

# IMPACT-Data Biomedical Cloud

An initial iteration for a federated virtual computing environment in the context of Precision Medicine in Spain



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## 1. BACKGROUND

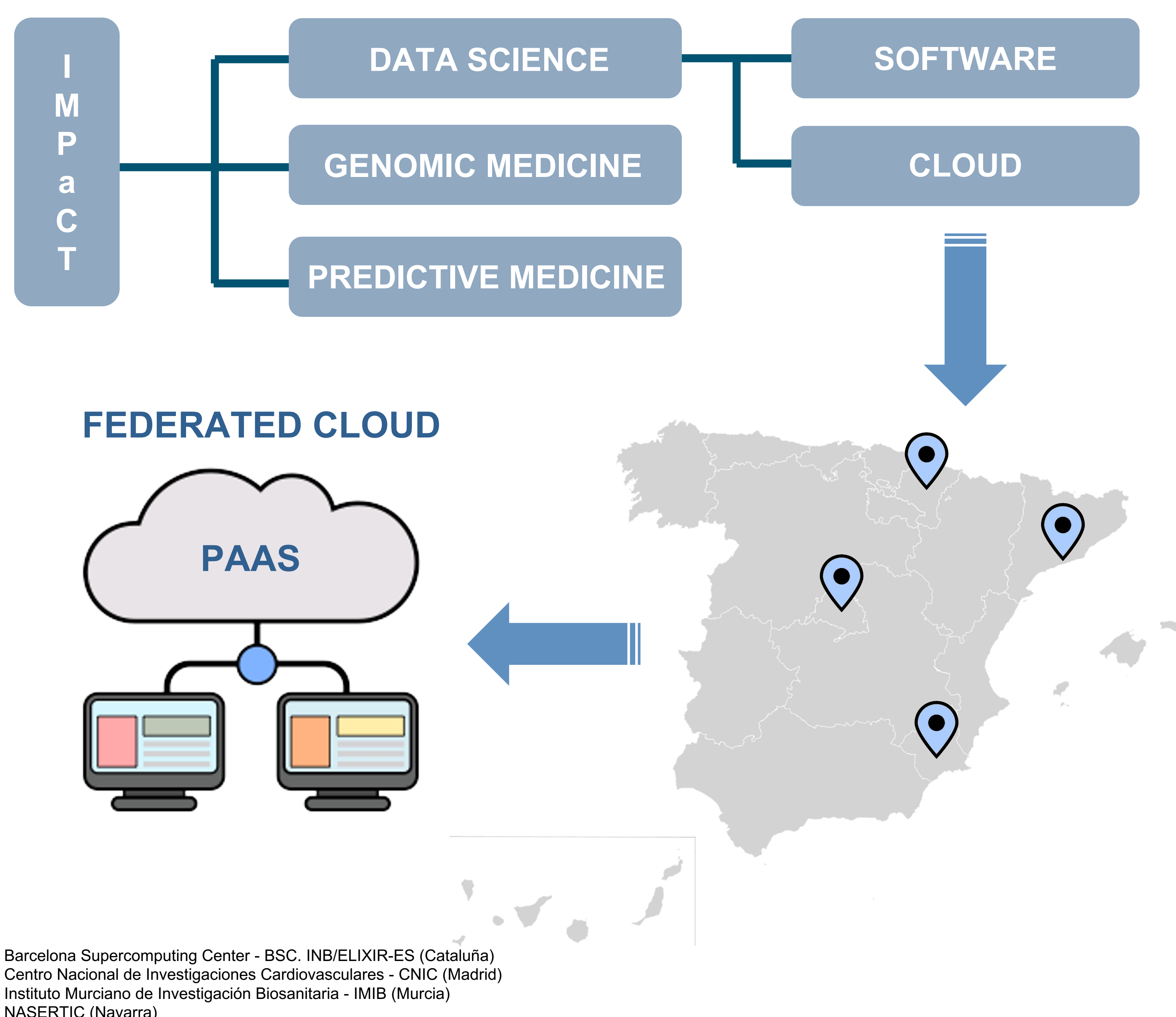
The Spanish Precision Medicine Infrastructure associated with Science and Technology (**IMPACT**), aims to impulse **precision medicine** within the Spanish National Health System. **IMPACT-Data**, the Data Science pillar of this infrastructure, has been tasked to design, deploy and extend a **Biomedical Cloud** taking as reference similar efforts across Europe.

## 2. OBJECTIVE

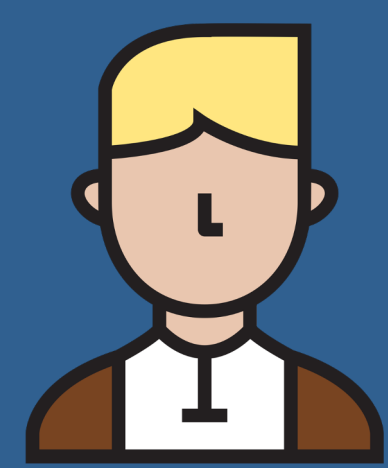
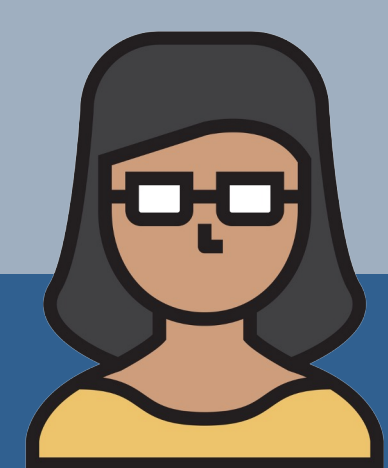
The establishment of IMPACT-Data **Biomedical Cloud** aim to provide a **scalable** and **flexible** analysis **environment**, enabling the **integration**, **management** and **analysis** of sensitive and non-sensitive data, e.g. richly described genomics, structured clinical, and medical imaging data, made available within IMPACT for research purposes.

## 3. STRUCTURE

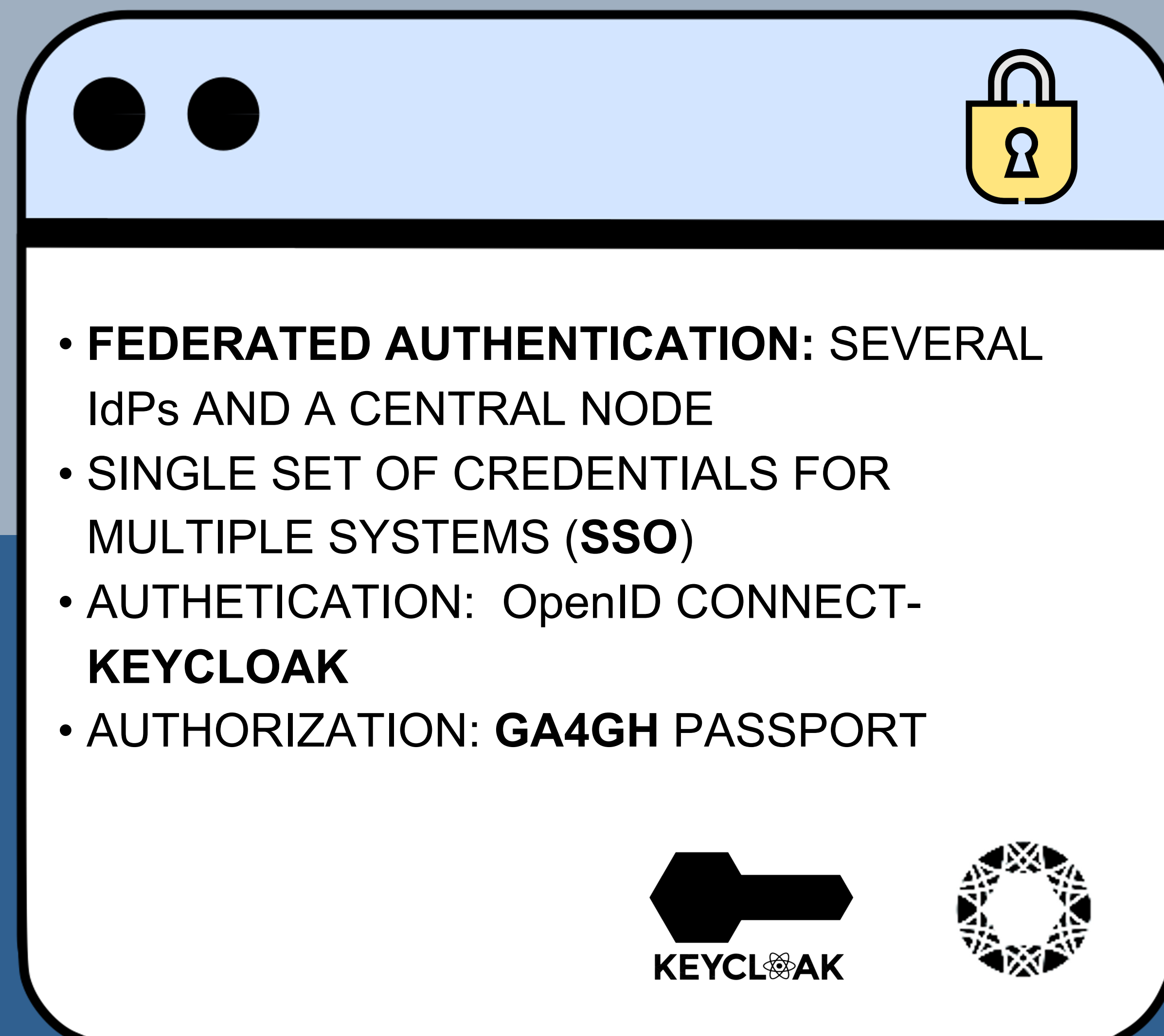
The infrastructure is designed as a **federated cloud system**, which will include a *Life Sciences Login*-compliant **authentication system**, a data infrastructure to manage both **public and sensitive data**, and a **distributed** set of **computational resources**, which will be assigned depending on the data that should be mobilized, and the needs of the desired analysis.



## USERS

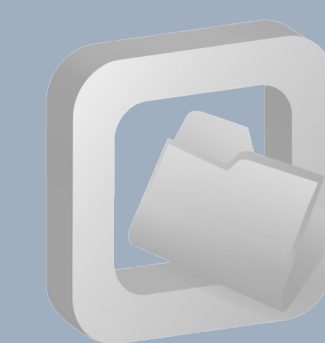


## AUTHENTICATION



## PUBLIC DATA

CAN BE ACCESSED BY ANYONE WITH A VALID IMPACT ACCOUNT



**Galaxy**  
PROJECT

**PULSAR**

## PROTECTED DATA

ONLY APPROVED USERS WILL BE ABLE TO INTERACT WITH ACCESS CONTROLLED DATA

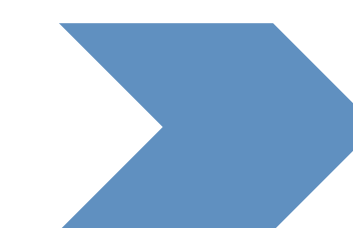
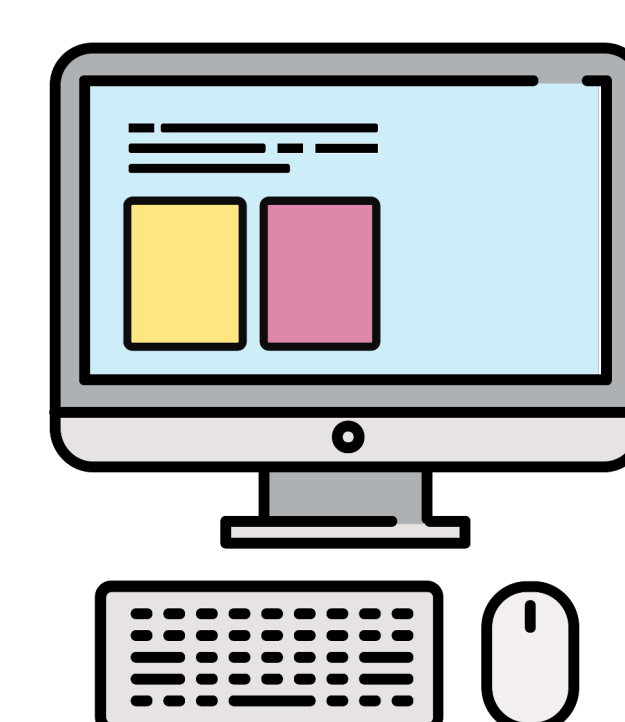


EUROPEAN  
GENOME-PHENOME  
ARCHIVE

The IMPACT-Data Biomedical Cloud is designed for enabling the **execution of analytical workflows** assembled by any of the consortium's organizations to **analyze** individual or combined clinical, genomic and medical imaging **datasets** for research purposes.

It represents an opportunity to disseminate software development **best practices** and promote the adoption of standards developed in ELIXIR, GA4GH and similarly **community-driven efforts**

## PROSPECTIVE SERVICES



**bio.tools**  
**BioContainers**  
**WorkflowHub**  
**OpenEBench**  
**EGA**

