



ESCAPE

European Science Cluster of Astronomy &
Particle physics ESFRI research Infrastructures

WP5 - ESAP

ESFRI Science Analysis Platform

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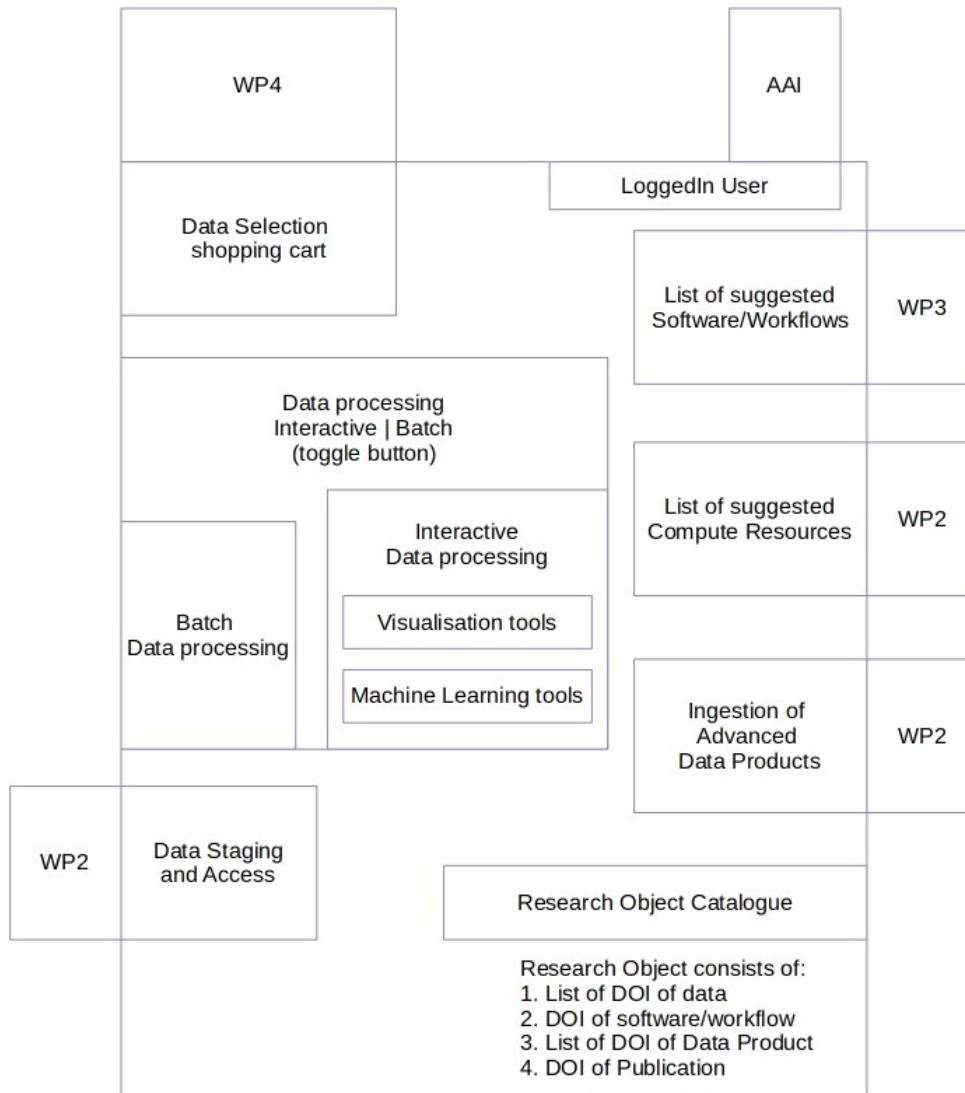
ASTRON, The Netherlands

ESCAPE Progress Meeting, 26-27 February 2020

ESCAPE - The European Science Cluster of Astronomy & Particle Physics ESFRI Research Infrastructures has received funding from the European Union's Horizon 2020 research and innovation programme under the Grant Agreement n° 824064.

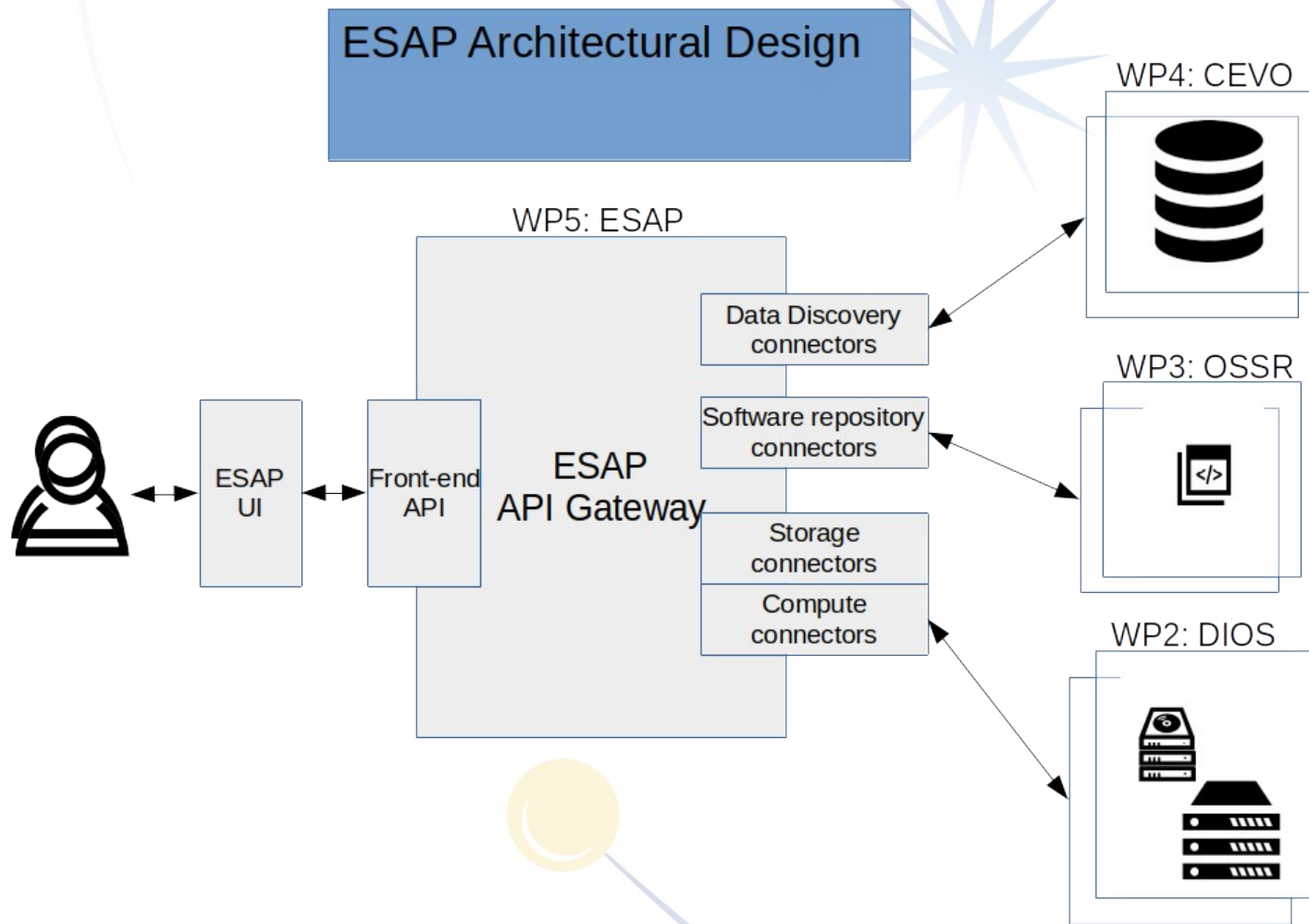


ESAP UI Service Components



- AAI
- Data selection shopping cart
- Data Staging and Access
- List of suggested Software/Workflows
- List of suggested Compute Resources
- Batch data processing
- Interactive Data analysis
- Data analysis with visualisation tools
- Data analysis with machine learning tools
- Research object catalogue
- Ingestion of advanced data products





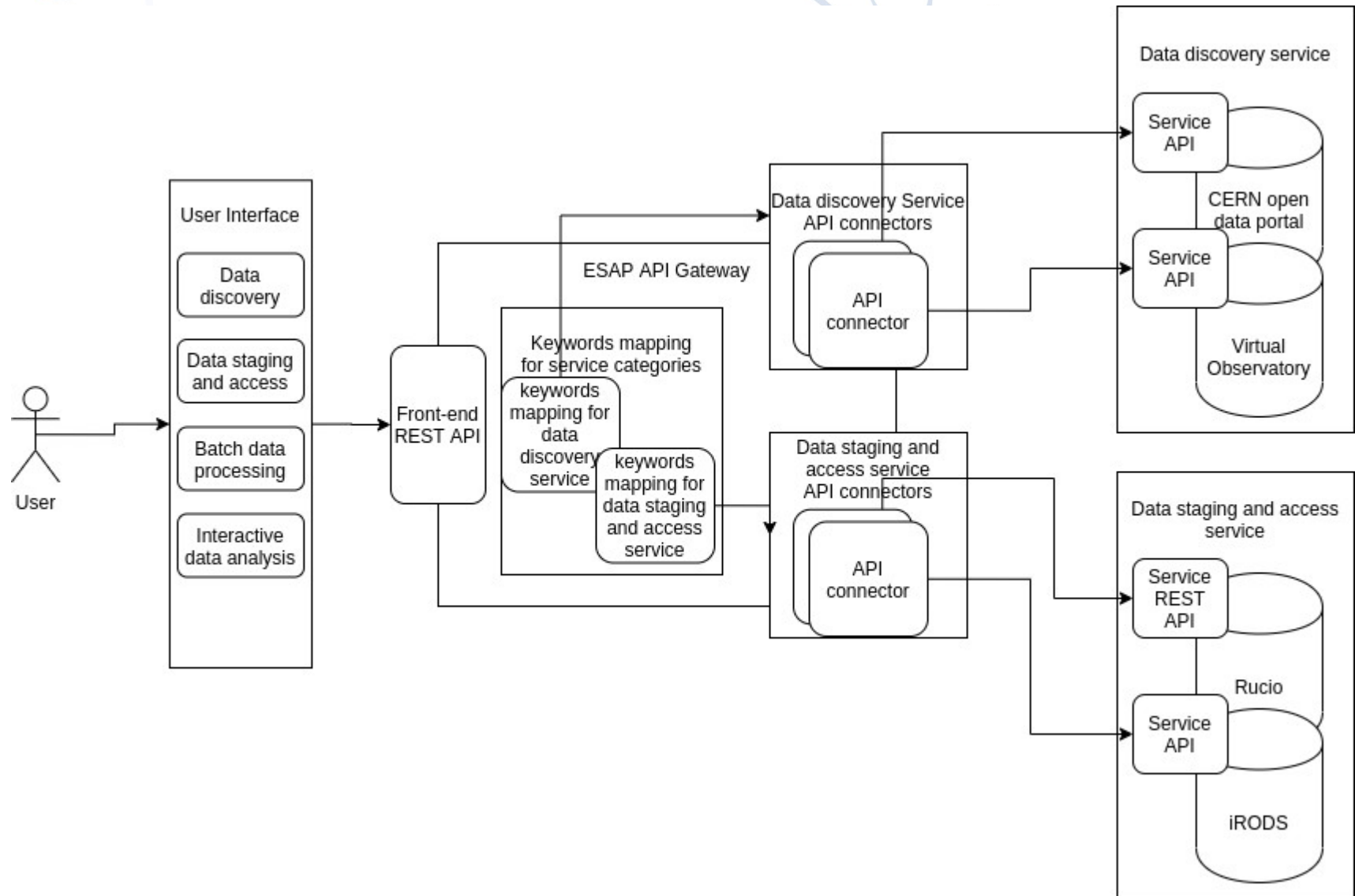
ESAP Minimum Viable Product Core Team

Each core team member is leading one or more service categories:

- ASTRON is leading the development of the ESAP UI and API Gateway.
- SKAO and CTAO lead the aspects of data lake and workload management integration.
 - CERN, FAU
- Nikhef leads on the federated-AAI aspects.
- UEDIN leads the IVOA integration and interactive data processing services.
 - JIVE, EGO, FAIR, UCM
- INAF is leading the development of batch processing.
 - CSIC-IAA



ESAP Architectural Design



WP5-ESAP contribution to ESCAPE software repository and catalogue



Contribution to Software Repository

- Building blocks of ESAP developed as part of ESCAPE project:
 - Source code of each UI service component
 - Source code of API Gateway
 - Source code of API connectors
- ESAP user contributed:
 - Jupyter Notebooks
 - Workflows
 - Research Objects (DOIs of Digital Objects)



Contribution to Software Repository contd.

ESAP prototype

- Complete ESAP software stack ready to be deployed by communities
- Guidelines for customizing ESAP for community use with ESAP building blocks



What ESAP needs from Software Repository

- Metadata of software
 - Hardware type, e.g. CPU, GPU
 - Single-thread or multi-thread
 - Software environment, e.g. is MPI needed?
 - Containerized or not
 - What are the input/output data types?
- Research Object Catalogue
 - DOIs of Digital Object
 - WP5 + WP3 ?



AAI in WP5 - ESAP



Authentication: Login with ESCAPE credentials

- Integrate with ESCAPE IAM
- Allow ESAP users to create an account with their ESCAPE credentials
 - User register at ESCAPE IAM
 - Use their institution credential through eduGAIN
 - Or their social account, e.g. Google
 - User register at ESAP
 - Use their ESCAPE credentials through ESCAPE IAM



Welcome to **escape**

Sign in with your escape credentials

 meyer



Sign in

[Forgot your password?](#)

Or sign in with

 Google

 eduGAIN

Not a member?

Register a new account

[Privacy policy](#)



Authorization: Access to services

- Software/workflows:
Most software/workflows are open for access (hopefully)
- Data discovery through Virtual Observatory
 - Most data is open
 - Proprietary data:
 - Group/Membership management
 - Is this provided by ESCAPE IAM?
 - What is the authorization model?
- Compute Infrastructure
 - SSH Key
 - Token-based authorization?
 - What is the authorization model?



Authorization: Access to services contd.

- Data access through Data Lake infrastructure
 - How are users and agents authenticated?
 - What's the authorization model?
 - What's the delegation model?
 - How are authorization privileges and policies managed?
 - What are the legacy auhtn/authz mechanisms that must be supported?
- Integration plan
 - Tutorial + F2F hackathon
- End-to-End use case
 - Lofar data discovery, staging and processing

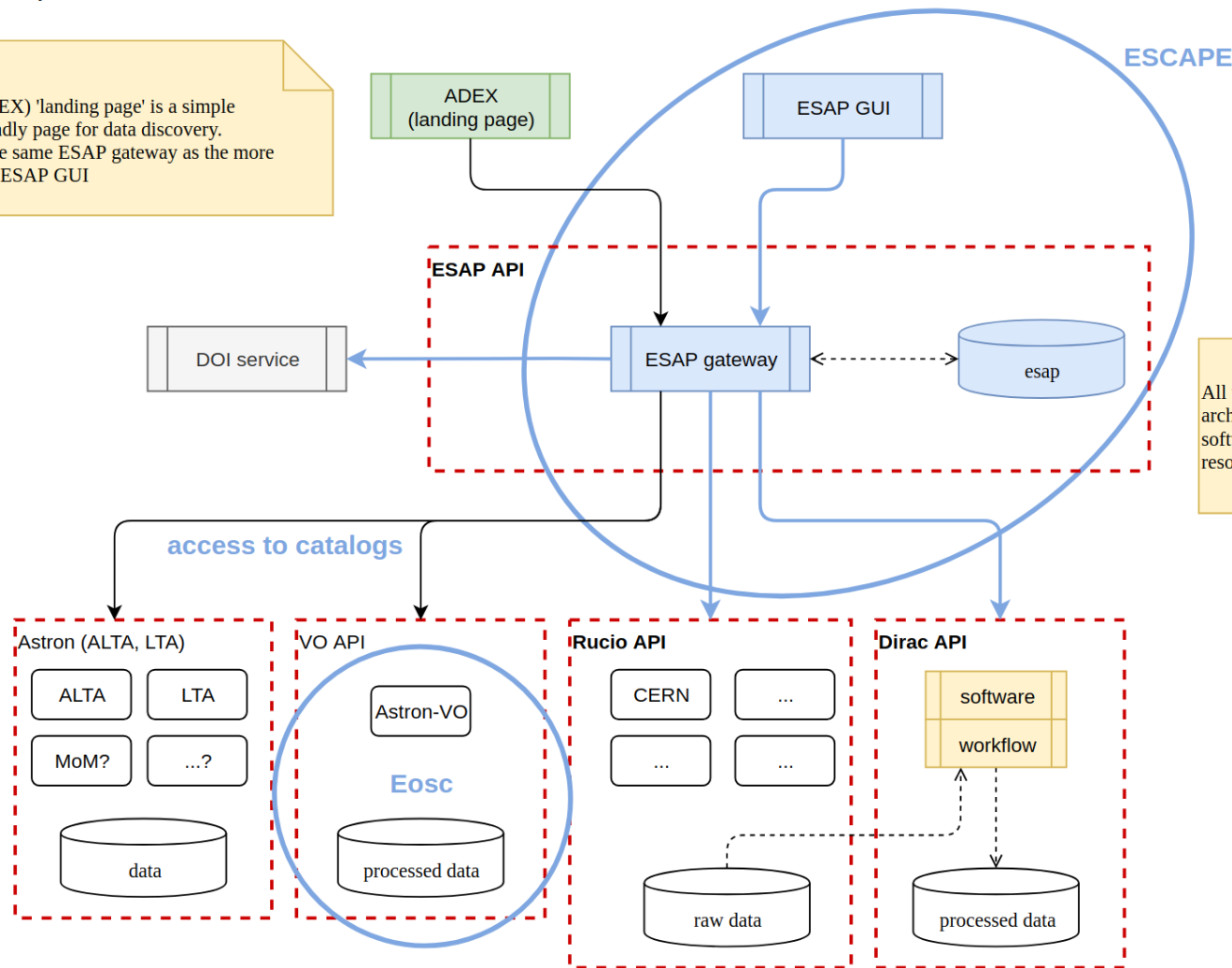


ESAP layout and data access patterns/needs



ESAP Architectural Design

The (ADEX) 'landing page' is a simple user friendly page for data discovery. It uses the same ESAP gateway as the more complex ESAP GUI



All the information about archives, catalogs, datasets, available software and workflows, processing resources is described in the esap database.

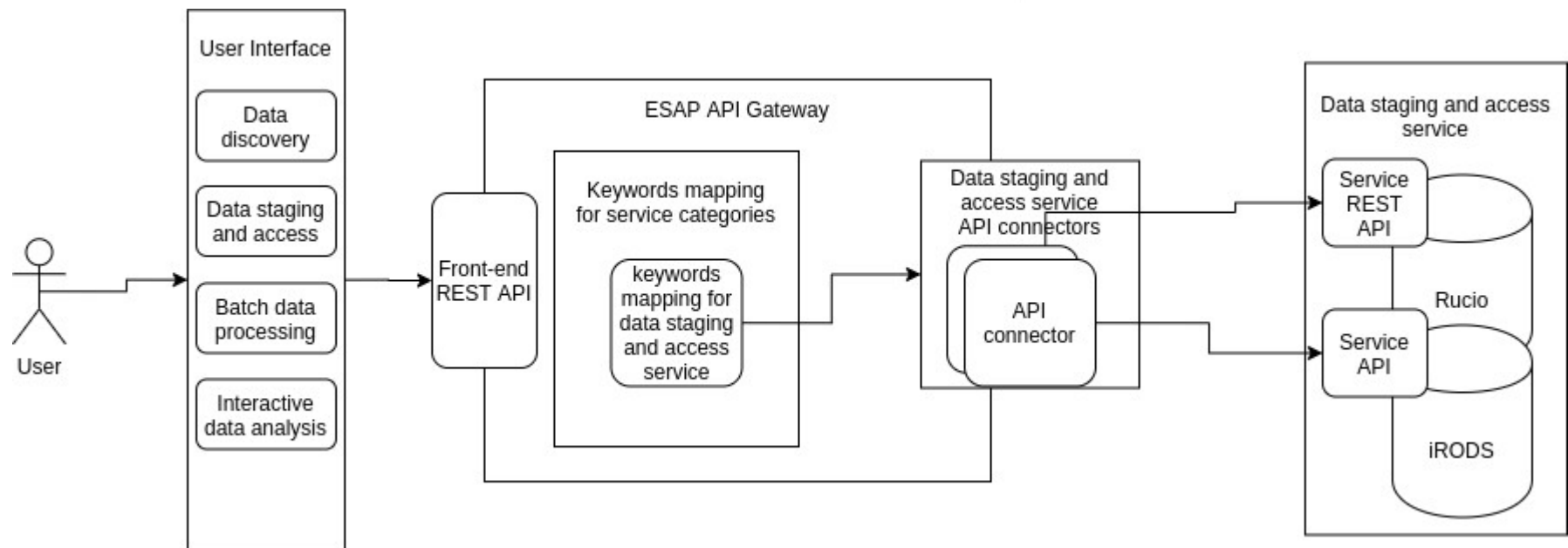


Data and compute access

- Data access through Data Lake infrastructure
 - How are users and agents authenticated?
 - What's the authorization model?
 - What's the delegation model?
 - How are authorization privileges and policies managed?
 - What are the legacy auhtn/authz mechanisms that must be supported?
- Compute access (WP5 + WP2)
 - Same questions as above
- Bring the Lofar use case to the testbed



ESAP Architectural Design: Data access



Access to Virtual Observatory via ESAP

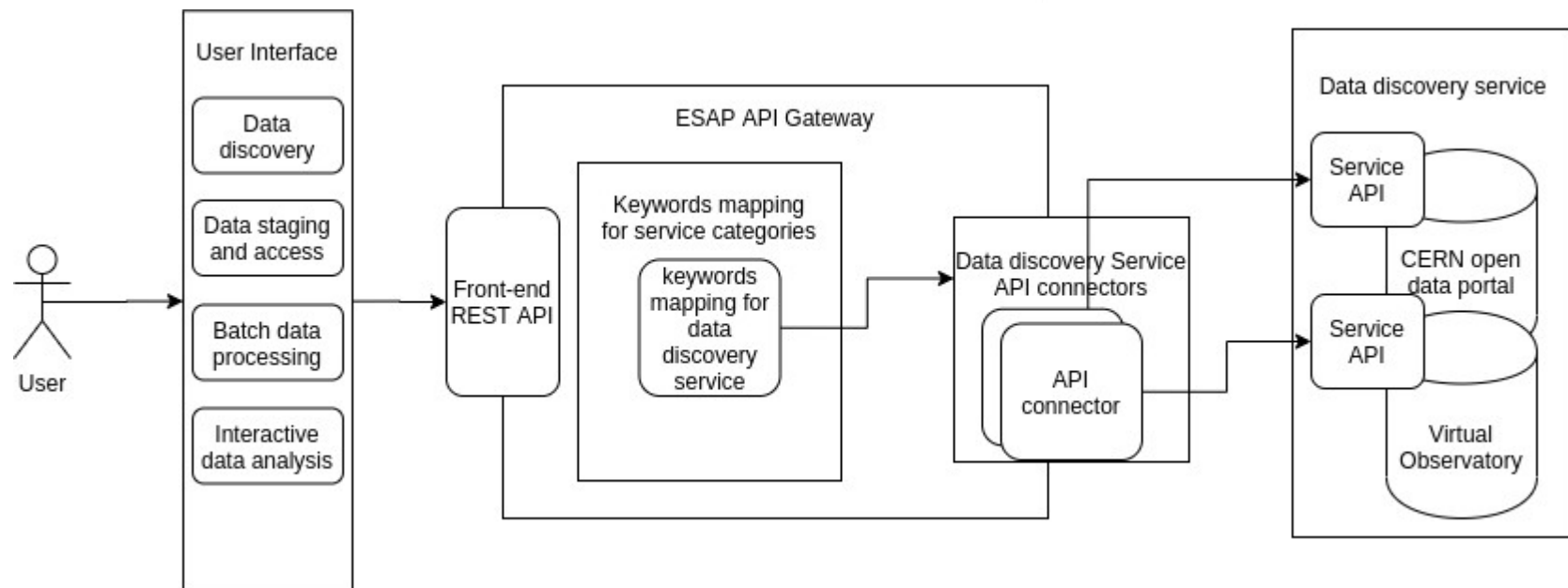


WP4 Tech Forum

- 04-06 Feb, Strasbourg
- Joint WP4/WP5 discussion
- Remote demo of ESAP UI and ESAP API Gateway by Nico Vermaas (ASTRON)



ESAP Architectural Design: Access to Virtual Observatory



ESAP Busy Week

Integrate ESAP API Gateway with

- Data discovery through Virtual Observatory
- Data Lake Infrastructure through Rucio REST API

Participants:

- Aris (CERN), James (SKAO), Rohini (SKAO), Stelios (UEDIN), Nico (ASTRON), Zheng (ASTRON)





ESCAPE

The logo features a stylized blue arc at the top left that curves towards a blue starburst. A second, lighter blue arc is at the bottom right, starting from a yellow circle and curving upwards.

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Thank you !