

The AloD platform



Funded by
the European Union

The AI4Europe Project

A community-driven platform empowering
AI Research & Innovation

Over 125,000 AI
assets in one place



AIoD's
3 pillars

Common
infrastructure of
machines



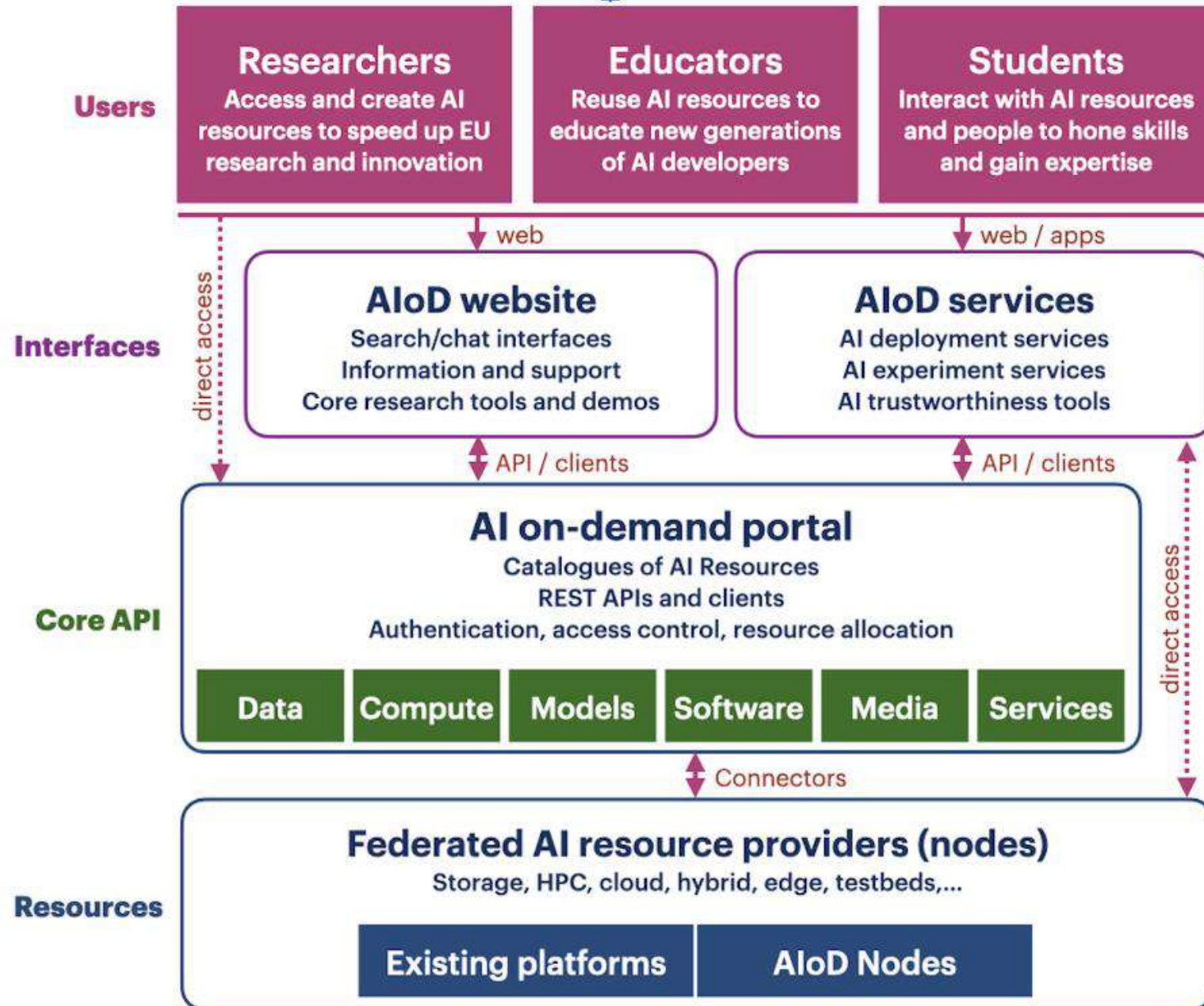
One sign-in for
total access

www.aiod.eu

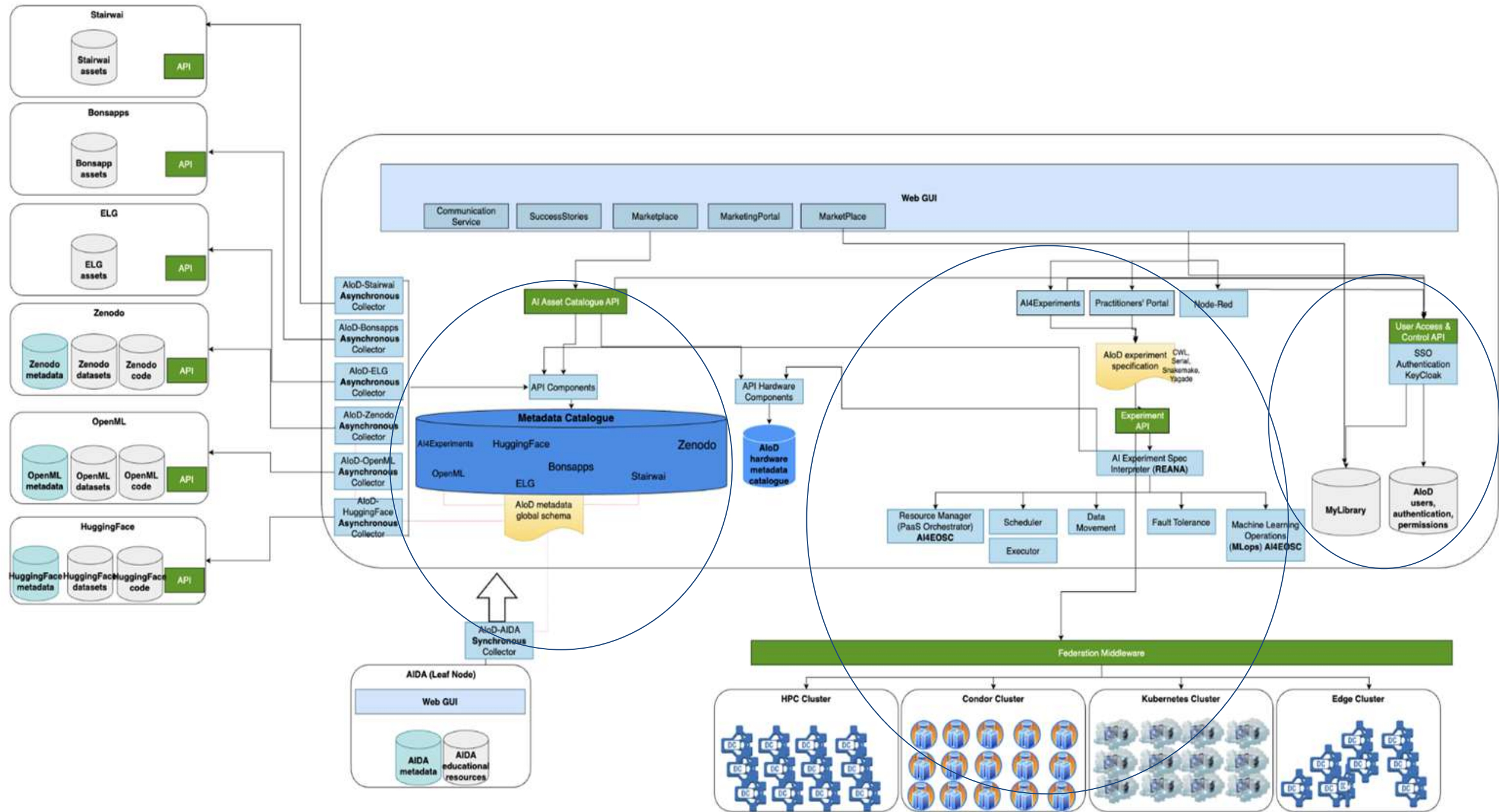


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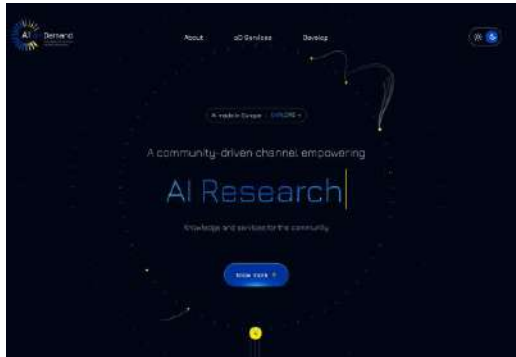
The AloD Architecture



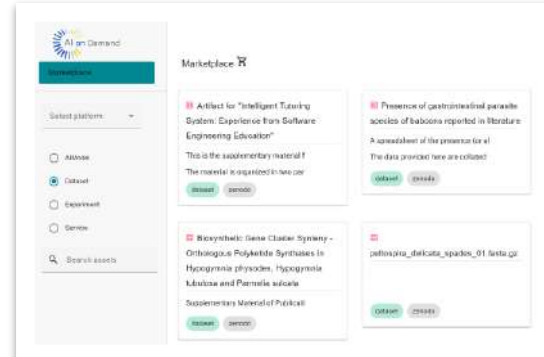
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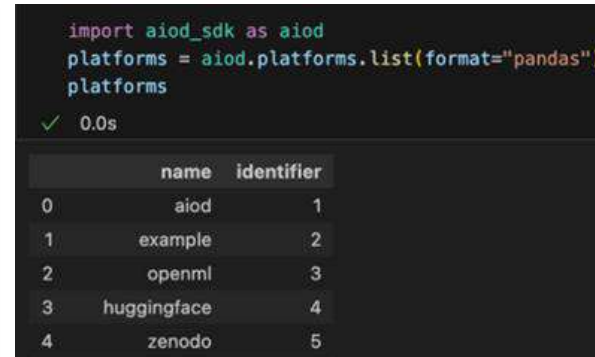
Current Interfaces



Web portal
general information



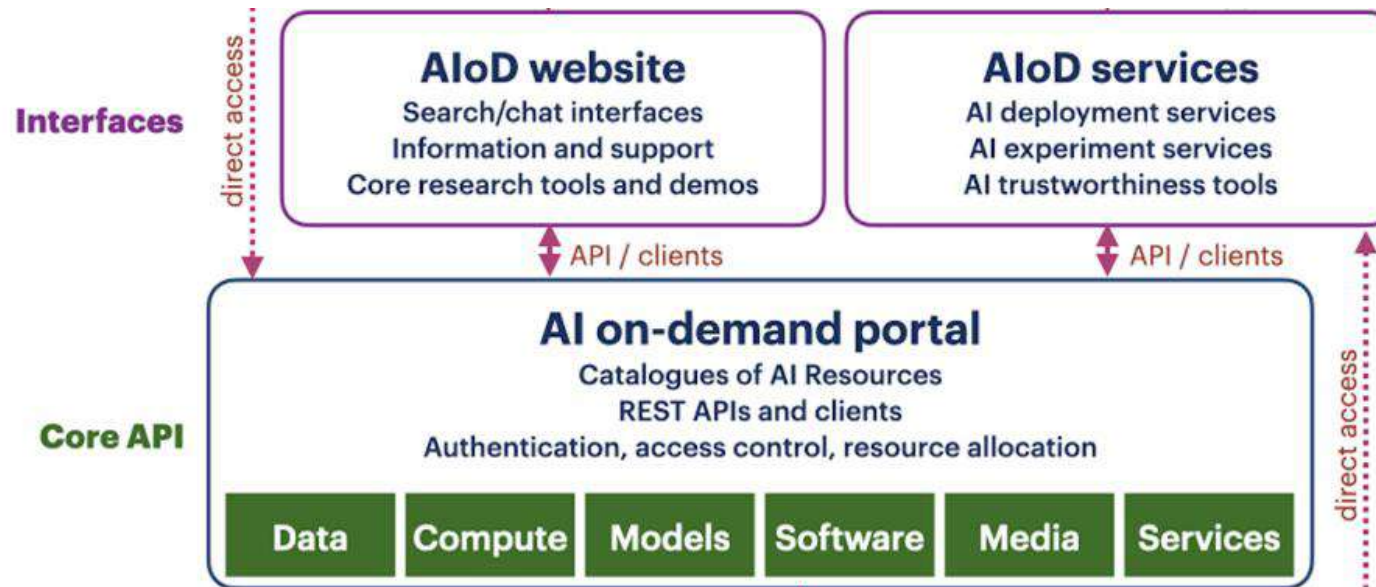
MyLibrary
search for AI resources



API
programmatic access



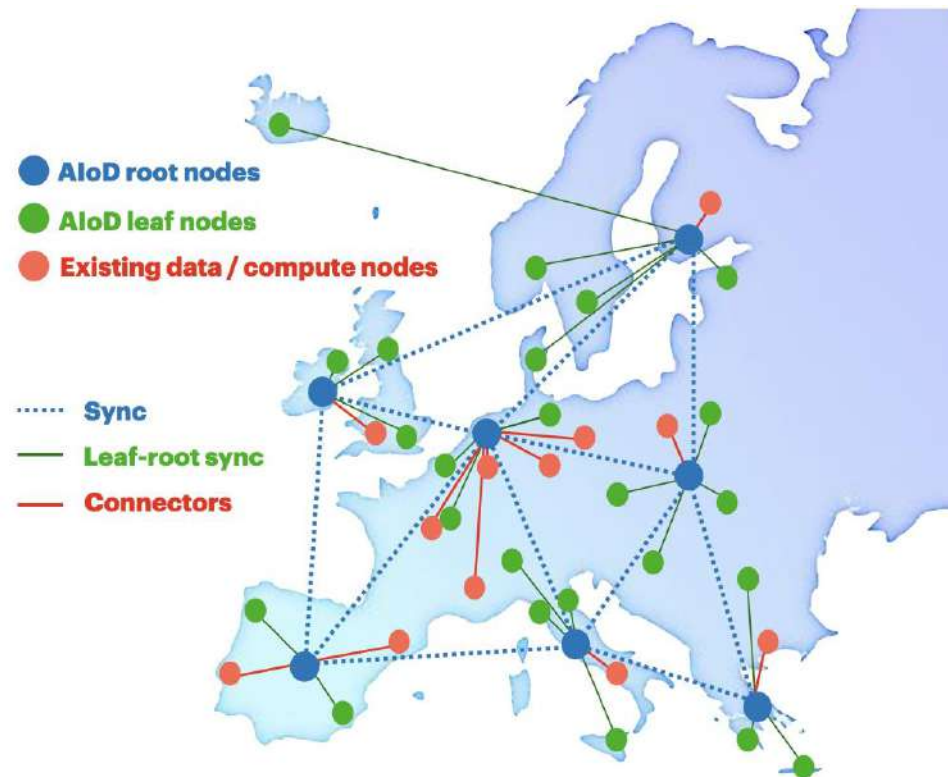
Services
advanced interfaces



A decentralised AloD platform

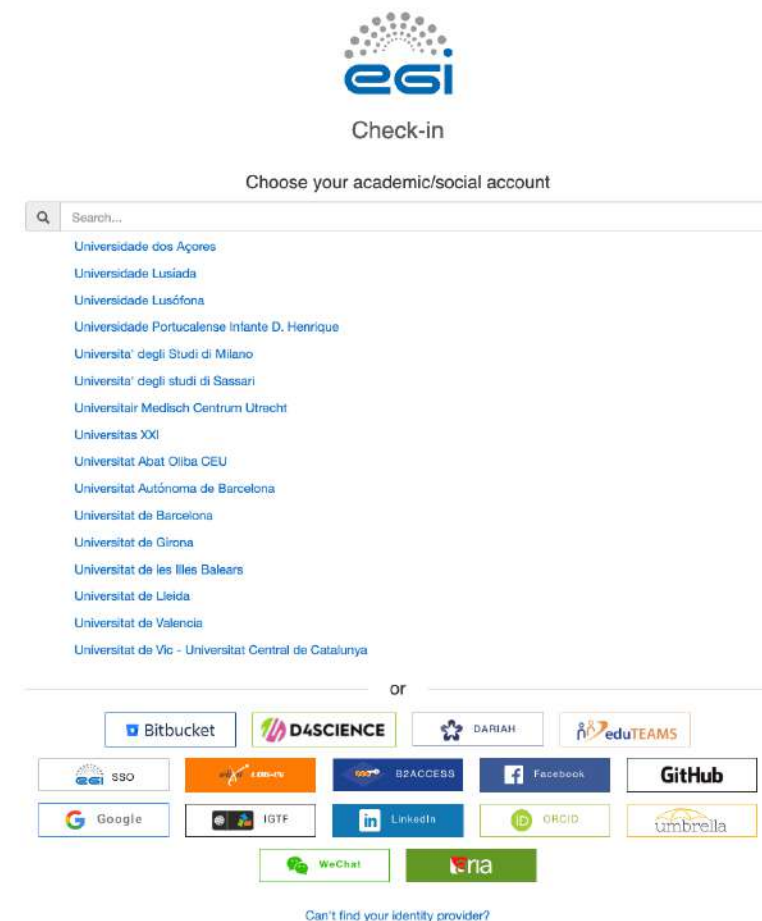
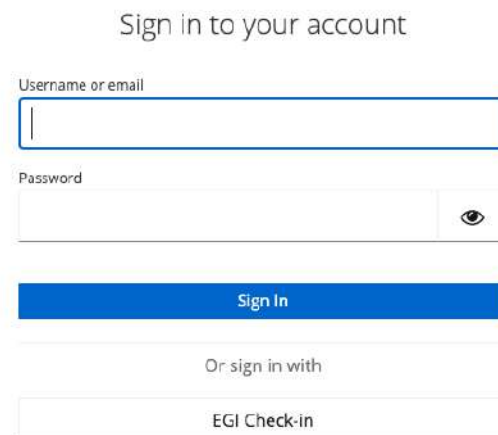
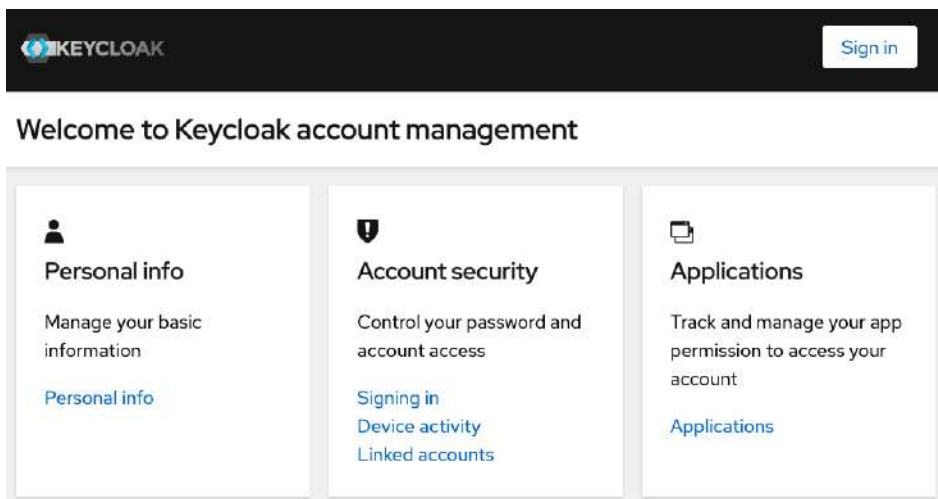
Distributed architecture:

- **(Root) nodes**
 - run core AloD services (e.g. AI resource catalogue)
 - run connectors to existing data and compute infrastructure
- **Leaf nodes**
 - run thematic services built on top of the core ones (e.g. portal, experimentation environments)
 - facilitates controlled integration of local services and resources.
- **External resources**
 - provide external resources (e.g. data and computing)



The Identity and Access Management

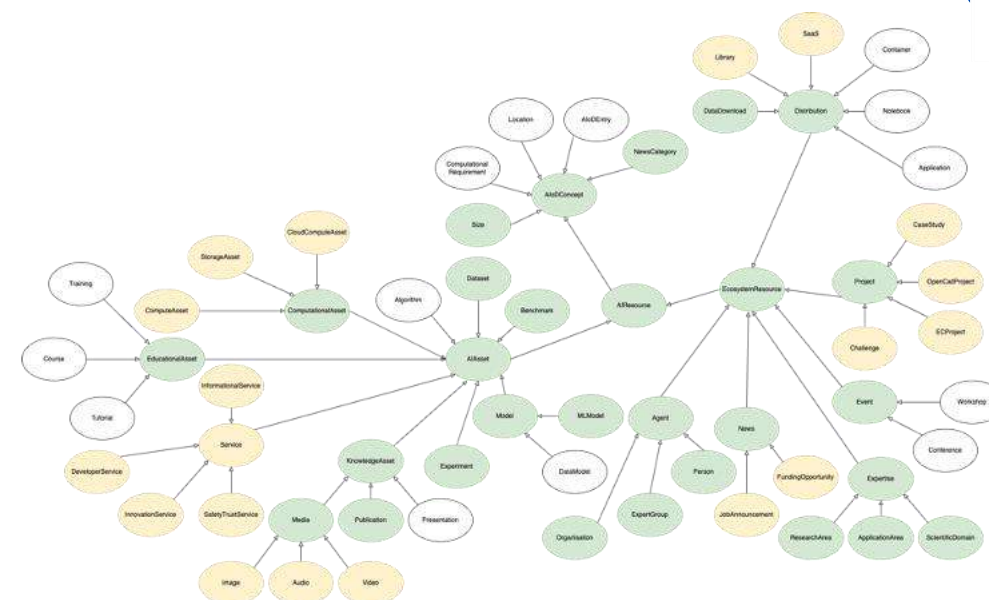
- Based on Keycloak
 - SSO, AuthN & AuthZ, Identity brokering
 - Federated with EGI check-in
- EGI check-in: SSO to services using existing credentials
 - Academic (e.g. eduGAIN, ORCID)
 - Social media (e.g. Google, Facebook, LinkedIn)
 - Community-managed identities (e.g. RIs)



The Metadata Catalogue

<https://api.aiod.eu>

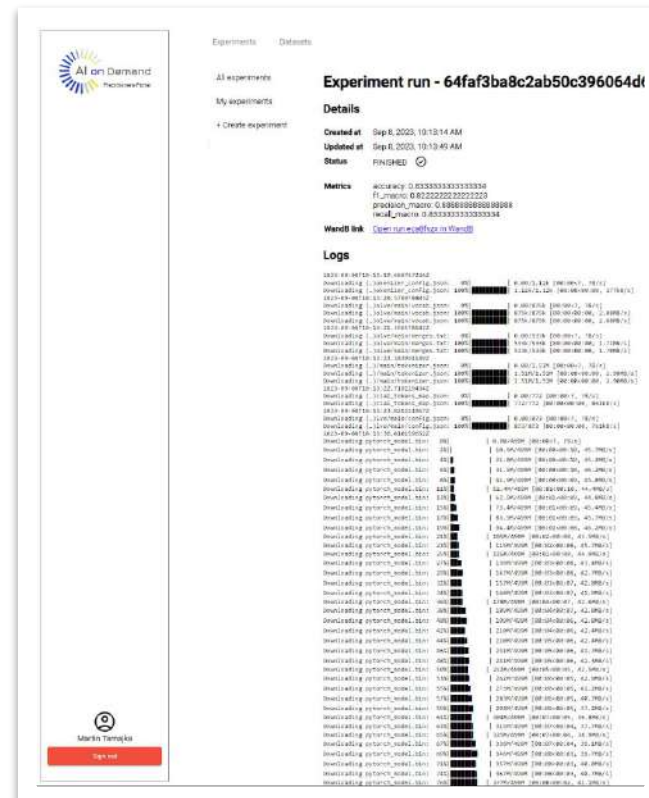
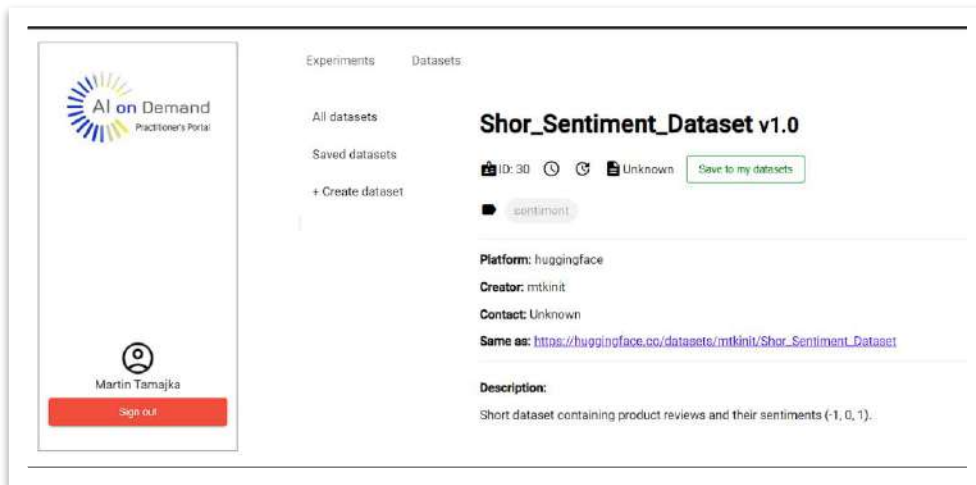
- **Software interface (API)**
 - Supports listing, adding, updating, and retrieving Platforms, **datasets, experiments, ML models, publications, services, projects, computational assets, news, events, educational resources, case studies, persons, teams,...**
- **AI resource (metadata) catalogue**
 - **500K+** resources (mostly datasets), onboarded via the API
 - **Connectors** with OpenML, Zenodo, HuggingFace, AIDA, Bonsapps, StairwAI, Robotics4EU
 - ElasticSearch: searching over metadata catalogue across different platforms at once



datasets	
GET	/datasets/v1 List Datasets
POST	/datasets/v1 Dataset
GET	/counts/datasets/v0 Count Of Datasets
GET	/datasets/v1/{identifier} Dataset
PUT	/datasets/v1/{identifier} Dataset
DELETE	/datasets/v1/{identifier} Dataset
experiments	
GET	/experiments/v0 List Experiments
POST	/experiments/v0 Experiment
GET	/counts/experiments/v0 Count Of Experiments
GET	/experiments/v0/{identifier} Experiment
PUT	/experiments/v0/{identifier} Experiment

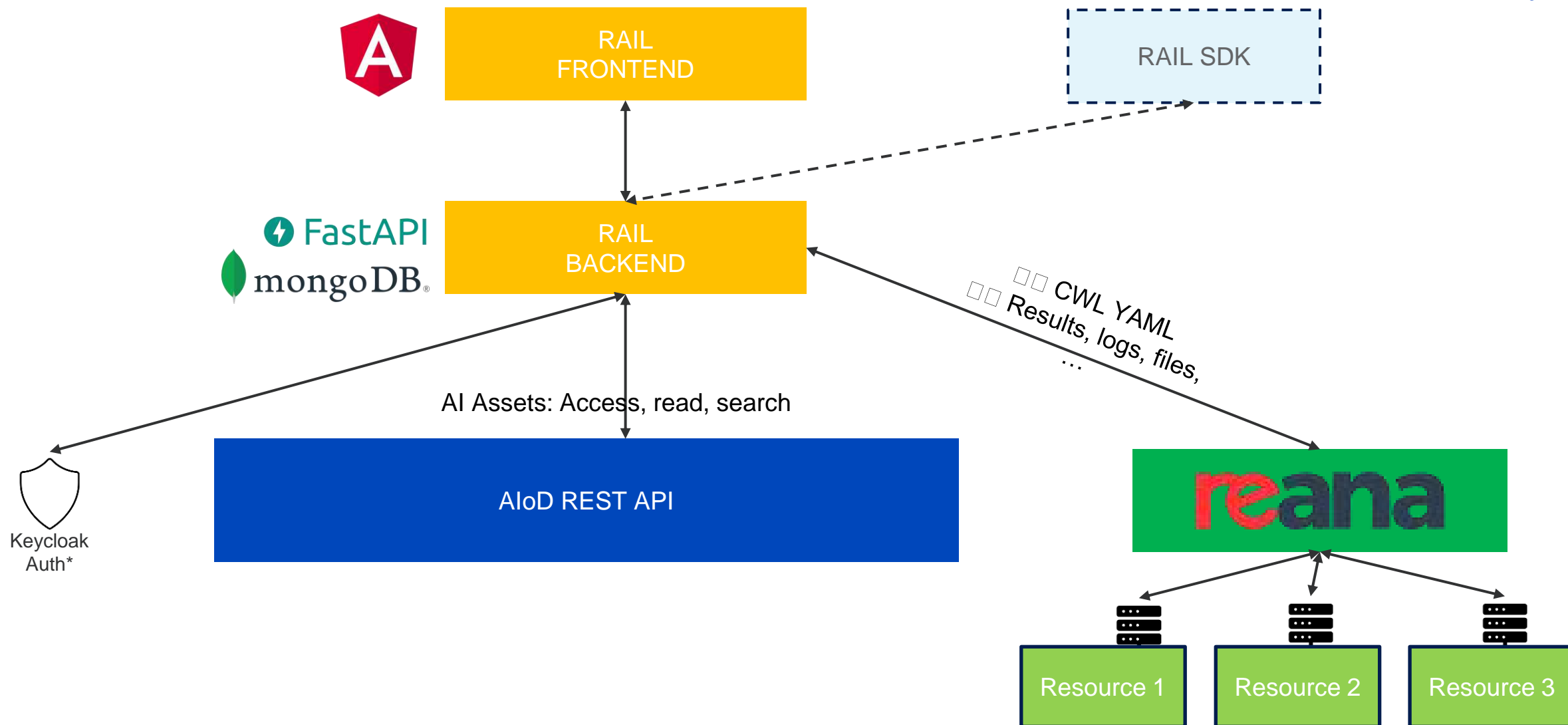
RAIL

<https://rail.aiod.eu>



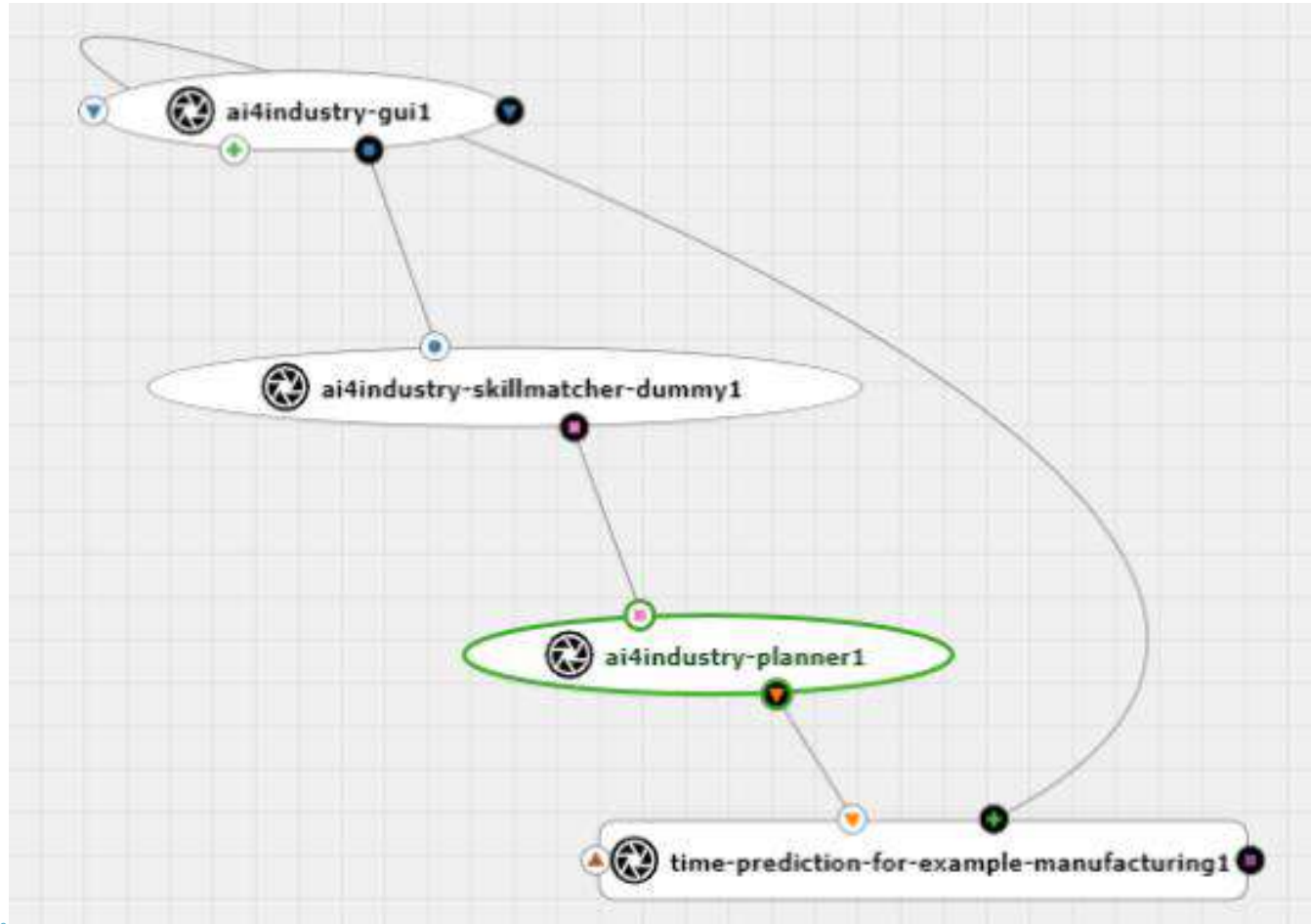
- A tool that allows AI practitioners to explore and use AI assets directly in AloD in a lightweight and highly flexible way
 - A web application (currently also working on API and SDK)
 - enables AI practitioners
 - work with AloD AI Assets (explore, search, compare, ...)
 - create experiments that are reproducible and reusable
 - execute directly in the AloD platform supported by its infrastructure
 - make use of AloD AI Assets

RAIL



AI Builder

<https://ai-builder.aiod.eu>



AI4EUROPE



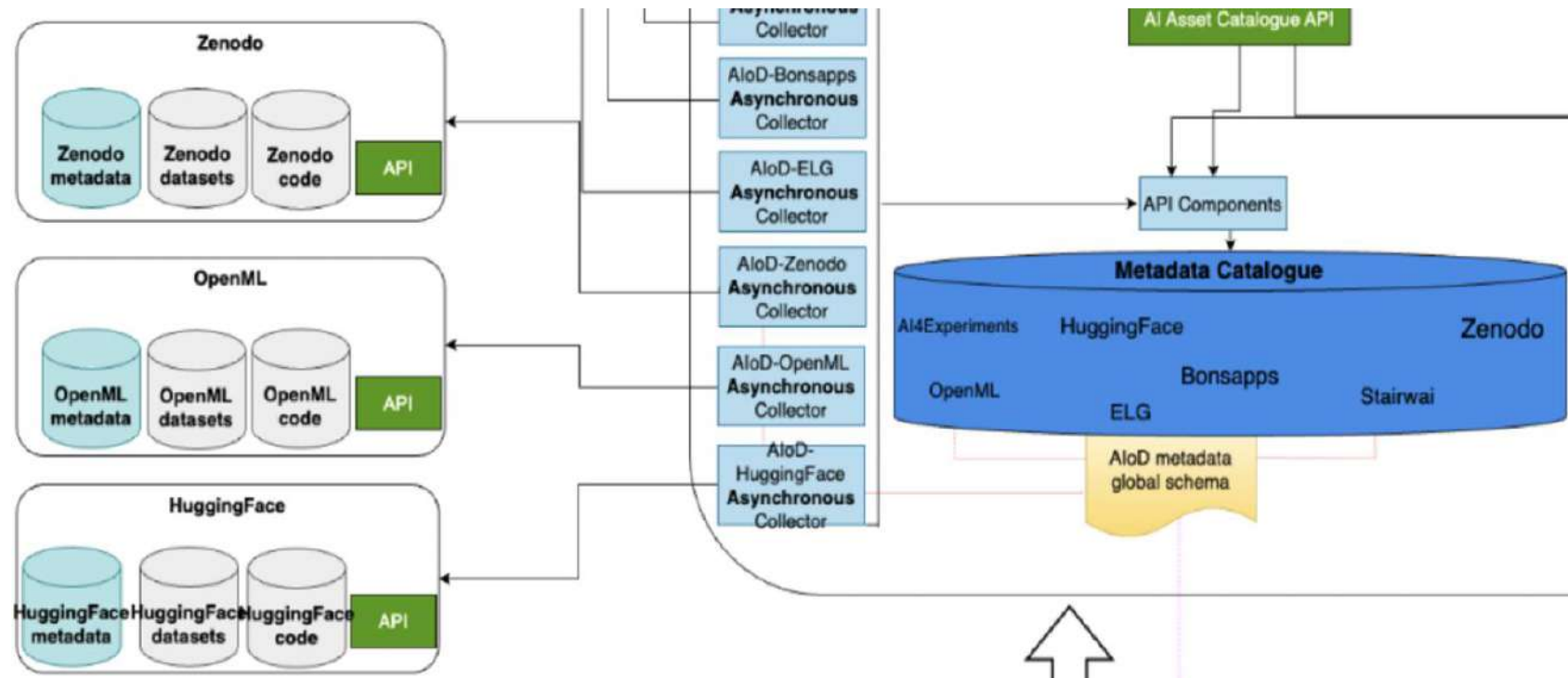
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How to Engage?



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Sharing AI resources: the metadata catalogue



Python SDK

- Connect AloD API to Services
 - install via package manager
 - import and use it
 - under development
 - Github: [aiod_py_sdk](#)

```
%pip install aiod-py-sdk
```

Python

```
import aiod_sdk as aiod
platforms = aiod.platforms.list(format="pandas")
platforms
```

✓ 0.0s Python


	name	identifier
0	aiod	1
1	example	2
2	openml	3
3	huggingface	4
4	zenodo	5
5	ai4experiments	6

AloD Metadata Catalogue 1.3.20240308

QAS 3.1


/openapi.json

This is the Swagger documentation of the AloD Metadata Catalogue. For the Changelog, refer to <https://github.com/aiondemand/AIOD-rest-api/releases>.

[Authorize](#) 

default ^


[GET / Home](#) v

[GET /authorization_test Test Authorization](#)  v

[GET /counts/v1 Counts](#) v


platforms ^


[GET /platforms/v1 List Platforms](#) v

[POST /platforms/v1 Platform](#)  v

[GET /counts/platforms/v1 Count Of Platforms](#) v

[GET /platforms/v1/{identifier} Platform](#) v

[PUT /platforms/v1/{identifier} Platform](#)  v

[DELETE /platforms/v1/{identifier} Platform](#)  v

```
aiod.datasets.counts()
```

✓ 0.6s Python

409335

```
datasets = aiod.datasets.list(offset=300, limit=2)
datasets[datasets.columns[:5]]
```

✓ 0.1s Python

	platform	platform_resource_identifier	name	da
0	huggingface	huggingartists/oxxyymiron	huggingartists/oxxyymiron	
1	huggingface	huggingartists/peter-paul-and-mary	huggingartists/peter-paul-and-mary	

```
metadata_dataset302 = aiod.datasets.get(302)
metadata_dataset302[:5]
```

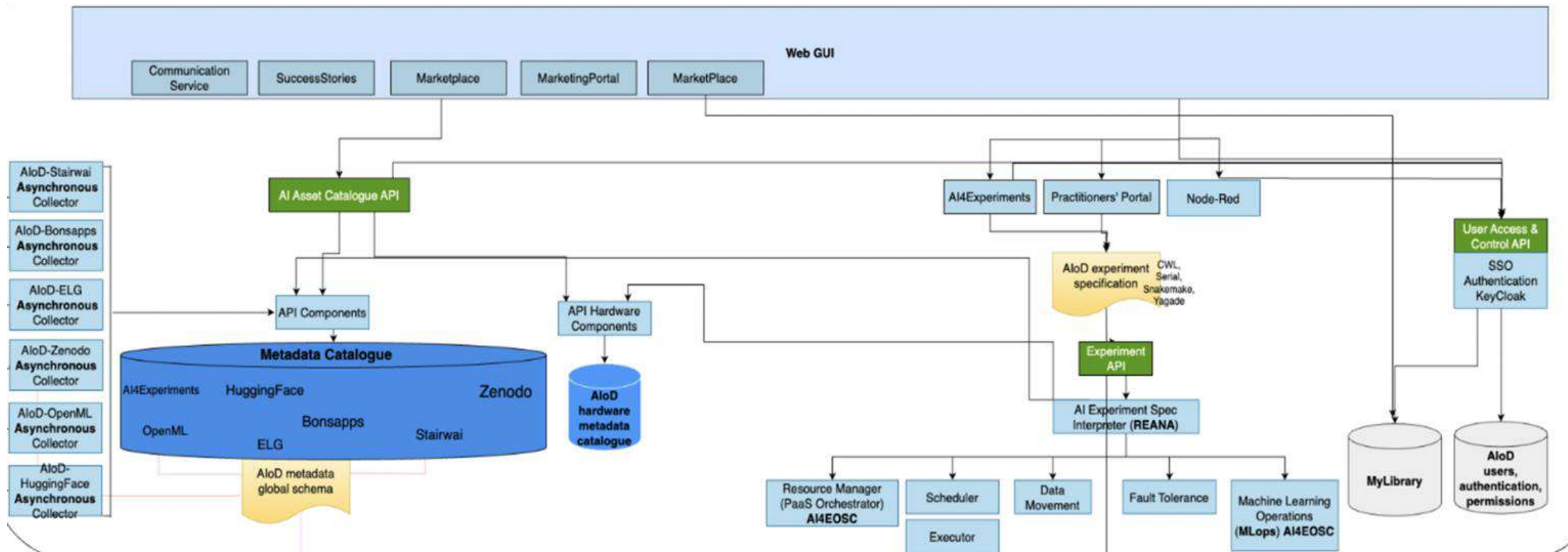
✓ 0.0s Python

```
platform
platform_resource_identifier      huggingartists/peter-
name                             huggingartists/peter-
date_published                    2022-0
same_as                           https://huggingface.co/datasets/hugg
dtype: object
```

Sharing Services



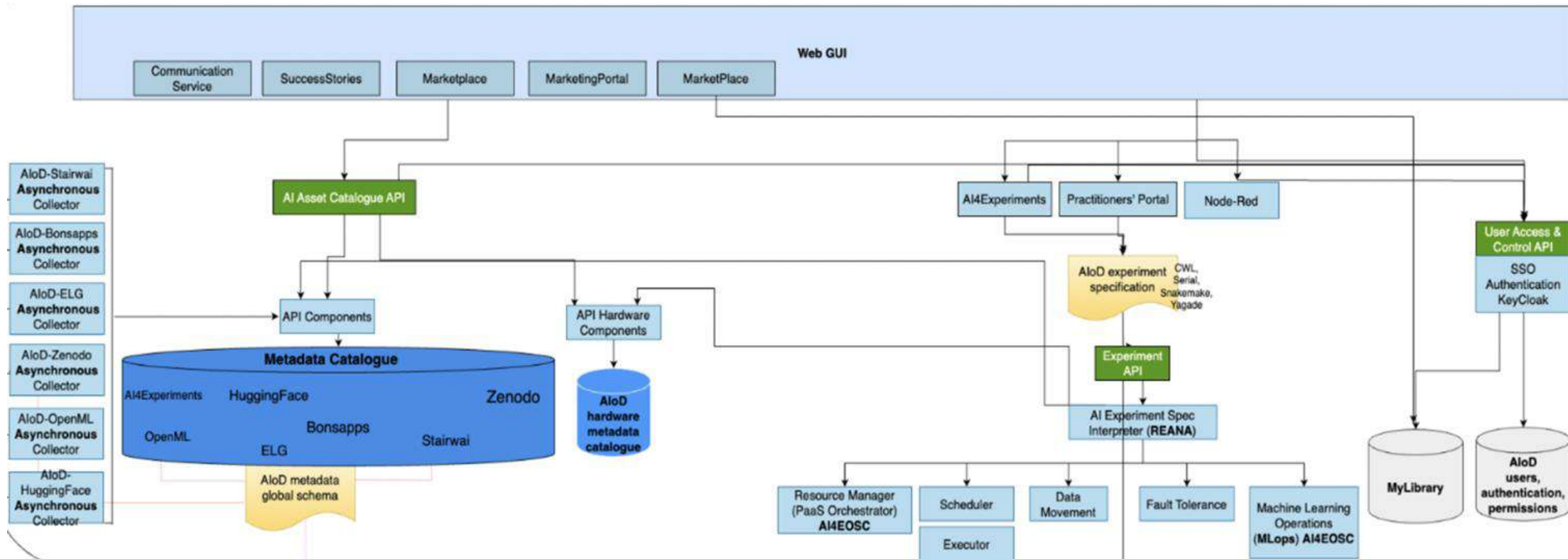
- Leveraging AloD core services to create more complex services



Sharing Computing Resources



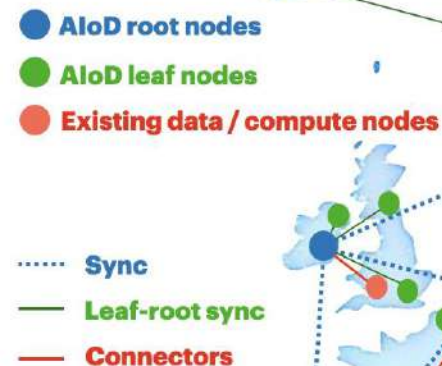
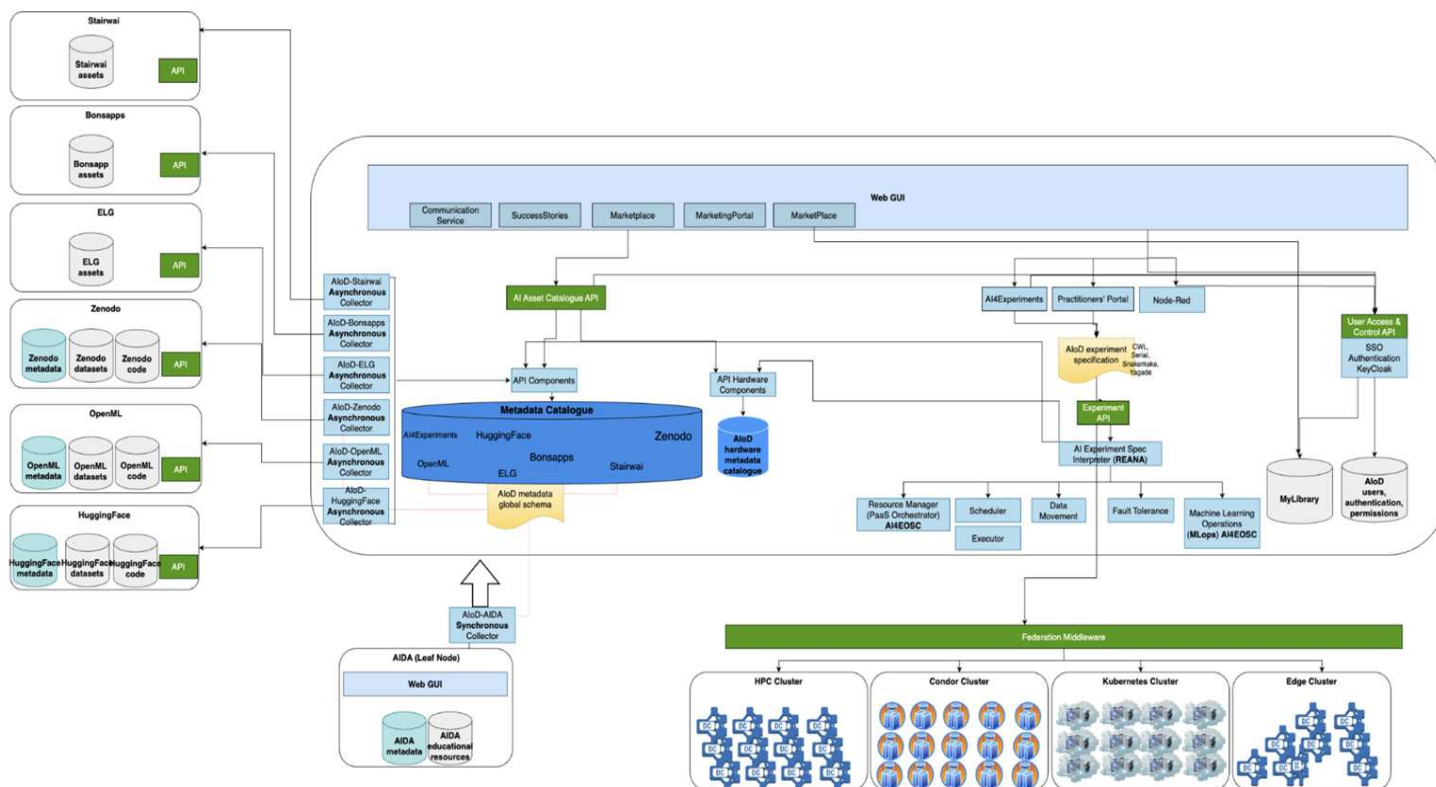
- Under development
 - Controlled shared of your computing resources



Installing a local AloD



- Local Out-of-the-box bundle





The AI-on-Demand Platform

A community-driven platform empowering
AI Research & Innovation



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Thank you!



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