

Jožef Stefan Institute

SLING: **Importance of Having HPC Capabilities and their Networking Role in Slovenia**

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SLING - Slovenian National Supercomputing Network

<http://www.ijs.si/>
<http://www.sling.si/>

History



Zuse Z 23



CDC Cyber 74 (later Cyber 172)



CONVEX C3860



National/Institute Dilemma

- In-house:
 - Critical capability
 - Critical competence
 - Flexibility and development
- Out-scaling
 - Scalability
 - Secondary services
 - Long-term support



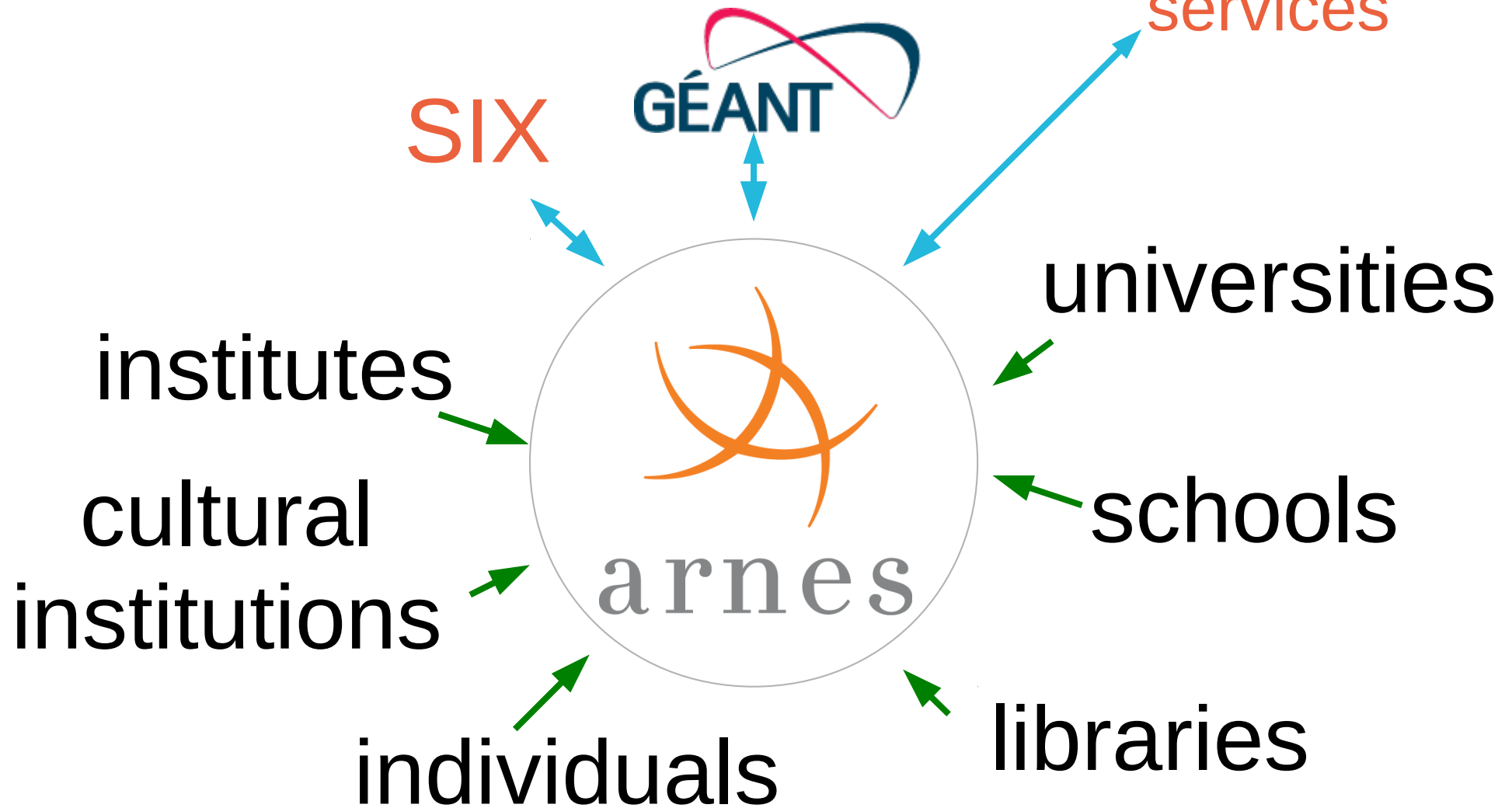
Access, Responsibility

- Who needs access?
- Who has responsibility?
- Who has knowledge?
 - Researchers
 - Students
 - Developers
 - Technical professionals

Advantages/Disadvantages

- **Advantages** ~ competitiveness
 - Specialized/adapted infrastructure
 - Full control, maximum response time
 - Competitive advantage, access time
 - In-house knowledge base
- **Disadvantages** ~ scalability
 - Expenses and infrastructure
 - Publication pressure on technical staff

Arnes - Our Network



Working Together



SLING Letter of Intent Signing at National Institute of Chemistry
4th May 2017

SLING Consortium

SLING
Consortium
2019

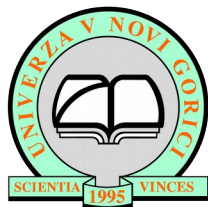


Fakulteta za
informatijske študije
Faculty of information studies

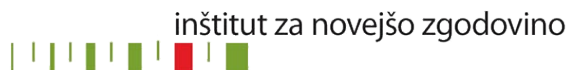


Institute of Information Science, Maribor, Slovenia

Univerza v Ljubljani



FGG
FMF
FRI
MF
FS



inštitut za novejšo zgodovino



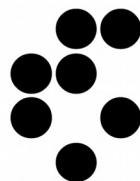
National Institute
of Chemistry



REPUBLIKA SLOVENIJA
MINISTRSTVO ZA JAVNO UPRAVO



ComTrade



Jožef Stefan Institute





SLING:

Advantages of Collaboration

- International Collaboration
- Accessibility and Standards
 - remote access, users, sw
- Training and Outreach
- Technical Collaboration
- Common Infrastructure

Collaboration



EuroHPC
Joint Undertaking



NORDUGRID

*Grid Solution for Wide Area
Computing and Data Handling*



CLARIN.SI



EUDAT



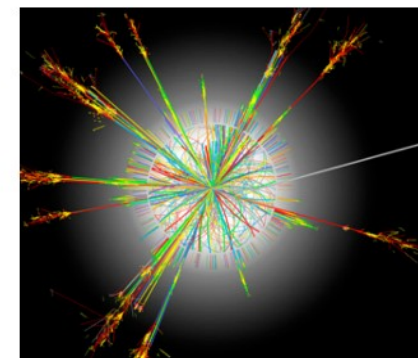
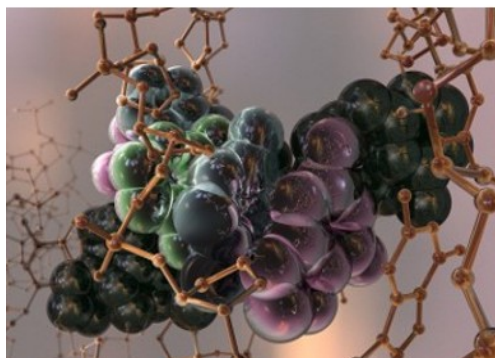
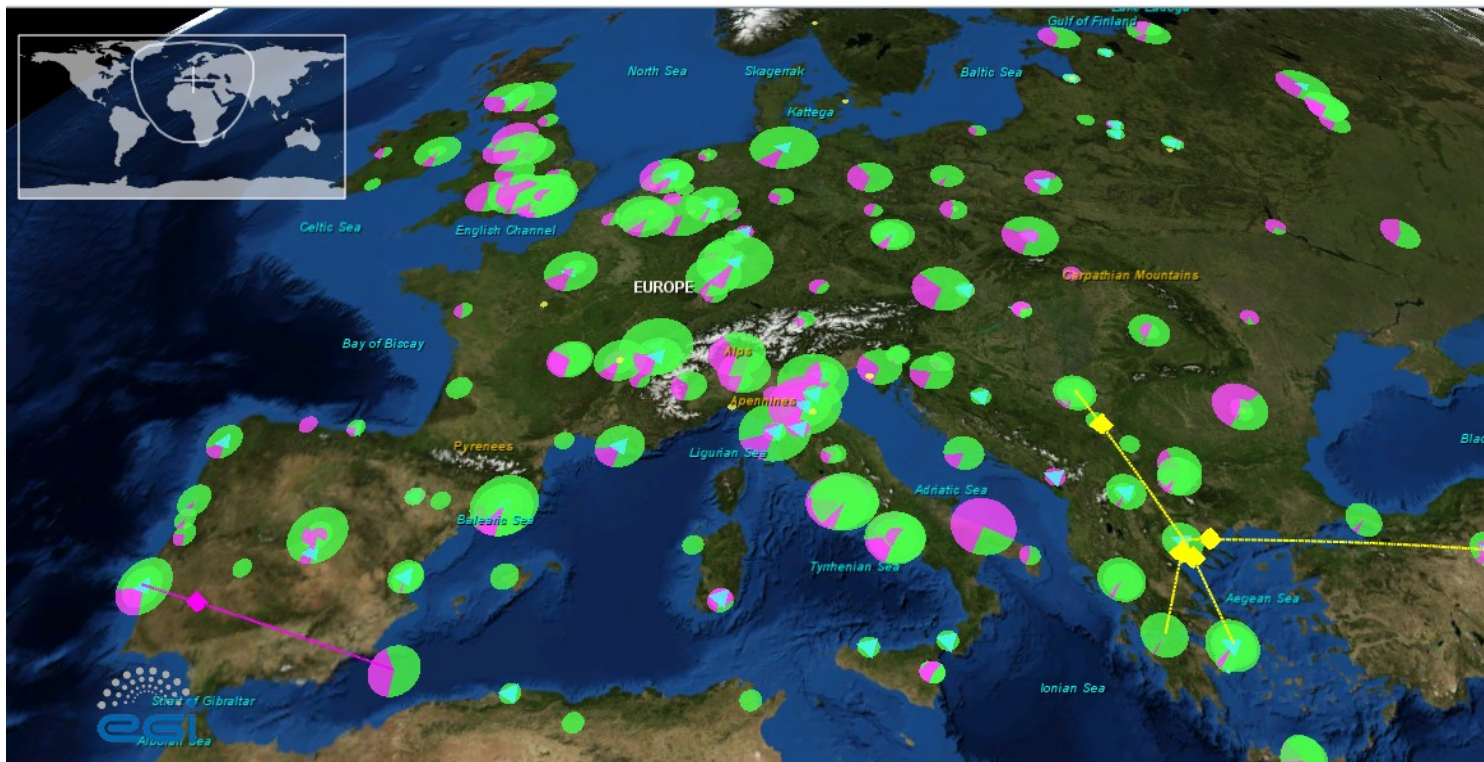
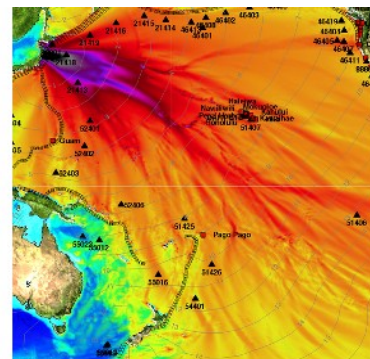
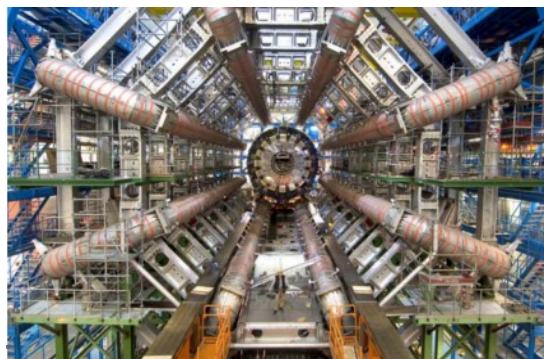
EOSC pilot
The European Open Science
Cloud for Research Pilot Project



CECAM, CERN, Belle2, Pierre Auger ...



Grid HPC



SLING Networks / Services



HPC RIVR

Call 11 Apr 2018
Contract 24 Dec 2018

- Cohesion – Eastern Slovenia
- Project Consortium
- Contract with SLING
- EGI, PRACE, NorduGrid
- EuroHPC Pillars I & II
- Regionalan & Bilateral
>50 k cores, >20 PB HD, ~1 PB SSD





Organization and SLING

- **SLING:**
 - SLING council
 - SLING science board (access)
 - Technical forum
 - High-level Support Groups
- **HPC RIVR**
 - Technical committee RIVR
 - Direct participation

Integration

- Common architecture
- Common High-Level Support
- Common Repositories
GIT / CVMFS / Singularity HUB
- $n \times 100$ Gb/s network
- CEPH ~ shared storage
(IZUM/ARNES/IJS) + services



EuroHPC Pillar I: procurement

- PetaScale
 - PetaScale @ RIVR
(procurement, network, funding)
- Pre-Exa Scale
 - Pre-ExaScale @ Cineca
co-development & high level
support, 1 MiO/5let, 4FTE in-kind
 - Collaboration: Finland



EuroHPC Pillar II: research and innovation

- Priorities

- Extreme-scale computing: Q1/2020
- HPC apps: Q3/2020
- Competence Centres: Q1/2020
- Stimulating SMEs: Q1/2020
- European Processor Initiative 2020



For/From Researchers

- Package jobs with portable containers
- Connect with SLING colleagues: experience & support
- Work with support groups and spread knowledge
- Scale-out home and abroad

and thank you! 18/20

Contributors

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Questions?

Thank you for support.