

# ACH-04 - IPPLM/PSNC

## Integrated Modelling and Control

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### The ITER Integrated Modelling & Analysis Suite (IMAS)

ACH-04 works towards making **IMAS** environment available at **EUROfusion**'s computing resources: *Gateway* and *Pitagora*.

Our activities revolve around installation, maintenance, and providing support to users.

Environment we provide is composed of the software commonly used for fusion related computations.

- > **module load ach-modules**
- > **module load imasenv**

### EUROfusion Software Stack DevOps platform for a EUROfusion Standard Software

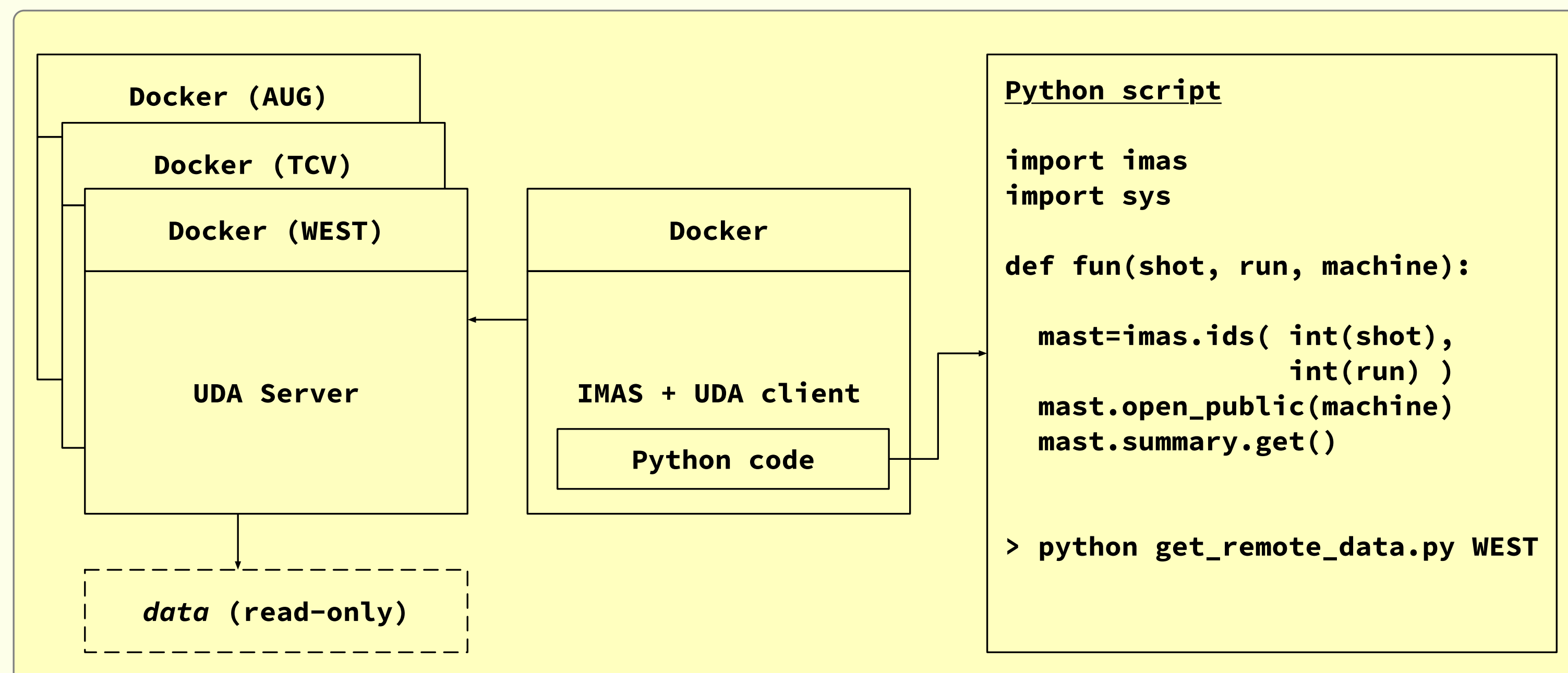
ACH-04 hosts a complete, fully integrated, DevOps platform. It significantly improves the developer experience when building and delivering code. We provide following components:

- <https://gitlab.eufus.psnk.pl> – source code control
- <https://jira.eufus.pscn.pl> – your primary ACH-04 contact point
- <https://confluence.eufus.psnk.pl> – powerful WIKI system
- <https://chat.eufus.psnk.pl> – chat and knowledge sharing system

### Containerised infrastructure-agnostic components

**Docker** based release of **IMAS** allows developers to provide **IMAS** based solutions in a convenient way. They can be easily made **laptop**, **HPC** and **Cloud ready** at the same time. One component that runs everywhere.

A **Docker** based **UDA** (Universal Data Access) client/server solution is an example of how containerization benefits can be leveraged.



### Adaptation of codes to IMAS framework

ACH-04 provides support for adapting simulation and analysis codes to the **IMAS** framework. This work spans several complementary activities:

- interface development: **IMAS** ↔ **code native data formats**
- containerized integration: **Docker** based **IMAS** wrappers
- **Python** integration: **Python** based **IMAS** wrappers
- Data Model changes: new physical quantities in **IMAS Data Dictionary**
- workflow integration: adapting codes to the **MUSCLE3** framework
- workflow benchmarking: benchmarks of integrated workflows

### Authorization and Authentication Infrastructure (AAI)

**ACH-04** provides Keycloak based Authorization and Authentication Infrastructure integrated with standard **EUROfusion** mechanisms (**IMS** located at IPP). It is possible to use it as **IdP** for your projects.

### Implementation of Data Management Plan

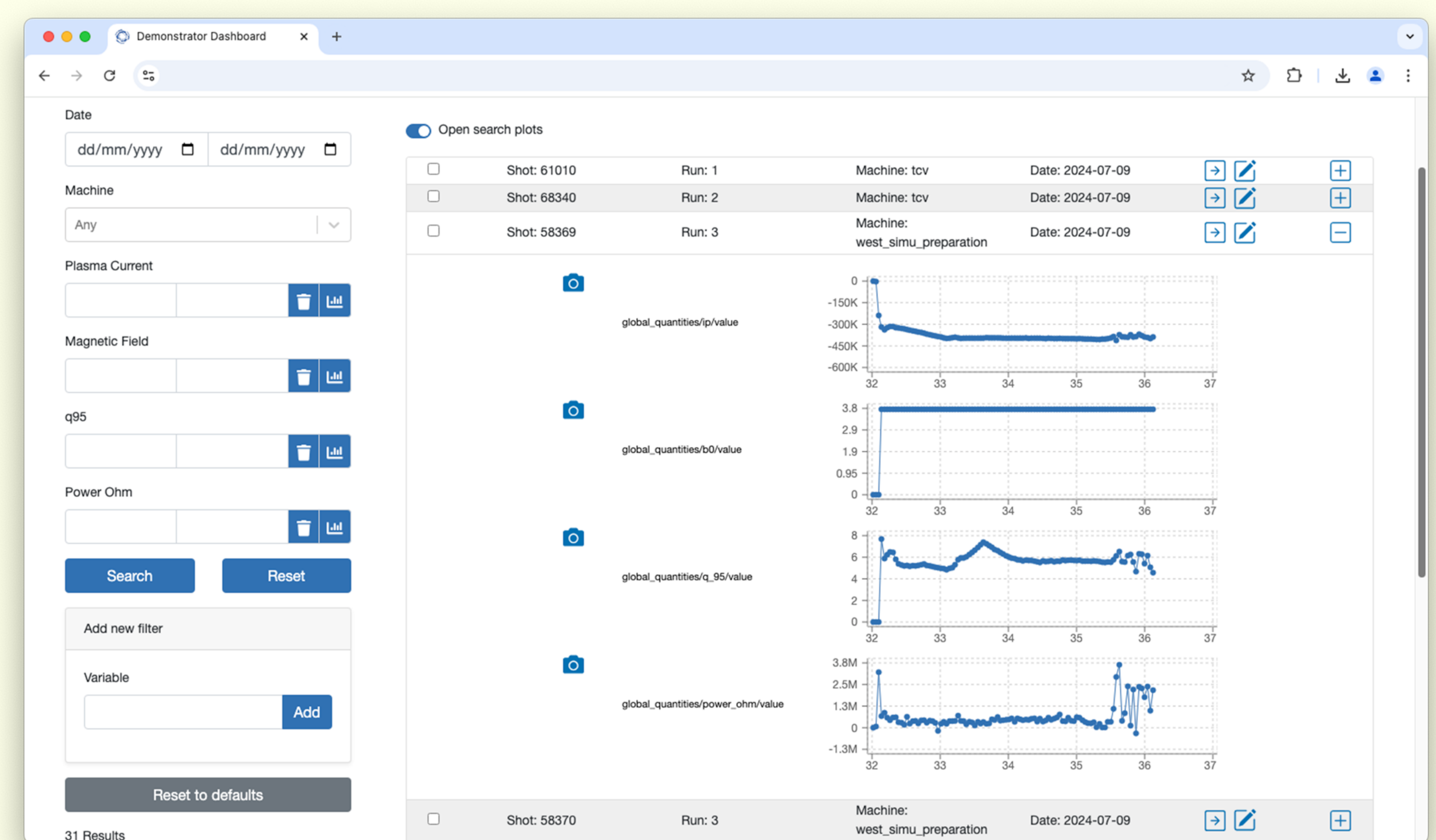
The main goal of Data Management Plan project is to provide access to metadata generated during operation of fusion devices

**AUG**, **COMPASS(U)**, **JET**, **MAST(U)**, **TCV**, **WEST**.

### Simulation Catalogue

The aim to overcome the challenges of retrieving data from various data sources, e.g.: *dealing with proprietary data formats, accessing remote locations, managing different data access policies and credentials*.

It is planned to include new data sources in the future as well as providing data to a general public audience.



### Conclusions

▪ If you are facing challenges with:

- making your code **IMAS** ready and running it at *Gateway/Pitagora*
- improving code robustness through stronger **DevOps** practices
- identifying the right platforms for project related activities (**JIRA/Gitlab**)
- distributing your work as containerized codes
- sharing result metadata with the wider community

please reach out to us via the ACH-04 Support portal:

<https://jira.eufus.psnk.pl/browse/ACH04SUPP>

ACH-04 Start Page



▪ <https://link.eufus.psnk.pl/ach-04>

▪ JIRA/Confluence tutorials



▪ <https://link.eufus.psnk.pl/jira>

▪ Simulation Catalogue (DMP)



▪ <https://link.eufus.psnk.pl/dmp>

