



FENIX

RESEARCH INFRASTRUCTURE

Federated High Performance and Cloud Computing and Storage e-Infrastructure Services

Workshop on the European HPC ecosystem during EHPCSW and
PRACEdays 22, Paris
22.03.2022, Sadaf Alam (CSCS)



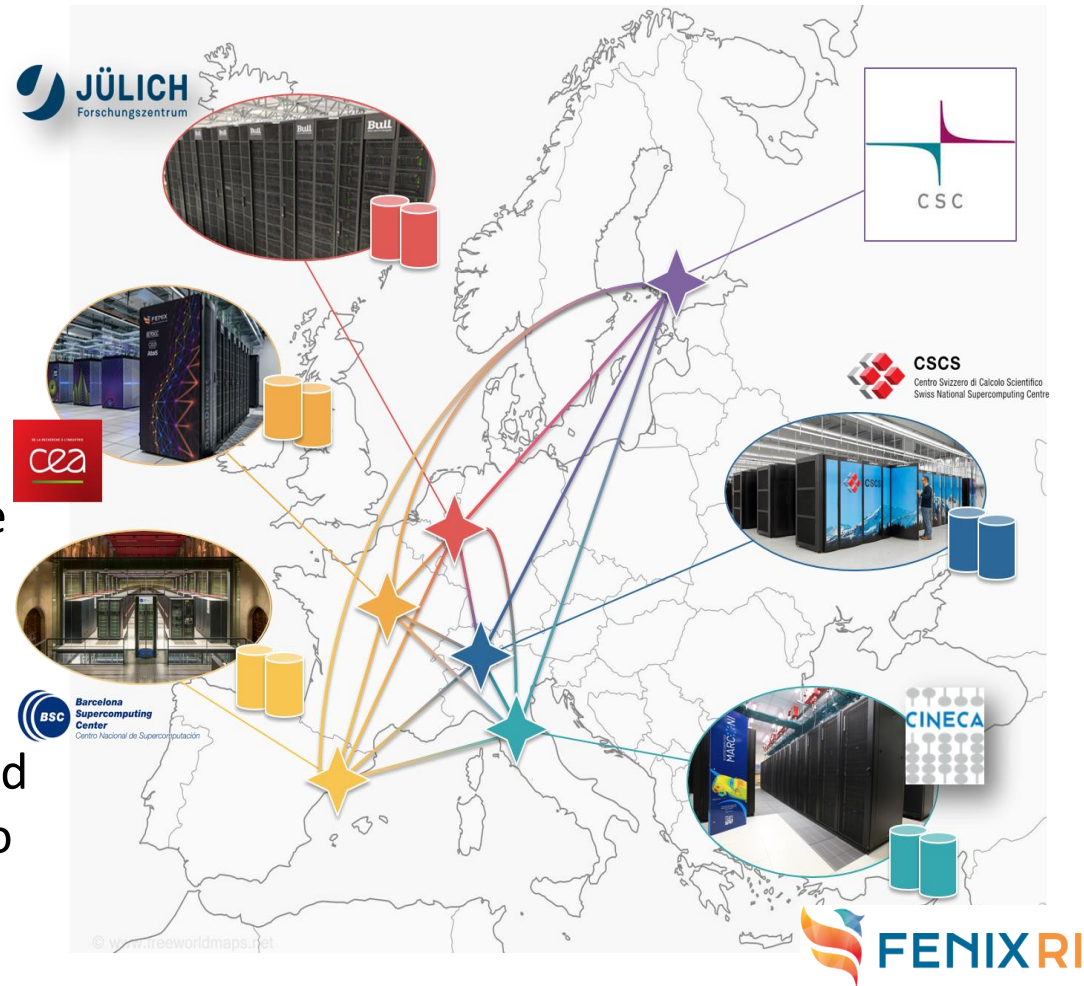
The ICEI project has received funding from the European Union's Horizon
2020 research and innovation programme under the grant agreement No 800858.

Fenix Mission Statement

Collaboration of HPC centres to harmonise and federate e-infrastructure services to support a variety of science and engineering communities

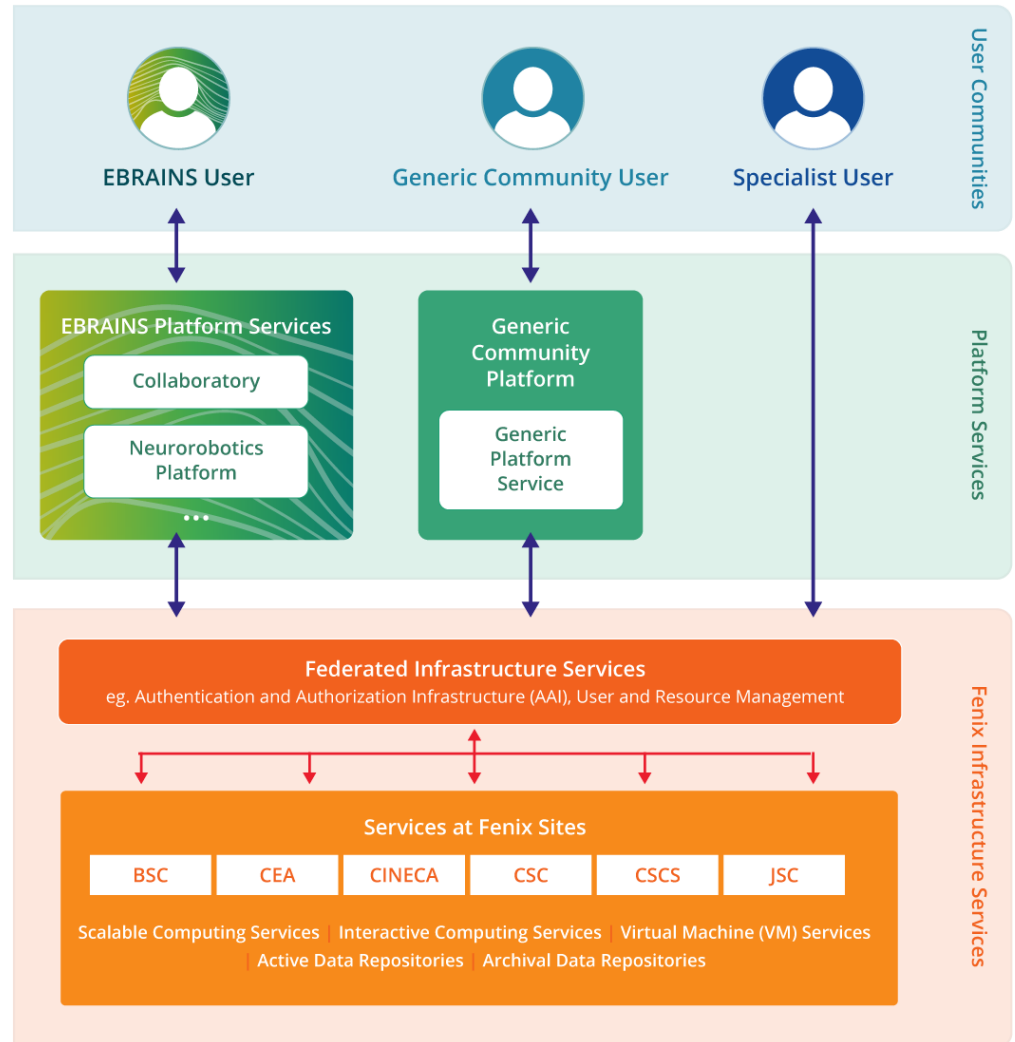
Ambition to sustainably serve science and engineering domains that strongly benefit from diverse e-infrastructure services for collaborative research

Leveraging national, European and international funding programs to realise the compute, storage and network resources sustaining the e-infrastructure services



Fenix within a European Ecosystem

- User communities = applications and workflows developments and execution
- Platform services = community research infrastructure (RI) services, operation and development
- Infrastructure services
 - Federation layer e.g. GEANT eduTEAMS AAI proxy
 - HPC and cloud computing and storage services



Fenix Architecture

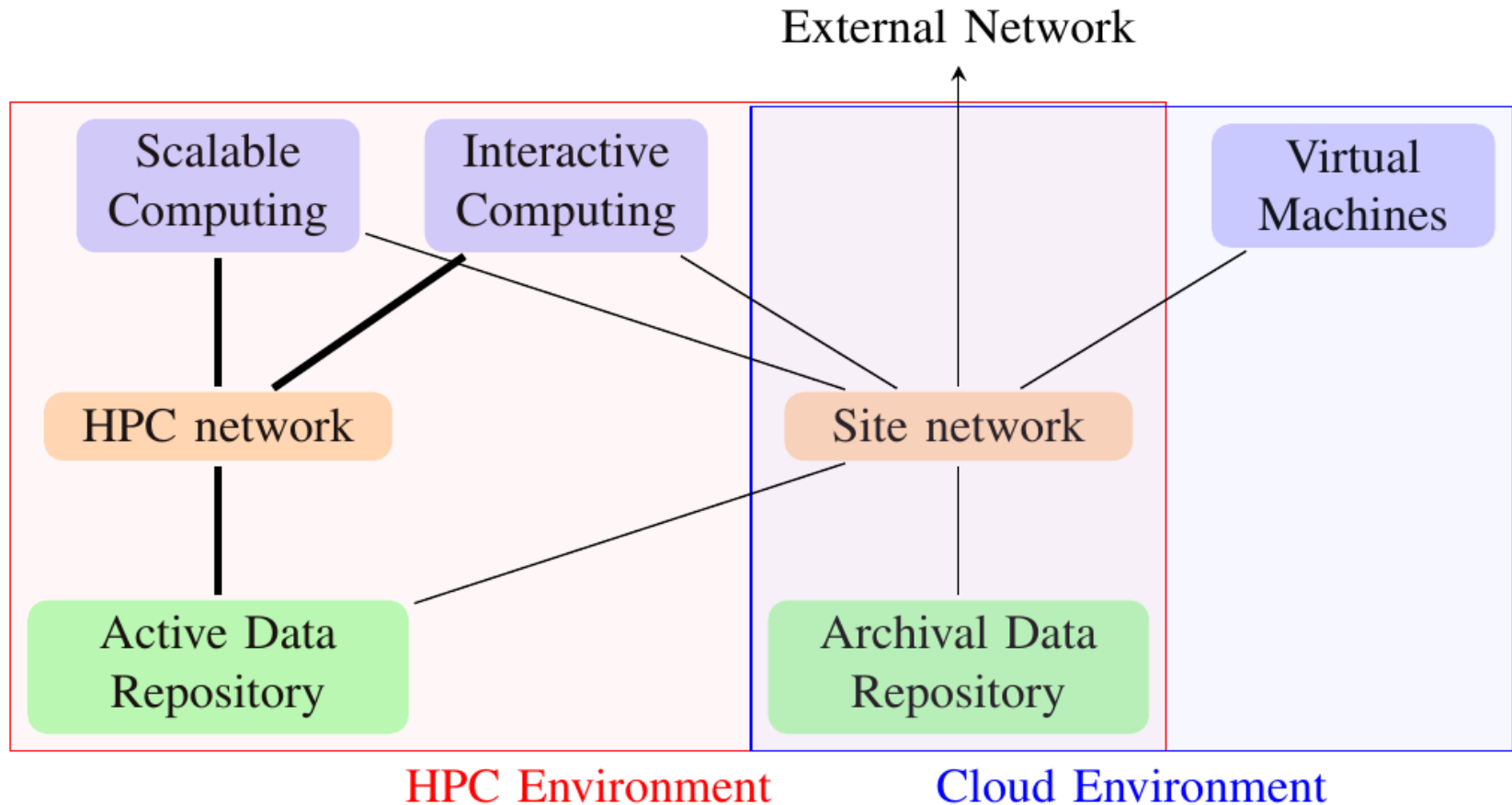


Federation services

- Authentication and Authorisation Services (AAI)
- Fenix User and Resource Management Services (FURMS)

Choose Your Identity Provider

Examples: Science Institute, Lee@uni.edu, UCI



ICEI Co-design Project to Implement Fenix

- Interactive Computing E-Infrastructure (ICEI)
 - Co-funded by the EC SGA under the Human Brain Project (HBP) Framework
 - 5 European supercomputing centres (PRACE Hosting Members) involved
- EBRAINS research infrastructure:
<https://ebrains.eu/>



How to get 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** from any community
- Allocation committees independent from Fenix Infrastructure Providers

FENIX
RESEARCH INFRASTRUCTURE

ABOUT FENIX INFRASTRUCTURE ACCESS SUPPLIERS MEDIA CONTACT US

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

Which computational resources are available?

Available computational resources are provided by the ICEI project, details on available resources are published on the Fenix website:

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
Piz Daint Multicore	CSCS (CH)	250 nodes	1 node	<p>Scalable Computing Services</p> <ul style="list-style-type: none">- 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 <p>For more details click here.</p>

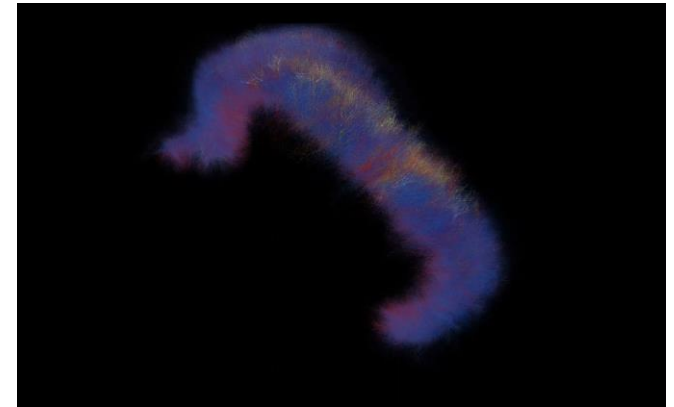
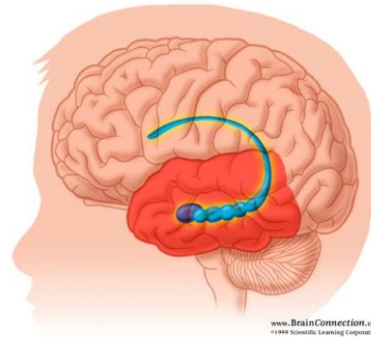
<https://fenix-ri.eu/infrastructure/resources/available-resources>

Example of a Fenix Use Case

Large scale simulations of models: Hippocampus

Project studies mechanisms that may contribute to the emergence of higher brain functions at the cellular and behavioural level in the hippocampus

PI: M. Migliore, CNR, Italy



© Michele Migliore & HBP Hippocampus Team

Required services of the Fenix Infrastructure:

- **Scalable Computing Services** - for running large-scale simulations using Neuron
- **Active Data Repositories** - as temporary storage [write from simulation, read for analysis]
- **Interactive Computing Services** - for analysing data produced by simulations
- **Archival Data Repositories** - for storing final data products

Success story on Fenix website:

<https://fenix-ri.eu/news/icei-resources-used-first-detailed-3d-hippocampus-model>



THANK YOU



fenix-ri.eu



[@Fenix_RI_eu](https://twitter.com/Fenix_RI_eu)



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**Note: All users and communities are welcome to
apply for resources through open calls**