

LifeWatch ERIC Strategic Working Plan Outcomes

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Abstract

LifeWatch ERIC has embarked on its new destination towards upgrading and (co-)constructing its Infrastructure as a response to the needs of its target communities and stakeholders. Through an industrialisation process, all independent data, software components, publications and other types of research products contributed by the Member Countries will be consolidated and integrated to enable collaborative development. The Technology Readiness Level of LifeWatch ERIC will be raised to level 9. This process is described in its new Strategic Working Plan on its second implementation period (2022-2026). Accordingly, this topical collection of papers includes articles which describe the main outcomes, that is the deliverables of this new Strategic Working Plan. The deliverables published in this topical collection are not of a confidential nature and are developed in the form of a standard, structured template.

Keywords

LifeWatch ERIC, biodiversity, ecology, Research Infrastructure, e-Science Infrastructure

Introduction

The Strategic Working Plan of LifeWatch ERIC describes the steps to be taken in the period 2022 – 2026 in order to transform LifeWatch ERIC from an operating prototype to a fully operational Research Infrastructure, compliant with the ESFRI criteria for a Landmark Research Infrastructure. During this period, LifeWatch ERIC will undergo continuous upgrading and (co-)construction, responding to the needs of its target communities and stakeholders. Through an industrialisation process, all independent data, software components, publications and other types of research products contributed by the Member Countries will be integrated to enable collaborative development. The Technology Readiness Level of LifeWatch ERIC will be pushed from level 6 to 9 (see also the sister paper in the Biodiversity Data Journal: <https://doi.org/10.3897/BDJ.12.e119804>).

Implementation strategy

The RI will consist of four layers, built upon the data lake to which data providers, global aggregators and observatories will contribute:

1. core (vertical) services, such as AAI, HPC, cloud services, storage and personal space;
2. integration (horizontal) services, such as the MetaData Catalogue, Ecoportal, Tesseract and LifeBlock;
3. an ecosystem of analytics, composed of hundreds of web services;
4. services for converting research results into knowledge, such as mapping services, summary statistics, ichnographics and publication services.

To realise these ambitions, a set of four priorities (including objectives, tasks, sub-tasks and deliverables) is defined for 2022 – 2026, which are depicted in the graph of Fig. 1 below:

1. *Organisation*: steps will be taken at the administrative, organisational and financial levels, to take advantage of the lessons learned during the first implementation period (2017 - 2021) and to optimise both the structure and functioning of LifeWatch ERIC as an organisation.
2. *Infrastructure*: the current prototype of the Infrastructure will be further developed into the next-generation Infrastructure on Biodiversity and Ecosystem Research (next-gen IBER). To this end, an important investment in disruptive technologies (e.g. artificial intelligence/machine-learning, smart high-performance/cloud/edge computing and blockchain technologies) will be targeted.
3. *Community*: *trading zones* will be developed with the scientific communities, stakeholders, ERICs, RIs and global actors. This will have top priority. The RI will be co-designed and co-developed and the current approach on communication and

networking, engagement and outreach and training and education, will be upgraded.

4. *Industrialisation, Technology Transfer and Innovation*: implementation processes and services will be consolidated to industrialise the LifeWatch ERIC prototype, disseminate scientific and technological research results to the market place and wider society, increase the visibility of LifeWatch ERIC, strengthen the Research and Development position of its members (and Europe) and, finally, scale up the socio-economic impact of LifeWatch ERIC.

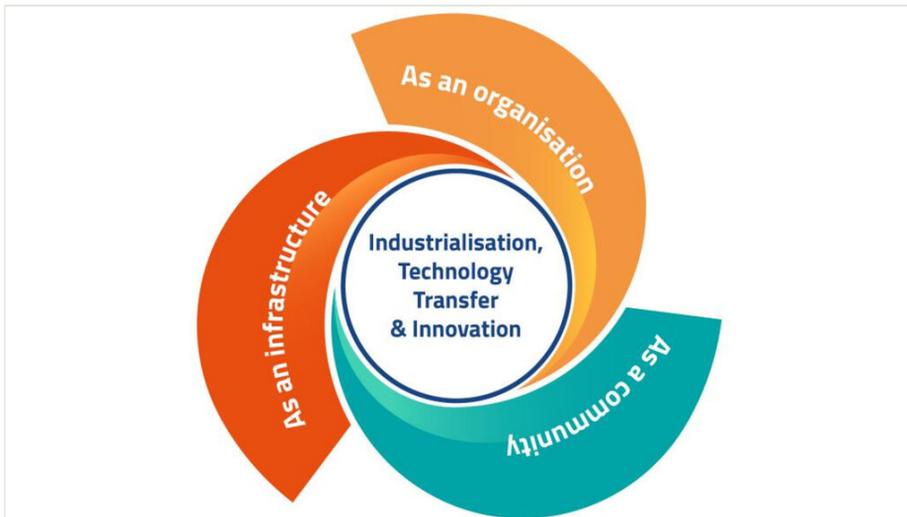


Figure 1. [doi](#)

The four Priorities identified for the next implementation period of LW ERIC.

The resulting Research Infrastructure will have strong added value for users, such as one-click access to a wealth of data, analytical services and other research resources; workflows dedicated to specific lines of research with customised data and services; the option for users to create their own workflow on the fly; the option to combine multiple workflows that can test the same hypothesis in parallel and then compare results. These innovations make LifeWatch ERIC a game-changer in modern science practice and in producing knowledge. It will impact all stages in the life cycle of the scientific research practice from hypothesis formation to publication of new knowledge (all encompassed by LifeWatch ERIC's holistic approach); transparency and repeatability (due to the application and further development of disruptive technology); and collaboration between disciplines and domains (lowering barriers between disciplines and domains towards synthetic knowledge).

The indicative budget for 2022 – 2026 amounts to 10.75 M€ in cash and 41.55 M€ in kind for all four priorities.

The Topical Collection of articles on the LifeWatch ERIC Strategic Working Plan Outcomes

This topical collection of papers includes articles which describe the main outcomes, that is the deliverables of the Strategic Working Plan of LifeWatch ERIC during its second implementation period (2022-2026). These deliverables are not of a confidential nature and are developed in the form of a standard, structured template, which generally includes the following sections: introduction, methodology, main components, acknowledgements, references and conclusions. All articles follow the peer-review process and standards of the Research Ideas and Outcomes Journal.

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LifeWatch ERIC

Ethics and security

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Conflicts of interest

The authors have declared that no competing interests exist.