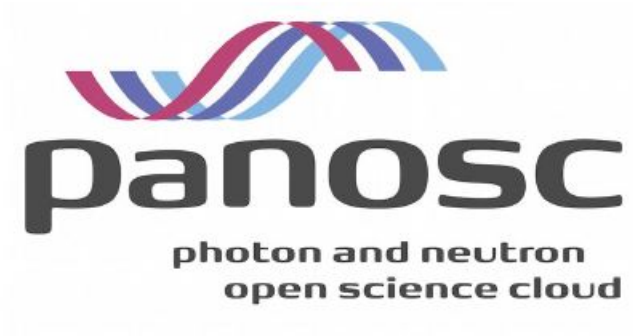

Technical Talk 08 – HZDR and ExPaNDS

Uwe Konrad, Oliver Knodel

9th of October 2020

The ExPaNDS project has received funding from the *European Union's Horizon 2020 research and innovation programme* under grant agreement No 857641.
The PaNOSC project has received funding from the *European Union's Horizon 2020 research and innovation programme* under grant agreement No 823852.

Overview

- Helmholtz-Zentrum Dresden-Rossendorf
- Our ExPaNDS Team
- The Portal Architecture test experience
- Our Data Management Infrastructure
- COVID and the impact on the team’s roadmap

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Facility

HZDR HELMHOLTZ ZENTRUM DRESDEN ROSSENDORF

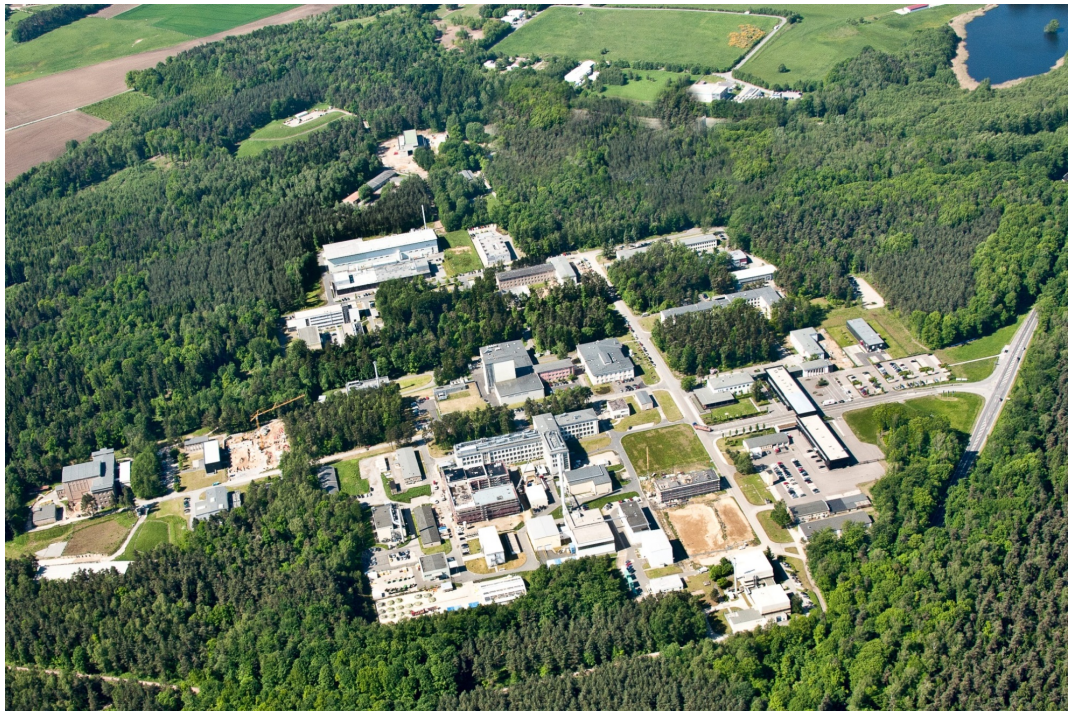
Located in Dresden, Germany

Employees

approx. 1,200
including about 350 scientists
+ 170 doctoral students
as well as employees and guest scientists from more than
60 countries

Research Sites

DRESDEN
Leipzig, Freiberg, Schenefeld
near Hamburg, Grenoble (FR)



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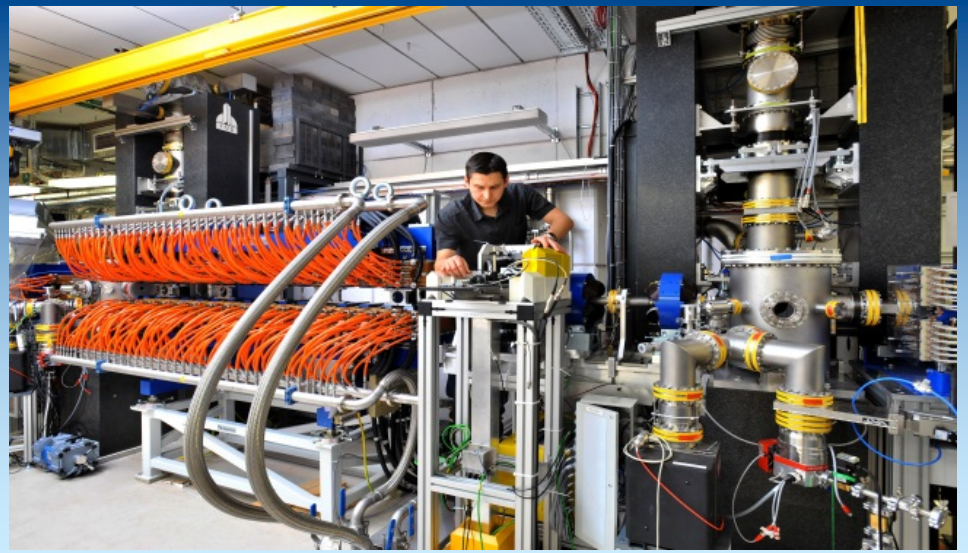
Facility – Beamline

HELMHOLTZ ZENTRUM DRESDEN ROSSENDORF

ELBE – Center for High-Power Radiation Sources

Electron accelerator ELBE feeds free-electron lasers FELBE & THz source TELBE;
generates positrons, protons and neutrons as well as X-ray and gamma radiation;
plus high-intensity lasers (1 Petawatt) **DRACO** and **PENELOPE** (under construction)



THz Source TELBE

Credits: Bierstedt

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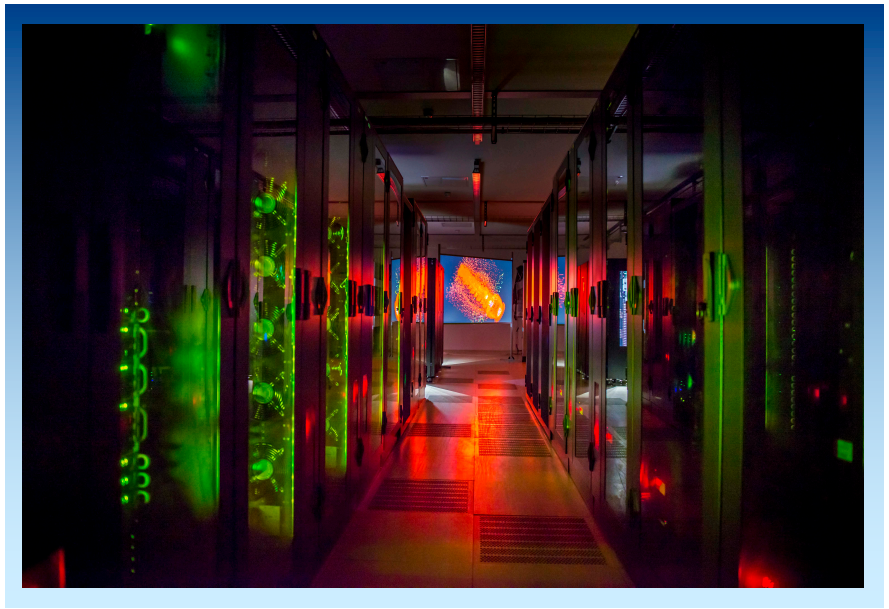
Institute of Information Services and Computing

5 Departments:

- IT-Infrastructure (HPC-Cluster)
  - 283 nodes with 469 TFlop/s CPU and 2.47 PFlop/s GPU
  - Slurm batch system
  - GPFS transfer rate up to 10GB/s per node and 3.9 PB in total
  - Jupyter Hub Portal
  - Virtual Machines
  - OpenStack (Test)
- Computational Science
- User Services
- Application Services
- Library



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ExPaNDS Team at HZDR

Dr. Uwe Konrad
Head – Department Information Services and Computing
Expertise in Information Services
WP4 contributor, WP5 co-lead

Dr. Oliver Knodel
Research Software Engineer – Department Information Services and Computing
Expertise in HPC Architectures and Services
Will contribute to WP4 and primarily to WP5 E-learning platform and Training Courses Calendar

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The Portal Architecture test experience

- What went well?
  - Documentation (confluence), installation process
- What could go better?
  - Integration/Deployment in/on our existing infrastructure (OpenStack, Slurm, Unicore)
- What is the gap between what's in your facility and what the Portal needs?
  - We don't have a Kubernetes infrastructure at the moment
  - We can provide an HPC-Cluster with Slurm, OpenStack and Jupyter Notebook Portal
  - Metadata Management still in progress at HZDR

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Facility needs for the Portal

- Name the features you would prioritize/what does the portal needs in order to run in your facility?
  - Deployment in OpenStack (Our OpenStack is still in an early phase)
  - Slurm module for HPC integration
  - Singularity compatibility
  - An interface to access, transfer or publish our experiment data with an uniform ID and user authentication is essential in our HZDR infrastructure

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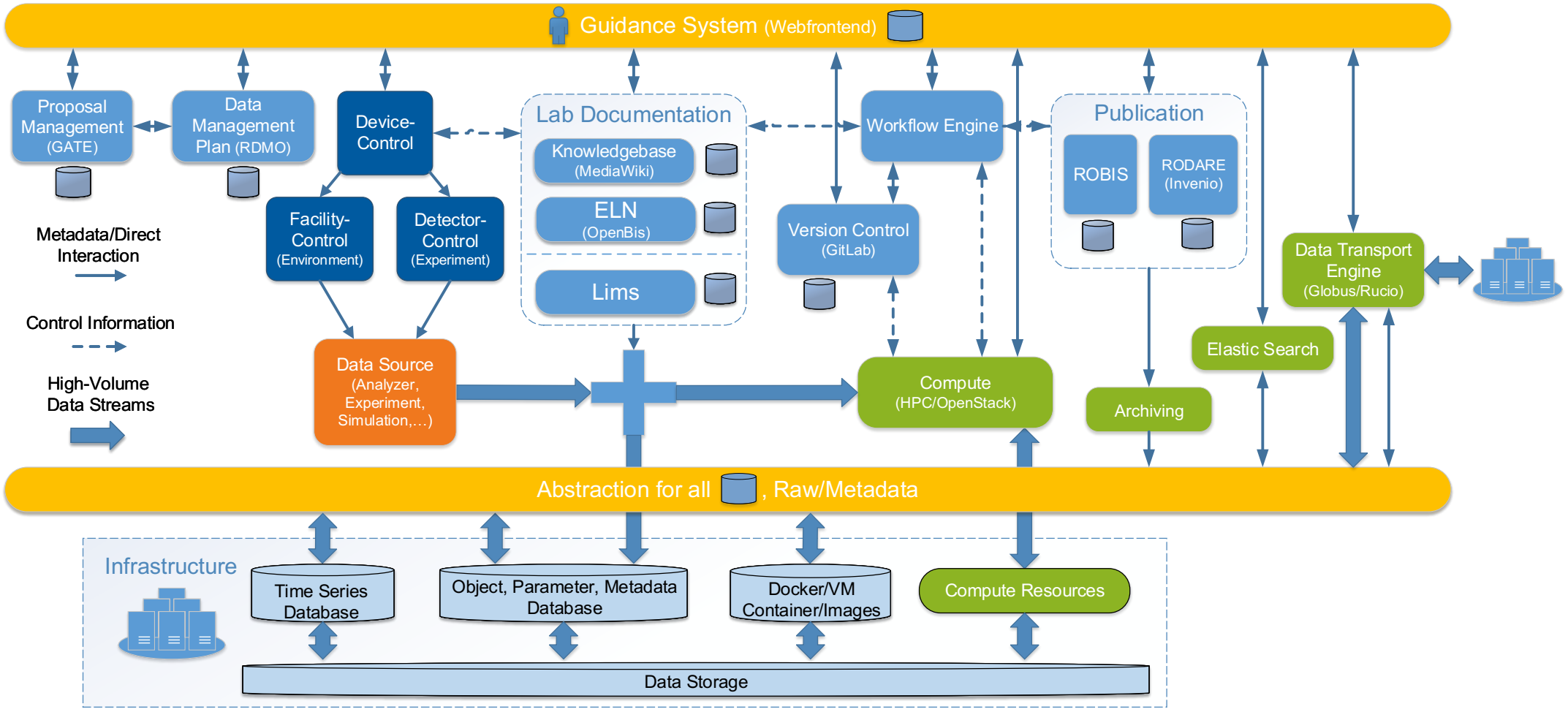
Data Management Infrastructure at the HZDR



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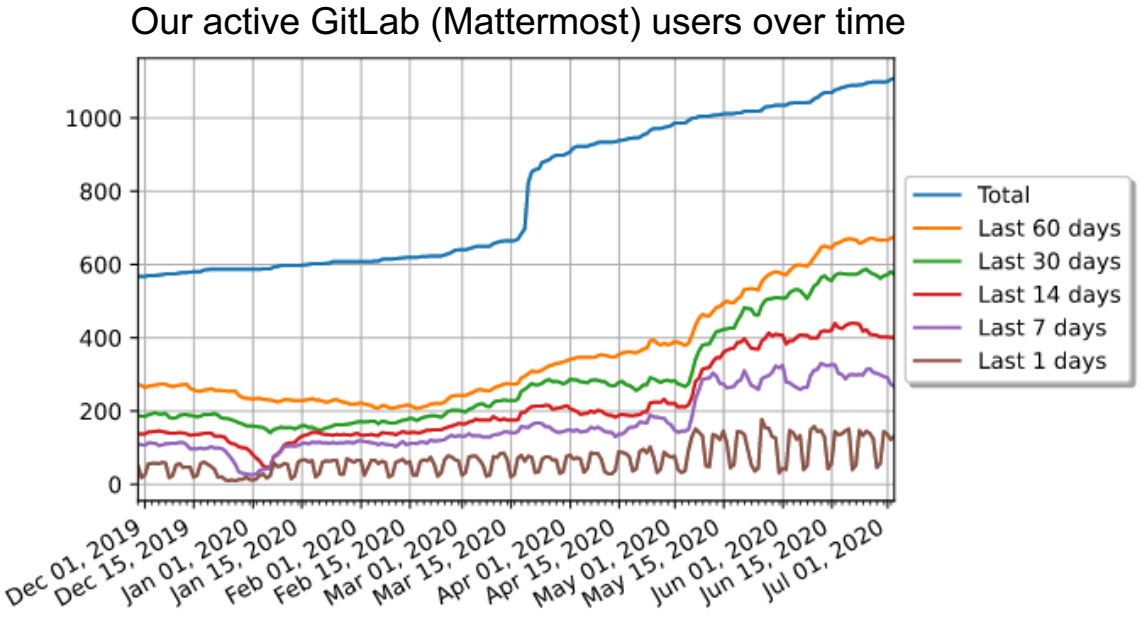
COVID-19 and the impact on your team

- For 2020, the IT department had to change its priorities and focus on:
  - Communication: Stable Video Conference solution, Mattermost
  - Collaboration: GitLab, Nextcloud
  - Teleworking: Stable VPN Infrastructure



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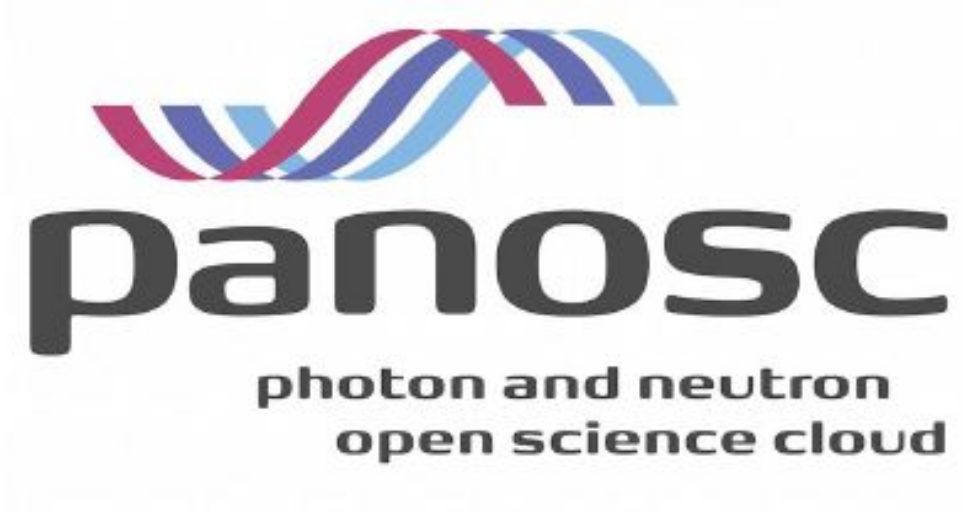

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