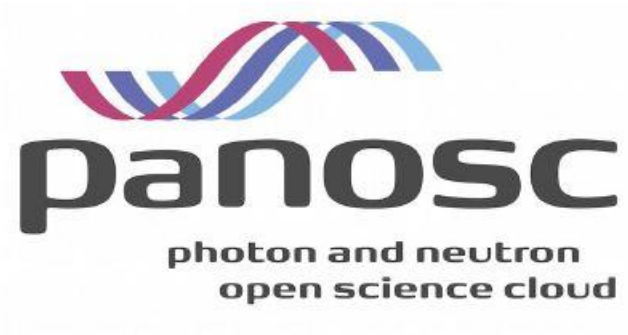

Brief introduction about the status of ExPaNDS and PaNOSC

8th 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

- The purpose
- Identified challenges
- Goals of the workshop
- The Portal Architecture
- The technical talks
- Survey and wrap up
- Agenda

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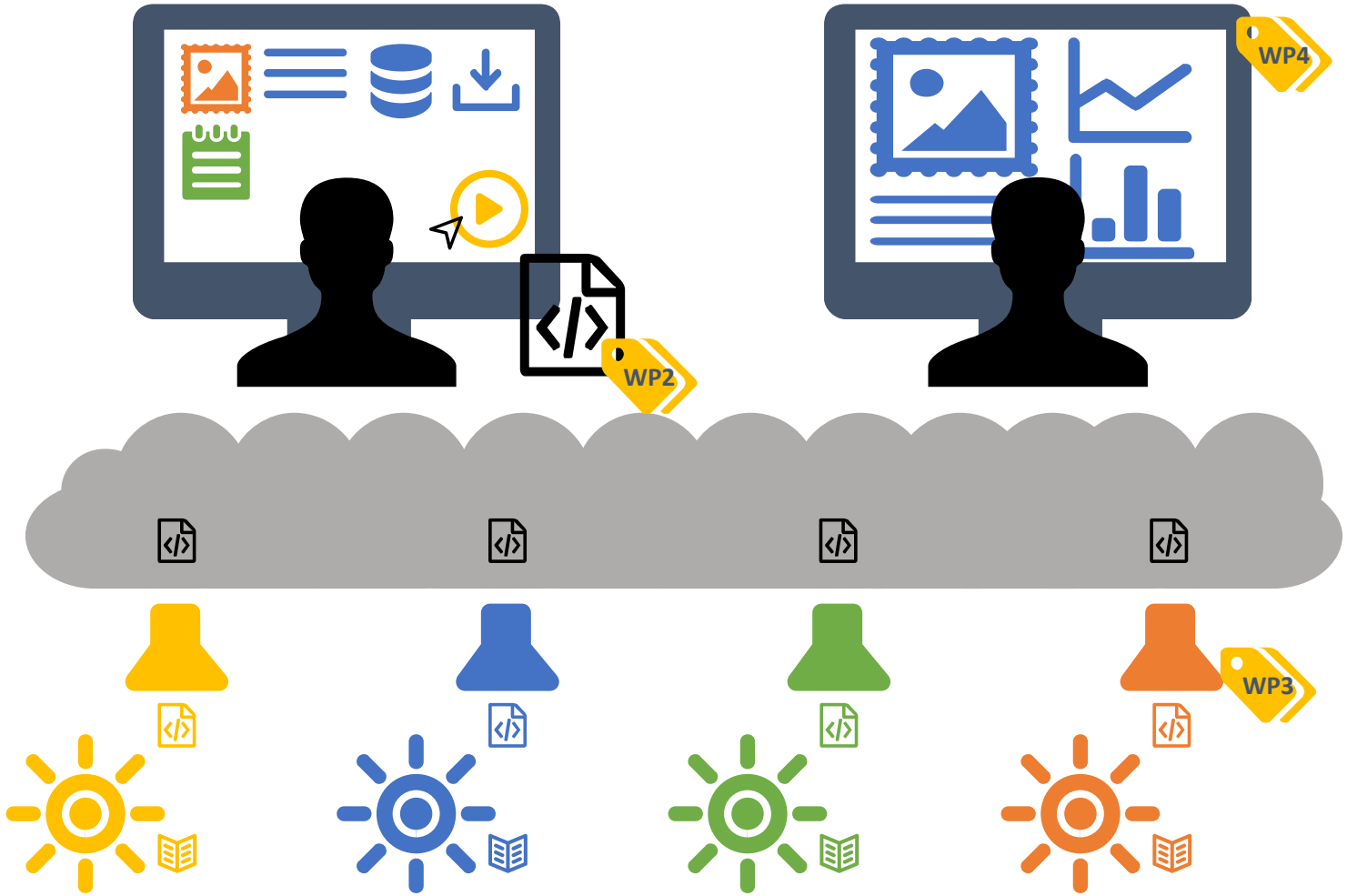
The purpose (the final product)



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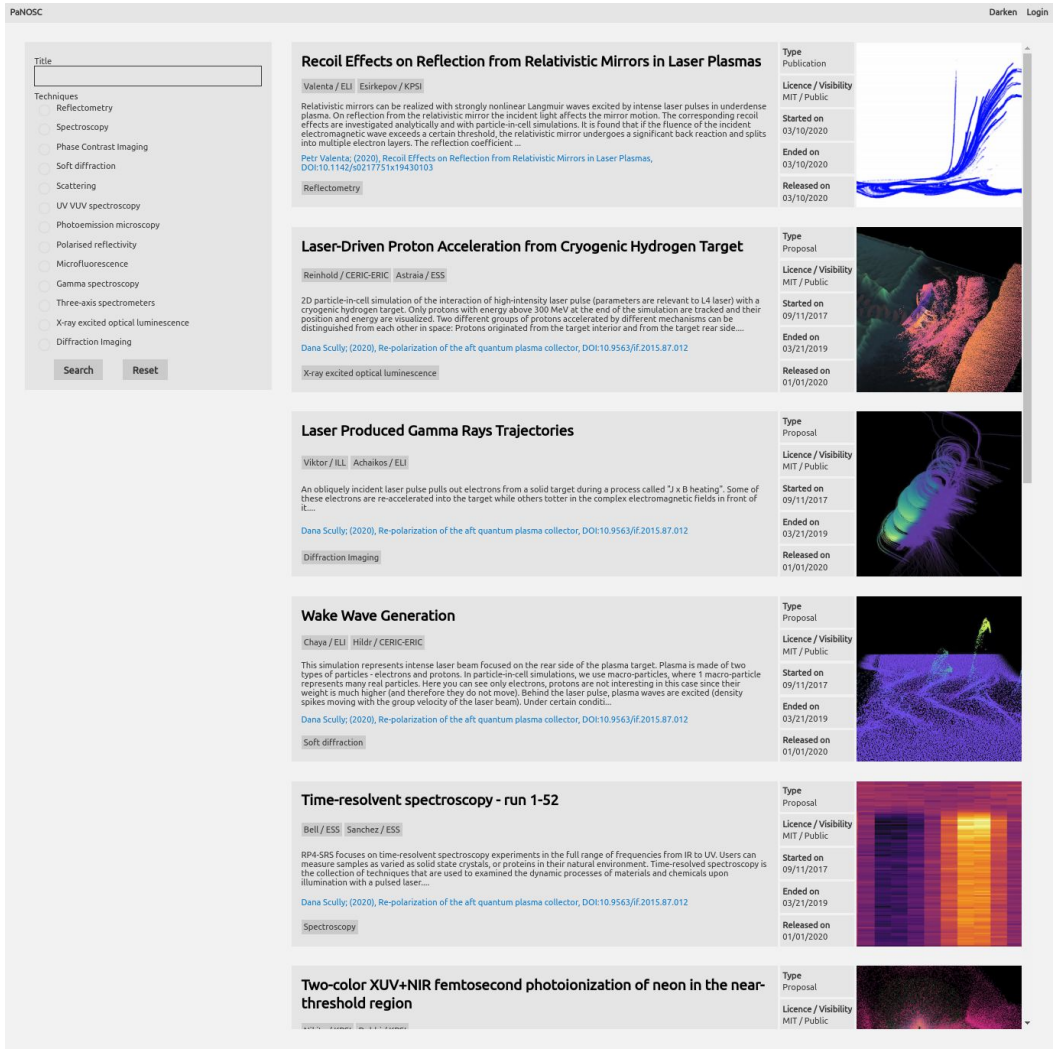
First screen shot



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Identified challenges of both projects

- Minimum setup in place from each facility.
  - Data Catalogue?
  - IT Infrastructure?
    - Kubernetes?
    - Slurm?
    - Openshift?
- Integration of the Portal with each particular infrastructure.
  - Exposure of the metadata to the EOSC.
  - Kubernetes, OpenShift, Slurm, Jupyterhub….
- Sizing the service's capacity.
  - How much dedicated computing power would be optimal?
- How Data Policies (Embargo period?) fit into all this, and how should we implement it?

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Goals of the workshop

- Get to know each other.
  - ...and what we do.
- Understand both projects and our roles.
- Better understanding of the requirements for the implementation of a common portal at each facility.
- Learn from each other.
- How to organise ourselves to work together (next steps).

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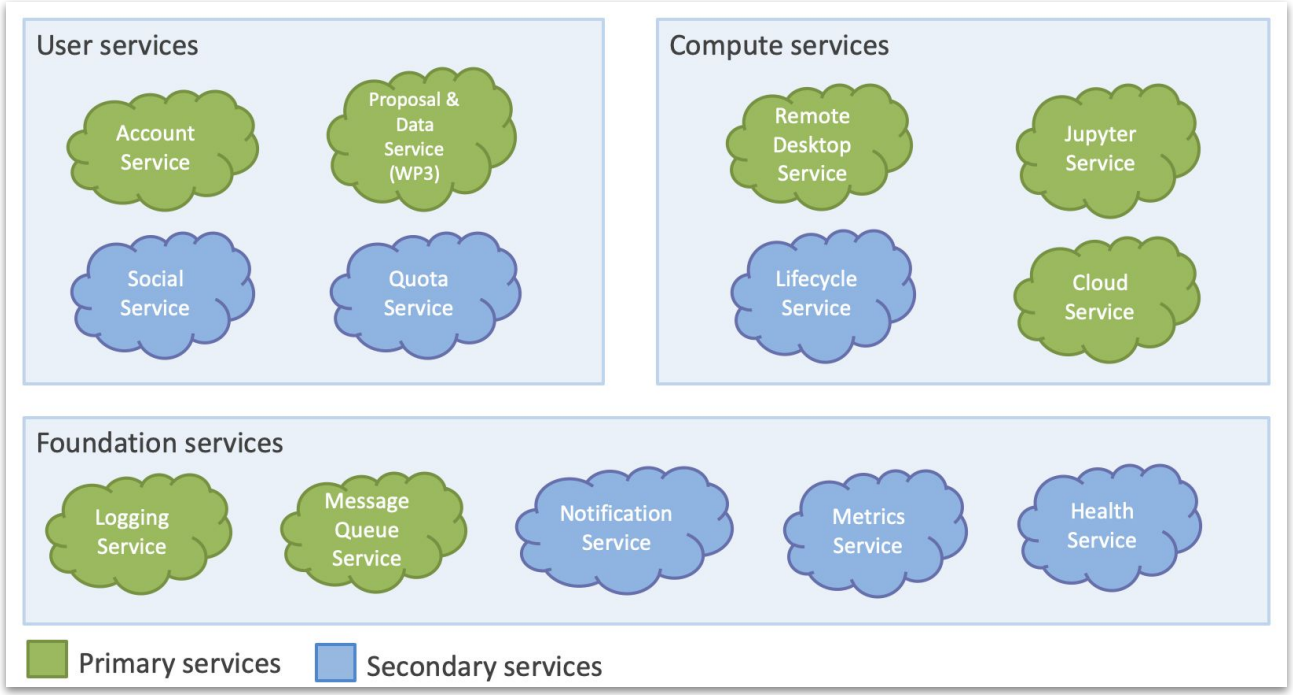
The Portal Architecture overview

Built on micro-services

- Micro-service architecture to enable
  - Separation of concerns
  - Flexible to take into account a partner's own needs and logic
  - Quicker to iterate
- Identified primary and secondary services
  - Validated by all partners
- Most services have been developed in NodeJs (TypeScript)
  - One Java service (remote desktop)
- Completed the first development iteration
- Documentation can be found here



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Portal IT1 micro-services

Service	Description
API Service	● Provides the main point of entry to the PaNOSC Portal application and provides an authenticated facade to APIs of underlying micro services.
Account Service	● Authenticates and authorises a user (OpenID Connect) and return an Account object with relevant attributes. ● Provides information about the Roles of the connected user.
Cloud Service	● Performs two main tasks ○ A catalogue of plans (image and flavour combinations for Remote Desktop and Notebook) and instances ○ Proxy requests to concrete Cloud Providers
Cloud Provider	● Each concrete virtualisation host (eg Kubernetes, Slurm, OpenStack, ProxMox) is represented by a Cloud Provider with an implementation specific to that platform. ● Return a list of images/templates, a list of flavours and manage (create, start, stop, destroy) running instances. ● A common API provides unified access to these providers from the Cloud Service.
Desktop Service	● Acts as a relay between the Apache Guacamole guacd service on a running instance and a web-socket to the browser client. ● Allows for sharing of desktops between different users ● Manages different roles (owner, user, guest)
Notebook Service	● Acts as a proxy to the Notebook Server on a running server.

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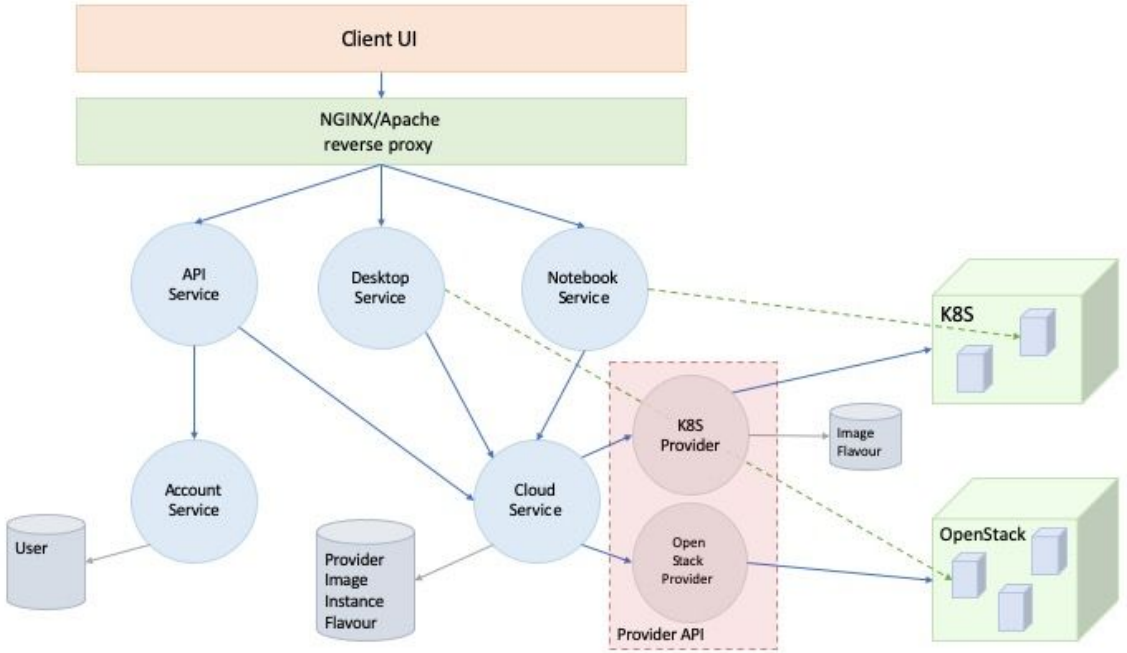
The Portal Architecture IT1

- Objective: API where authenticated user can create instances and access Remote Desktop/Jupyter services
  - Completed 27th March 2020
- Minimal micro-services developed
  - Many use cases have still not been covered
  - Much functionality is missing
  - Some micro-services are 1st iteration too
    - eg Account Service
  - Only Kubernetes cloud provider developed
- CLIs developed to test the application
- Deployed to K8S cluster using Helm Charts



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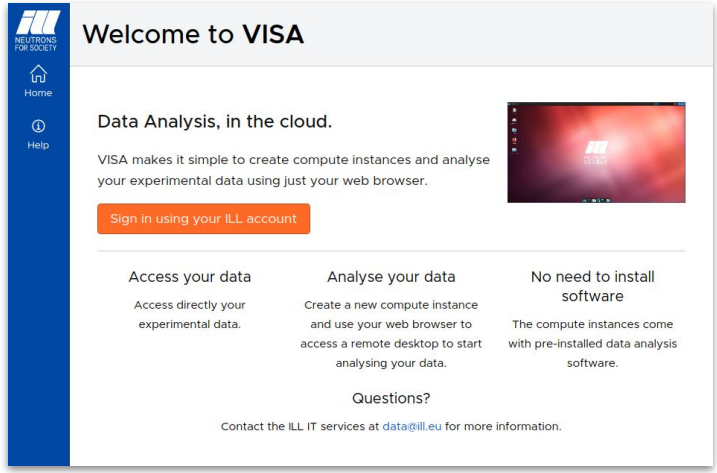
The Portal Architecture status

- Development was put on-hold due to the COVID pandemic
  - Development effort at ILL was focused on enabling *Remote Experiments* in VISA
  - VISA is a data analysis portal developed at the ILL (before PaNOSC)
  - Experience and effort in VISA development will be transferred to Portal for the net benefit of all partners
- Documentation is available on the PaNOSC confluence
- Re-evaluation of Portal integration at the ILL
  - VISA is in production so transition to Portal needs to be seamless
    - Remote Experiments still needs to be possible due to travel restrictions
  - K8S not on the service roadmap
    - Re-evaluation of deployment strategy (docker-compose?)
  - Re-integrate experience (and code) from VISA into Portal design: priority!



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The Portal Architecture next steps

- Converge VISA and Portal developments
  - Analyse how to integrate PaNOSC Portal into VISA and port latest VISA developments into the micro-service architecture
    - Decoupling VISA modules into micro-service architecture
    - Abstract away ILL business logic and re-use code
      - Enabling site-specific extensions to micro-services?
  - Convert API into GraphQL
- Develop OpenStack Cloud Provider (ILL) and Slurm (volunteers?!)
- Implement a simpler deployment strategy that is not coupled to Kubernetes
  - Maybe in parallel to the Helm Charts (volunteers?!)
- Develop *Proposal and Data Service*: connect to a WP3 FAIR Data API provider

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Technical Presentations

- 17 talks (15 minutes each)
  - 12 + 3 (questions)
- Topics
  - Facility
  - Team and expertise
  - The Portal Architecture Test Experience
  - Facility needs for the Portal
  - COVID-19 and the impact on your team

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Results of the survey and wrap up

- Results of the Survey:
  - Survey kindly processed by Sophie Servan.
  - Raw data will be available at the end of the workshop.
- Wrap up objectives:
  - Identify main ideas from all participants.
  - Address relevant questions.
  - Define next steps, including communication channels.

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Agenda – 8th of October

- 15:15 - Brief introduction about the status of ExPaNDS and PaNOSC (J. Hall & D. Salvat)
- 15:30 - Daniel Salvat (ALBA)
- 15:45 - Andrea Lorenzon (CERIC-ERIC)
- 16:00 - Majid Ounsy (Soleil)
- 16:15 - Franz Lang (STFC)
- 16:30 - Leonardo Sala (PSI)
- 16:45 - Jakub Grosz (ELI)

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Agenda – 9th of October

- 13:00 - Andy Goetz (ESRF)
- 13:15 - Uwe Konrad (HZDR)
- 13:30 - Lottie Greenwood (ESS)
- 13:45 - Zdenek Matej (MAXIV)
- 14:00 - Andrey Vukolov (ELETTRA)
- 14:15 - Christopher Reynolds (DLS)
- 14:30 - Coffee break
- 14:45 - Michael Schuh (DESY)
- 15:00 - Andrea Manzi (EGI)
- 15:15 - Robert Rosca (EuXFEL)
- 15:30 - Rolf Krahl / Heike Görzig (HZB)
- 15:45 - Jamie Hall (ILL)
- 16:00 - Open Discussion: Results on the survey
- 16:30 - Wrap up session

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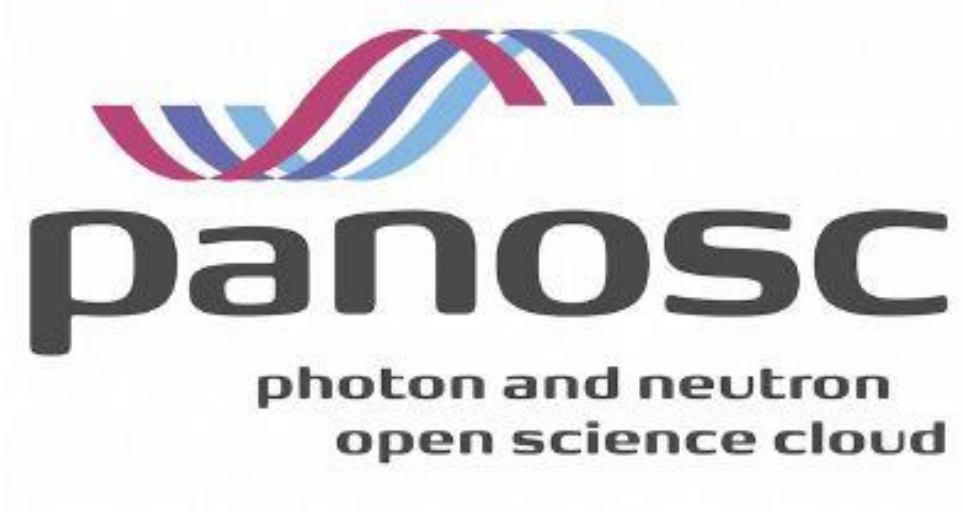

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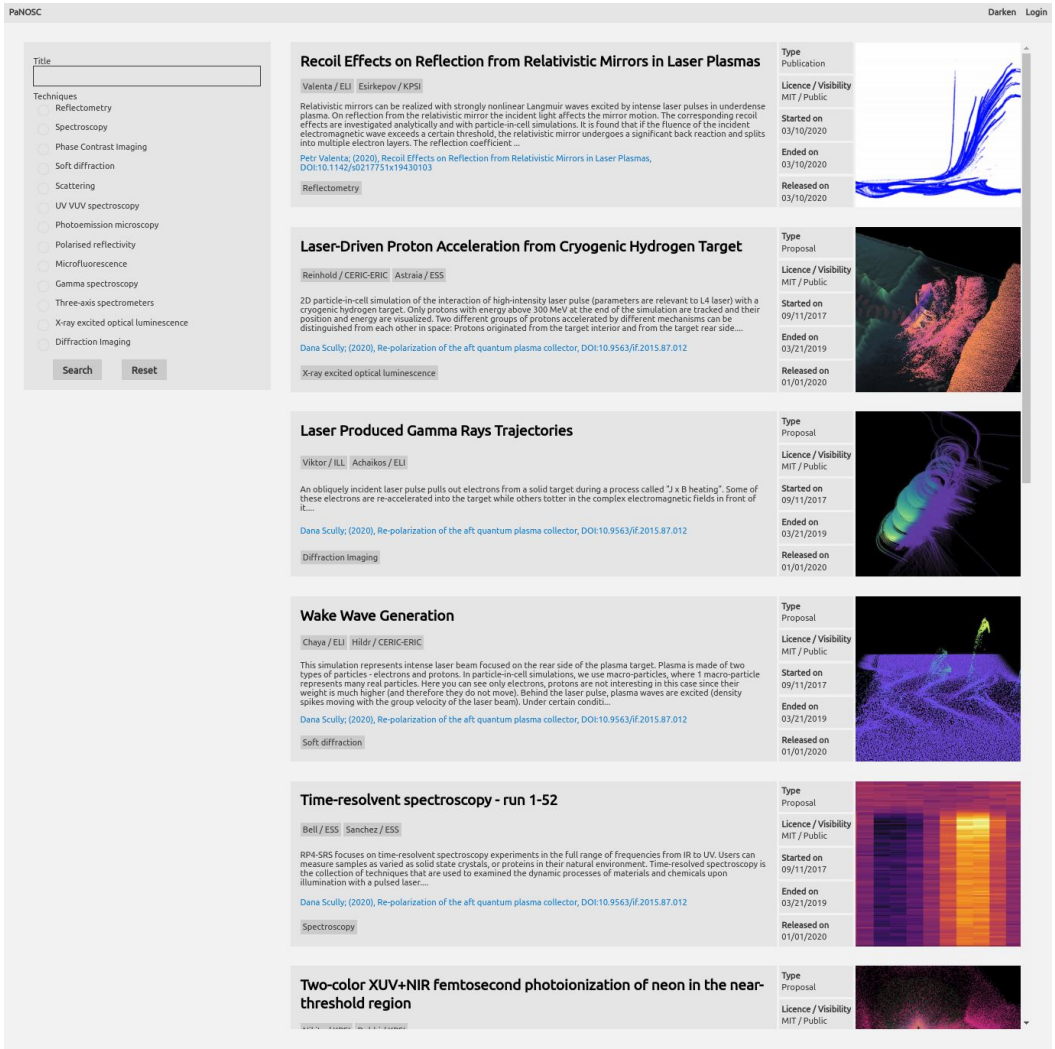

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