Within Pillar II, the EU has identified six clusters 'Global Challenges and Industrial Competitiveness' that can have a real impact benefitting citizens: **1) Health** **2) Culture, Creativity, and Inclusive Society,** **3) Civil Security for Society,** **4) Digital, Industry and Space,** **5) Climate, Energy and Mobility,** **6) Food, Bioeconomy, Natural Resources, Agriculture and Environment.** Horizon Europe will also launch research and innovation missions, that will focus on key areas, and will link activities across different disciplines and different types of research and innovation. Five mission areas have been defined: **(a) Cancer;** **(b) Soil, health and food;** **(c) Climate neutral and smart cities;** **(d) Healthy oceans, seas, coastal and inland waters;** **(e) Adaptation to climate change, including societal transformation.** The Missions will strive to include citizen participation, and contribute to a better and broader understanding of the importance of investing in R&I.

The H2020 programme also encompassed several public-private and public-public partnerships initiatives.

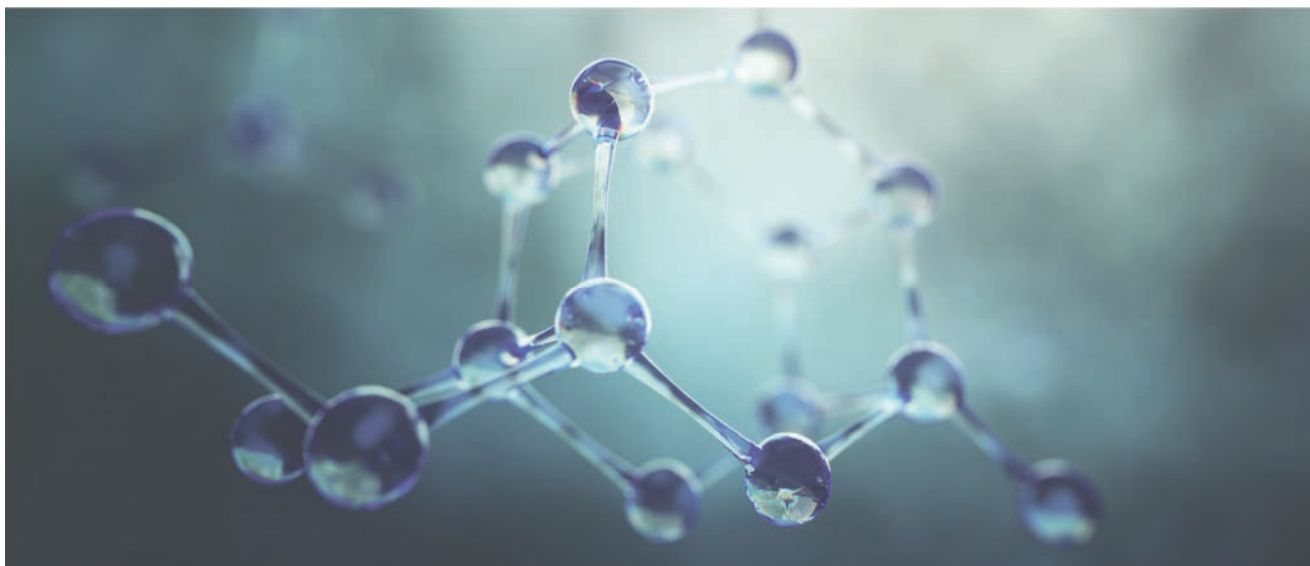
The public-private partnerships are: 1) Innovative Medicines Initiative 2 (IMI2), 2) Fuel Cells and Hydrogen 2 (FCH 2), 3) Clean Sky 2, 4) Bio-Based Industries, 5) Electronic Components and Systems for European Leadership (ECSEL), 6) Shift2Rail, 7) Single European Sky Air Traffic, 8) Management Research (SESAR). Many of these will transcend into Horizon Europe, evolving to integrate the lessons learned.

ERICs and the H2020

ERICs, like any other legal entity, have been eligible for H2020 funding and can apply to H2020 calls either as coordinators, beneficiaries or third parties. Depending on the calls, the RIs can be the coordinators and develop their own capacity, services, collaborate with other RIs on common objectives and common development or be the instrument used by the scientific community to set-up its own research programme and strengthen the proposal. Certain calls have begun to encourage the use of ERICs, however, the description of ERICs in the calls is usually limited to their name and lacks key information about the services that could be of interest.

H2020 grants have allowed ERICs to provide access to their services and support research projects across different research areas. They have also allowed ERICs to continue to develop tools and capacities, to expand their scope and outreach. Furthermore, through H2020 grants ERICs and other RIs have networked and have created pathways for joint service delivery, contributing to a cohesive and coherent RI landscape. In turn, ERICs have supported cutting edge science that has contributed to solving the societal challenges identified in Horizon 2020.

Nevertheless, due to the EU commission financial rules, the distributed RIs (depending on their specific organisation and the link between the hub and national nodes) have faced administrative challenges when there is a simultaneous implication in the project of an ERIC's headquarters (coordination/core team) and one or more of its national nodes. This adds significant hurdles to the execution of the projects and also has an impact on the ERICs' visibility as a single entity.



Recommendations

ERICs were created as European Research Area (ERA) instruments to support cross-border and multinational research in Europe, and boost scientific excellence. The services and resources provided by ERICs are open to all European research communities. Optimal use of the ERICs through Horizon Europe-funded projects would maximize their impact on the ERA's objectives of integrating and unlocking Europe's scientific potential. Safeguarding their eligibility and participation in European-funded projects is therefore essential.

Increased visibility of ERICs in Horizon Europe calls, could significantly boost their use by scientific communities, contributing to achieving their full potential and highlighting the relevance of RIs for priority challenges (e.g. Green Deal and Missions). Similar actions to those implemented with the ERC (see the previous chapter) could be adopted for Horizon Europe calls, fostering the uptake of ERIC services. Also, a similar mechanism of specific top-up funding could be developed to cover infrastructure services with an independent budget line. This budget would be unlocked by successful proposals and would be ring-fenced access to the ERIC. A clear separation of research costs and access would reduce the researcher's burden of rational budgeting during the preparatory phase and would make proposals competitive only on research costs.

Financial rules that are better adapted to ERICs and to the distributed nature of many of them, would also stimulate uptake. Furthermore, as the launch of Horizon Europe nears, the ERIC Forum has identified the actions that ERICs will implement to contribute to the five Missions¹⁴. Allowing ERICs to be beneficiary of all Pillar 2 actions, will ensure ERICs will be able to provide invaluable resources to the Missions. Sustained and open dialogue between the ERIC Forum and the EU Commission, could identify key opportunities for joint efforts for ERIC visibility and ensuring their optimal use.

The sustained development of ERICs must align with the collective efforts for a cohesive and well-functioning European Research Infrastructure landscape. A more efficient and cost-effective implementation of RI services could be achieved, in a context of heightened "inter-division/departement cooperation" within Horizon Europe. Establishing clear and continuous dialogue among divisions, to ensure funding calls build synergies and complementarities, and avoid duplications or contradictions, would warrant the best allocation of funding. This could streamline the use of ERIC services, by avoiding the allocation of funds to initiatives that intend to develop redundant networks or services, reducing fragmentation in the RI landscape. The sustainable nature of ERICs makes them ideal partners to ensure maintenance, upgrade and long-term sustainability of tools developed during H2020 or in PPP-supported projects. Moreover, converging interest between industry partners and ERICs in the development of new tools and technology could also lead ERICs to act not only as potential beneficiaries in PPP projects but also as in-kind contributors.

14 ERIC Forum position paper, The ERIC community and Horizon Europe mission areas.
https://www.eric-forum.eu/wp-content/uploads/2020/06/ERIC-Forum_Horizon-Europe-Missions_Position-Paper.pdf

VI - H2020 TransNational Access schemes

Funding of Trans-national access

Transnational access to Research Infrastructures enables scientists from various countries in Europe and beyond to use technological resources and expertise to enrich their projects with equipment and knowledge from specialised research sites/laboratories/ observatories across the EU. Transnational access (TNA) schemes under H2020, through INFRADEV and INFRAIA calls, have proven to be highly suitable to provide necessary funds for user projects in Research Infrastructures and streamline access provision and procedures within RIs. Through the H2020 TNA schemes, access costs can be reimbursed based on actual costs, unit costs¹⁵ or a combination of both. These reimbursement possibilities are adapted to the large variety of project costs and to the diverse definitions of units of access of the institutes that make up the RIs, therefore enabling most research costs to be covered. Beyond covering research operations costs, travel, accommodations and subsistence costs are also eligible for reimbursement.

TNA opportunities have strongly promoted international collaboration and have increased value and visibility through access to services to the national nodes. These national nodes have been funded, built and operated on a national level, and initially only served their national communities. TNA programmes have promoted access to research development and innovation services leading to cutting-edge scientific results. Certain TNA programmes have also financed key stages of scientific and technological development, supporting proof of concept and prototyping projects that then lead to the consolidation of large-scale projects with broad impact. Thus, TNA funding has proven to be a true catalyst for ERIC Member State contributions to ERIC central budgets.

ERICs and TNA

ERICs support scientists at every step of project conception, development and implementation. They help them find the right lab, node or observatory among carefully selected national partner sites. The costs of supporting projects are considerable and vary amongst the ERICs. Some ERICs can cover the vast majority of their operational and service costs with member country fees and can provide free access to most of their users. This is the case of INSTRUCT. However, if INSTRUCT and other ERICs who provide free access are to continue sustainably expanding their service base and are to expand their outreach to new communities, supplementary funding is crucial.

Other ERICs rely on TNA schemes to provide access to their services, as annual member country contributions cover operational expenses, but cannot fully cover services provided within projects. For example, users of JIVE's services must submit proposals for evaluation on scientific merit. If selected for support, users can benefit from TNA funding, allowing them to make use of the network and all of its capacity. TNA funds complete and expand the level of support that the ERIC can provide, increasing the ERIC's capacity to respond to the needs of the community of users, enhancing its sustainability. TNA funds also promote multi-disciplinarily and cross-RI mobility, encourage the use of services by industry, stimulate RI use in new communities and help to expand user bases in EU third countries or countries beyond the EU.

ERICs in the process of consolidation, for whom member countries have not yet committed a common budget for the implementation of user projects often experience a financial bottleneck.

¹⁵ Commission Decision C(2013) 8199 of 10 December 2013 authorising the use of reimbursement on the basis of unit costs for actions involving trans-national access under the Research Infrastructures Part of the Horizon 2020 Framework Programme. Available at: https://ec.europa.eu/research/participants/data/ref/h2020/other/legal/unit_costs/unit-costs_tna-infra_en.pdf

They need to secure external funding in order to implement projects when only a fraction of their users have access to funding that could cover service costs. A TNA mechanism that could support this initial phase, would allow ERICs to reach their maximum potential more swiftly, providing projects stable access to high-quality RIs.

Recommendations

The H2020 TNA schemes have been essential for certain ERICs to provide access to their services and should be safeguarded. Full eligibility of ERICs for TNA schemes that cover costs of services and travel, not only ensure the sustainability of current support but also create new opportunities, while allowing ERICs to achieve objectives of growth and expansion.

Adapting TNA schemes to support ERICs during their initial consolidation phase, would fast-track access to high-quality infrastructure, catalysing initial member country contributions and accelerating the ERIC's maturity. This funding could then evolve for mature ERICs, providing them with a flexible budget that would allow them to cover basic operational expenses (often related to expenses incurred in national nodes) in order to evaluate, select, and support projects demonstrating scientific merit. It would help sustain a baseline operational status to enable long term planning and development and new members of the ERICs could use the outcomes as performance indicators to evaluate the case for full membership. This would enhance ERICs' capacity to support a higher number of projects and would allow them to play an active role in fostering and incentivising innovative and impactful research. This funding for the implementation of user projects could help to ensure that all European researchers have access to ERICs, regardless of the membership of their country of origin, and promote a more diverse and broad user base. It would contribute to overcoming the existing unequal North-South and East-West distribution of available national funding for RI access. It could also contribute to achieving a more balanced geographical distribution of applicants and a broader diversity of proposals.

ERICs and the European Commission could jointly benefit from targeted funding for TNA activities that would focus on the enlargement of a particular user base to enhance the circulation of knowledge in the ERA (e.g. specific support for neighbouring countries, or upskilling of a new community for optimal RI use).

Targeted funding of TNA could also focus on the contribution of RIs to specific goals (e.g. Green Deal or the Horizon Europe Missions). Furthermore, TNA schemes could also support access of European researchers to global infrastructures, boosting their competitiveness, providing opportunities for cross-fertilization and upskilling of European researchers. A revision of the European Charter for Access to Research Infrastructures¹⁶, that takes into consideration the current needs and specificities of remote/virtual access could be considered. The revised version for the Charter could also define the directives for balanced access from EU and non-EU countries, as well as define the framework for expanded access based on user fees for the private sector. Expanding fee-based access could raise the attractiveness, optimize the use of limited resources, and boost technology development when industry searches to support in R&D endeavours.

Lastly, the creation of a centralized budget managed by ERICs that could fully fund research projects, selected by the ERIC upon scientific merit and excellence, could be explored. This budget could be composed of a common contribution of Member States combined with European funding. This mechanism could help to overcome an obstacle experienced by certain ERICs, wherein funds to access the ERIC's multinational services are available through TNA, but the overall costs of the multinational research project require an additional funding source. This could also be addressed by expanding the recognition of TNA as an eligible cost across the European Commission's actions on research and innovation, and not limiting it to programmes aiming at the implementation, integration, operation and development of RIs, as is currently the case.

VII - Short-term mobility and fellowships

Fellowships and mobility in ERICs

Since their creation ERICs have trained highly specialised research, administrative, and management staff through their day-to-day operations, dedicated training and coordinated efforts with world-class institutions. ERICs have set up short-term mobility and fellowship schemes to support and build the capacities of both the user base and the staff running the ERIC. These schemes require a significant financial commitment from the RIs and have received highly positive feedback from all the stakeholders involved.

As described in section VI, facilitating user access to the technologies offered by the research infrastructures is key to enable their uptake by the European scientific community and provides a unique opportunity for the upskilling of scientists, engineers and data professionals. In parallel, staff exchange schemes enable operational staff from research infrastructures to hone their expertise in all areas including data management, service provision, innovation and ethics. Internship and fellowship schemes in RI facilities, spanning from a few days to months, facilitate valuable collaborations between researchers and RI staff across Europe. They foster the creation of partnerships and the consolidation of networks that are essential for a robust, operational research ecosystem in which RIs are fully integrated.

Funding models for ERIC staff and user training – challenges and opportunities

Schemes for mobility and training, which are a priority for the development of the user base and personnel as well as for the technological development of the RIs, require a considerable volume of funding from different sources.

For some ERICs, these programmes have been covered by the member countries contribution. Other sources of funding have been Horizon 2020 projects such as CORBEL and TNA schemes (see the previous section), but these have been limited and ad hoc opportunities. As RIs continue to develop as knowledge hubs and beacons of scientific excellence, the volume and accessibility of funding available for training activities need to be expanded.

Broader funding capacity would extend the reach and scope of existing programmes to all new staff and new users' communities. A larger body of skilled personnel would allow ERICs to widen their service-providing capacity while ensuring that the highest level of scientific excellence is maintained. It would also contribute to ensuring that ERICs remain the international reference for pioneering methods and technologies. Funding for training and mobility schemes for fellows and users of RIs should cover costs related to travel and subsistence. Costs of planning and organizing training events should also be eligible for funding, including personnel costs associated with the preparation and follow up of training events.

Recommendations

A sustained dedicated budget for RIs to finance short term mobility and fellowships, selected upon scientific merit could have great added value. This could be a co-funding model, where European funding (e.g. from Horizon Europe) is combined with national funding (e.g. coming directly from national funding authorities or collected at the level of the national RI members of a given RI).

The co-funding could be awarded to and managed by the ERICs/RIs directly. The program would have the following characteristics:

- ***It would support short-term visits (from 7 to 90 days) and have a simple application process;***
- ***It would be continuous, on a rolling basis, with awards given throughout the year, making it a swift model;***
- ***Criteria for selection on scientific merit would be pre-established;***
- ***In the case of the user access visits it would provide funding for travel, accommodation, RI access fees and consumable costs during RI use;***
- ***In the case of staff exchange and training it would provide funding for travel, accommodation, and eventual training courses or conference fees, through a simple process for justification without prior application;***
- ***It could be in the order of € 2.500 - 10.000 per fellowship***

Encouraging and enabling RIs to be full partners of Maria Skłodowska Curie Actions could also have a significant impact on the training of the next generation of scientists and RI staff.

Furthermore, taking into account the level of expertise already available at the ERICs, which has been developed through years of organising, running and analysing short-term mobility and fellowships and considering the level of investment that the Member States have incurred to set up ERICs and training their current staff; the ERIC Forum could extend and harmonize the training for users and personnel across ERICs.

The continuation of RI cluster project funding where a budget is allocated to the exchange between the different RIs within an area is also fundamental. These projects open dialogue within RI clusters that create synergies and facilitate the adoption of harmonized practices, while helping to avoid redundancies. If the clustering is extended to inter-area initiatives to promote multidisciplinary collaboration and development of common competencies, even more benefits could be reaped.



RECOMMENDATIONS AND CONCLUSIONS

Over the course of the past decade, the ERICs have become key instruments for cutting-edge science that provide solutions to today's major socio-economic and environmental challenges, underpinning the development of the ERA and fostering multinational and transnational cooperation. Funding from diverse schemes, together with the invaluable contributions of ERIC member countries, have allowed ERICS to deliver access to services, facilities, samples and data across Europe. With the future of the ERA at our doorstep, ERICs must continue to evolve and expand their outreach, while upholding the highest standards of scientific excellence. Funding schemes that can sustainably provide resources in sufficient volumes will be essential.

As funding mechanisms evolve, the following recommendations can be highlighted:

ERICs should be fully eligible and be recognized by national funding agencies, and cross-border funding from national funding agencies should be promoted;

ERICs and funding bodies at all levels can join efforts to improve ERICs visibility and attractiveness. Funding bodies should actively refer applicants to ERICs, encouraging and providing incentives for their use;

Transnational Access mechanisms must be safeguarded, and expanded to support ERIC consolidation, respond to specific challenges, develop research communities and provide a flexible budget for sustainable access for competitive projects;

Simplification of the application and financial processes for distributed RIs in Horizon funding can help to overcome bureaucratic hurdles and boost the visibility of ERICs;

Dialogue and collaboration among national, regional and European funding bodies must be strengthened to ensure the alignment of strategies and the synergic use of resources.

The diversity of the ERICs has thus far proven to be a strength, allowing ERICs to respond to the specificities of the user communities across research fields while ensuring balanced and equitable access and upholding scientific excellence. This has positioned ERICs as key actors of EU research and innovation policy. Due to their diversity, there is no one-size-fits-all solution, and funding mechanisms must be carefully adapted to the long-term operational needs of each individual ERIC.

A continuous and open dialogue between ERICs and all funding bodies is required to identify and adopt solutions that will lead to the optimized and sustained use of ERICs. A dedicated working group will be created within the ERIC Forum to continue exploring these questions and reflect on pragmatic solutions.

The following opportunities were identified and can continue to be explored by this working group:

The creation of a centralized budget, composed of the common contribution of all Member States combined with European funding, managed by the ERICs, to select and support ambitious projects, selected upon merit and excellence. This centralized budget would balance the distribution of access costs by all European countries. It could cover not only access costs, but fully fund projects. It would help to ensure that the goal of supporting the ERA is upheld, even when Member States are compelled to promote the interests of their own research programmes.

There is a need to optimize and further develop smart and innovative service provision for private stakeholders, that could stimulate innovation potential and respond to societal needs. A broader, for-fee access service base could be developed. Co-funding mechanisms, with greater user participation, could also be explored, with a mix of shared costs between users, Member States and the European Commission.

To better respond to societal needs, opportunities for “co-creation” and “co-design” of research projects between ERICs and their user communities should be explored. The mechanisms to best fund and support this approach should be explored.

Coherent and synergic actions between the national, regional and European funding bodies will lead to a more efficient and strategic use of resources at every level, placing ERICs at the forefront of the renewed ERA. The collaboration between the EU Commission and the Member States in the continued evolution of the ERIC Regulation, is also required to define and optimise the funding volume and mechanisms supporting the broad variety of ERIC operations models. A sustained effort from ERICs in their evaluation and assessment of their funding models will contribute to a fruitful and productive dialogue.

The ERIC Forum, through its dedicated working group and through all of its members, will continue to play an active role in improving the visibility of ERICs and in maintaining an open and sustainable dialogue with the European Commission, with ESFRI, and with the national public funding bodies. It will strive to contribute to the international recognition and the competitive edge of European Research Infrastructure landscape, strengthening Europe’s global position in research and innovation, and improving the life of European citizens.



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Contact:

info@eric-forum.eu



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