

# CHSRC v0.1 update

September 2nd, 2024

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# About me

Swiss SRC Software Architect

Engineer, developer

SRC Design

Product Owner



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# Overview



SRCNet v0.1, CHSRC v0.1

Outcomes from the last quarter

Preparation

- To be a v0.1 Node
- For v0.1 Test Campaigns
- For SRCNet Operations

# Brief Recap



Agile processes for development and delivery of SRCNet, in line with Construction activities (Scaled Agile Framework - SAFe).

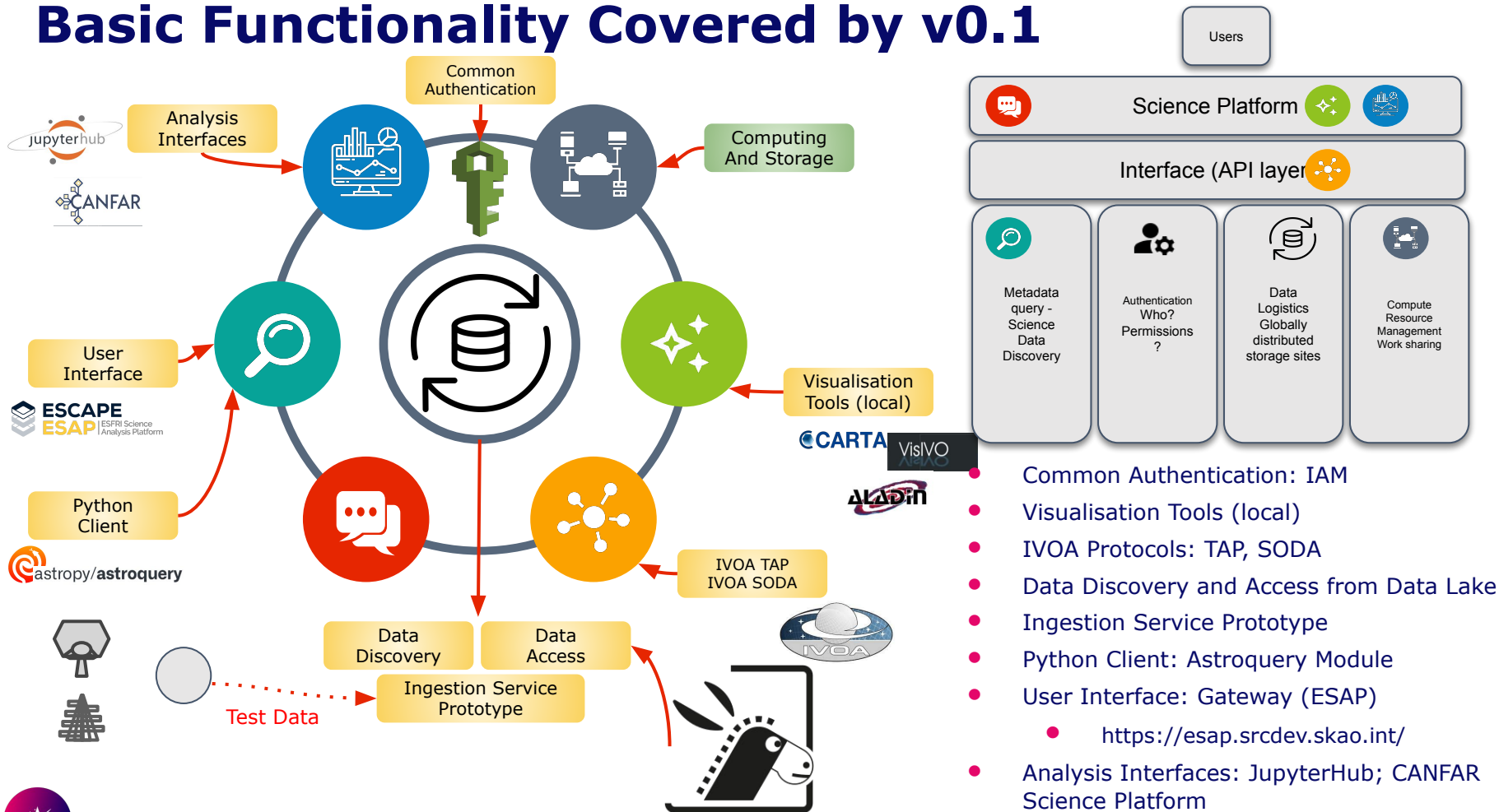
- New (Swiss) team working as part of the global SRCNet development efforts starting June 2024. Chocolate team!
  - Currently consisting of developers at FHNW and EPFL

Link to [SKACH Spring meeting presentation!](#)

# SRCNet v0.1

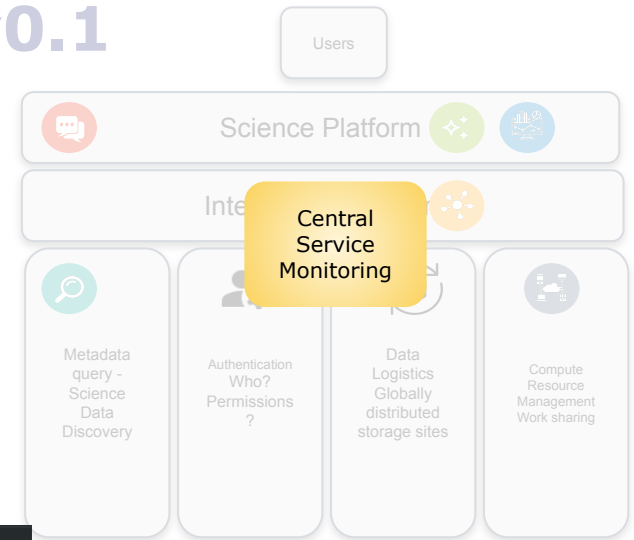
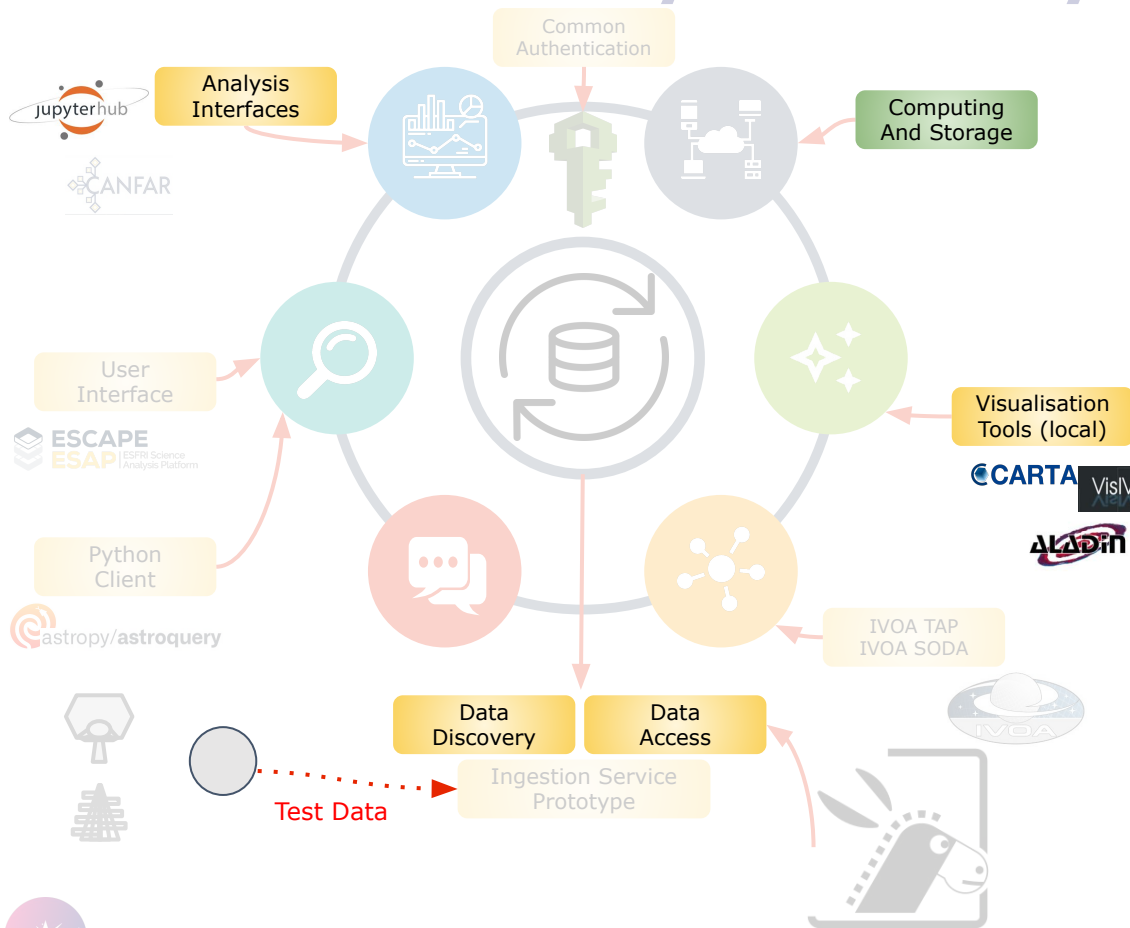
...no but what is it really?

# Basic Functionality Covered by v0.1



- Common Authentication: IAM
- Visualisation Tools (local)
- IVOA Protocols: TAP, SODA
- Data Discovery and Access from Data Lake
- Ingestion Service Prototype
- Python Client: Astroquery Module
- User Interface: Gateway (ESAP)
  - <https://esap.srcdev.skao.int/>
- Analysis Interfaces: JupyterHub; CANFAR Science Platform

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# What does v0.1 mean for CHSRC

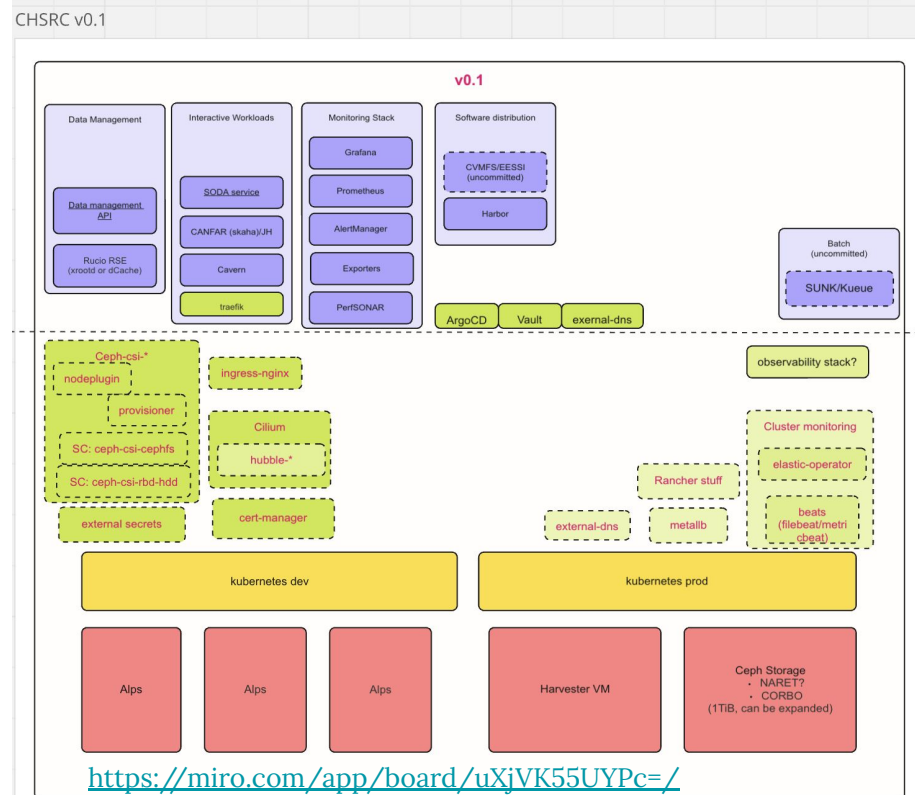
## [SRCNet v0.1 Implementation Plan document](#)

Infrastructure based at CSCS

- 400 TB
- 14 TFLOPS

Kubernetes clusters

SRCNet services deployed and managed by SKACH on Kubernetes clusters





## Engineering exercise

SRCNet Operations group to be the main 'users'

- Test Campaigns to be defined
  - Dedicated time window identified, compute and storage at sites exercised at the scale pledged
  - Data lifecycle tests demonstrating 'science user' flows (src-workloads repo is a source of use cases)
  - Rucio, distributed data management system, will be at the heart of these campaigns

# Outcomes from the last quarter

PI23 outcomes

# PI23 outcomes

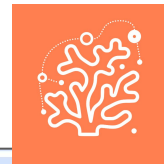


Getting ready for the v0.1 preparation

- Getting our Kubernetes clusters ready
- Deploying SRCNet Service Monitoring
- Using Karabo for SRCNet test data

Rough overview of activities on behalf of the Chocolate team!

# GitOps magic



The screenshot shows a GitLab interface. On the left, a sidebar lists repository features like Pinned, Issues, Merge requests, and Repository. The main area displays a file tree for the 'src/ska-chsrc-gitops' repository, listing folders like 'blackbox-exporter', 'certificates', and 'external-dns', along with their last commit information. On the right, a documentation page for 'ArgoCD' is open, detailing its role in GitOps and providing installation instructions. A dark blue overlay menu is visible in the center, listing various services and tools available in the SRCNet environment.

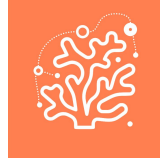
<https://gitlab.com/ska-telescope/src/ska-chsrc-gitops>

<https://ska-telescope.gitlab.io/src/kb/ska-src-docs-operator/services/dependent/gitops/tools/argocd.html>

# SRCNet Central Service Monitoring



# Karabo as SRCNet Test Data



github.com/i4Ds/Karabo-Pipeline/blob/main/karabo

i4Ds / Karabo-Pipeline

Code Issues 72 Pull requests 3 Actions

Files

main

Go to file

- .github
- conda
- doc
- karabo
- .experiments
- data
- examples
- data
  - ImageMosaicker.ipynb
  - LineEmissionBackendsComparison.ipynb
  - SRCNet\_rucio\_meta.py
  - SRCNet\_simulation\_walkthrough.ipynb
  - SRCNet\_v0.1\_simulation.py
  - sbatch\_script.sh

github.com/i4Ds/Karabo-Pipeline/pull/597

i4Ds / Karabo-Pipeline

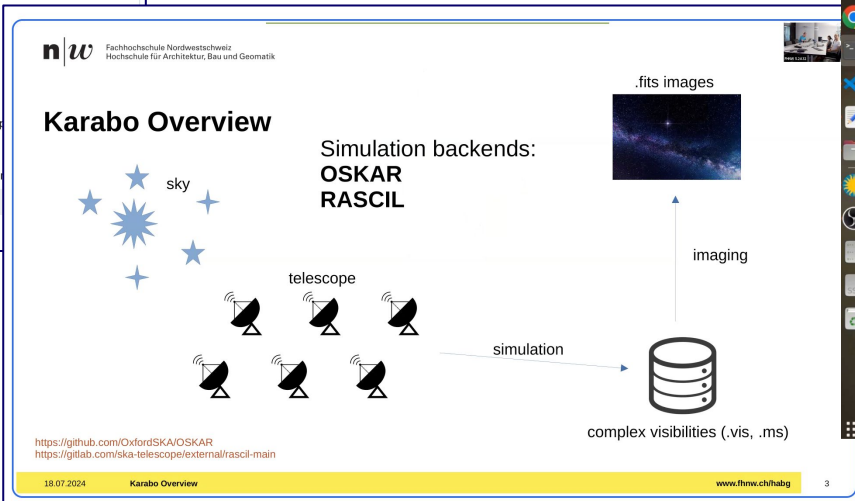
Code Issues 72 Pull requests 3 Actions Projects Wiki Security Insights

## Obscure rucio ingestion #597

Merged Lukas113 merged 14 commits into main from obscure-rucio-ingestion on Jul 24

Conversation 16 Commits 14 Checks 3 Files changed 12

<https://github.com/i4Ds/Karabo-Pipeline/pull/597>



```
Activities Terminal Aug 15 12:11
ubantu@karabo: /tmp/ingest/processes/62b9c6d4-8919-4101-a722-ca84c37900e
flatpak run com.obsproject.Studio
luka@luka@ThinkPad-P15v-Gen-1:/tmp/karabo-STM-lukas@DQLinCv@WSCL... ubuntu@karabo: /tmp/ingest/processes/62b9c6d4-8919-4101-a722-ca84c37900e

*** System restart required ***
Last login: Thu Aug 15 09:23:57 2024 from 147.86.223.3
(base) ubuntu@karabo:~$ ls
(base) ubuntu@karabo:~$ cd ingest/karabo
(base) ubuntu@karabo:~/ingest/karabo$ ls
CONTRIBUTING.md  FAQ.md  MANIFEST.in  README.md  VERSION  docker-compose.rucio_dev.yml  docker-compose.rucio.yml  requirements.txt  setup.py
(base) ubuntu@karabo:~/ingest/karabo$ docker-compose rucio.yml up --detach
CONTAINER ID   IMAGE    COMMAND    CREATED    STATUS    PORTS    NAMES
b35480f6c5a1   hello-world   "hello" 2 months ago   Exited (0) 2 months ago          condensing_clarke
(base) ubuntu@karabo:~/ingest/karabo$ docker-compose rucio.yml up --detach
[1] 160876
(base) ubuntu@karabo:~/ingest/karabo$ docker-compose rucio.yml up --detach -f sbdout.log
(rucio_ingestion) updated_at: 2024-07-25T08:30:10
rucio_ingestion status: ACTIVE
rucio_ingestion suspended_at: None
rucio_ingestion created_at: 2024-07-25T08:30:10
rucio_ingestion account: loginlog
rucio_ingestion token expires in 546 minutes
rucio_ingestion 2024-08-15 10:08:37.862 [root] ingest INFO 21 Starting loop for directory /tmp/ingest/staging...
rucio_ingestion 2024-08-15 10:08:37.862 [root] ingest INFO 21 Coullon's decompose path /tmp/ingest/staging, skipping...
rucio_ingestion 2024-08-15 10:08:37.862 [root] ingest INFO 21 No new files found for this iteration
rucio_ingestion 2024-08-15 10:08:37.862 [root] ingest INFO 21 Sleeping for 55...
rucio_ingestion 2024-08-15 10:08:42.868 [root] ingest WARNING 21 Coullon's decompose path /tmp/ingest/staging, skipping...
rucio_ingestion 2024-08-15 10:08:42.869 [root] ingest INFO 21 No new files found for this iteration
rucio_ingestion 2024-08-15 10:08:47.874 [root] ingest WARNING 21 Coullon's decompose path /tmp/ingest/staging, skipping...
rucio_ingestion 2024-08-15 10:08:47.874 [root] ingest INFO 21 No new files found for this iteration
rucio_ingestion 2024-08-15 10:08:47.875 [root] ingest INFO 21 Sleeping for 55...
^C
(base) ubuntu@karabo:~/ingest/karabo$ docker-compose rucio.yml up --detach
658669f7cc59 sks-src-ingest:0.1.0 /bin/bash etc/docker... 18 seconds ago   Up 16 seconds
b35480f6c5a1 hello-world /hello 2 months ago 2 months ago
(base) ubuntu@karabo:~/ingest/karabo$ cd /tmp/ingest/
ingest_rucio FAILED: failed pre-conditions: processing staging
(base) ubuntu@karabo:~/ingest/karabo$ cd staging/testing/
(base) ubuntu@karabo:~/ingest/staging/testing$ ls
(base) ubuntu@karabo:~/ingest/staging/testing$ cd ../.. /processed/
(base) ubuntu@karabo:~/ingest/processes$ ls
(base) ubuntu@karabo:~/ingest/processes$ cd 62b9c6d4-8919-4101-a722-ca84c37900e/
(base) ubuntu@karabo:~/ingest/processes/62b9c6d4-8919-4101-a722-ca84c37900e$ ls
gleam-ra250-dec-90-example.flts gleam-ra250-dec-90-example.flts.meta log result
(base) ubuntu@karabo:~/ingest/processes/62b9c6d4-8919-4101-a722-ca84c37900e$ cat log
1723716653-578818  changed state from STAGING to PROCESSING
1723716658-409918  uploaded data
1723716658-5714653 Added metadata
1723716658-599303  changed state from PROCESSING to PROCESSED
```

# PI23 outcomes

Getting ready for the v0.1 preparation

- Getting our Kubernetes clusters ready
- Deploying SRCNet Service Monitoring
- Using Karabo for SRCNet test data

Rough overview of activities on behalf of the Chocolate team!

Great feedback from the Program Team regarding PI23 outcomes



Many points of collaboration with others in the ART. This was appreciated within the team as well.



# Participation in other fora



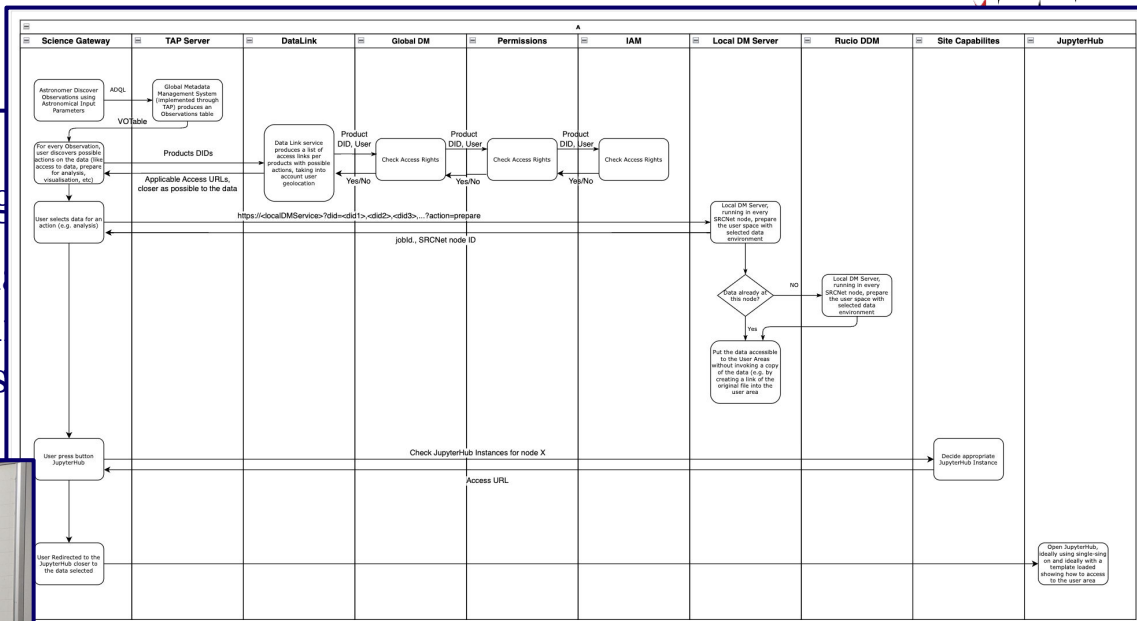
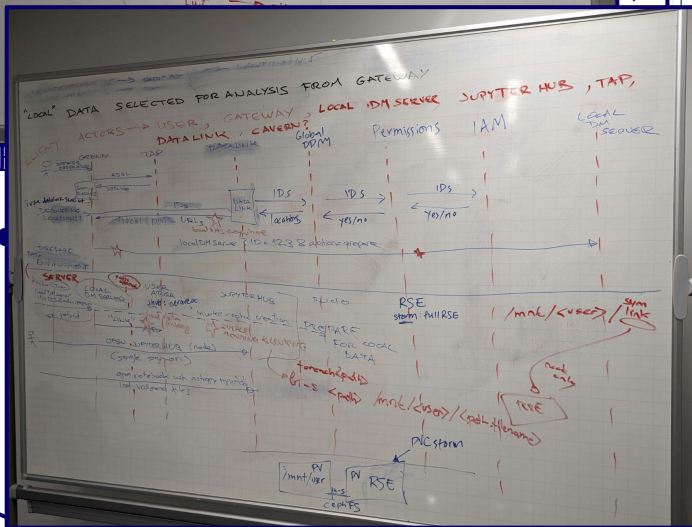
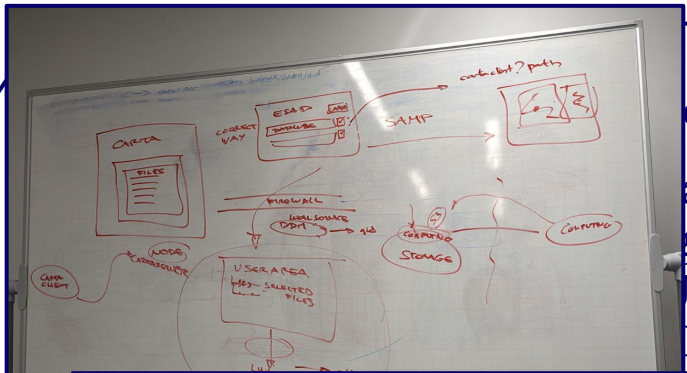
## SRCNet Operations by way of two groups

- Infrastructure & Services Management Group (ISMG)
  - Tracking and managing high level updates
  - ISMG member: Rohini Joshi
- SRC Operations Group (SOG)
  - Technical discussions of SRCNet service development, deployment, debugging
  - SOG member: Pablo Llopis

## SRCNet Architecture Core Team

- Small dedicated team to refine the SRCNet architecture for v0.1 +
- Arch core team member: Rohini Joshi

# Participation in other



the SRCNet architecture for v0.1 +

# Looking ahead

FTE Resource pledge for PI24

FTE effort (EPFL + FHNW)

- Development
- Including Agile roles
- Architecture core team
- SRC Operations

	Value Stream			
Pledge periods	Organisation (FTE)	Development (FTE)	Service Operations (FTE)	Science Support (FTE)
PI24	0	3.6	0.5	0.2

Ongoing effort to align science support for SRCNet in SKACH

Sep 2024



Jan 2025

# Looking ahead

Outcomes of PI24 planning ...what are we doing in the next quarter?

- Building on our GitOps infrastructure to deploy SRCNet v0.1 compulsory services
  - We are really leading the way in this area, other sites to follow similar patterns.
  - Contributing to SRCNet documentation
- Finessing the SRCNet v0.1 monitoring dashboards
  - Working with all v0.1 SRCNodes to integrate services into a central dashboard
- Karabo as test data for SRCNet v0.1 ...and SDP?

Sep 2024



Jan 2025

# Looking further ahead

## Improving Science User Engagement

- Starting to understand the requirements for and build a CHSRC node that not only fulfills our commitments to the Observatory but one that enables the local community to do their science

Sep 2024



Jan 2025

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- Starting to understand the requirements for and build a CHSRC node that not only fulfills our commitments to the Observatory but one that enables the local community to do their science

## Crossing the threshold for v0.1

- Going from functional readiness to readiness at scale
- Expecting infrastructure resources to be ready by this time

Sep 2024



Jan 2025

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## Test Campaigns

- Exercising the SRCNet resources, v0.1 services at scale, and v0.1 functional architecture

Sep 2024

PI24

SRCNet 0.1 phase, PI25

SRCNet 0.1 phase, PI26

Jan 2025



# Thank you!

More details in the following talk and  
Karabo workshop [tomorrow!](#)

Feel free to contact me at [rohini.joshi@fhnw.ch](mailto:rohini.joshi@fhnw.ch)

