



# ESFRI

# Landmark Monitoring

# 2022-2024

## Second Batch Report

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## OBJECTIVES AND GENERAL REMARKS

ESFRI Landmarks were introduced in the ESFRI Roadmap 2016 as reference Research Infrastructures (RIs) and are pillars in the ERA landscape, offering not only services to academic research but also supporting development and innovation.

In order to support the further development of the Landmarks and to achieve further insights into the functioning of the European RI ecosystem, the Forum has assigned the Monitoring Committee (MC) with the task of conducting a regular monitoring of all ESFRI Landmarks.

The Monitoring should further enable regular exchange between ESFRI and the Landmarks on their long-term development, assess the quality of each individual Landmark, identify possible problems and support the Landmarks to take appropriate actions. It shall also provide information on the performance, output and impacts of the Landmarks.

The Monitoring started with a Kick-Off Workshop on 16<sup>th</sup> September 2022 in Brussels, involving interested stakeholders. Each monitoring round consists of several batches, the first round consists of three batches. The monitoring rounds will be repeated regularly, maybe around every 5 years, depending to some extent on other ESFRI activities, as this is a time-consuming activity.

The monitoring of the first batch of 11 ESFRI landmarks was completed with the first batch report in June 2023.

The present report summarises the results of the Monitoring of the second batch comprising 11 Landmarks. The main generic findings are described in chapter two, while the experiences with the second batch of Monitoring are described in chapter three. While the first batch had already shown that the concept worked well in general, experience from this first batch served to optimise some organisational aspects from the second batch onwards. For keeping to the overall timeline of the monitoring the third batch was started while the second batch was only halfway through. Increasing experience with the monitoring process of all participating parties allowed running two batches in parallel although the workload on the Working Groups, especially the IG and the SWG DIGIT that both participate to all Panels was challenging, even more so when considering that other important activities involving these groups, such as the Landscape Analysis or the ESFRI roadmap were running in parallel.

The MC will also report about the Monitoring of the third batch of Landmarks, presumably in December 2024. A final report shall be delivered in the first half of 2025, after the completion of the Monitoring of all the Landmarks included in this round of Monitoring. The distribution of Landmarks over the three batches is given in the annex.

The individual reports will be accessible, only for ESFRI purposes, to delegations via CIRCABC.

The individual reports shall be kept confidential within ESFRI (Forum and Working Groups) and are not made publicly available.

The Monitoring Committee suggests publishing this report on the ESFRI website.

The schedule for the Monitoring of the third batch is annexed.

## MAIN FINDINGS OF THE LANDMARK MONITORING (2023-2024)

Most RIs have worked together with the Monitoring Panels in an open and constructive way. Several RIs have mentioned the usefulness of the Landmark Monitoring and the usefulness of the LM Monitoring report, for example, for their authorities and/or funding agencies.

No Panel recommended revisiting the respective Landmark soon due to severe and critical problems, but for some Landmarks a need for improvement was identified.

- In general, the scientific excellence of the RIs is considered very good or even excellent.
- The Pan-European relevance is good for all, and in several cases, this extends to global relevance.
- E-needs are well taken care of. The RIs have data management plans and live up to the FAIR principles etc.
- Some of the RIs are in partnership with other RIs, leading to very useful collaboration, thereby enhancing the impact of the single infrastructures.
- The novel access schemes often triggered by the COVID-19 crisis have to some degree become a routine alternative, and remote access is already more a tool for avoiding carbon footprint than a remedy for lockdown restrictions.
- Also in the second batch, it is clear that many RIs are working on dealing with KPIs, at different levels. While many RIs have had their specific KPIs that capture for instance access and scientific publications for some time, most Landmarks are in the process of adapting their KPIs to a more comprehensive view as given by the ESFRI KPI framework. Most RIs will need to invest more in collecting and categorising relevant data (related to numbers and origins of their users, publications, outreach, impact etc.) to be able to present complete and meaningful KPIs. Some RIs have difficulties when users do not physically access the RI, but use data and tools based on open platforms, so that quantification of relevant KPIs remains elusive.
- In the future, ESFRI should probably focus on spreading knowledge about KPIs, discussing with Landmarks how to choose relevant KPIs etc.
- Similarly, some Landmarks have difficulty describing the social or economic impact. This is also a task for ESFRI to take up.
- The main threat to the RIs (as perceived from their side) is their sustainability, e.g. in terms of insecurity about (long-term) membership of organisations and/or countries as well as the secured availability of funding. It is sometimes difficult for RIs to develop a policy in an environment where there is extremely strong competition for funding and where there is a lot of uncertainty about the evolution in the funding and support landscape, in particular, because RIs depend strongly on a long-term vision.
- On the other hand, governance, management and HR policies are in general sound for the RIs, as is annual reporting, finances and audit etc.
- It may be difficult for RIs to find an overall aim or strategy in a quickly evolving society. RIs are expected to contribute strongly to relevant societal problems, but often they do not receive adequate extra funding (and time) to build up that expertise, or activities must be done at the expense of shutting down other lines of research or competence.

## EXPERIENCES AND LESSONS LEARNT FROM THE FIRST TWO BATCHES OF ESFRI LANDMARK MONITORING

The MC collected the experience with the Landmark Monitoring procedure from the first two batches. The results show that besides timing issues and workload, the process worked well. A number of practical issues were addressed following the experience with the first batch. The second batch, although running already more smoothly than the first batch still underscored the necessity of early and succinct information for the Panels, experts and Landmarks. Again, it should be mentioned that some continuity in Panel composition is advantageous. The Panel Chairs have an outstanding responsibility that can be best met with experience with ESFRI Landmarks and ESFRI Landmark Monitoring procedures. Changes in the Public Guides are not considered at this stage since the last batch is already running. The Lessons Learnt (to be concluded in 2025) will likely provide input for optimizing the monitoring procedure.

### Organisation

Monitoring the second batch of ESFRI Landmarks followed the procedures of the first batch with some facilitating changes in the reporting format for Landmarks.

For each Landmark, a Monitoring Panel was set up with a Chair from the relevant Strategy Working Group (SWG) and members from relevant SWGs, the DIGIT SWG and the Implementation Group (IG). Guidelines for the process, including timelines, document templates and questionnaires, were set up. The procedure was explained at well-attended online workshops that addressed Landmarks, Monitoring Panels and external experts in dedicated events: workshops for Landmarks and Panels in September 2023, and a workshop for external experts in January 2024. It was obvious that the time invested in explaining the aim, the methodology, the procedure and, importantly, answering questions was spent well.

### Timing and interaction with Landmarks

The Monitoring Panels contacted the Landmarks in October/November 2023, and discussed the KPIs and other information that the Landmarks would provide. The Monitoring questionnaire was made available for filling out by Landmarks via the MOS+ system on 10<sup>th</sup> of November 2023. Information and documents were submitted by Landmarks till 4<sup>th</sup> of January 2024. The process worked as established during the first batch, and uploading in MOS+ and later on, of the reports in CIRCABC in general went smoothly. The external experts (for Scientific Case and Implementation Case) were contracted in November and December 2023, and they provided their assessment reports by the end of February 2024. The reports were analysed by the Monitoring Panels, the Monitoring Panels made their own report taking the experts reports into account, and additional questions were drafted for the hearing of the Landmark – or in some cases the hearings were based mostly on the experts' reports. The hearings took place in March and April 2024. If necessary, a site visit was possible, but no site visit of a Landmark was reported. After the hearings, the Monitoring Panels drafted their reports and sent them to the Landmarks to check for any factual errors, following which the reports were finalised in the second half of May. As can be seen, the timing was quite tight, especially as in most Strategy Working

Groups there were a number of Landmarks to be monitored. Also, for the members of the IG and DIGIT, present in all Monitoring Panels, timing was challenging. In addition, the monitoring process took part at the same time as the new Landscape analysis was finalised, the work on the Roadmap process methodology started, and other drafting groups were active, so resources were very stretched, but most were able to work to this timeline. However, it is clear that the timeframe is too tight for all parties involved and for subsequent monitoring exercises, there should be more time and ESFRI should try to distribute the planning of events and requests a little better when possible.

## LESSONS LEARNT

### Questionnaire and format

- After the first batch, the submission process for the questionnaire was updated for the second batch. This new format worked better than for the first batch, but improvements may still be possible.
- It is good that the Panels discuss the KPIs and additional documents before the Landmarks fill out the questionnaire. This prior discussion allows the monitoring exercise to be put in perspective, both for the Landmark and for the Panel, and maybe more time and attention should be allowed for this step in the future, not least for the Landmarks.

### Monitoring Panels

- The composition of each Monitoring Panel as it is established at the beginning, as well as any updates should consistently and immediately be communicated to the respective Panel Chair and all the members of this Monitoring Panel. The current composition of all Monitoring Panels should always be available to the members of the Monitoring Committee, and changes in the Panel composition should be communicated to the MC Chair.
- The share of workload in the Panel between SWG members, the Implementation Group (IG) and DIGIT should be made clear.
- It is important that the Panel Chair is fully aware of the procedures (SWG Chair responsibility).
- It is advised that for a future monitoring exercise the Panel Chairs are given more guidance on the details of their tasks and responsibilities by the SWG Chairs and the Monitoring Committee. .
- The Chairs are advised to inform all Panel members early on the procedure and keep them updated on any steps taken, such as selecting and contracting experts and communicating with the Landmarks.
- There is one Panel for each Landmark, and it includes the SWG, DIGIT and IG members. They each concentrate on their respective part but they work together.
- The expectations of Panel members, experts and Landmarks should be clearly communicated to and by the Panel Chairs so that any doubts about the process and timing can be resolved quickly and clarifications provided. For example, even after changes for the second batch, it still seems unclear what type of recommendation is expected in the monitoring report and where it should be expressed: critical observations that need to be tackled, or just recommendations that may help the Landmark.
- The process requires a high level of commitment from the SWG (including DIGIT) and IG members who are involved in the Monitoring Panels.
- The capacity of the IG has grown so for this batch it was sufficient to be able to do the work. It is important that there is a sufficient number of members of the IG, and the IG is stable.
- It was perceived positively that the members from the SWG and IG were working together early on, which was not always the case for the evaluation of proposals for the ESFRI Roadmap.

## External experts

- The appointment and involvement of the external experts has to be communicated to the Chair of the Monitoring Panels and the IG representative as early as possible.
- If possible, external experts should be from different countries.
- The IG kept in touch with the external experts until the Col form was submitted and the material from the RIs was uploaded on CIRCABC. From then onwards, StR-ESFRI and the Chairs of the Monitoring Panel dealt with the individual external experts. The ways the Chairs of the Monitoring Panels contacted the experts were not always the same, and this should probably be harmonised in the next round, e.g. by making guidelines for contacting external experts. We have heard this this would be appreciated.

## The monitoring report

- Landmarks are informed about what will happen with the report, who has access, and who is the owner.
- It should be clear to the Landmarks, if and when they can distribute the report, if they wish to do so.



## ANNEX

### List of Landmarks monitored in this first round (from first to third batch)

#### Landmarks of the first batch:

Domain	Name	Full name	Roadmap (Y)	Landmark (Y)	Operation start (Y)	Monitoring Year
ENE	ECCSEL ERIC	European Carbon Dioxide Capture and Storage Laboratory Infrastructure	2008	2018	2016	2022
ENV	ICOS ERIC	Integrated Carbon Observation System	2006	2016	2016	2022
ENV	EURO-ARGO ERIC	European contribution to the international Argo Programme	2006	2016	2014	2022
H&F	BBMRI ERIC	Biobanking and BioMolecular Resources Research Infrastructure	2006	2016	2014	2022
H&F	ECRIN ERIC	European Clinical Research Infrastructure Network	2006	2016	2014	2022
H&F	EATRIS ERIC	European Advanced Translational Research Infrastructure in Medicine	2006	2016	2013	2022
H&F	ELIXIR	A distributed infrastructure for life-science information	2006	2016	2014	2022
PSE	ESRF EBS	European Synchrotron Radiation Facility Extremely Brilliant Source	2006	2016	2020	2022
PSE	SPIRAL2	Système de Production d'Ions Radioactifs en Ligne de 2e génération	2006	2016	2019	2022
SSH	ESS ERIC	European Social Survey	2006	2016	2013	2022
SSH	CLARIN ERIC	Common Language Resources and Technology Infrastructure	2006	2016	2012	2022

#### Landmarks of the second batch (this report):

Domain	Name	Full name	Roadmap (Y)	Landmark (Y)	Operation start (Y)	Monitoring Year
ENV	EPOS	European Plate Observing System	2008	2018	2023	2023
ENV	EMSO ERIC	European Multidisciplinary Seafloor and water-column Observatory	2006	2016	2016	2023
ENV	IAGOS	In-service Aircraft for a Global Observing System	2006	2016	2014	2023

<b>H&amp;F</b>	INFRAFRONTIER	European Research Infrastructure for the generation, phenotyping, archiving and distribution of mouse disease models	2006	2016	2013	<b>2023</b>
<b>H&amp;F</b>	INSTRUCT ERIC	Integrated Structural Biology Infrastructure	2006	2016	2017	<b>2023</b>
<b>H&amp;F</b>	Euro-Biolmaging ERIC	European Research Infrastructure for Imaging Technologies in Biological and Biomedical Sciences	2008	2018	2016	<b>2023</b>
<b>H&amp;F</b>	EMBRC ERIC	European Marine Biological Resource Centre	2008	2018	2017	<b>2023</b>
<b>PSE</b>	ILL	Institut Max von Laue-Paul Langevin	2006	2016	NA	<b>2023</b>
<b>PSE</b>	EMFL	European Magnetic Field Laboratory	2008	2016	2014	<b>2023</b>
<b>SCI</b>	SHARE ERIC	Survey of Health, Ageing and Retirement in Europe	2006	2016	2011	<b>2023</b>
<b>SCI</b>	DARIAH ERIC	Digital Research Infrastructure for the Arts and Humanities	2006	2016	2019	<b>2023</b>

**Landmarks of the third batch:**

Domain	Name	Full name	Roadmap (Y)	Landmark (Y)	Operation start (Y)	Monitoring Year
<b>DIGIT</b>	PRACE	Partnership for Advanced Computing in Europe	2006	2016	2010	<b>2024</b>
<b>ENV</b>	LifeWatch ERIC	e-Infrastructure for Biodiversity and Ecosystem Research	2006	2016	2017	<b>2024</b>
<b>ENV</b>	EISCAT_3D	Next generation European Incoherent Scatter radar system	2008	2018	2023	<b>2024</b>
<b>H&amp;F</b>	EU-OPENSREEN ERIC	European Infrastructure of Open Screening Platforms for Chemical Biology	2008	2018	2021	<b>2024</b>
<b>H&amp;F</b>	ERINHA	European Research Infrastructure on Highly Pathogenic Agents	2008	2018	2018	<b>2024</b>
<b>PSE</b>	European XFEL	European X-Ray Free-Electron Laser Facility	2006	2016	2017	<b>2024</b>
<b>PSE</b>	ELI ERIC	Extreme Light Infrastructure	2006	2016	2018	<b>2024</b>
<b>SSH</b>	CESSDA ERIC	Consortium of European Social Science Data Archives	2006	2016	2013	<b>2024</b>

### Timeline for the Third Batch

<b>STEPS</b>	<b>DATE / DEADLINE</b>
Establishment of Monitoring Panels	By 01 December 2023
Kick-off workshops with Landmarks and Panels	December 2023
Identification of external experts for each Landmark	January 2024
Agreement with Landmarks on the list of KPIs and of monitoring documents	January 2024
Opening of the MOS+ system for Landmarks	February 2024
Submission of documents by Landmarks	29 April 2024
External Experts workshop	May 2024
External experts reports	27 July 2024
Initial analysis of the documents and agreement on follow-up questions	01 September 2024
Hearings / Site visits	1 - 27 September 2024
Draft Reports by Monitoring Panels	11 October 2024
Factual check by the Landmarks	18 October 2024
Draft Final reports by Monitoring Panels	31 October 2024
Review of the reports by the Monitoring Committee	15 November 2024
Final reports by Monitoring Panels for approval of the Forum	30 November 2024
Approval of the Forum	December 2024