



European Strategy Forum
on Research Infrastructures

2016 ESFRI Projects

**Overall conclusions and recommendations
from the ESFRI monitoring exercise**

October 2021

2016 ESFRI Projects - Overall conclusions and recommendations from the ESFRI monitoring exercise

Aim of the document

This document summarises the conclusions and recommendations of the 2016 ESFRI Projects monitoring exercise concluded in June 2020 in the framework of preparing the ESFRI Roadmap 2021. In the meantime, there have been new developments that indicate a constant progress of the Projects such as for ACTRIS, which is now close to the establishment of ACTRIS-ERIC, and EST, which identified the site for the telescope.

Monitoring process

The ESFRI Working Groups (WGs), composed by the relevant Strategy Working Groups (SWGs) and the Implementation Group, performed the monitoring of the 2016 ESFRI Projects:

- ❖ ACTRIS – Aerosols, Clouds and Trace gases Research Infrastructure (*Main SWG: Environment*)
- ❖ DANUBIUS-RI – International Centre for Advanced Studies on River-Sea Systems (*Main SWG: Environment*)
- ❖ EMPHASIS – European Infrastructure for Multi-scale Plant Phenomics and Simulation (*Main SWG: Health & Food*)
- ❖ E-RIHS – European Research Infrastructure for Heritage Science (*Main SWG: Social and Cultural Innovation*)
- ❖ EST – European Solar Telescope (*Main SWG: Physical Sciences & Engineering*)
- ❖ KM3Net – KM3 Neutrino Telescope 2.0 (*Main SWG: Physical Sciences & Engineering*)

The monitoring exercise aimed at analysing the state of implementation of these six ESFRI Projects in reference to the minimal key requirements for the Implementation Phase, as specified in the 2021 ESFRI Roadmap Guide.

The ESFRI Executive Board analysed in detail the outcomes of the monitoring and concluded that all six Projects made substantial progress since they entered the ESFRI Roadmap, however none of them were considered as implemented. ACTRIS and KM3Net obtained a “High” or “Very High” score for Scientific Case and Implementation Case, signifying their potential to reach the implementation phase very soon, and were therefore invited by the EB to undergo a full evaluation with external reviewers and a hearing, as foreseen for the 2010 Projects, in view of potentially reaching the Landmark status. Only ACTRIS accepted the invitation and underwent a full evaluation completed in June 2021 with the Forum approval in September 2021.

Overall conclusions and recommendations

Aerosols, Clouds and Trace gases Research Infrastructure (ACTRIS)

The ESFRI WGs consider that ACTRIS project has been developing very well toward implementation. The ESFRI WGs recommend that ACTRIS develops a realistic financial model accepted by all parties interested in the establishment of the ACTRIS-ERIC planned for 2021. ACTRIS should also reach out to other research fields as well as governmental agencies that could represent new user communities. The WGs recommend ACTRIS to address the risks related to data management shared between several institutions, especially the risks of one or more of these institutions failing to secure funding during the set-up of ACTRIS and in the long term.

International Centre for Advanced Studies on River-Sea Systems (DANUBIUS)

The ESFRI WGs observe that the project has completed the Preparatory Phase but a lot remains to be done in order to reach the Implementation Phase. The WGs recommend that DANUBIUS secures financial commitments from current and future members for the Implementation and Operational Phases. DANUBIUS should better design the required ICT architecture and ensure adequate comprehensive data management. Finally, it should consider reviewing the timeline for rolling out its services and pay particular attention to the necessary construction permissions and procurement processes, which may be time consuming.

European Research Infrastructure for Heritage Studies (E-RIHS)

The ESFRI WGs consider that E-RIHS is progressing reasonably well in fulfilling the minimal key requirements for implementation. They identified some critical challenges that need to be addressed. Scientific goals and indicators need to be better described; a comprehensive strategy, considering international projects and infrastructures, toward implementation needs to be developed; effort is still required to reach an agreement on the ERIC statutes; there is a pressing need to secure the necessary financial commitments.

European Solar Telescope (EST)

The EST project is developed by a well-coordinated community strongly committed to the project. The international communities declared their interest to join the project. Due to the development of other projects, in particular the complementary/competing DKIST infrastructure, EST should be commissioned according to the schedule. The ESFRI WGs recommend EST to gather formal confirmation of the stakeholders' commitments (politically and financially), to adopt the legal entity that is necessary to ensure the sustainability of the RI, and to identify the location – and funding – of the Data Centre.

European Infrastructure for Multi-scale Plant Phenomics and Simulation (EMPHASIS)

ESFRI WGs acknowledge the EMPHASIS' vision to act as a Pan-European RI and recommend, in particular, to move beyond the network and act as a true RI. WGs also suggest highlighting

more the socio-economic impact of the project together with strengthening the user strategy and access policy. Finally, they recommend EMPHASIS to consolidate the members' commitment for the implementation phase, with particular attention to the financial aspect.

KM3 Neutrino Telescope 2.0 (KM3NeT)

The ESFRI WGs consider that KM3NeT project has been developing very well toward implementation in the 10-year framework. The WGs do not identify any critical issues. A particular recommendation highlights the need to keep the timeline of the project, since the scientific impact is expected to be very significant if the project is implemented on time.

The table below represents the overall marks given to the Projects for the Scientific and Implementation cases.

MONITORING OF ESFRI 2016 PROJECTS			
	<i>Scientific Case</i>	<i>Implementation Case</i>	<i>Overall</i>
ACTRIS	High	High	High
ANUBIUS	Medium/High	Medium	Medium
IRIS	Medium	Medium	Medium
IST	High	Medium	Medium/High
EMPHASIS	Medium/High	Medium/High	Medium/High
KM3NeT	Very High	High	High/Very High

Background information

During the preparation of the Horizon Europe Work Programme, it was noted that not enough support is provided to the ESFRI 2016 Projects that concluded their preparatory phase support projects. They still face bottlenecks to implementation and would benefit from a second round of funding, especially given the current Covid-19 crisis. Notably, these ESFRI projects may suffer from the transition to the Horizon Europe new framework programme and the possible lack of opportunities for supporting their development as fully-fledged pan-European research infrastructures.

For these reasons, the European Commission included a new topic in the Work Programme 2021/2022 specifically supporting the ESFRI 2016 Projects - HORIZON-INFRA-2021-DEV-02-02: Consolidation of the research infrastructure landscape – Individual support for ESFRI projects (excluding ACTRIS, which received funding under the last H2020 INFRADEV-03 call). This call addresses the key aspects identified during the ESFRI monitoring exercise of the 2016 Projects that could hamper their implementation and timely start of the operational phase.

Based on the recommendations stemming from the ESFRI monitoring exercise, support can be provided for activities such as: enlargement of the membership, establishment of the governance structure, securing long-term funding, finalization of the distributed architecture, development of ICT and data management solutions (including possible open access to data), development of access policies and users' strategies, consolidation of the international dimension, addressing staff and procurement related issues.