How to apply for computing, storage and cloud resources

HBP summit 2021

Valentina Armuzza & Anna Lührs

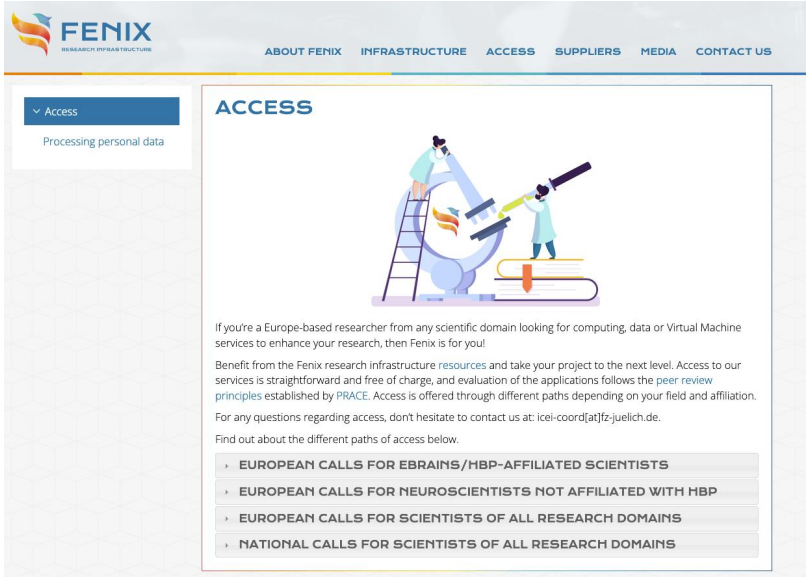
The ICEI project has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No 800858.

User Access to the Fenix Infrastructure

- Fenix Infrastructure is open to users at different levels and from **multiple user communities**
- Access is free of charge and granted to users through an **excellence-based peer-review** procedure
  - Currently, two communities and respective access procedures:
    - Continuous call for HBP members, EBRAINS users and neuroscientists
    - Quarterly PRACE-ICEI calls for European researchers at large

➔ Allocation committees independent from Fenix Infrastructure Providers

➔ **See Fenix website for details:** https://fenix-ri.eu/access



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Which resources are available?

- The Fenix infrastructure offers computing, cloud and storage resources

FENIX RESEARCH INFRASTRUCTURE

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Infrastructure / Resources / Available Resources

- Infrastructure
- Resources
  - Available Resources
  - Planned Resources

AVAILABLE RESOURCES

The ICEI project is currently able provide researchers with access to resources listed in the table below:

Component	Site (Country)	Total ICEI (100%)	Minimum Request	Technical Details
Scalable Computing Services				
Piz Daint Multicore	CSCS (CH)	250 nodes	1 node	- Memory per node: 64 GB, 128 GB - Compute nodes/processors: 1813 Cray XC40 nodes with Two Intel® Xeon® E5-2695 v4 @ 2.10GHz (2 x 18 cores) CPUs - Interconnect configuration: Cray Aries For more details click here.

https://fenix-ri.eu/infrastructure/resources/available-resources

- All 5 Fenix sites involved in the ICEI project now offer resources: BSC, CEA, CINECA, CSCS and JUELICH

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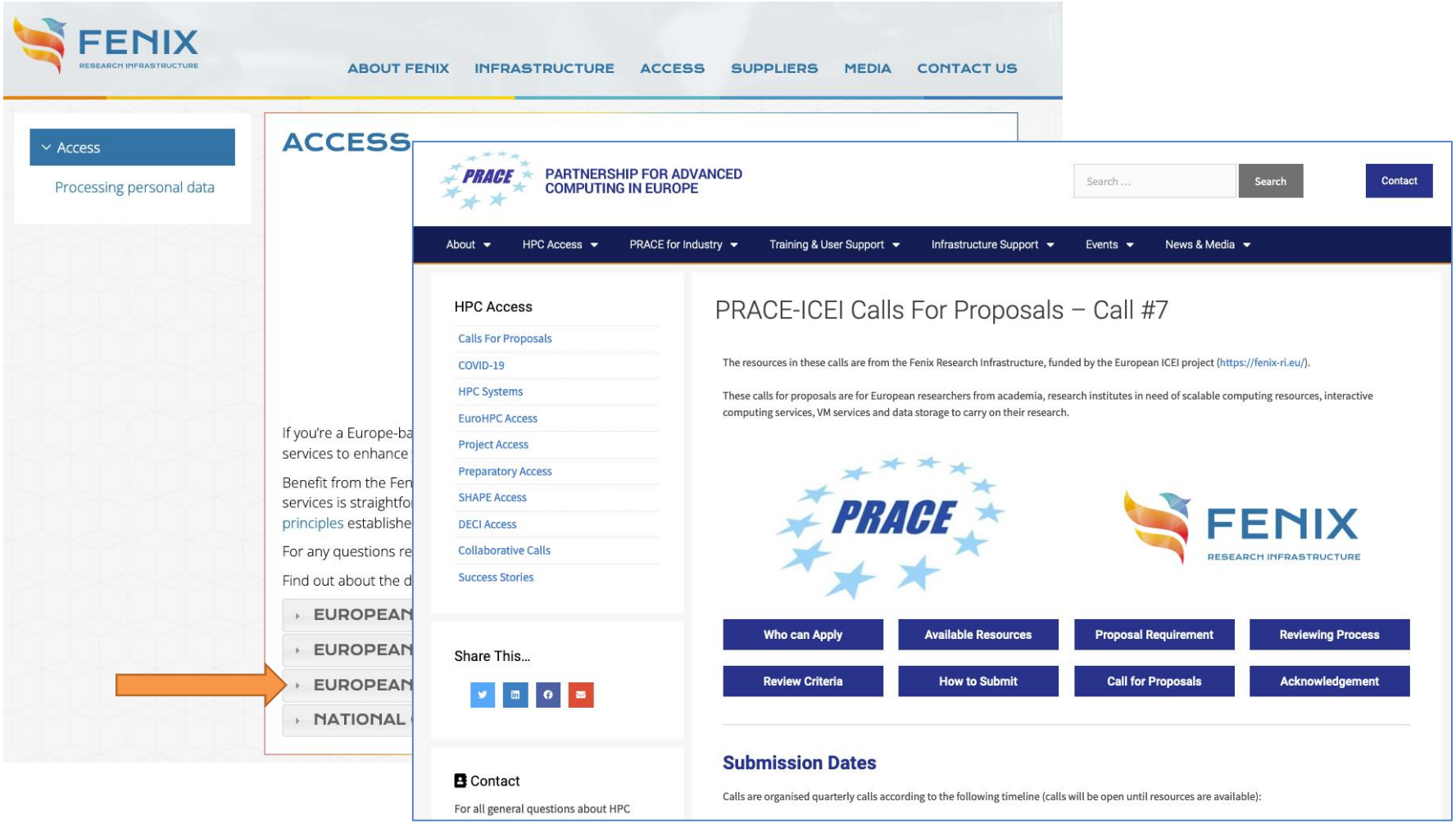
Resource allocation procedure – peer review process

- **Who** can apply for using resources?
  - European researchers (PIs, PhD students), usage of resources is free of charge
- **How** does the application process work?
  1. Submission of a proposal through the new online application system
     - describe research project + how resources will be used to achieve the goals
  2. Technical + scientific review of proposals (excellence-based peer review procedure)
     - shortened procedure for small-scale projects: "Fast Track" (no scientific review)
  3. Applicants receive notification of review results and access to resources is granted usually within 1-2 months
- **Questions and support:** ICEI Project Management Office – ICEI PMO
  - Point of contact for any questions about the available resources, the review process and allocation procedure: icei-coord@fz-juelich.de
  - Support with the preparation of project proposals
- **Where** to find the instructions and how to apply?

Access for European researchers at large: via PRACE



https://prace-ri.eu/hpc-access/collaborative-calls/

Access for neuroscientists: via HBP/EBRAINS

Human Brain Project

EBRAINS

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- Access
  - Processing personal data

ACCESS

If you're a Europe-based researcher from any scientific domain looking for computing, data or Virtual Machine services to enhance your research, then Fenix is for you!

Benefit from the Fenix research infrastructure resources and take your project to the next level. Access to our services is straightforward and free of charge, and evaluation of the applications follows the peer review principles established by PRACE. Access is offered through different paths depending on your field and affiliation.

For any questions regarding access, don't hesitate to contact us at: icei-coord[at]fz-juelich.de.

Find out about the different paths of access below.

- EUROPEAN CALLS FOR EBRAINS/HBP-AFFILIATED SCIENTISTS
- EUROPEAN CALLS FOR NEUROSCIENTISTS NOT AFFILIATED WITH HBP
- EUROPEAN CALLS FOR SCIENTISTS OF ALL RESEARCH DOMAINS
- NATIONAL CALLS FOR SCIENTISTS OF ALL RESEARCH DOMAINS

Neuroscientists through HBP via HBP/ EBRAINS Call

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Access for neuroscientists: via HBP/EBRAINS

- General hints for proposal preparation
  - The length of the proposal is not prescribed but should be in a reasonable relation to the amount of required resources
    - Provide just a few sentences per question when asking only for a few VMs
    - Proposals requesting >5% of any of the available resources will undergo a scientific review - provide details that are necessary for an (external) scientific reviewer to assess scientific excellence
  - Proposals can be submitted at any time, i.e. you do not have to worry about hard deadlines
  - Light weight application process, the answers to the questions in the application process can usually be relatively short
  - The process is flexible and resources can be made available to a project before a final decision is made
  - Do not hesitate to ask for support to prepare an application: icei-coord@fz-juelich.de

New online application system

- For HBP/EBRAINS scientists and the neuroscience community:
  - Until September 2021
    - Proposal was written in Word, based on a template
  - Since September 2021
    - An online application and review system has been put in place.
    - In case of any questions or issues with the application system: please inform icei-coord@fz-juelich.de
    - The application process is described in the Fenix-ICEI collab: https://wiki.ebrains.eu/bin/view/Collabs/fenix-icei/2.%20Fenix%20services%20and%20resources/
    - User guides are available as well: https://wiki.ebrains.eu/bin/view/Collabs/fenix-icei/Online%20application%20system%20-%20User%20guides/
- PRACE-ICEI calls are handled via the PRACE mechanisms as before

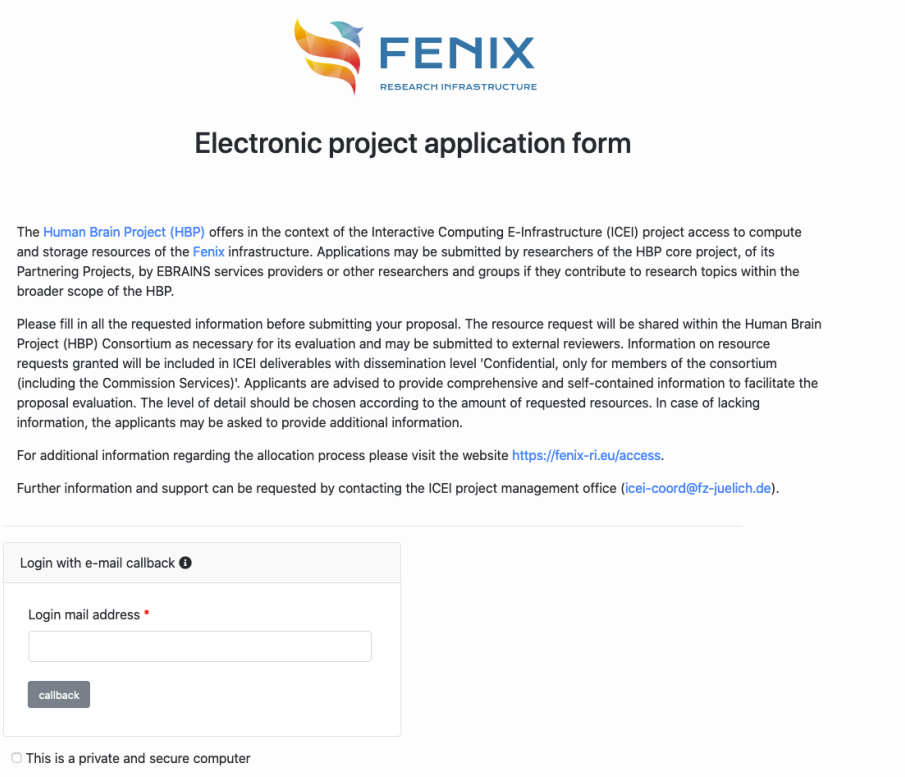
Login

Online application system

Online application system: https://jards-ebrains.fz-juelich.de/

1. Visit https://jards-ebrains.fz-juelich.de/
2. Enter your email address, click on "Callback"
3. You receive an email from noreply@fenix-ri.eu with the subject "*Project application identification*". Click on the embedded link or copy-paste it into the browser.

- There are no user accounts. The system works with callbacks. Make sure to always use the same email address!



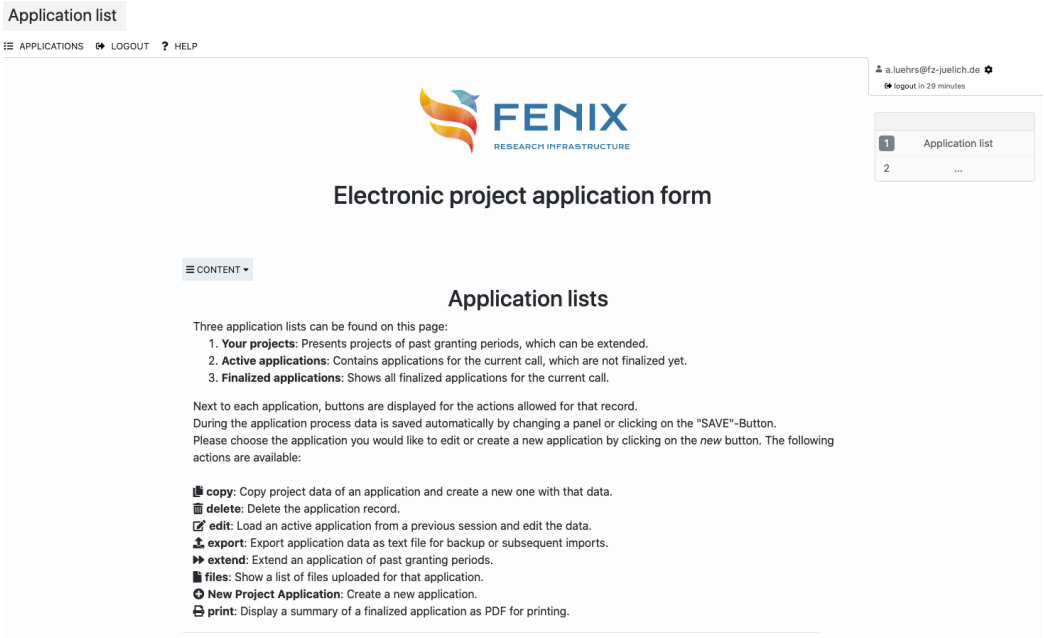
FENIX RI EBRAINS

The overview page

Online application system

On the overview page, you can see:

- List of all active applications (i.e. proposal you are still working on, which are not yet submitted)
- List of finalised applications
- New proposals can be created also based on an existing one (as a renewal), if the previous one was already prepared in this online system.
  -> Most fields will be pre-filled.



Preparing a new proposal I

New Project Application

Online application system

- Applications can be prepared and submitted by the PI, or by a “person to contact” (PC) on behalf of the PI.
- The system will ask the same questions that were previously asked in the paper-based workflow, but now on multiple pages.
- Applications can be saved and continued later on.
- It is possible to switch back and forth between pages, just make sure to use back next at the bottom or SAVE at the top to save progress.
- The menu on the right shows all sections and allows to switch fast to another one.
- Mandatory fields are marked with *.
- Detailed instructions are in the user guides: https://wiki.ebrains.eu/bin/view/Collabs/fenix-icei/Online%20application%20system%20-%20User%20guides/For%20Applicants/

Application ID: 20546

1	Application list
2	Choose PI and PC
3	Applicant's data
4	Project type
5	Project summary
6	Scientific objectives
7	Resources
8	Dissemination
9	Finalize

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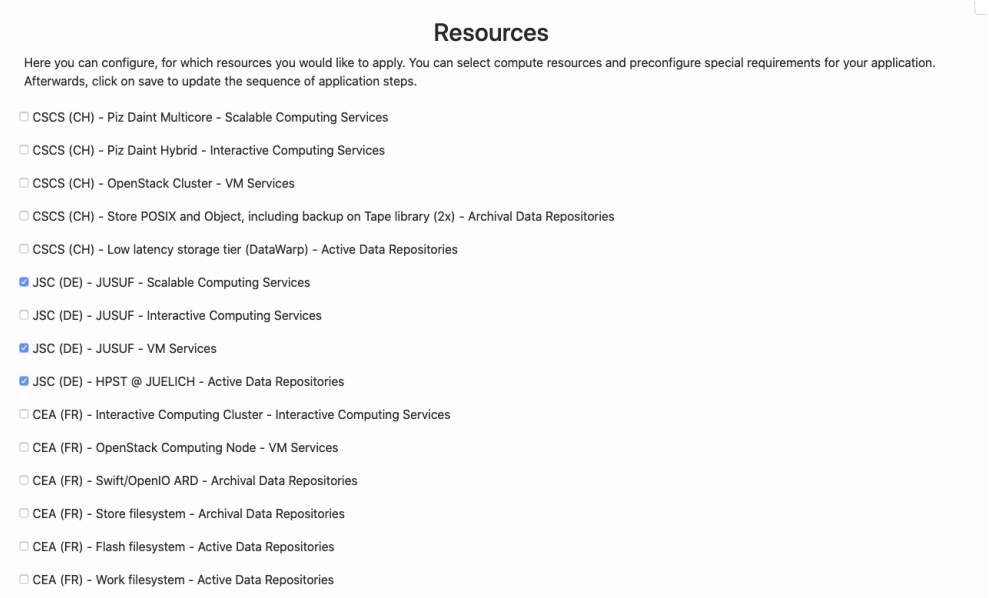
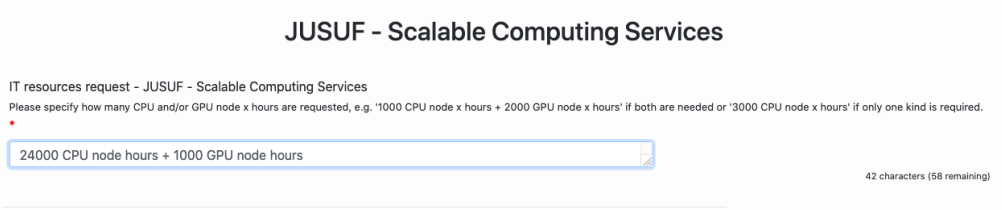
Preparing a new proposal II

Online application system

Selecting resources:

1. Select all systems from the list, which you would like to apply for
   - This page also asks for the Technical implementation plan a few more details
2. Define on the following pages for each of them, how many resources on the respective system are required.
   - Make sure to follow the instructions in particular with regards to units.





Preparing a new proposal III

New Project Application

Online application system

- It is possible to upload a PDF document with additional information.
- Once you have clicked the FINALIZE button on the last page, the proposal will be processed by the ICEI PMO.

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Electronic project application form

Finalize application

Thank you for your resource application. You will receive a confirmation of your submission by email. Received proposals will first be reviewed by the ICEI team for technical viability before being forwarded to the EBRAINS Infrastructure Allocation Committee (IAC) that manages the review for scientific excellence. Depending on the number of requested resources, awarding of the requested resources will be decided by HBP's Directorate or the IAC. In case more resources are being requested than can be allocated, a ranking will be performed based on the review results.

This research has received funding from the European Union's Horizon 2020 Framework Programme for Research and Innovation under the Specific Grant Agreement No 800858 (Human Brain Project SGA ICEI) and Specific Grant Agreement No. 945539 (Human Brain Project SGA3).

back FINALIZE

a.luehrs@fz-juelich.de

logout in 20 minutes

Application ID: 20546

1	Application list
2	Choose PI and PC
3	Applicant's data
4	Project type
5	Project summary
6	Scientific objectives
7	Resources
8	JUSUF - Scalable Computing Services
9	JUSUF - VM Services
10	HPST @ JUELICH - Active Data Repositories
11	Dissemination
12	Finalize

THANK YOU

fenix-ri.eu

@Fenix_RI_eu

icei-coord@fz-juelich.de

Access for neuroscientists: via HBP/EBRAINS

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EBRAINS

3. Scientific methodology, goals, impact and implementation plans

Please explain the methodology that will be used to achieve the scientific goal of the project, highlighting scientific excellence, novelty and potential for high European and international impact of the project.
What are possible transformative aspects and expected advances?

- Details on scientific background and objectives of the project (section 3)
  - What are possible advances when the project goals are reached?
  - Level of detail depends on the type of project/amount of resources:
    - If a relatively **small amount of resources**, e.g. for testing, is requested, only short description of project goals and summary of the impact of the project results on future research projects etc.
    - If a **larger amount of resources** is requested (> 20000 node*hour), more detailed description on the methodology that will be used to achieve the scientific goal(s) (1-2 pages), also addressing novelty and impact of the project (European, international level)

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4.2 Technical implementation plans

Please explain why the requested resources are needed to achieve the scientific goal.
What kind of jobs are planned (number and type of nodes, typical job duration)? How much storage needs to be available to execute the jobs? Please list the software components, HBP platform tools and services that are needed?

4.3 Do you currently use your software on a cluster or supercomputer?

Please select "Yes" or "No", if you selected "Yes", please specify, whether you have optimized, scaled, benchmarked your code before. What is the current job configuration (number of nodes, execution time, etc.)? What is the expected job configuration on ICEI resources?

- Technical details on the project (section 4.2)
  - Why are the requested resources needed to achieve the (scientific) goals?
  - What kind of jobs are planned (duration, number/type of nodes)?
  - How much storage needs to be available to execute the jobs?
  - Which software, EBRAINS/HBP platform tools and services are needed?
- Technical information if software is currently used on a cluster/ supercomputer (section 4.3)
  - YES/NO -> if YES, additional details on code optimization and job configuration

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5. Resource management and work plan

Please describe how you intend to manage the requested resources, e.g. how will it be ensured that all resources are consumed by end of the project? How will input data and result data be moved to or from the system?

- What is the plan for resource usage, how will you make sure that all resources are consumed by the end of the project and how is data transfer managed? (section 5)
  - E.g. „The total duration of the project is planned to be x months; y tasks will be carried out as follows. Task 1: …; Task 2 …; The total time required for Tasks 1 and 2 is around z months and will mostly involve using Interactive Computing resources; Task 3 …”

Access for neuroscientists: via HBP/EBRAINS

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Contents

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Summary

Please provide one paragraph summarizing the scientific question(s) that you intend to address using these resources. What is the scientific goal?

Short summary of project goals (< 1000 characters)

1. Relation to the HBP's Description of Action (DoA)

Please provide information on the related work packages & tasks and explain how the project relates to the goals and objectives of HBP.

Relation to HBP SGA3 (WP, task, CDP) or to HBP objectives

2. Preliminary work (in case of a project extension)

Please provide a brief summary of project results obtained from your first resource allocation.

Project extensions: Summary of results obtained in the context of the project

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EBRAINS

4. IT resources requested

4.1 Resources

Resource	Units	Quantity (required in total)
Resources at CSCS		
Piz Daint Multicore (Scalable compute)	node×hour	
Piz Daint Hybrid (Interactive compute)	node×hour	
OpenStack Cluster (VMs[2])	# x VM model(s)[3]	
Store POSIX and Object (storage in ARD[4] incl. backup on Tape library)	TByte	
Low latency storage tier (storage in ACD[4])	TByte×day	
Resources at JUELICH		
JUSUF (Interactive/ Scalable compute)	node×hour	
JUSUF Virtual machines (VMs[2])	# x VM model(s)[3]	
HPST @ JUELICH (storage in ACD[4])	TByte×day	
Resources at CEA		
Interactive Computing Cluster	node×hour	
Openstack Compute Node (VMs[2])	# x VM model(s)[3]	
Swift/OpenIO (storage in ARD[4])	TByte	
Store filesystem (storage in ARD[4])	TByte	
Flash filesystem (storage in ACD[4])	TByte×day	
Work filesystem (storage in ACD[4])	TByte×day	

Comments on requested resources:

Table of available resources on page 3

[2] Fenix Virtual Machine (VM) Services (details on Fenix website: https://fenix-ri.eu/infrastructure/services/virtual-machine-services)

[3] e.g. 4x gpp.s; 1x gpu.l (document on Fenix VM Services Models: https://fenix-ri.eu/sites/default/files/public/file-uploads/Fenix%20VM%20Models_8.pdf)

[4] Fenix Data Services (details on Fenix website: https://fenix-ri.eu/infrastructure/services): Archival Data Repository (ARD), Active Data Repository (ACD)

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4.4 Do you require on-boarding on how to use the requested resources?

☐ NO
☐ YES

4.5 Does this project involve processing of personal data as defined by GDPR?

☐ NO
☐ YES

If you selected "Yes" or if you will be processing anonymised human data, please specify what kind of data will be processed.

Do you need practical guidance to start using the resources granted to your project?

Details on regulations for processing of personal data: https://Fenix-ri.eu/content/processing-personal-data

6. Data management plan

Do you agree and plan to comply with the current version of the HBP Data Management Plan[5]?

☐ NO
☐ YES

If you selected "No" then please provide your data management plan. Please try to address the following questions, providing very short answers and/or references:

1. What is the purpose of the data collection/generation and its relation to the objectives of the project?

2. What types and formats of data will the project generate/collect?

3. How do you plan to address the FAIR data management principles such that the data produced in this project will become findable, accessible, interoperable and re-usable?

Do you agree and plan to comply with the HBP Data Management Plan*?

* The HBP Data Management Plan is defined in HBP SGA2 deliverable D11.3.1, which is a non-public deliverable that is accessible to HBP members. You can ask us at icei-coord@fz-juelich.de for a copy.

FENIX RI EBRAINS

Access for neuroscientists: via HBP/EBRAINS

7. Dissemination

Please describe planned channels and resources for dissemination and knowledge exchange. If the requested resources are used to provide EBRAINS services, then describe plans for attracting users for these services. In other cases, please explain where you plan to publish results.

8. How did you become aware of HBP/EBRAINS resources offered within the Fenix infrastructure?

- ☐ Fenix website (https://fenix-ri.eu/)
- ☐ Human Brain Project website (https://humanbrainproject.eu/)
- ☐ EBRAINS website (https://ebrains.eu/)
- ☐ Fenix Twitter account (@Fenix_RI_eu)
- ☐ EBRAINS social media (Twitter, Facebook, LinkedIN, Instagram)
- ☐ HBP social media (Twitter, Facebook)
- ☐ EBRAINS Collaboratory (https://wiki.ebrains.eu/bin/view/Collabs/fenix-icei/)
- ☐ Fenix webinar (https://fenix-ri.eu/media/webinars)
- ☐ Presentation/representation at a conference/workshop/tutorial
  - ☐ by Fenix/ICEI project member
  - ☐ by EBRAINS/HBP Outreach team or member
  - ☐ by Fenix user
  - ☐ other (please specify):
  - ☐ unknown
- ☐ Other (please specify):

9. References

Please provide recent/most important bibliographic references that are relevant to the project.

[<ref number>] <reference>

Description of any plans for dissemination and sharing of project results

- e.g. scientific publications, availability of the code (open access?) and generated data (public data base?) etc.
- In case EBRAINS service is provided, plans for attracting users for offered service