

NAISS – User Support Strategy

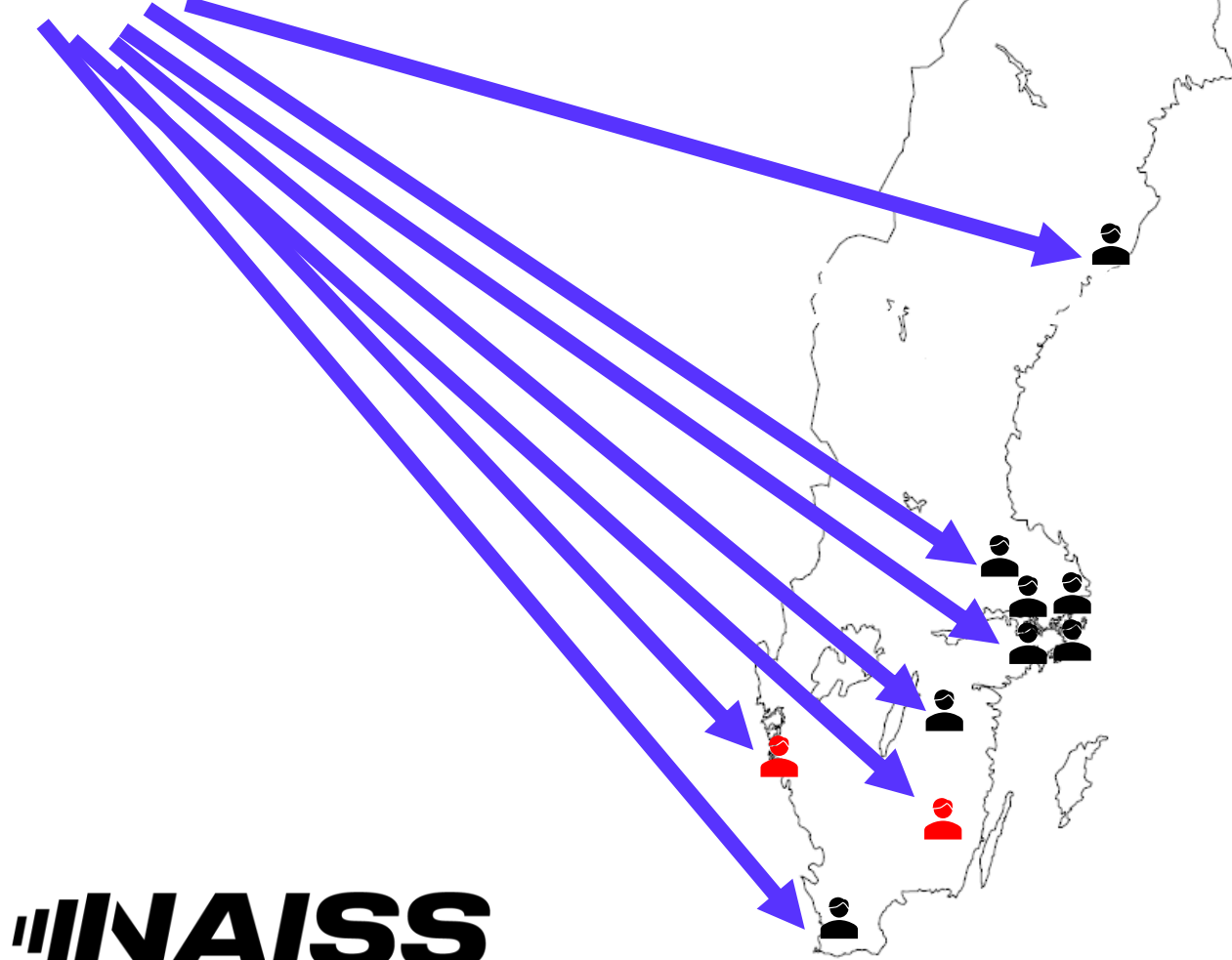
NAISS User Forum, Stockholm

October 6, 2026

D. Samaddar

Our support team members are spread around Sweden

NAISS



NAISS



UPPSALA
UNIVERSITET



UMEÅ UNIVERSITET



Karolinska
Institutet



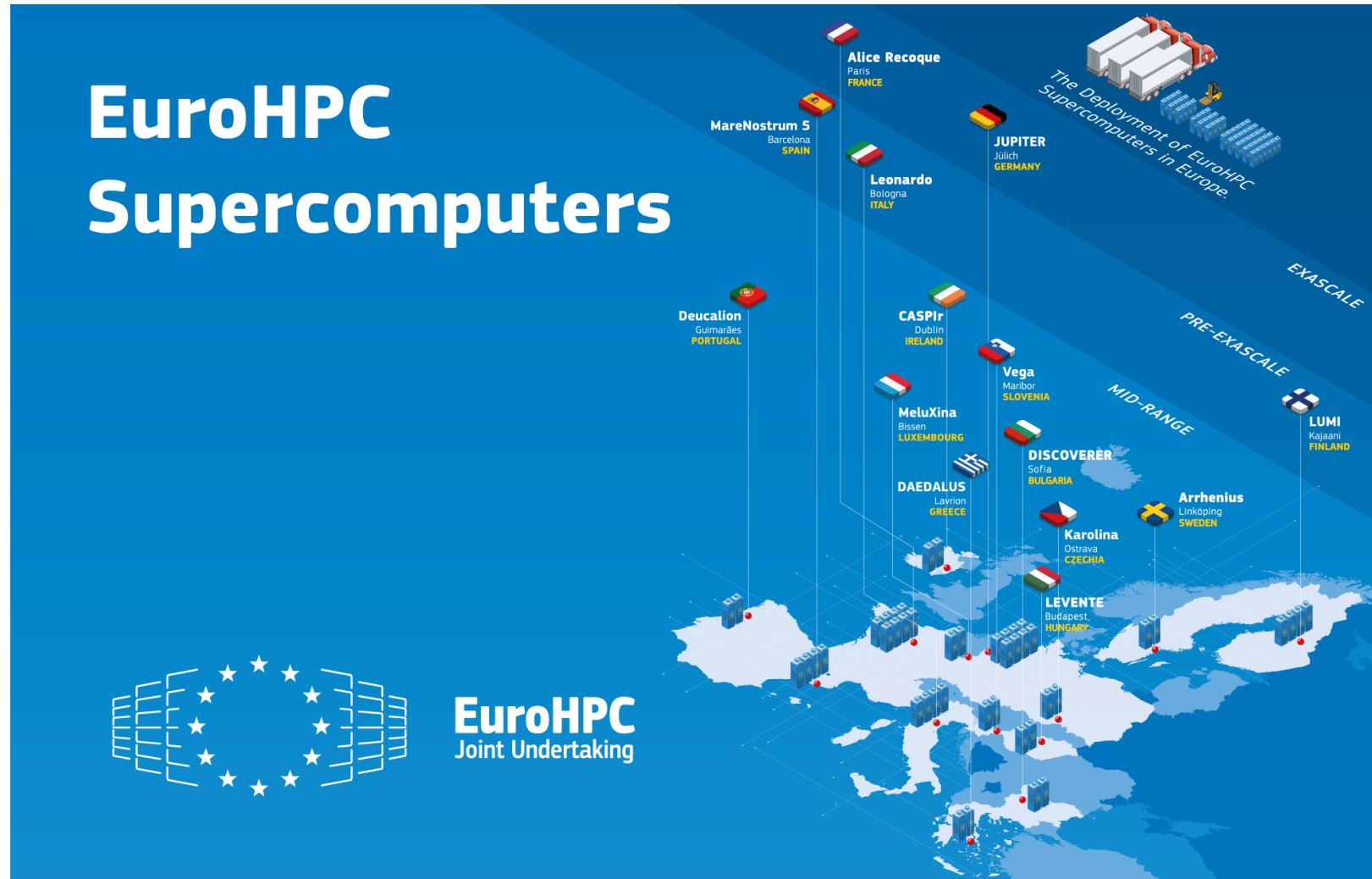
Stockholms
universitet



LUNDS
UNIVERSITET

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LINKÖPINGS UNIVERSITET

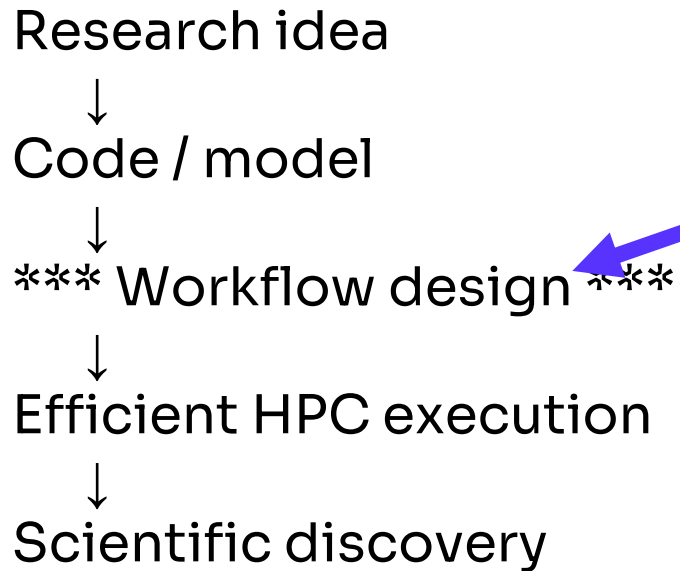
NAISS staff support users from across Europe as part of EuroHPC



Evolving HPC landscape – and our needs to adapt

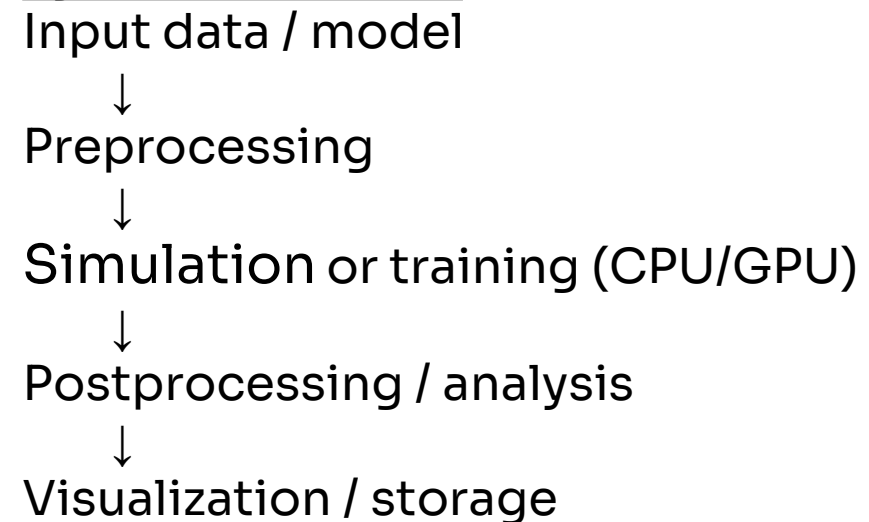
- Rapid growth of AI workloads on HPC systems
- HPC + ML convergence (eg climate models with ML parametrization)
- Data-heavy workflows
- Increasingly diverse user communities (physical sciences, social sciences, ...)

Evolving HPC landscape – and our needs to adapt



Increasingly, the limiting factor is not compute power but the ability to design scalable computational workflows.

Typical workflow:



Moving from non-accelerator based to accelerator based resources

Traditional HPC use:

CPU clusters



Simulation-focused
workloads



Job-based interaction

AI-HPC era:

CPU + GPU systems



Simulation + AI + data
workflows



Pipeline-based interaction

- Traditional codes – **CPU based**.
- Porting to accelerator based workflows – importance of application experts.
 1. Identify workloads that benefit from accelerators
 2. Guide users toward appropriate architectures
 3. Avoid wasted effort
- This requires **domain expertise plus algorithmic insight**.
- *CPU scaling fails when **nodes spend too much time talking to each other**.*
- *GPU scaling fails when **the algorithm does not contain enough parallel work to keep thousands of threads busy**.*

What does this mean for user support?

Traditional support

“My job crashed.”

“How much memory should I request?”

“How do I compile this code?”

“Why isn't my MPI job scaling?”

Emerging support

“Should this workflow run on CPUs or GPUs?”

“How do I combine simulation and ML?”

“How should I move and manage 50 TB of data?”

“How do I orchestrate simulation → training → inference?”

“Should I port this code to GPUs at all?”

We still need to answer the first set extremely well.

But increasingly, we also need to answer the second.

User support – more collaborative than reactive

A reactive approach:

User encounters problem



Opens ticket



NAISS solves problem

Collaborative approach:

Research question



Workflow / architecture discussion



Domain + application expertise



Efficient implementation



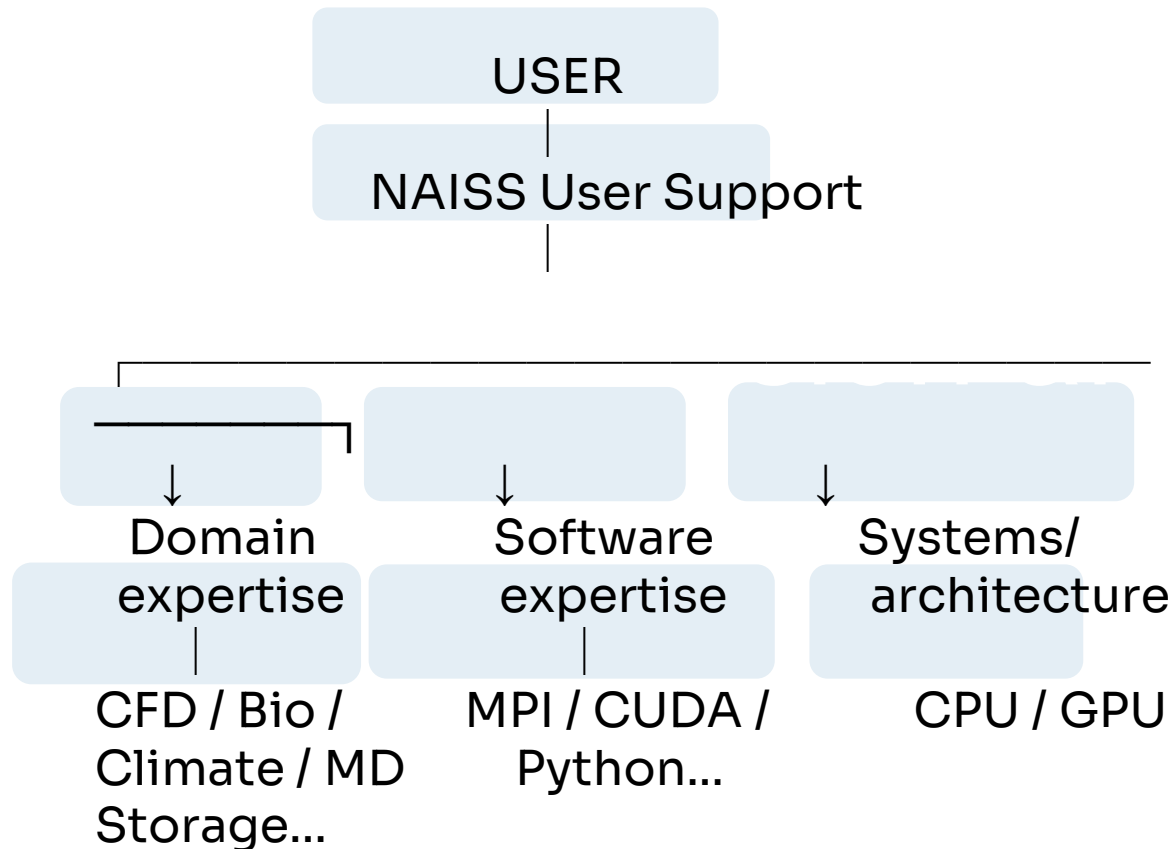
Production computing



Scientific result



User support – streamlined



Users shouldn't need to know which person or organization has the expertise they need. NAISS should make that expertise accessible.

We support a wide range of domains



NAISS training and support at various levels

New PhD student:

“I've never used Slurm.”

Needs: onboarding → training → documentation → approachable first-line support.

Experienced computational scientist:

“My MPI code stops scaling at 64 nodes.”

Needs: profiling → application expert → performance engineering.

AI/HPC research group:

“We want simulation + surrogate modelling + inference on Arrhenius.”

Needs: workflow design → GPU expertise → data management → sustained support.



Vision for NAISS

In three years, success means...

- Users don't need to understand the NAISS organization to get help.
- Researchers engage us earlier—not only when something breaks.
- Our domain experts work as a national expertise.
- Training, documentation and individual support reinforce each other.
- We help researchers choose the right computational approach—not simply consume more compute.
- New communities can use HPC without first becoming HPC experts.

NAISS - seen by researchers as a strategic partner rather than just a service provider.



Users can help shape NAISS support

- **USAC** – User Support Advisory Committee
 - **Reach out to us:**
 - What works well for you today — and where do you encounter barriers?
 - What could NAISS provide that would make your research easier?
- Your feedback helps us decide where support should evolve next.***

***User support should not only solve problems
— it should enable better science.***

Thank you