

Introduction to E-RIHS

E-RIHS, the **E**uropean **R**esearch **I**nfrastructure for **H**eritage **S**cience aims to play a leading role in the global community of Heritage Science, supporting the conservation, interpretation and management of cultural and natural heritage throughout Europe and, later, worldwide.

Heritage Science is a cross-cutting domain embracing a wide range of research disciplines assisting the various aspects of heritage conservation, interpretation and management. E-RIHS will integrate national facilities of recognised excellence in the field, constituting a distributed research infrastructure (RI) with a sustainable plan of activities, including research, training and the offer of access to a wide range of high-level scientific instruments, methodologies, data and experience for advancing knowledge and innovation in the preservation of cultural heritage. E-RIHS will connect researchers in the Humanities and Natural Sciences to foster a trans-disciplinary culture of exchange and cooperation for the growth of the European Research Area.

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At present E-RIHS has 16 prospective founding member countries participating in its preparatory phase, as well as 6 more observers, and prospective associates in all continents including a strong branch in Brazil. Within five years of its establishment as an European Research Infrastructure Consortium (ERIC) E-RIHS has well-grounded expectations to encompass within its partnership the joint capabilities of over 100 centres of specialised knowledge, many of which with experimental facilities, and over 500 specialists in all aspects of the field. The new horizons opened and the scientific and technical results achievable by such a partnership working together can, at the moment, only be imagined. Among these results E-RIHS expects to help each country increase awareness and enhance its cultural heritage assets as well as contribute to open new sites to cultural tourism within a global framework. All will benefit!

As an ERIC, E-RIHS will represent a bold venture in a field of capital importance to Europe and each of its countries – that of enhancing and preserving one of the most valuable and promising assets in a post-industrial context: their unique and varied cultural heritage.

1. Context of partnership within E-RIHS

E-RIHS will integrate national facilities of recognised excellence in this broad field. These facilities are called *partners* within E-RIHS and through them the partnership offers access to a wide range of high-level scientific instruments, data and specialised knowledge for advancing science and technologies in the field.

E-RIHS fosters a trans-disciplinary culture of exchange and cooperation. Besides partners, it also accepts *affiliates*- organisations, services, research projects or proposals that aim at a closer cooperation with the partnership or its support but do not make available services for external access through E-RIHS.

All E-RIHS partners will benefit from:

- working under a brand that is known and respected within the field;
- possibility to resort to a pool of specialists in the field (the E-RIHS researcher pool) with experience in many related domains, through a social network available only within the partnership;
- use of access to all instrumental means within the group in privileged conditions;
- possibility to use the means within E-RIHS to put together research teams e.g. to solve problems at the national level, to develop lines of common interest, to lecture in courses or cooperate in dissemination events;
- possibility to apply for funding using integration in E-RIHS as a distinguishing entity and resource within the partnership to form a winning consortium.

2. A legal statute for E-RIHS

There are three basic types of legal entities for a research infrastructure such as E-RIHS: i) either as a legal entity derived from a national legal form; or ii) as a European Research Infrastructure Consortium (ERIC) under the European legal framework; or iii) linked to an intergovernmental organisation.

It is worth noting that the ERIC is adopted more frequently as a legal status both by existing European research infrastructures, as well as recommended as the target for those now forming. Choosing to be something other than an ERIC would only be advisable if the other legal framework would have a major advantage compared to the ERIC. As things stand, however, it is difficult to envisage such a scenario.

The most suitable solution for a research infrastructure, that of a ERIC, has thus been proposed to the E-RIHS PP partners during the kick-off meeting of the preparatory phase in Florence, on March 30th 2017. It has been approved in principle, waiting for formal approval by the governing board, after discussion with the Stakeholders Advisory Board.

An alternative statute was also considered for the interim period before the formal adoption of the ERIC by the Members States.

(NOTE: for more information on the legal status, please see the document on legal status)

3. The E-RIHS Governance

E-RIHS is expected to be a large ERIC with participation by a significant number of members. The structural complexity of a distributed infrastructure, increased by the access activities, are served by different platforms, and requires an articulated management structure to ensure efficient and effective operation.

The proposed governance scheme is an attempt to provide such a management structure. It was discussed by the E-RIHS PP Steering Committee during the kick-off meeting and later in a plenary session at the 1st Interim Meeting (and is illustrated in figure 1).

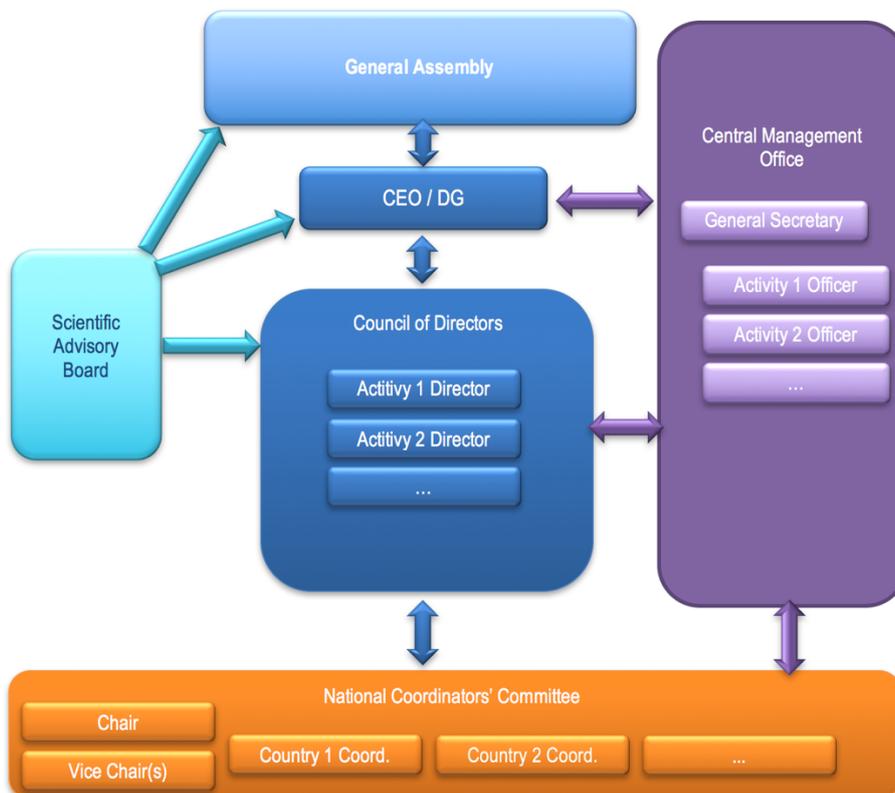


Figure 1. A possible governance scheme for E-RIHS

Similar to other distributed RIs, the E-RIHS governance could have:

- a General Assembly, which is the top decisional entity at the political level. It decides the ERIC strategies, provides direction, appoints and dismisses directors and eventually ratifies the decisions of the executive governance;
- a National Coordinators' Committee, representing all the national nodes. It is the plenary body at the scientific and representative levels, where all the national E-RIHS RIs can interoperate, mediating the offer of access at national level, exchanging experiences, harmonising national strategies and cooperating to ensure the success of E-RIHS;
- a Management Board composed by the Chief Executive Officer / Directeur Général (CEO / DG) and a small council of Directors, as necessary. The Board will ultimately be responsible for the implementation and execution of E-RIHS strategies and for the correct and timely handling of E-RIHS operations. It will handle several necessary functions such as the financial management, human resource management, quality control, communication, dissemination, promotion and others;
- a Central Management Office, which could be distributed, will be the seat for staff and other management collaborators,
- a number of advisory and representatives' bodies.

(NOTE: for more information on the governance structure, please see the [document on governance](#))

4. Quality assessment of candidates to integrate the E-RIHS network

Quality is one of the pillars of E-RIHS and to ensure its high level throughout the network, quality criteria must be met by all organisations and research groups that may state a connection with its brand. *Quality* must be understood as an attribute recognised by E-RIHS from its own perspective and not as compliance with any existing standards. Recognition is granted following a collaborative assessment process between E-RIHS and the entity being evaluated.

Quality assessment is a procedure required to keep E-RIHS scientific offer at a stated level of excellence. It addresses both *partners*, with simplified periodic reviews, and external institutions, with candidates to become new partners or to establish collaboration with E-RIHS. It may also be used to evaluate services

such as educational or dissemination initiatives from organisations other than partners, seeking an endorsement by E-RIHS. Similar but much simpler procedures also apply to affiliation or to grant support, e.g. for project proposals.

The E-RIHS procedure for quality assessment has been completed as a work proposal and includes a *meta-study*, i.e. based on publicly available sources; the *analysis of the declarations and the documentation* provided by the candidate; and *on-site visits* and *interviews* by a team of peers. The procedure starts from the initiative of a partner proposing new services, or of a prospective new partner or affiliate (called *candidate*). Where periodic partner reviews are concerned, the procedure starts instead from the initiative of the E-RIHS Quality Manager.

The following table summarises the application of the E-RIHS quality assessment procedure.

Assessment subject	Institution type			
	Partners	Candidate new partners	Candidate new affiliates	External institutions
Overall quality assessment	Periodic review: simplified procedure	Admission: full procedure	Admission: simplified procedure	Not applicable
New services offered	Simplified procedure	Full procedure, jointly with admission procedure	As for external institutions	Endorsement: independent assessment
Feedback on services rendered	Yes, continually assessed	Yes starting before a final decision is taken on the application	As with external institutions	Yes on services endorsed by E-RIHS as a condition for future endorsements

The final decision following the assessment lies with the E-RIHS competent body and also takes into account any views communicated by the coordinator of the national E-RIHS hub. The decision may be one of the following: i) *Approved*; ii) *Rejected*, with justification; iii) *Approved with recommendations*: - a case where minor issues are noted, but they are expected to be amended in the short term; or iv) *Pending*: - when E-RIHS sees potential for the candidate but major issues prevent their immediate approval. In this last case the final report will sketch out a roadmap to acceptance and will indicate, when appropriate, tutor organisations chosen within the partnership to accompany and guide the candidate to achieve full compliance.

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5. The funding system

5.1. Why fund E-RIHS?

Worldwide, general tourism is the fourth largest industry generating USD \$733 billion in revenue (UNWTO) in 2003. The European Commission (EC) acknowledges that cultural heritage is an important resource for economic growth, employment and social cohesion, offering the potential to revitalise urban and rural areas and promote sustainable tourism. It is estimated that four out of ten tourists choose their destination based on its cultural offerings.

But stating its relevance as a driver of tourism only recognises part of its importance: at national level, tangible cultural heritage materially connects communities with their past, is a source of inspiration for writers, artists and designers alike, is a basis for small businesses of all sorts and offers innumerable opportunities for occupation in later life, contributing to healthier ageing. Cultural heritage does not have to be sold – it sells itself!

It is in this privileged field that E-RIHS works and through its network of partners wants to impact the preservation of such assets sensibly.

5.2. Extramurally-funded activities within the scope of E-RIHS

Funding is needed to pursue activities within the E-RIHS partnership including coordination and management. Most activities at a national level will fall within the following categories:

- research financed by funding agencies for the purpose of advancing knowledge (including the preparation of specifications, recommendations or standards) with the results to be freely disseminated;
- access to instrumentation resources;
- education, through the participation e.g. in doctoral programs and organisation of courses and similar events;
- organisation of joint events for the dissemination of research results, such as congresses and conferences;
- development and upgrade of tools and instruments.

Some of these activities, most notably in the fields of education and dissemination, will be paid for by participants and sponsors; research and access will usually require funding by agencies supporting development, either at national, or at supranational levels.

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In addition, local partners may also carry out business transactions, such as:

- research for clients, whose results are delivered as a product;
- paid tests or paid access to instrumentation;
- consultancy, e.g. on the causes of pathologies, remedial measures, support to interventions, authentication of works of art;
- exploitation of patents and sales of specialised products including: dissemination of media and specific conservation products;
- other services within their field of activity.

International actions may be organised or developed in co-operation with other E-RIHS partners. In all activities, partners within the ERIC can request the support of E-RIHS and count on its full backing.

5.3. Funding model at national level

Partners of E-RIHS are listed in national roadmaps and are expected to be funded, both for activities of research, and for access offered at a national level by the organisation or organisations that fund such activities within each Member State. Funding may be granted directly, or through a national RI.

Such funding is what would normally be expected irrespective of E-RIHS, however by belonging to the partnership, E-RIHS will ask from its national partners a contribution in kind: part of the access funded nationally is to be made available for allocation through E-RIHS. This contribution is to be balanced by the advantages of belonging to E-RIHS, including the possibility of accessing technical means and expertise based in other countries, again through the vast E-RIHS network. At the same time, E-RIHS will help obtain funding for activities, particularly research.

Figure 2 synthetises the funding model at national level.

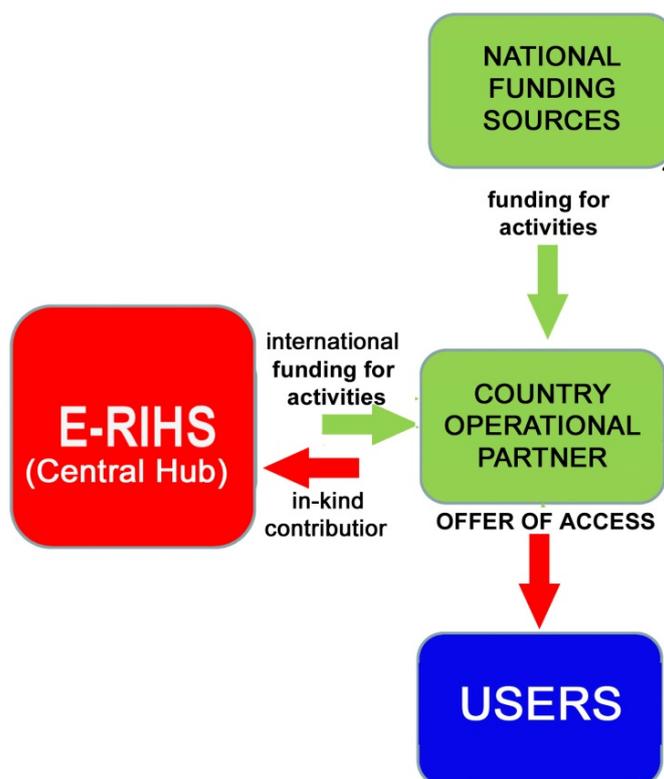


Figure 2. Simplified funding model at the national level (sources such as clients and sponsors were omitted).

5.4. Funding model of E-RIHS management

E-RIHS aims to be financially balanced without placing undue stress on its partners. That principle requires that fixed costs for E-RIHS be under control at all times, so they will be concentrated in the Central Hub (and National Hubs when needed) and dealt with in a manner to ensure they will not create undue current liabilities for the group or its partners.

This simplified model is based on cash and in-kind revenue from the country hosting the Central Hub (in-kind will usually correspond with making installations

available) and cash contributions from countries that join the ERIC as members. As for other ERICs, such contributions will be paid on a yearly basis by the organisations representing the Member States in E-RIHS, and will be used primarily to cover the fixed costs of running the organisation. Such costs include the management of access to scientific and technical assets made available by national partners as in kind contributions to the ERIC, and directly allotted by E-RIHS.

E-RIHS will actively promote proposals for the funding of its activities through Framework and similar programmes for research and technological development, expecting to retain a small fraction of the resulting revenue and pass the rest to those organisations that will fulfil parts of the contracts.

Figure 3 compiles the funding model of the Central Hub.

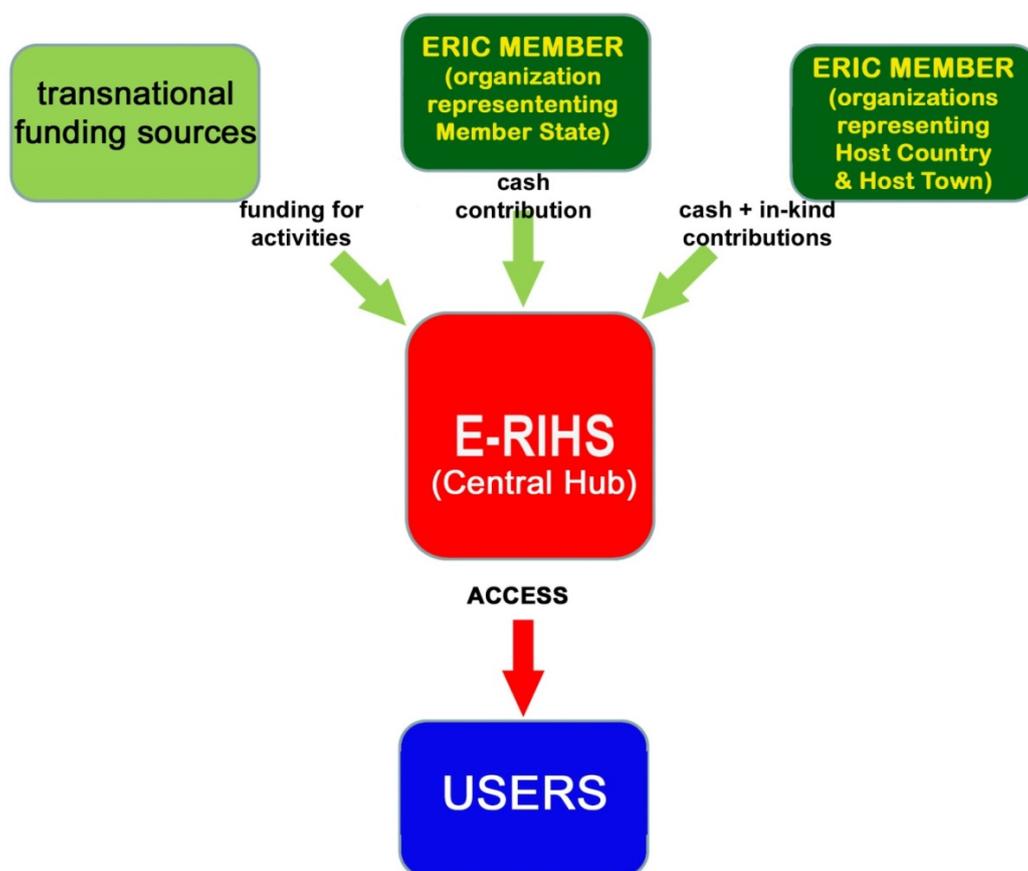


Figure 3. Simplified funding model of the Central Hub (minor or occasional sources such as donors and sponsors were omitted).

5.5. Budget of the Central Hub

The Central Hub will concentrate the fixed costs of E-RIHS in itself. In the transition phase, before the start of the ERIC, the Central Hub will be supported by Italy (premises + personnel + travel & other expenses) also with an in-kind contribution of personnel time (high-level organisers and advisers) offered by present E-RIHS PP partners.

After the start of the ERIC, cash contributions from the founding countries will be received and the in-kind contributions will be diminished until a steady funding level is attained. The exact budget at any time will depend on the extant members and their contributions, as well as the funding obtained e.g. through Framework Programmes but it is expected that by 2022 the yearly budget for the cost of core activities will have stabilised.

As the exact operational modes of E-RIHS are still under discussion, for the moment we can only set the fixed costs of E-RIHS in a range, at around € 1 to 3 M/year. This figure will be refined during the preparatory phase.

The fixed costs of the Central Hub are to be balanced by yearly cash contributions by members, plus some additional revenue from other funding sources. The office rent for hosting the headquarters of E-RIHS was not included because it will be offered by the town of Florence.

6- **Timeline of E-RIHS**

E-RIHS follows a string of successful FP projects since 2000, the last of which (IPERION CH) started on May 01, 2015 and will be concluded in April 2019.

National E-RIHS hubs started forming in 2013 and the group was a successful candidate to the 2016 ESFRI roadmap, leading to the present H2020 INFRADEV 2016-2 Project E-RIHS Preparatory Phase (E-RIHS PP) which will be concluded in January 2020. During its final year the process for establishing the ERIC will be started with as many MS as will decide to be founding members and an interim phase commenced.

As far as the legal aspects are concerned, ERICs do not have to undergo the time-consuming process of ratification in each country. The ERIC regulation is directly applicable in Member States and does not require transposition. However, it is necessary for Member States to adopt the appropriate measures and procedures to host or become a member of an ERIC (declaration of recognition as an international body or organisation). On average, it takes more or less two years to establish an ERIC, the length of the process depends on the

country where the seat is established. Given the time necessary for the ERIC procedure to be concluded, it is expected the formal start-up will be in 2022.

Based on the present E-RIHS PP partnership, on the number of observers and the national hubs formed or in formation it is expected that during the first five years of operations the number of adherent MS will exceed 15, plus at least one non-MS (the UK) adhering with a status to be defined under the Brexit process. After this transitional phase, the Central Hub will be working with its full budget based on cash contributions from the E-RIHS members.

Figure 4 synthetises the expected timeline.

Timeline of E-RIHS

