Overview of Strategic Objectives of ERICs – update (April 2019)

The document summarized strategic objectives, as described in the Statutes of existing ERICs, in order to establish the ones that are shared between the Research Infrastructures (RIs) most widely.[1] The review covered 20 ERICs established so far (Annex I).
The document serves as input into the discussion of the ESFRI Working Group on Monitoring in order to enable the development of the Key Performance Indicators, which are relevant for a number of RIs.

Proposed objectives are the following:
1. Scientific excellence

 1.1. Contribution of the RI to top-level research, based on effective access to excellent facilities.

 1.2. Enable research by building, developing and maintaining an infrastructure of resources (data, collections), assure their interoperability (if relevant) and provide effective access.

2. Education and training

 2. To promote training and education of RI staff, users from academia, industry and the professions as well as the general public.

3. Facilitation of regional and transnational collaboration and activity in Europe

 3.1. In the case of a distributed RI: to further the integration of national capabilities (facilities, resources, data, services), into a unique, EU-level Distributed Research Infrastructure by supporting optimum use of resources through coordination, facilitation of the use, alignment and harmonization of activities (e.g. training, communication, cooperation with industry) and/or investments.

 3.2. All RIs: Facilitate regional and transnational R&D and collaboration, and add value across EU.

4. Technological development, innovation and knowledge transfer

 4.1 To contribute to technological development

 4.2. To provide services to industry, e.g. through access to facilities, technology transfer, development of skills, contractual development and advice.

5. Outreach

 Outreach to academia and industry, the general public and policy makers to publicise their activities and their value

6. Data

 Adhere to 'FAIR guiding principles for scientific data management and stewardship', promote fair, transparent and equitable access to scientific results and data and related services. Assure its sustainability and EOSC connectivity.

7. Provide scientific support to policies and standards

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[1] Despite similarities in the way objectives are described in the Statutes of ERICs, the differences between them might have resulted in omission of some ERICs from certain categories of objectives.

7.1. To contribute to the development and coordination of standards, protocols and professional best practice

7.2. To facilitate evidence-based decision making and/or to contribute to the implementation of the European Research Area

8. International co-operation

8.1. To coordinate and strengthen the European contribution to the international initiative in a particular field

8.2. To cooperate with countries outside Europe, for example on global challenges

9. Governance, management and optimum use of resources

High quality institutional management, including financial, administrative, human resources, environmental and safety management

1. Scientific excellence (shared by 100%)

1.1. Contribution of the RI to top-level research, based on effective access to excellent facilities.

Objectives by ERICs in this topic
- contribute to top-level research (CERIC)
- excellence in research (SHARE)
- EATRIS ERIC shall advance research in translational medicine.
- the ultimate objective of CLARIN ERIC is to advance research in humanities and social sciences by giving researchers unified access to a platform which integrates language-based resources and advanced tools at a European level.
- EATRIS ERIC shall advance research in translational medicine.
- grant effective access to its resources and services (BBMRI)
- contribute to top level research (ESSS)
- ensure a full scientific exploitation of the ESSS and its suite of instruments, grant effective access to users
- facilitation of European research programmes and projects; (ICOS)
- facilitation of the analysis of carbon sequestration and/or GHG emission reduction activities on global atmospheric composition levels, including the attribution of sources and sinks by geographical regions and activity sectors; (ICOS)
- EMSO ERIC shall establish, coordinate, facilitate and optimise the use of pan-European facilities and sea operation resources in order to ensure maximum benefit to the ocean observation community.
- it shall optimise access to ocean observatory infrastructures and data. (EMSO)
- the provision and rationalisation of access to EMSO ERIC infrastructure by qualified European and international scientific communities, whose projects shall be evaluated for such purpose; (EMSO)
- ECCSEL ERIC shall address and nurture top-level research actions among scientists within the field of CCS
- ECCSEL ERIC will establish a very advanced inventory of unique research facilities. It shall establish and operate a world-class distributed research infrastructure
- the task of CESSDA ERIC shall be to provide a distributed and sustainable research infrastructure enabling the research community to conduct high-quality research in the social sciences contributing to the production of effective solutions to the major challenges facing society today
- to facilitate the advancement of integrative structural cell biology (INSTRUCT)
– promote and deliver on new scientific discoveries and deepen knowledge of marine organisms and ecosystems (EMBRC)
- JIV-ERIC shall operate and develop the data processor, often referred to as the correlator, and service the scientists that use EVN facilities
- EU-OPENSCREEN ERIC shall facilitate the access to resources, tools and facilities to researchers and to support high quality research on the molecular mechanisms of biological processes.
- efficient service and optimum conditions for users (CERIC)
- the collection of user requirements and best practice in order to provide efficient support to users (CLARIN)

- establish and operate Common Services for the European biobanking community (BBMRI)

1.2. Enable research by building, developing and maintaining an infrastructure of resources (data, collections), assure their interoperability (if relevant) and provide effective access.

Objectives by ERICs in this topic

- build an infrastructure of data on a particular topic (SHARE)
- to assemble the collected information in a user-friendly data base accessible to all scientific researchers (SHARE)
- the definition and maintenance of a collection of formal and de facto standards and mappings between those to facilitate interoperability between data and services; (SHARE)
- to realise a significant impact on healthcare and make a significant contribution to the advancement of the tools and technologies that drive translational science (EATRIS)
- BBMRI-ERIC shall establish, operate and develop a pan-European distributed research infrastructure of Biobanks and Biomolecular Resources in order to facilitate the access to resources as well as facilities and to support high quality biomolecular and medical research
- implement quality management including standardised procedures, best practices and appropriate tools to increase the quality of the resources collected and their associated data; (BBMRI)
- promote quality, transparency and optimal use of clinical research data (ECRIN)
- to develop a long term global ocean monitoring system (ERO-ARGO)
- to provide quality controlled data and access to the data sets and data products to the research (climate and oceano- graphy) and operational (e.g. Global Monitoring for Environment and Security (GMES)/Copernicus Marine Service) communities. (EURO-ARGO)
- Improve research opportunities and outcomes through linking distributed digital source materials. (DARIAH)
- to establish integrated data and analysis from GHG observation systems. (ICOS)
- ICOS ERIC shall provide effective access to coherent and precise data to facilitate research into multi-scale analysis of GHG emissions, sinks and their driving processes by making available measurement protocols, long-term data and data products. (ICOS)
- EMSO shall optimise access to ocean observatory infrastructures and data.
- the coordination and support of the activities of existing fixed point deep-sea floor and fixed-point water column observatories around Europe, promoting the continuity and quality of time series and reliable data management; (EMSO)
- coordinating the storage and use of data for scientific research as well as the timely delivery of data for use in geo-hazard early warning and operational oceanography. (EMSO)
- the main task of LifeWatch ERIC shall be to establish and operate the infrastructure and information systems necessary to mobilise and integrate data and algorithms for biodiversity and ecosystem research (Life-watch)
- integrated access to distributed data resources; the provision of services for data discovery, analysis, modelling and visualisation; web-based and site-based support for users; and digital environments for scientific cooperation and experimentation. to data mobilisation and data sharing; computational capacity; and development of new infrastructure capabilities — including exploration of a role as a broker coordinating requirements and delivery plans between national and international facilities(Life-watch)
- CESSDA ERIC shall fulfil its task by contributing to the development and coordination of standards, protocols and professional best practice including training on best practices related to data distribution and data management.
- EMBRC-ERIC shall promote fair and equitable access to its services, open access to scientific results and data, transparency, equal treatment and non-discrimination. (EMBRC)
- develop, build and maintain a European Chemical Biology Library of Compounds;
develop, build and maintain a Central Database of screening results; (Data policy, production and use) (EU-OPENCSREEN)
- providing free and timely access to its accumulated data to professional users and members of the public (ESS)

2. Education and training (shared by 45%)

2. To promote training and education of RI staff, users from academia, industry and the professions as well as the general public.

Objectives by ERICs in this topic
- promoting and coordinating joint training of scientific and technical personnel and young researchers (CERIC)
- provide training and facilitate mobility of researchers to support the establishment of new Biobank sand Biomolecular Resource Centres to strengthen and structure the European Research Area (BBMRI)
- promote training of investigators and all categories of professionals and lay persons involved in clinical research (ECRIN)
- integration of training; build capacity in order to foster the coordinated training of scientists, engineers and users (EMSO)
- to support training programmes (LIFE-WATCH)
- to facilitate teaching and learning in the social sciences, to initiate training activities and exchanges between established and potential Service Providers (CESDA)
- to provide training in integrative techniques in the field of structural biology (INSTRUCT)
- training facilities and courses for researchers and technical personnel (EMBRC)
- fostering education (EPOS)

3. Facilitation of transnational collaboration and activity in Europe (shared by 75%)

3.1. In the case of a distributed RI: to further the integration of national capabilities (facilities, resources, data, services), into a unique, EU-level Distributed Research Infrastructure by supporting optimum use of resources through coordination, facilitation of the use, alignment and harmonization of activities (e.g. training, communication, cooperation with industry) and/or investments (shared by 60%)

Objectives by ERICs in this topic
- to further the integration of national capabilities of Partner Facilities into a unique, EU-level Distributed Research Infrastructure by promoting and coordinating joint training of scientific and technical personnel and young researchers, and develop a common strategy and policy for intellectual property and know-how protection and exploitation, fostering the support to industrial developments and users, collaborating with neighbouring communities and industry (CERIC)
- the creation and operation of a federation of existing data and web-service centres to facilitate single sign-on access to data and to technology services provided by these centres; the coordination and organisation of training, awareness and dissemination actions; coordination and support of activities aimed at the acquisition and creation of new data and web-services (CLARIN)
- improve the interoperability between Biobanks and Biological Resource Centres of Members (BBMRI)
- encourage cooperation and harmonisation; promote common standards, tools and practice that will impact on the structuring of national networks; reducing the fragmentation of health and legislative systems in Europe (ECRIN)
- JIV-ERIC shall correlate all EVN projects, which are approved by the EVN Programme Committee
- to coordinate the operations of ICOS RI
- it shall establish, coordinate, facilitate and optimise the use of pan-European facilities and sea operation resource; it shall integrate the existing fixed-point ocean observatories around Europe, to help coordinate the extension and upgrading of these facilities and to facilitate the planning and deployment of new ones. (EMSO)
- coordinated operation of several facilities operating under a joint hallmark, including coordinated plans for their upgrade and new investments. It shall also support the owners of the research facilities in their endeavours to enhance the operations of their facilities and their endeavours to upgrade them and to create new facilities (ECCSEL ERIC)
- CESSDA ERIC shall be the hub of a distributed research infrastructure linking together the social science data archives of the Members

- to make available a managed access to state-of-the-art European structural biology facilities and specialist expertise; (INSTRUCT)
- EMBRC-ERIC shall operate on the basis of a central organisation as a distributed operation of individual Nodes in a coordinated way. It shall support joint research and development activities through a coordinated, long-term development programme among national Nodes;
- EU-OPENSCREEN ERIC shall establish, operate and develop a European distributed research infrastructure consisting of screening platforms as well as chemistry and biology facilities, in order to facilitate the access to resources, tools and facilities to researchers and to support high quality research on the molecular mechanisms of biological processes.
- The principal task of EPOS ERIC shall be to establish and operate the distributed European Plate Observing System coordinate high-quality infrastructure services supported by harmonised procedures and quality standards. To provide an effective governance framework to drive the integration and coordination of the Thematic Core Services. developing the ICS to provide interoperability, data management and access to services

3.2. All RIs: Facilitate transnational R&D and collaboration, and add value across EU (shared by 30%)
Objectives by ERICs in this topic
- expand SHARE to include all EU Member States
- CESSDA ERIC shall promote wider participation in the research infrastructure. In order to facilitate the entry of countries that seek support for the further development of their social science data archives, CESSDA ERIC shall initiate training activities and exchanges between established and potential Service Providers.
- exploiting the full scientific potential of the Central European Area, notably for materials preparation and characterisation, structural investigations and imaging in Life Sciences, Nanoscience and Nanotechnology, Cultural Heritage, Environment and Materials Sciences (CERIC)
- to provide additional coverage in the European regional seas (EURO-ARGO)
- JIV-ERIC shall correlate all EVN projects, which are approved by the EVN Programme Committee (JIV-ERIC)
- EMSO ERIC shall integrate the existing fixed-point ocean observatories around Europe

4. Technological development, innovation and knowledge transfer (shared by 70%)

4.1 To contribute to technological development (shared by 40%)
Objectives by ERICs in this topic
- contribute to top-level technological development, collaborating with industry (CERIC)
- to make a significant contribution to the advancement of the tools and technologies that drive translational science (EATRIS)
- furthering the advancement of methods of quantitative social measurements and analysis in Europe and beyond (ESS)
- explore and apply ICT-based methods and tools to enable new research questions to be asked and old questions to be posed in new ways. (DARIAH)
- contribute to top level technological development (ESSS)
- technological developments and demonstrations, related to GHGs, shall be promoted by the linking of research, education and innovation (ICOS)
- ECCSEL shall contribute to pushing the forefront of technological development beyond the current state-of-the-art, thereby accelerating the commercialisation and deployment of CCS.
- to further the development of the Instruct technology (INSTRUCT)

4.2. To provide services to industry, e.g. through access to facilities, technology transfer, development of skills, contractual development and advice (shared by 50%)
Objectives by ERICs in this topic
- collaborate with industry (CERIC)
- provide advice and services to multinational clinical research (ECRIN)
- contribute to top level innovation (ESSS)
- technological developments and demonstrations, related to GHGs, shall be promoted by the linking of research, education and innovation (ICOS)

- EMSO ERIC shall stimulate and support the development of advanced technologies for in-situ ocean monitoring, the support to the leadership of Europe in marine technologies and the sustainable use of marine resources, through partnership with industries and other relevant stakeholders (EMSO)
- the maintenance of a capacity for the upgrading of the research infrastructure, the innovation and valorisation of knowledge and technology, and the development of new analytical capabilities. (LIFE-WATCH)
- ECCSEL ERIC shall facilitate superior experimental research on new and improved CO_2 capture, transport and storage techniques (CCS), envisaging commercial uptake by 2020-2030 and beyond 2030. It shall contribute to pushing the forefront of technological development beyond the current state-of-the-art, thereby accelerating the commercialisation and deployment of CCS.
- to further the development of the Instruct technology (INSTRUCT)
- integrated workflows of high-quality services for access to biological, analytical and data resources by deploying common underpinning technologies and practices; strengthening of the connection of science with industry through a coordinated knowledge and technology transfer service (EMBRC)
- engage in exchange with relevant industry (EU-OPENSCREEN)

5. Outreach (shared by 55%)

Outreach to academia and industry, the general public and policy makers to publicise their activities and their value

Objectives by ERICs in this topic
- Ensuring an efficient internal and external communication, coordinating promotion, outreach and marketing activities; outreach activities for new users (CERIC)
- the coordination and organisation of training, awareness and dissemination actions (CLARIN)
- it shall contribute to increased use and dissemination of knowledge (BBMRI)
- communicate with patients and citizens on the challenges and opportunities raised by clinical research. (ECRIN)
- exchange knowledge, expertise, methodologies and practices across domains and disciplines. (DARIAH)
- contribute to the dissemination of scientific results (ESSS)
- distribute information from ICOS RI to user communities
- integration of dissemination activities; act as an advocate of the science community involved in ocean observation (EMSO)
- engagement with relevant stakeholders of the European maritime regions, to support their environmental policies and blue bio-economy (EMBRC)
- disseminate tools and data for the use of the public (EU-OPENSCREEN)
- fostering outreach (EPOS)

6. Data

Adhere to 'FAIR guiding principles for scientific data management and stewardship', promote fair, transparent and equitable access to scientific results and data and related services. Assure its sustainability and EOSC connectivity.
The objective is a recent one and is not referred to in this way in the ERIC Statutes. It is relevant to all RIs.

7. Provide scientific support to policies and standards (shared by 55%)

7.1. To contribute to the development and coordination of standards, protocols and professional best practice (shared by 10%)
Objectives by ERICs in this topic
- managing standardisation issues and defining guidelines for calibration and registration of instruments according to pre-defined requirements (EMSO)
- CESSDA ERIC shall fulfil its task by contributing to the development and coordination of standards, protocols and professional best practice including training on best practices related to data distribution and data management.

7.2. To facilitate evidence-based decision making and/or to contribute to the implementation of the European Research Area (shared by 45%)
Objectives by ERICs in this topic
- contributing to the development of policies leading to the advancement of research in the European Research Area (ERA); speed-up the growth, helping to strengthen the competitiveness of the Central European Area (CERIC)
- contributing to the development of policies leading to the advancement of research in the European Research Area (ERA), both within the fields of humanities and social sciences and across disciplines (CLARIN)
- research based on SHARE shall facilitate evidence-based EU policies, such as the Europe 2020 Innovation Union Initiative, to help meeting the challenges of population ageing in all countries of the EU; to understand individual and societal ageing (SHARE)
- to realise a significant impact on healthcare (EATRIS)
- provide advice to national and European authorities and policymakers (ECRIN)
- contribution to the mobility of knowledge and/or researchers within the European Research Area (ERA) and increasing the use of intellectual potential throughout Europe; (ICOS)
- contribution of timely information relevant to the GHG policy and decision-making; (ICOS)
- to support knowledge based decision-making for the management of biodiversity and ecosystems (Life-Watch)
- promote the sustainable utilisation of marine biological resources; promote the European blue bio-economy. engagement with relevant stakeholders of the European maritime regions, to support their environmental policies and blue bio-economy (EMBRC)
- harmonising the EPOS implementation with national priorities and strategies

8. International co-operation (shared by 45%)

8.1. To coordinate and strengthen the European contribution to the international initiative in a particular field (shared by 15%)
Objectives by ERICs in this topic
- comparability with its sister surveys, notably the U.S. Health and Retirement Study and the English Longitudinal Study of Ageing, shall inform the design decisions of SHARE
- establish international relationships and launch joint activities with other European and non-European organisations concerned with its activities and in related fields, and when appropriate become a member of such organisations (BBMRI)
- Euro-Argo ERIC shall coordinate and strengthen the European contribution to the international Argo Programme as endorsed by the Intergovernmental Oceanographic Commission (IOC) of the United Nations Educational, Scientific and Cultural Organisation (Unesco) and by the World Meteorological Organisation (WMO).

8.2. To cooperate with countries outside Europe, for example on global challenges (shared by 30%)
Objectives by ERICs in this topic
- maintaining and exploiting relationships with related organisations and infrastructures in and outside Europe with a view to collaboration (CLARIN)
- coordination and support of development of technology and protocols for high-quality and cost-efficient measurements of GHG concentrations and fluxes also to be promoted beyond Europe; facilitation of the aims of the ICOS RI to establish a template for the future development of similar integrated and operative GHG observation networks beyond Europe (ICOS)
- EMSO ERIC shall make and sustain connections with international initiatives relevant to ocean observation.
- the establishment of connections with international initiatives relevant to open ocean observation, to act as a representative of Europe in these fields in other parts of the world to set up and to promote international cooperation in these fields and (EMSO)
- support to and cooperation with national and international facilities on the basis of service level agreements (Life-Watch)
- establish collaboration with the other European and international research infrastructures in order to serve the research community in interdisciplinary research questions; (EU-OPENSCREEN)

- integrating EPOS in the global science community to enhance the EPOS services; fostering international cooperation

9. Governance, management and optimum use of resources (shared by 40%)

High quality institutional management, including financial, administrative, human resources, environmental and safety management

Objectives by ERICs in this topic
- make optimum use of resources and know-how (ESSS)
- scientific and management evaluation of the activities, the strategic orientation and operation of all components of ICOS RI by external evaluators (ICOS)
- the synchronisation of investment and operational funds, in a way to optimise national, European and international resources; to make efficient use of ocean observatories around Europe (EMSO)
- efficient service (CERIC)
- efficient support to users (CLARIN)
- organise and coordinate high-quality infrastructure services supported by harmonised procedures and quality standards (EU-OPENSCREEN)
- to provide an effective governance framework (EPOS)
- EATRIS ERIC shall be committed to organising and facilitating the governance and coordination that is required to establish and operate the EATRIS research infrastructure.

Annex I

The Statutes of the following ERICs were reviewed:
- EPOS
- EU-OPENSCREEN
- EMBRC
- INSTRUCT
- CESDA
- ECCSEL
- LifeWatch
- EMSO
- ICOS
- ESS (SPALATION SOURCE)
- JIV
- DARIAH
- CERIC
- Euro-Argo
- ECRIN
- BBMRI
- ESS
- EATRIS
- CLARIN
- SHARE