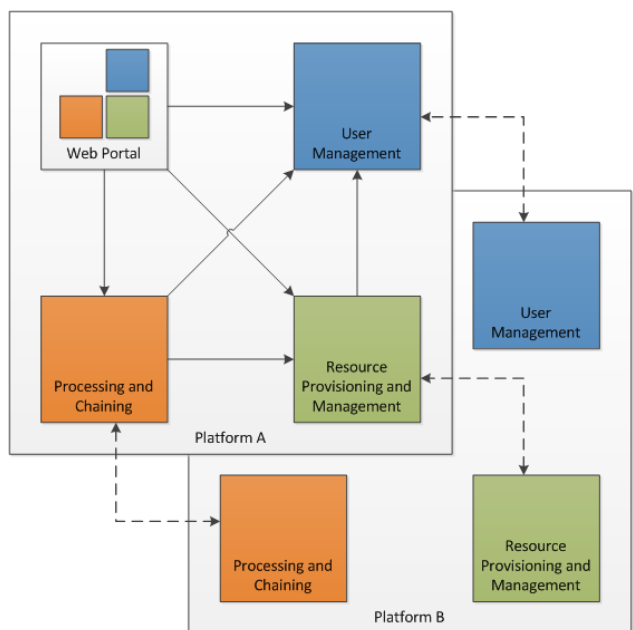


# EOEPCA

*Earth Observation Exploitation Platform Common Architecture*

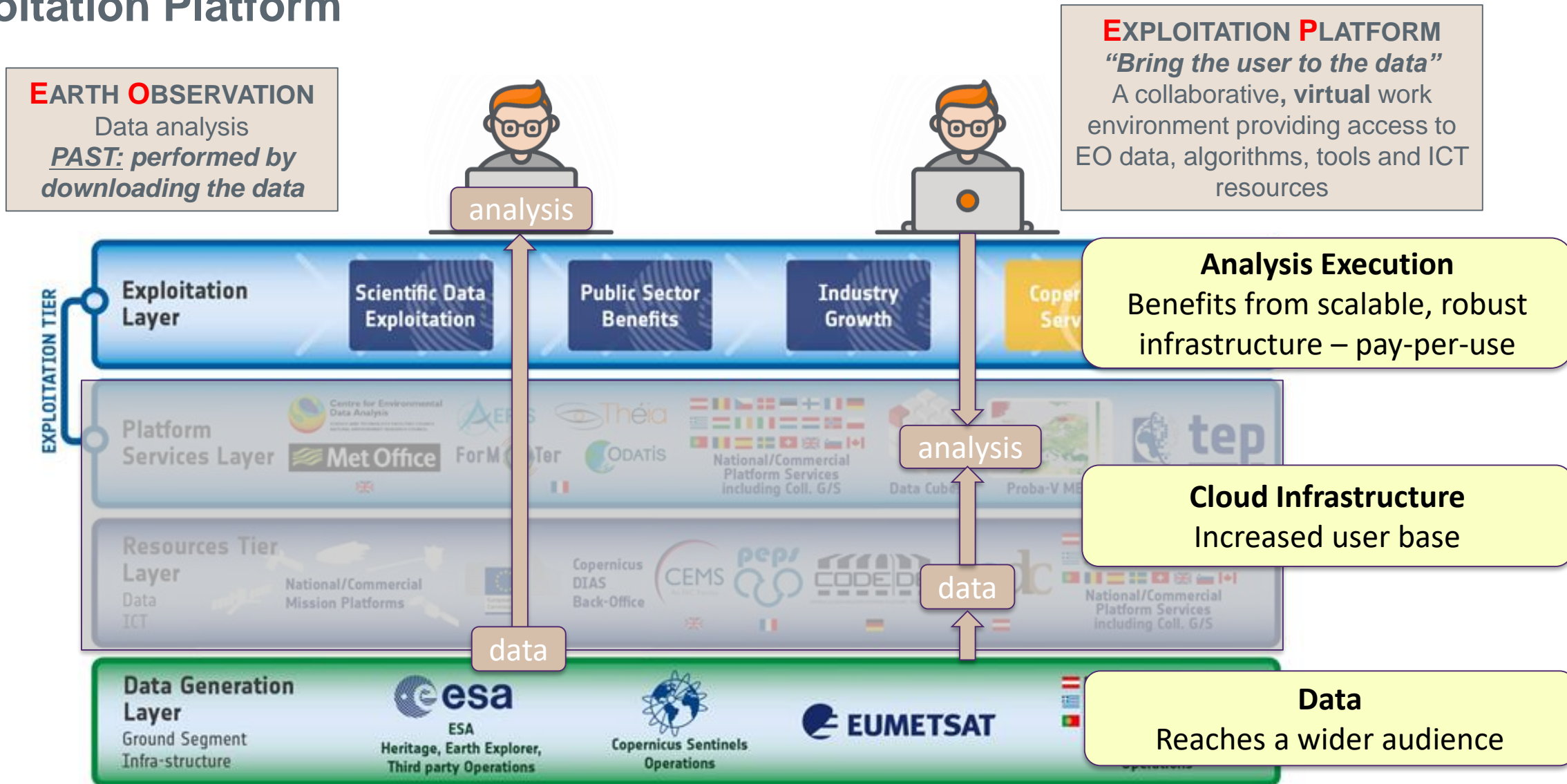
**ESA Phi Week 2021**



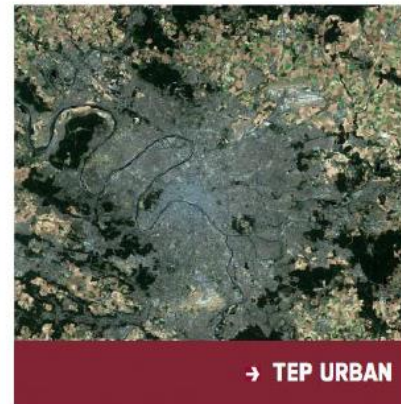
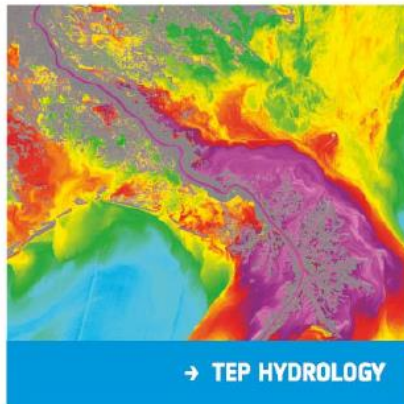
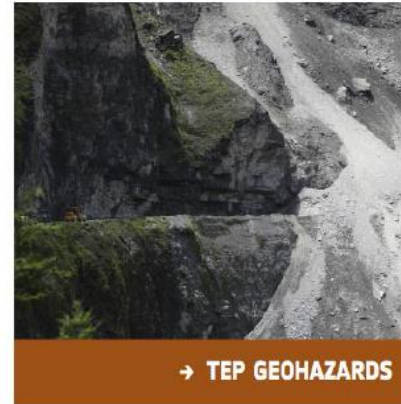
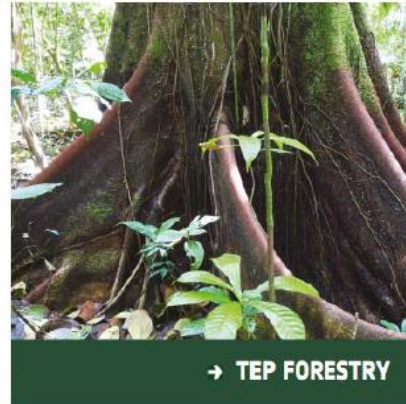
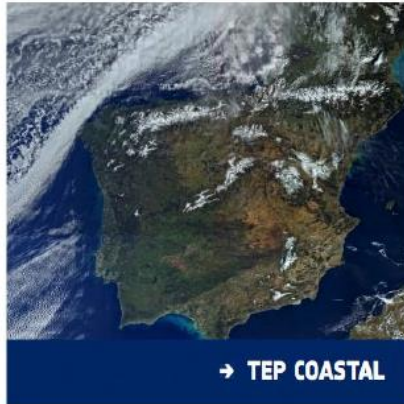
15<sup>th</sup> October 2021



# Exploitation Platform



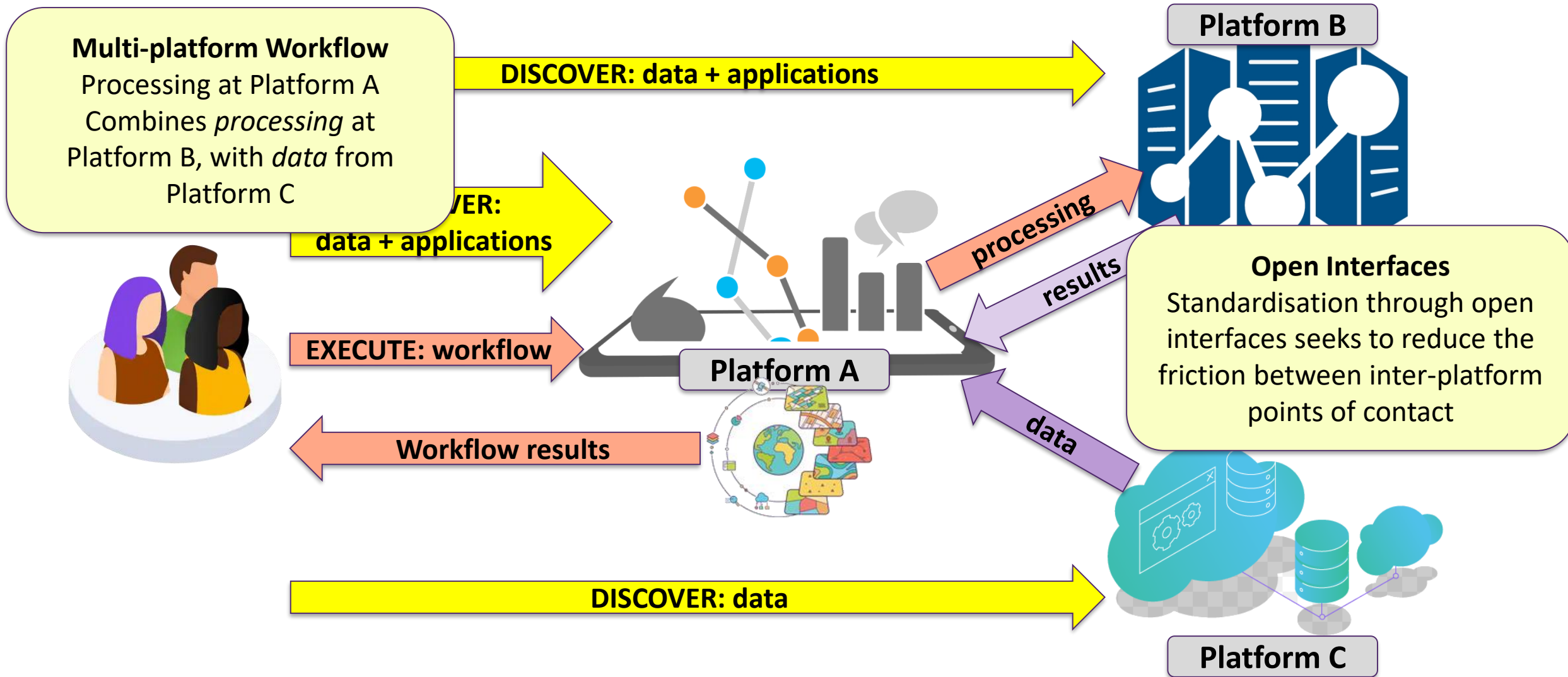
# Platform Ecosystem – Network of Resources



Wouldn't it be nice if ... I didn't need to be an ICT wizard or instrument expert to integrate different data into my research or application?



## Aspiration – Platform Interoperability





## GOAL – Common Architecture



### EOEPCA

#### EARTH OBSERVATION EXPLOITATION PLATFORMS COMMON ARCHITECTURE

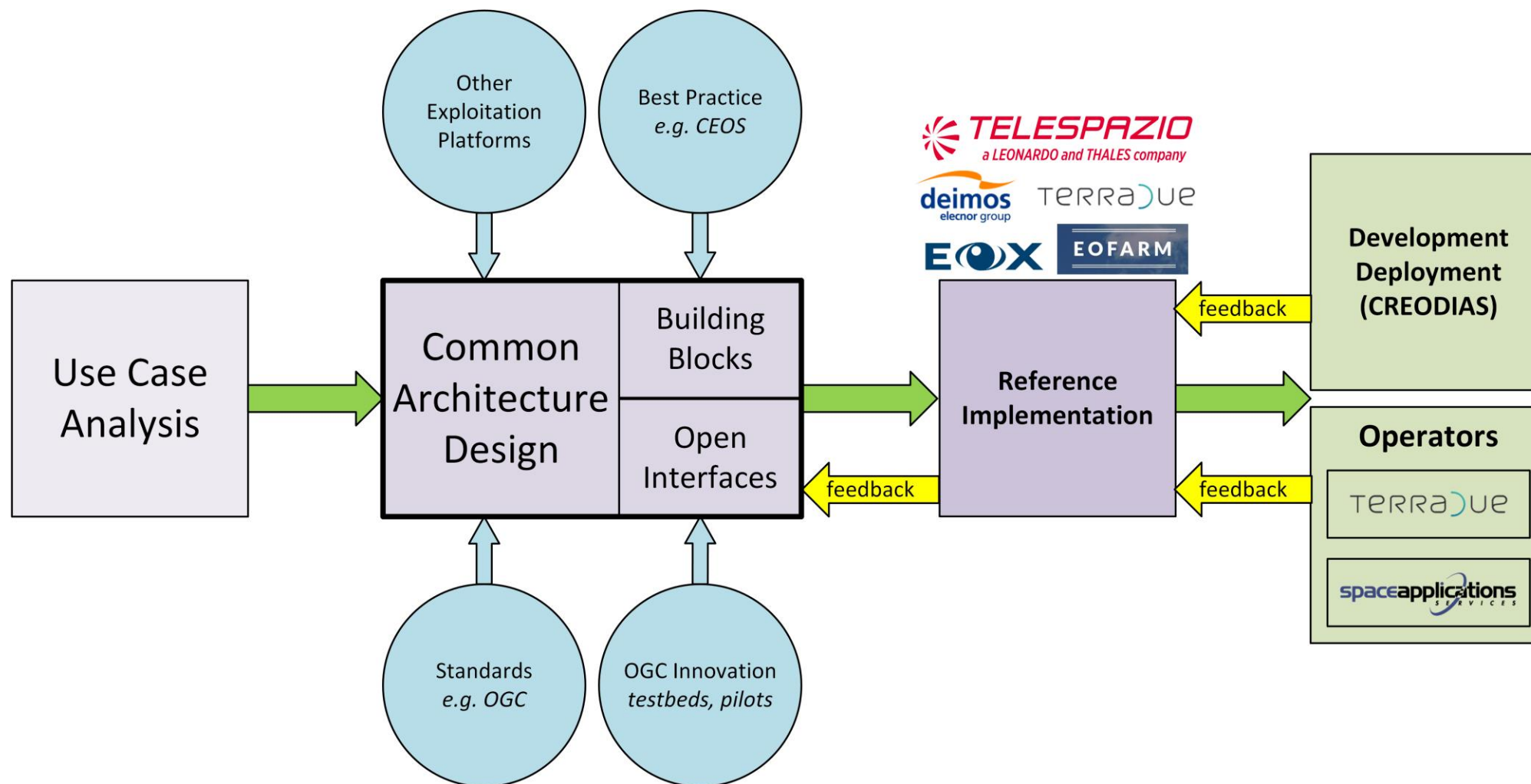
The goal of the Common Architecture is to define and agree a **re-usable exploitation platform architecture** by identifying a set of common building blocks that provide their services through open interfaces

To encourage federation of EPs through an open consensus-based architecture for EPs in the Network of Resources

To provide an **open-source Reference Implementation** of the architecture

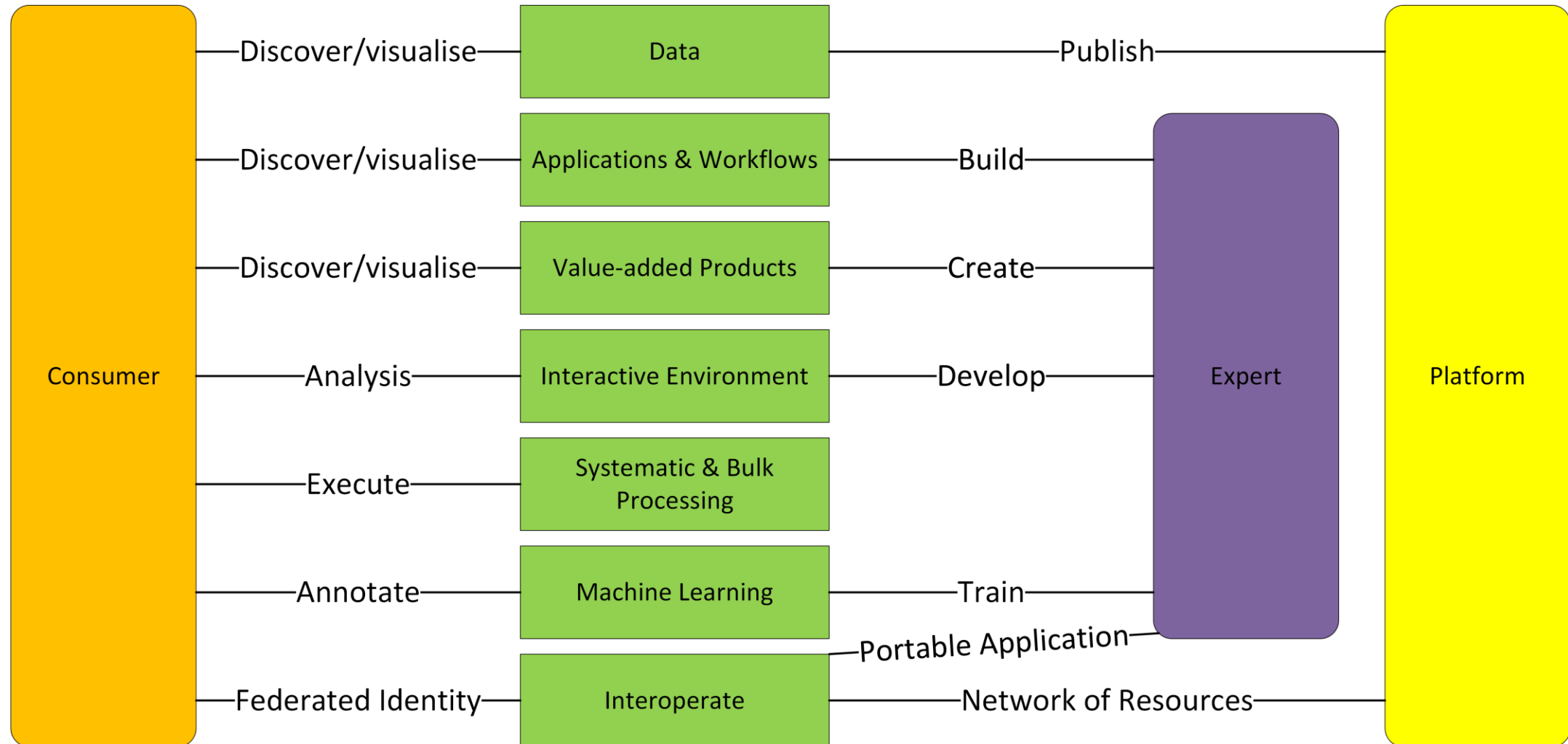


# Our Approach





# Use Cases





## Domain Areas & Building Blocks



### User Management

Federated user identity, access management and accounting

- **Login Service / Policy Enforcement Point (PEP) / Policy Decision Point (PDP) / User Profile**
- *License Manager / Accounting/Billing Service / Pricing Engine*



### Processing & Chaining

Application/workflow development, deployment, execution and interactive analysis

- **ADES (Application Deployment & Execution Service) / Workflow Engine / PDE (Processor Development Environment)**
- *EMS (Execution Management Service) / Interactive Analysis Tool*



### Resource Management

Management, discovery, visualisation and access to platform resources (data, applications, docs, etc.)

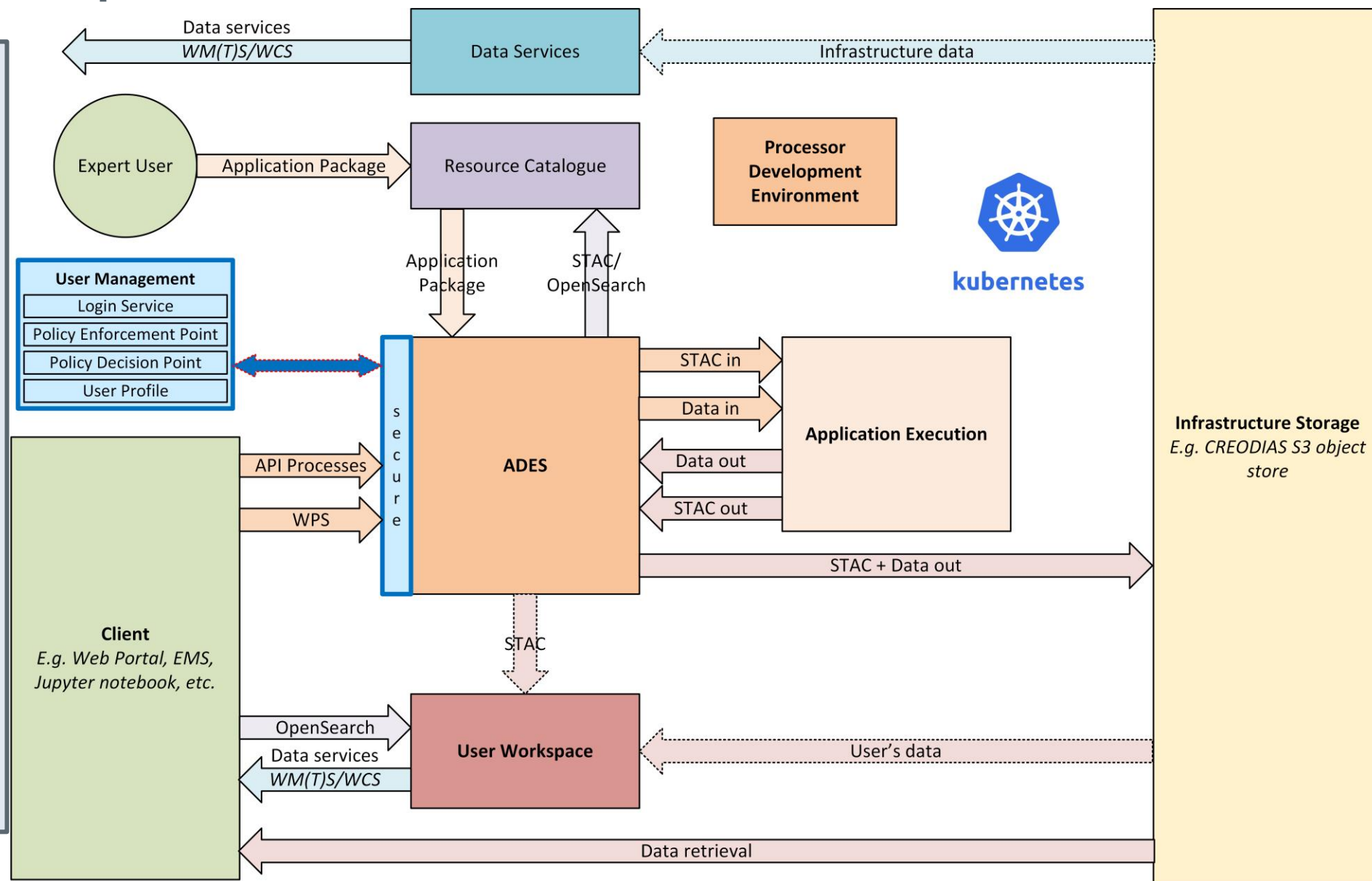
- **Resource Catalogue / Data Access Services / Workspace**
- *Data Ingestion / Data Access Gateway/Library*





# Current Reference Implementation

- Kubernetes 'abstract' infrastructure
- Containerised components
- Helm charts for Kubernetes
- Deployed to CREODIAS





# Current Reference Implementation

## ADES

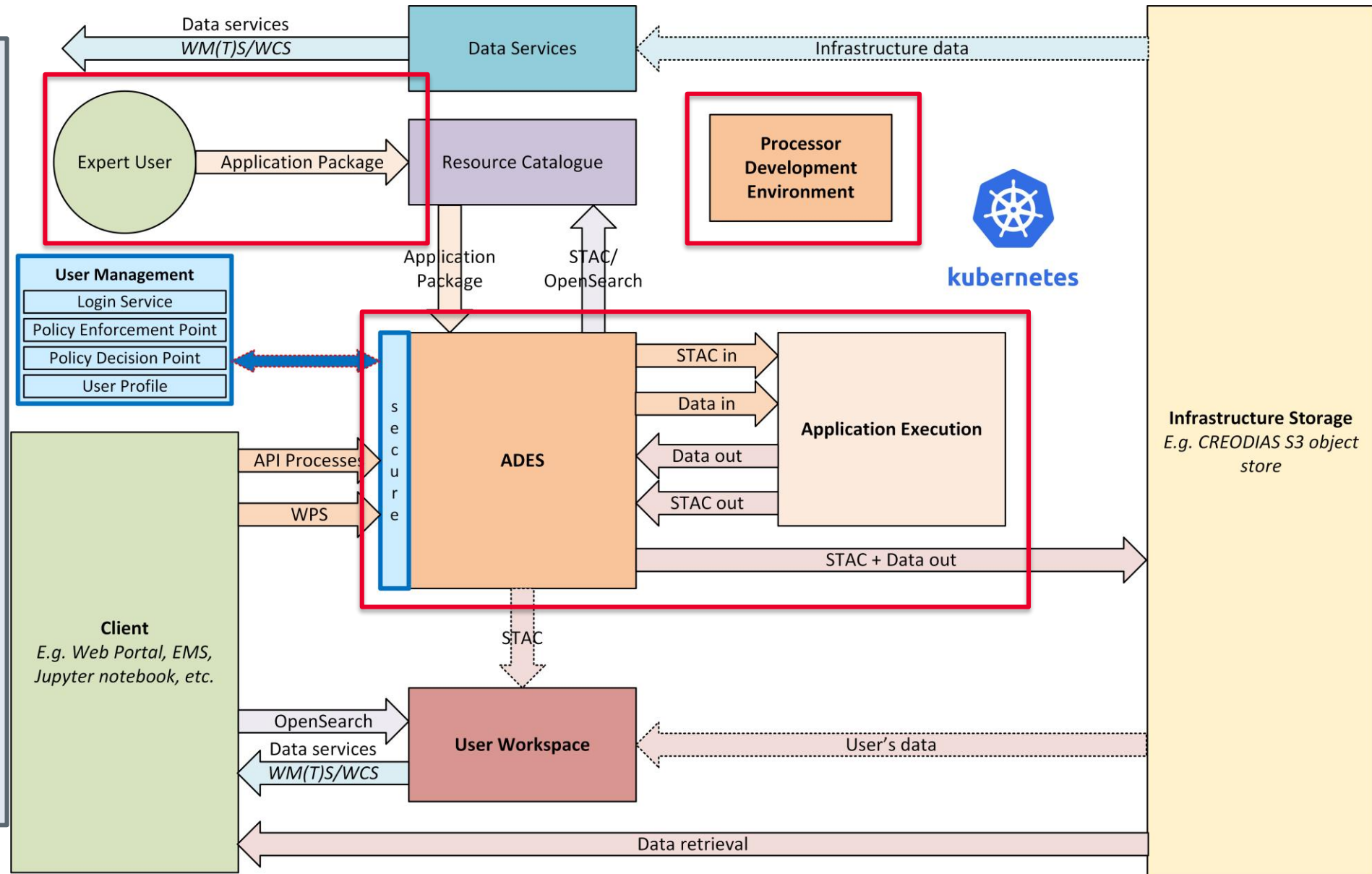
- OGC WPS 2.0
- Draft API Processes
- + deploy/undeploy
- STAC abstraction

## Application Package

- Metadata descriptor
- Container image

## PDE

- Integrated web tooling
- Develop, test and package applications





# Current Reference Implementation

## Resource Catalogue

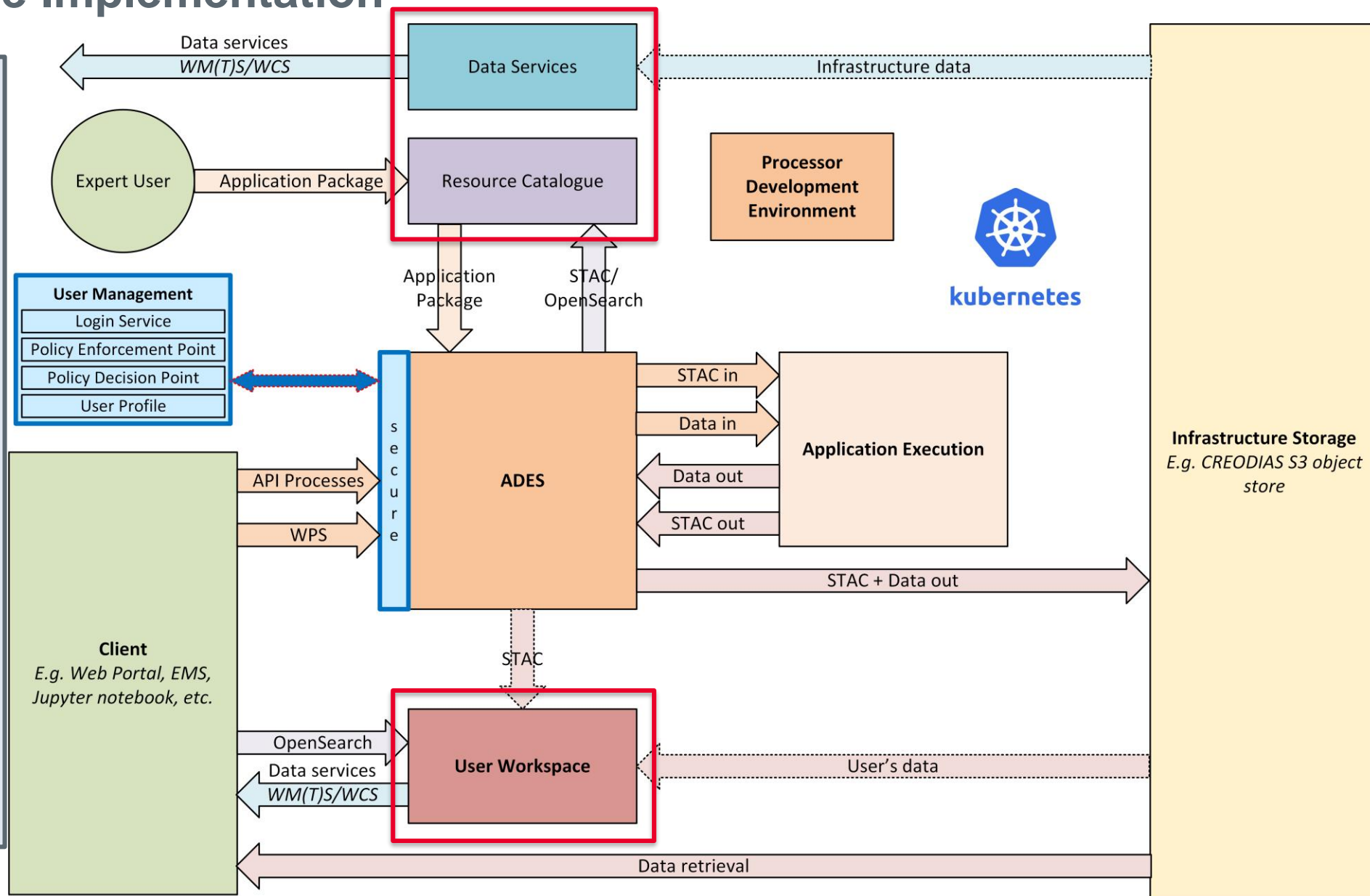
- OGC CSW 2.0.2/3.0
- OGC API Records
- STAC
- OpenSearch with EO

## Data Access

- OGC WMS 1.1-1.3
- OGC WMTS 1.0
- OGC WCS 2.0
- OpenSearch with EO

## Workspace

- User Resource Catalogue
- User Data Access
- User data products
- Processing outputs
- S3 bucket integration





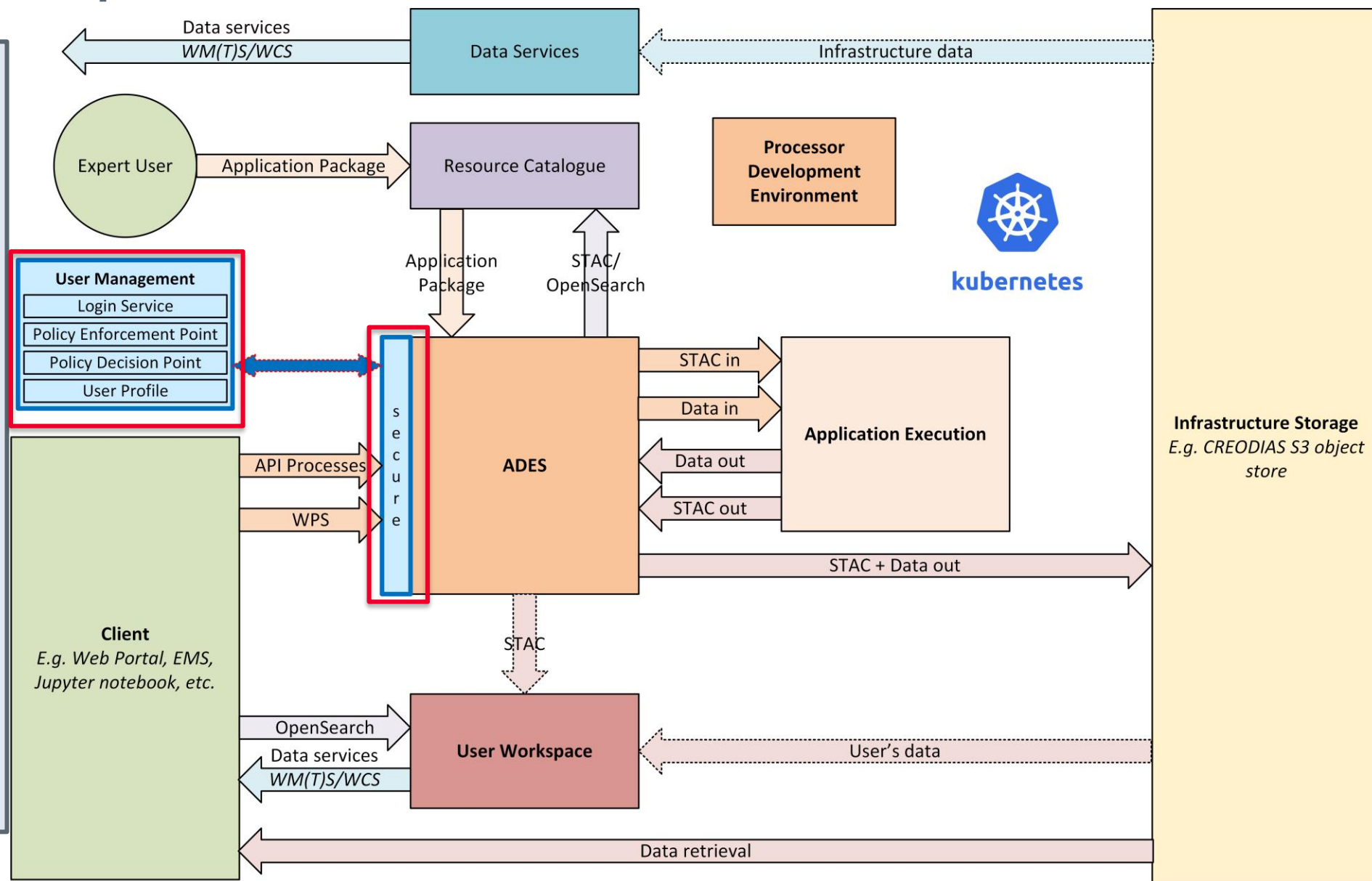
# Current Reference Implementation

## User Identity

- OpenID Connect
- External identity
  - GitHub
  - COIH

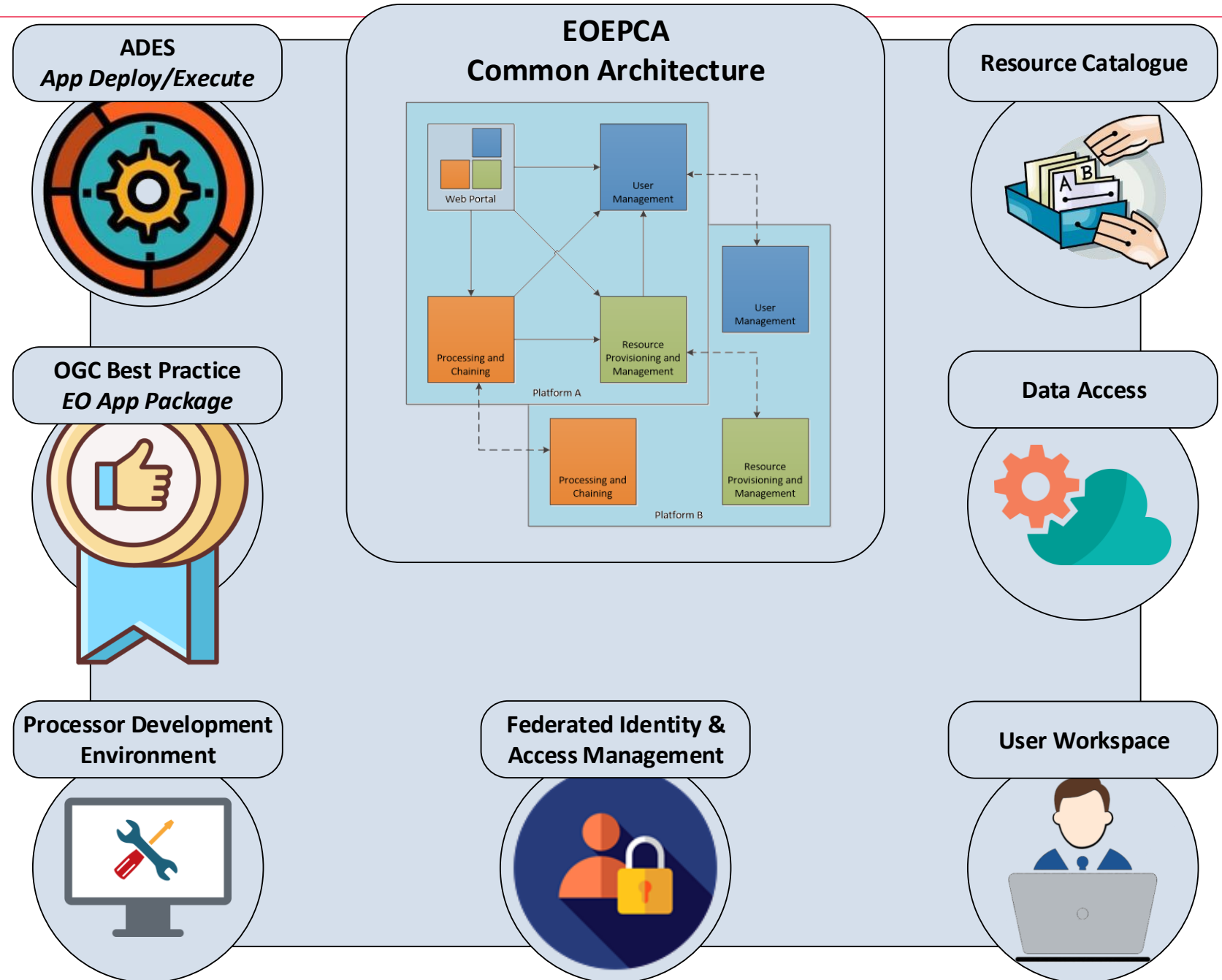
## Access Management

- Policy-based resource protection
- User Managed Access (UMA)



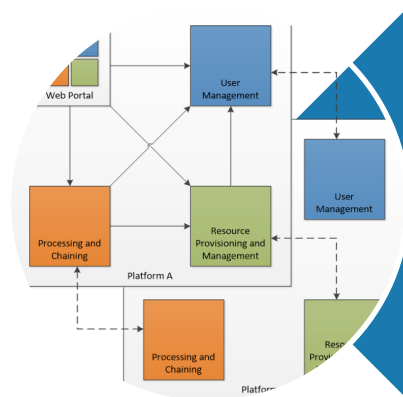
## In Summary

- Exploitation Platform blueprint
- Reference implementation building blocks
- Embraces the 'apps-to-the-data' architecture
- Open interface standards
- Encourage platform interoperability

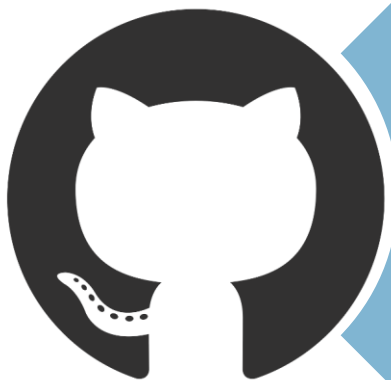




## Where to find us...



**Web Portal**  
<https://eoepca.org/>



**GitHub**  
<https://github.com/EOEPCA>



THANK YOU  
FOR YOUR ATTENTION

[telespazio.com](http://telespazio.com)