CHSRC: Expression of Interest

SRCNet v0.1 Workshop

Pablo Llopis - March 11, 2024
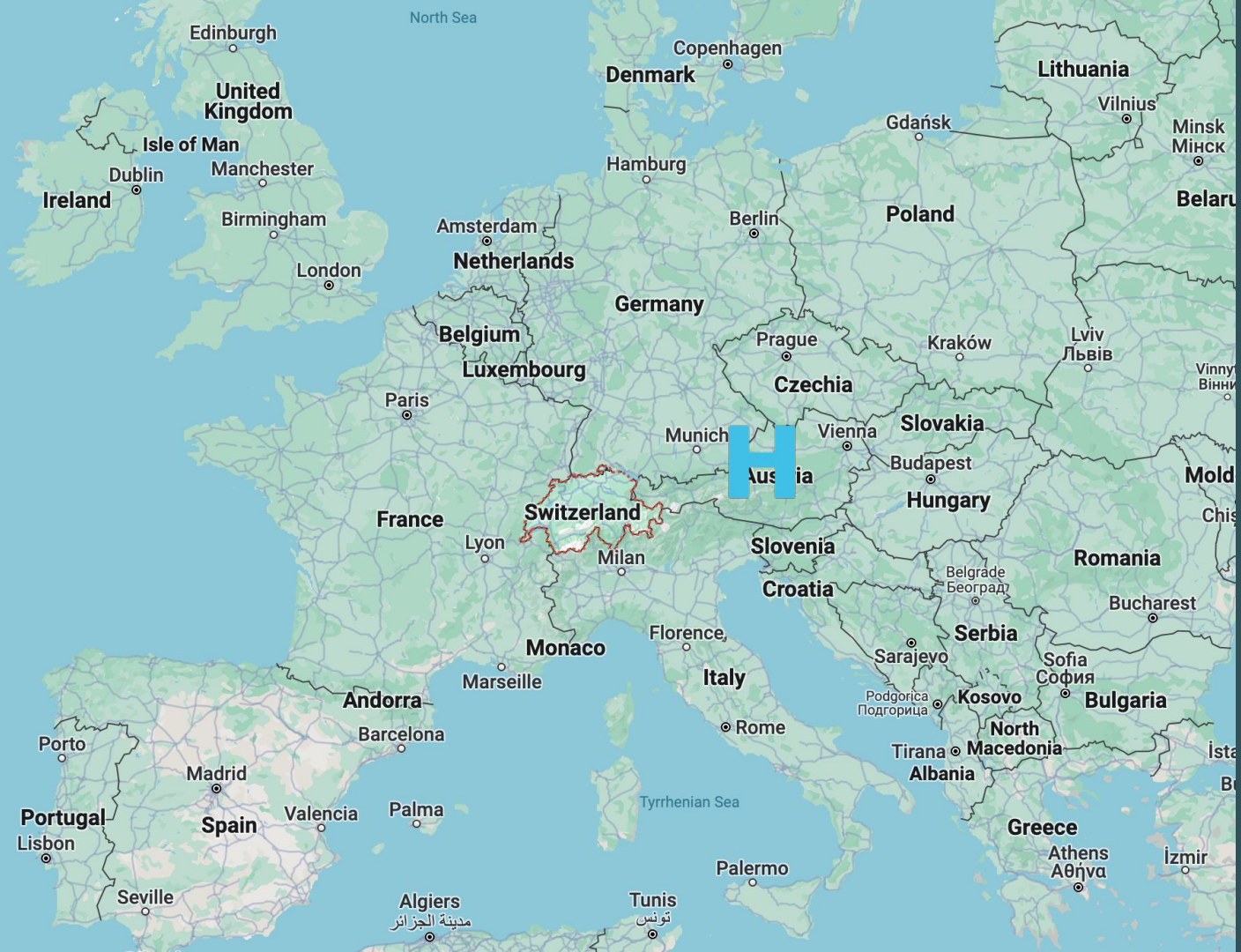
Overview

SKACH Institutions:

- Fachhochschule Nordwestschweiz (FHNW)
- Universität Zürich (UZH)
- Eidgenössische Technische Hochschule Zürich (ETHZ)
- École Polytechnique Fédérale de Lausanne (EPFL)
- Zürcher Hochschule für Angewandte Wissenschaften (ZHAW)
- Universität Basel (UniBas)
- Université de Genève (UniGE)
- Haute École spécialisée de Suisse Occidentale (HES-SO)
- Centro Svizzero di Calcolo Scientifico (CSCS).

SKACH Vision, Mission, Objectives:

Vision: Further Swiss leadership in the **global radio astronomy community**.

Mission: Ensure **meaningful contributions to the SKAO and SRCs** through the development and delivery of cutting-edge Swiss solutions to key science goals, big data research, technology, and services.

Objectives: Advance Switzerland's impact in the SKAO and SRCs through:

Creating synergies between the Swiss government, academia, and industry.
Engaging in leading-edge scientific research.
Providing Swiss solutions to SKAO and SRC big data and hardware challenges.
Competing for national and international funding for the Swiss Components of the SKAO and SRCs.
Ensuring returned value for money for the Swiss economic contributions to the SKAO and SRCs.
Fostering connections with other precursor radio astronomy facilities.

Swiss SRC = CHSRC

ISO 2-letter country code

SKACH SRCNet Funding and Support

As expressed in the Interest form, we can contribute 2% of the required SRCNet resources (throughout its various stages).
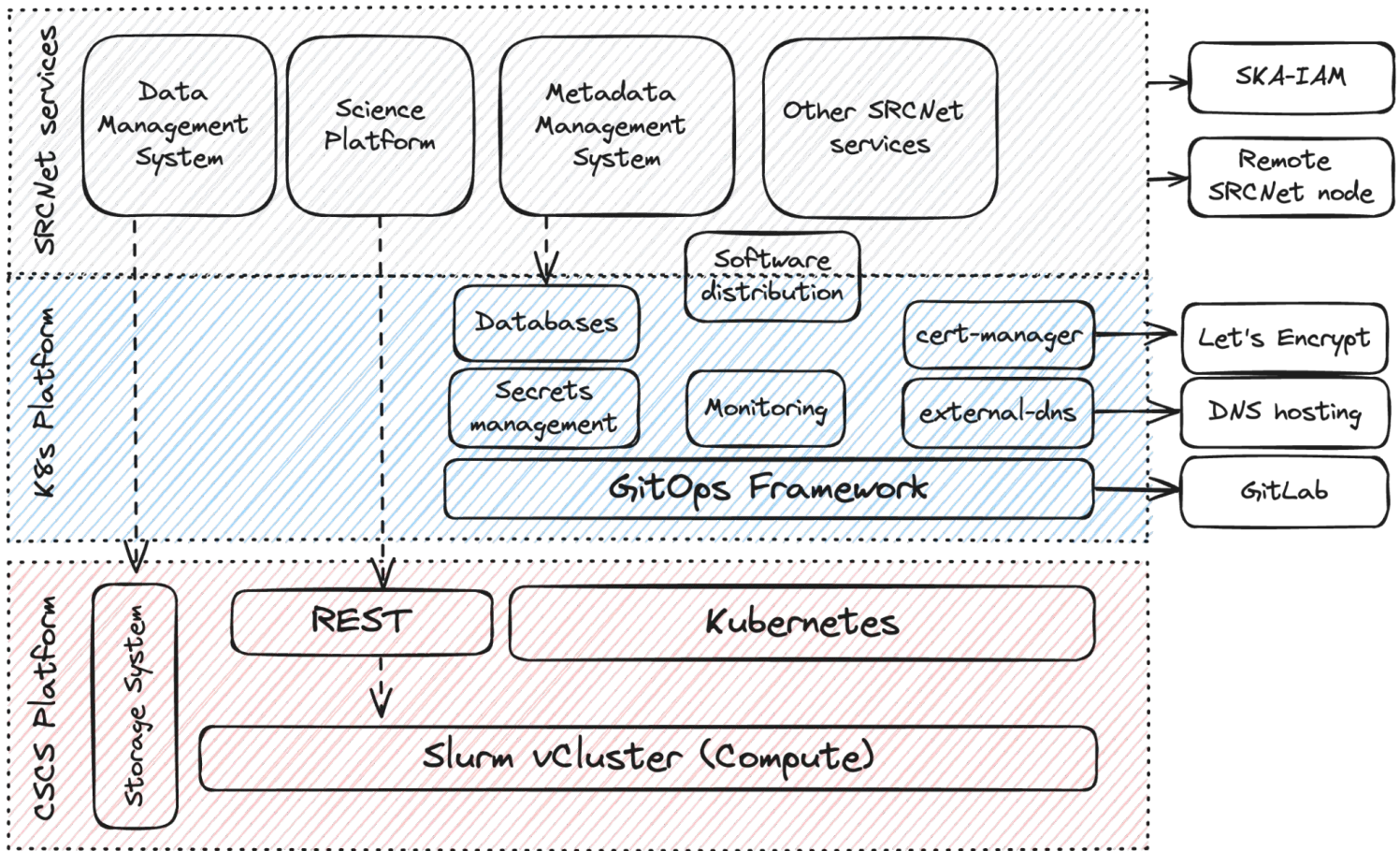
>1FTE for v0.1 (Operations, Prototyping, SW dev..)

Pending competitive funding approval, we could increase our contribution in terms of compute, storage, and FTEs by mid 2025.

CHSRC Contributions & Infrastructure

CHSRC has made **contributions to SRCNet prototyping** from the start through **Coral and Tangerine** team efforts.

- Rucio-based Data Lake Storage Endpoint
- Storage Inventory Data Lake and Metadata services
- CANFAR Science Platform ([skaha](#))
- Other services: Jupyterhub, binder, Linkerd, Harbor
- Kubernetes services: "GitOps-ifying" SRCNet services
- SRCNet Workloads [repository](#) and [STARS](#) benchmark suite.

SRCNet services
- Data Management System
- Science Platform
- Metadata Management System
- Other SRCNet services

→ SKA-IAM
→ Remote SRCNet node

K8s Platform
- Software distribution
- Databases
- Secrets management
- Monitoring
- cert-manager → Let's Encrypt
- external-dns → DNS hosting
- GitOps Framework → GitLab

CSCS Platform
- Storage System
- REST
- Kubernetes
- Slurm vCluster (Compute)

CHSRC is built on top of HPC resources

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SKA auth?

Interactive workloads?

Job submission interfaces?

Policy?

How to achieve integration between SRCNet services and an HPC platform?

SKACH Scientific Community participation

SKACH scientific community participation on SKA Science Data Challenges.

Used CSCS and EPFL's HPC infrastructure and services.

Yet to achieve: SKACH community carrying out science through SRCNet services.

Ongoing efforts in SRCNet integration with HPC environments.

Conclusions

SKCACH Board support to submit an SRCNet Expression of Interest was **strong** and **unanimous**.

CHSRC has made significant **prototyping contributions** through Coral team.

Demonstrated **capability to consistently roll out SRCNet services** in collaboration with other teams.

Able to leverage **HPC expertise** and HPC supercomputing infrastructure.

CHSRC is **open for collaboration** with other SRCs!

- **SKA** & precursor science
- SRCNet **Infrastructure** development
- SRCNet integration with HPC/**supercomputing** environments