



FENIX
RESEARCH INFRASTRUCTURE

D1.5

Fenix Governance

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Executive Summary

This report documents the status of the delivery of the Fenix Governance structure. It includes a description of all established entities, their current composition and the relevant legal framework. All planned entities except for the Fenix Council have been established. The legal framework for the Fenix Council has been implemented, but with currently only two Fenix Communities involved, this entity is not expected to play an active role and therefore full instalment has been postponed.

The deliverable also describes the relation between the governance structure and the user communities served through the distributed e-infrastructure provided by the ICEI project.

Although not part of the governance structure, the concept for creating a Fenix User Forum is described as part of this deliverable. With this step the project aims to establish an additional communication channel to the users of the infrastructure.

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1. Introduction

The Interactive Computing E-Infrastructure (ICEI) project is executed on the basis of a Specific Grant Agreement (SGA) under the Framework Partnership Agreement (FPA) of the Human Brain Project (HBP). The goal of this project is the delivery of a federated e-infrastructure. For the involved supercomputing centres this project is used as an opportunity to agree on a longer-term collaboration on providing compute and data services in a coordinated manner, together with a set of services that facilitate the federation of all these services. This collaboration of the supercomputing centres is called Fenix. The ICEI project is a first implementation project, with structures defined in such a way that more projects could be added.

The setup of Fenix assumes that infrastructure funding is linked with given communities of researchers, which are called Fenix Communities. This leads to a model in which the Fenix parties act as Fenix Resource Providers that provide the given Fenix Communities with a fixed fraction of the resources available within the infrastructure. Through the HBP ICEI project, Fenix currently serves two communities, namely the brain researchers organised in the HBP and European researchers at large through PRACE.

Given this background, the governance structure for the HBP ICEI project foresees three different entities (see *Figure 1*):

- A **Technical Board** for leading project execution and coordinating daily work;
- An **Executive Board** as the key decision-making entity; and
- The **Fenix Council** as a body that allows for regular and formalised interaction with the Fenix Communities.

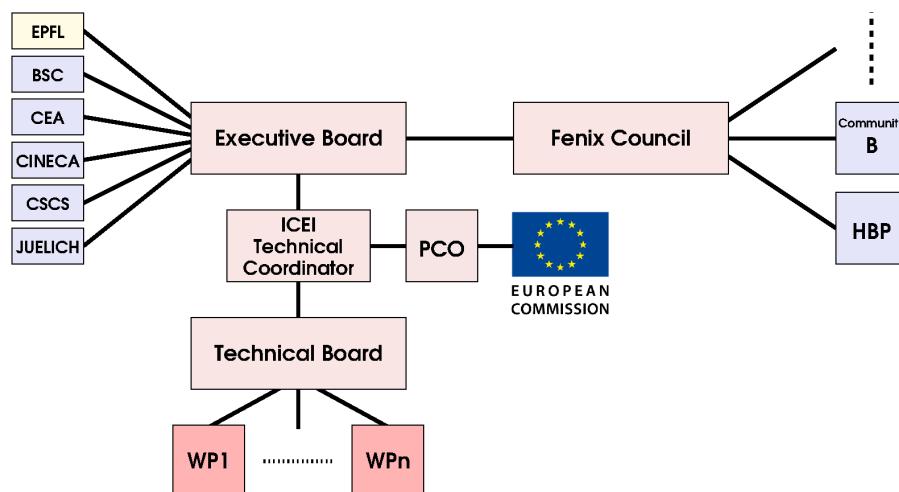


Figure 1: Originally planned ICEI/Fenix governance structure.

To provide a legal basis, the following agreements have been put in place:

- **ICEI Supplementary Consortium Agreement (ICEI-SCA):** This agreement between all beneficiaries supplements the HBP Framework Partnership Consortium Agreement (HBP-FPA-CA). All beneficiaries are per construction also party of the FPA and therefore party of the FPA-CA. The ICEI-SCA does not

overrule the HBP-FPA-CA. Due to potential conflicts with the HBP-FPA-CA the ICEI-SCA was approved by the HBP Directorate and the HBP Stakeholder Board before it was signed by the HBP Coordinator and the other ICEI project beneficiaries.

- **Memorandum of Understanding Regarding the Realisation of Fenix (Fenix MoU):** This legally non-binding agreement between the Fenix Resource Providers is the basis for Fenix and is constructed as an umbrella for possibly multiple project agreements as exist in the context of the HBP ICEI project.

In the following we provide details on the three governance entities and their relations to the listed agreements.

We furthermore introduce the Fenix User Forum. While it is currently not planned to be part of the governance structure, it is a space where users can organise themselves and are given the opportunity to influence the decisions on the future evolution of the e-infrastructure and its operation.

2. ICEI Technical Board

The Technical Board consists of the work package leaders plus one technical representative of each HBP ICEI project member institution without work package lead. Each member of the board has a deputy. The Technical Board is chaired by the Technical Coordinator. The Technical Board is composed of the Technical Coordinator plus the following work package leaders:

Work Package / Organisation	Leader / Representative	Deputy
WP1	Anne Carstensen (JUELICH)	Boris Orth (JUELICH)
WP2	Renata Gimenez (BSC)	Javier Bartolome (BSC)
WP3	Sadaf Alam (ETHZ)	Stefano Gorini (ETHZ)
WP4	Jacques-Charles Lafoucriere (CEA)	Gilles Wiber (CEA)
WP5	Debora Testi (CINECA)	Michele Carpené (CINECA)
EPFL	Marc Morgan	NN ¹

The role of the Technical Board is defined in the ICEI-SCA. It includes among others the following tasks and responsibilities:

- Management of the daily work of the project/infrastructure.
- Monitoring consumption of project resources and ensuring compliance with allocated resources.

¹ The representative of EPFL-PCO recently left this organization. After the deputy became the main representative, the deputy still needs to be nominated.

- Monitoring the utilisation of the ICEI infrastructure, assessing KPIs and reporting serious problems and deviations from performance targets to Executive Board.
- Management of risks as described in the ICEI project.
- Reviewing input received via the Fenix User Forum and taking necessary actions.

3. ICEI Executive Board

The Executive Board consists of one representative of each project member institution plus the Technical Coordinator (the latter without voting rights). Also here, for each board member a deputy is foreseen. Currently the Executive Board is composed as follows:

Beneficiary	Representative	Deputy
BSC	Javier Bartolome	Sergi Moré
CEA	Hervé Lozach	Jacques-Charles Lafoucriere
CINECA	Carlo Cavazzoni	Giuseppe Fiameni
EPFL-PCO	Christian Fauteux	Andrea Alonso-Allende Gamoneda
ETHZ	Thomas Schulthess	Colin McMurtrie
JUELICH	Thomas Lippert	Thomas Eickermann

While the Executive Board is intended to be the key decision-making body, its rights are restricted in order to avoid conflicts with the HBP-FPA-CA and to not restrict the rights of the HBP Directorate and the HBP Stakeholder Board. The Executive Board has therefore mainly a supervisory role with details defined in the ICEI-SCA. One of the important aspects to be supervised by the Executive Board is the infrastructure utilisation and the associated KPI as this is a key parameter for the success of the project and a low uptake of the resources could lead to an early end of the project. The latter would have significant financial impact on each of the ICEI partners.

While decisions related to the daily work are performed within the work packages or by the Technical Board, the Executive Board is in charge of decisions of major importance that concern the overall project. This includes decisions on proposals for non-material changes to the ICEI-SGA, proposals for material changes to the ICEI-SGA as long as they do not concern composition of the ICEI consortium, and approval of budget allocations. Furthermore, the Executive Board needs to approve tender documents and appoints the members of the Technical Board.

4. Fenix Council

The Fenix Council is a body defined in the Fenix MoU. This MoU foresees the Council to comprise one representative per community serviced through the Fenix infrastructure,

as well as one representative per resource provider, i.e. per MoU party. Furthermore, the following tasks are defined:

- Provide advice on the evolution of the Fenix Infrastructure by means of science cases and requirements definitions;
- Provide support for establishing resource allocation mechanisms and service level agreements;
- Review the status of the Fenix Infrastructure as well as resource allocation and utilisation.

Up to this point, the Fenix Council has not been installed and no inaugural meeting has taken place. The reason for this is that the number of Fenix Communities is still rather small. The tasks of the Fenix Council as listed above can currently more efficiently be managed without having the Council in place:

- The HBP project is closely involved in architecting the ICEI infrastructure. The community, e.g. during the HBP Summit, as well as the HBP governance bodies are regularly informed. More specific interaction with the community takes place through the definition of science and use cases.²
- Resource allocation mechanisms have been defined and established for the HBP and are being set up for PRACE through direct interaction with the HBP Directorate and the PRACE Board of Directors, respectively.

We will review the situation again in the future to assess whether the conditions for installing a Fenix Council that plays an active role have changed, e.g., because new Fenix Communities are created, or because the currently established involvement of the Fenix Communities turns out to be unsatisfactory from the perspective of any of the stakeholders.

5. Fenix User Forum

The originally planned Fenix Council should serve, among others, the goal of establishing formalised relations with the Fenix users. To ensure that users have a voice, the project is working towards the establishment of a Fenix User Forum. It will allow Fenix users to express their future needs as well as to provide feedback on the current services and resources of the Fenix Research Infrastructure.

The concept for the Fenix User Forum can be found in Annex A of this document.

6. Relations to Fenix user communities and management of user needs

The ICEI governance entities interact in various ways with entities representing user communities as well as users themselves (for a graphical representation see Figure 2):

² See ICEI deliverable D3.6 ("Scientific Use Case Requirements Documentation").

- HBP Directorate (HBP DIR): The ICEI project has the obligation of providing a fraction of the ICEI infrastructure resources to the Human Brain Project (HBP) and provide HBP users with programmatic access. The decisions on resource allocations for HBP users are made by the HBP DIR, which is supported by the EBRAINS Infrastructure Allocation Committee (IAC).³
- PRACE Board of Directors (PRACE BOD): Another part of the resources available through the ICEI infrastructure are made available to European users at large through PRACE. The allocation mechanism as well as the calls for proposals is led by the PRACE BOD.
- Fenix User Forum (FUF): The ICEI project is in the process of setting-up the FUF as described in section 5. There are various interaction points between ICEI entities and the FUF foreseen:
 - WP2 ("Dissemination and maximising impact measures") is in charge of providing organisational support to the FUF. This includes, in particular, operating and monitoring of the communication platform, conducting user surveys and organisation of FUF meetings. Feedback collected by the FUF will be reported by WP2 to the Technical Board that will be in charge of taking necessary actions. WP2 will be responsible for taking necessarily communication actions to provide feedback to the users organised in FUF.
 - Expecting requirements and needs changing during the operation of the ICEI infrastructure, WP3 ("Technical specification and coordination") is in charge of running an Infrastructure Requirements Management Workflow (see Annex B).
 - WP4 ("Procurement, deployment and operation") is in charge of operating the ICEI infrastructure and will monitor communication on the FUF's communication platform for operational issues and use this platform for providing information relation to operational issues. WP4 will report identified issues to the Technical Board.
- Fenix applicants: The technical review of applications for ICEI resources is performed by members of the ICEI project. In case technical issues are identified suitable experts and operational teams are being involved to address them. WP5 ("Resource allocation policies design and implementation") is in charge of implementing the resource allocation process, which in practice is managed by the Project Coordination Office (PCO).

The ICEI project has the challenge of managing potential discrepancies between user needs, which are expected to be changing throughout the project, and the hardware equipment, which was either already available or needed to be procured at an early point of the project and which cannot be replaced during further execution of the project. The possibility of such discrepancies occurring results in a risk of low utilisation of the ICEI infrastructure. To mitigate this risk, the following mechanisms are foreseen:

³ For small-scale projects the HBP DIR delegated the decision-making power to the EBRAINS IAC.

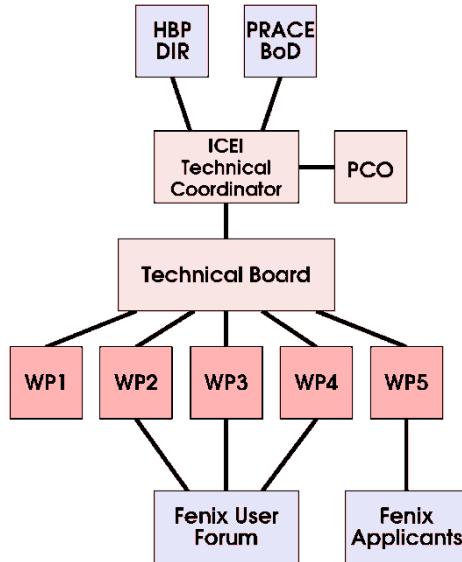


Figure 2: Interactions with community organisations (top) and users (bottom).

- While the hardware equipment will stay as deployed, considerable flexibility remains in the way how these hardware resources are provisioned. The Technical Board together with the concerned site will decide on reconfiguration of hardware resource provisioning based on an evaluation of the resource consumption by WP4 as well as an assessment of emerging user needs by WP3.
- To meet the specific risk of HBP users not being able to utilise the foreseen fraction of the ICEI resources. In case, an underutilisation is identified, the Technical Board can propose to increase the amount of resources allocated to PRACE users with the goal of having 40% of the resources being made available to European users. The ICEI Executive Board and the HBP Directorate need to approve this proposal before it can be implemented.

7. Summary and Outlook

In this report we have documented the current status of the ICEI governance structure. While the ICEI Technical Board and the ICEI Executive Board are established and operational, the instalment of the Fenix Council has been postponed. Different examples for involvement of the Fenix Communities have been provided to support our assessment that the Fenix Council can currently not be expected to significantly help improve this involvement of the Fenix Communities.

Annex A: Approach to Creating a Fenix User Forum

The Fenix User Forum (FUF) is an organisation that has the goal of facilitating interaction between users and Fenix as well as among the users. It will allow Fenix users to discuss and share their experiences, to express their future needs as well as to provide feedback on the current services and resources of the Fenix Research Infrastructure. The added value for the users is that they benefit from shared experiences and may impact the future operation and further evolution of the Fenix infrastructure. The FUF will be supported and coordinated by the Fenix team, but it will not be orchestrated by the Fenix Resource Providers to allow this being a primarily user-driven organisation.

Objectives

The main objective of the FUF is to establish a communication channel between Fenix resource providers and Fenix users on the following topics:

- Current and future user needs;
- Experiences and best practices for using the Fenix Research Infrastructure;
- User satisfaction.

Fenix will work on creating suitable means for communication such as mailing lists, wiki, discussion forums and in-person meetings.

Members

The FUF will be formed by the following members:

- Fenix users (including also potential and rejected users)
- Fenix Resource Providers
- EBRAINS Infrastructure Allocation Committee (IAC) and other members of resource allocation committees
- Other people interested in using ICEI/Fenix infrastructure services

All FUF members are subscribed to the FUF communication platform.

Organisation

For the time being, no formal organisational structure is foreseen that would, e.g., allow for decision making within the FUF. This topic will be addressed once the FUF has been established with a sufficient level of Fenix user engagement.

Communication efforts

To facilitate and nurture communication within the FUF, Fenix will engage in the following efforts:

- Setup and operate a FUF communication platform to which candidates for becoming a FUF member are invited to subscribe to. The platform will allow members to post content and facilitate discussions, e.g., about best practices. The following technical solutions for such a forum are considered: Google groups, Groups.io, Basecamp.
- Conduct user surveys and provide feedback forms⁴ that allow to measure user experience (following, e.g., the Net Promoter Score approach) and collect input for further improvement and evolution of the infrastructure.
- Organise regular FUF meetings, preferably in the context of events visited by Fenix users, e.g. during the HBP Summit or EuroHPC Summit Week.
- Fenix will use the information received through the FUF to improve the communication about Fenix, e.g., by publishing success stories. This will be done in close coordination with the provider of the information.
- Fenix will involve users through the FUF in a requirements management workflow to allow users to submit new requirements and to review technical analysis of submitted requirements, which will be the basis on which Fenix will accept or reject new requirements.

⁴ For example: <https://research.csc.fi/-/customer-survey-results>, <https://research.csc.fi/support>

Annex B: Infrastructure Requirements Management

Fenix expects changing user needs and requirements during the lifetime of the Fenix infrastructure. It therefore plans to put workflows for Infrastructure Requirements Management in place. It comprises two parts: Process #1 defines how new requirements are submitted, analysed and, finally, accepted or rejected. Process #2 is about implementation of new requirements. We restrict us here to process #1, because only this involves interaction with users.

Figure 3 shows a graphical representation of process #1. New requirements, which are submitted are analysed by an ICEI expert taking the role of a requirements engineer. This may lead to modifications that can be reviewed by users. The Technical Board finally decides on whether a requirement is accepted (with possibly no action required) or whether it is rejected.

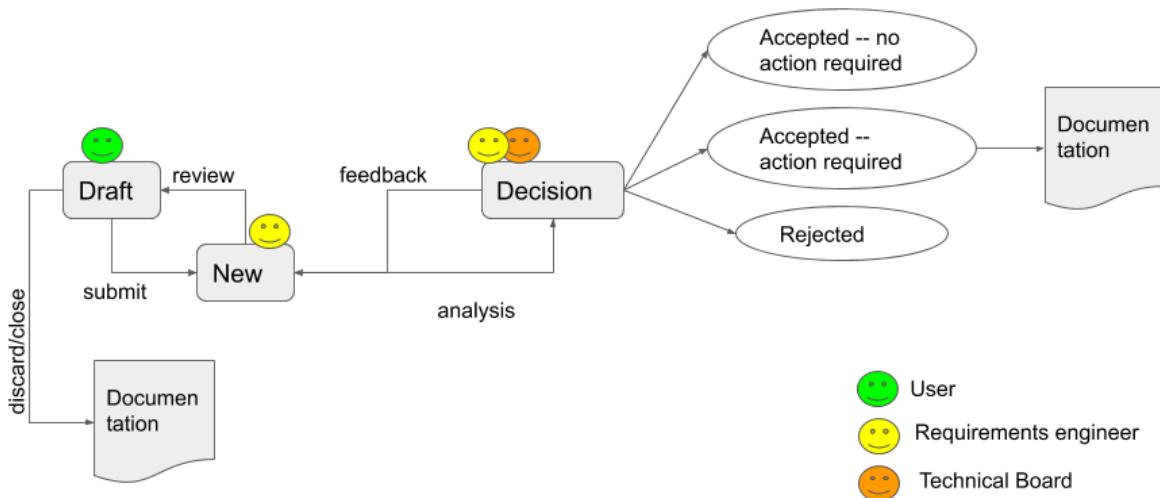


Figure 3: Workflow for Infrastructure Requirements Management.