

# A Platform for Simplifying and Accelerating Researcher Health Data Requests

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# Overview

## Agenda:

- Institutions, Goals and Requirements
- Tech and Architecture
- Workflow
- Configurability
- Live Demo

# Institutions, Goals and Requirements

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- The LOOP Zurich
- University Hospital Zurich
- University Children's Hospital Zurich
- Balgrist University Hospital
- University Hospital of Psychiatry Zurich
- ETH Zurich
- University of Zurich

# Institutions, Goals and Requirements

## Goals

- Provide a central biomedical informatics platform
- Speed up medical research
- Provide easy access to medical data

## The platform should:

- enable researchers to request medical data
- support institutions in reviewing data requests
- automate multiple steps of the request, review and data delivery process
- be configurable and support various workflow changes
- support expansion to multiple institutions

# Tech and Architecture



# Tech and Architecture

## Tech stack

- Python (Django)
- Postgres
- Vue (Quasar)
- Docker
- Nginx
- Keycloak
- MinIO
- SPHN Components

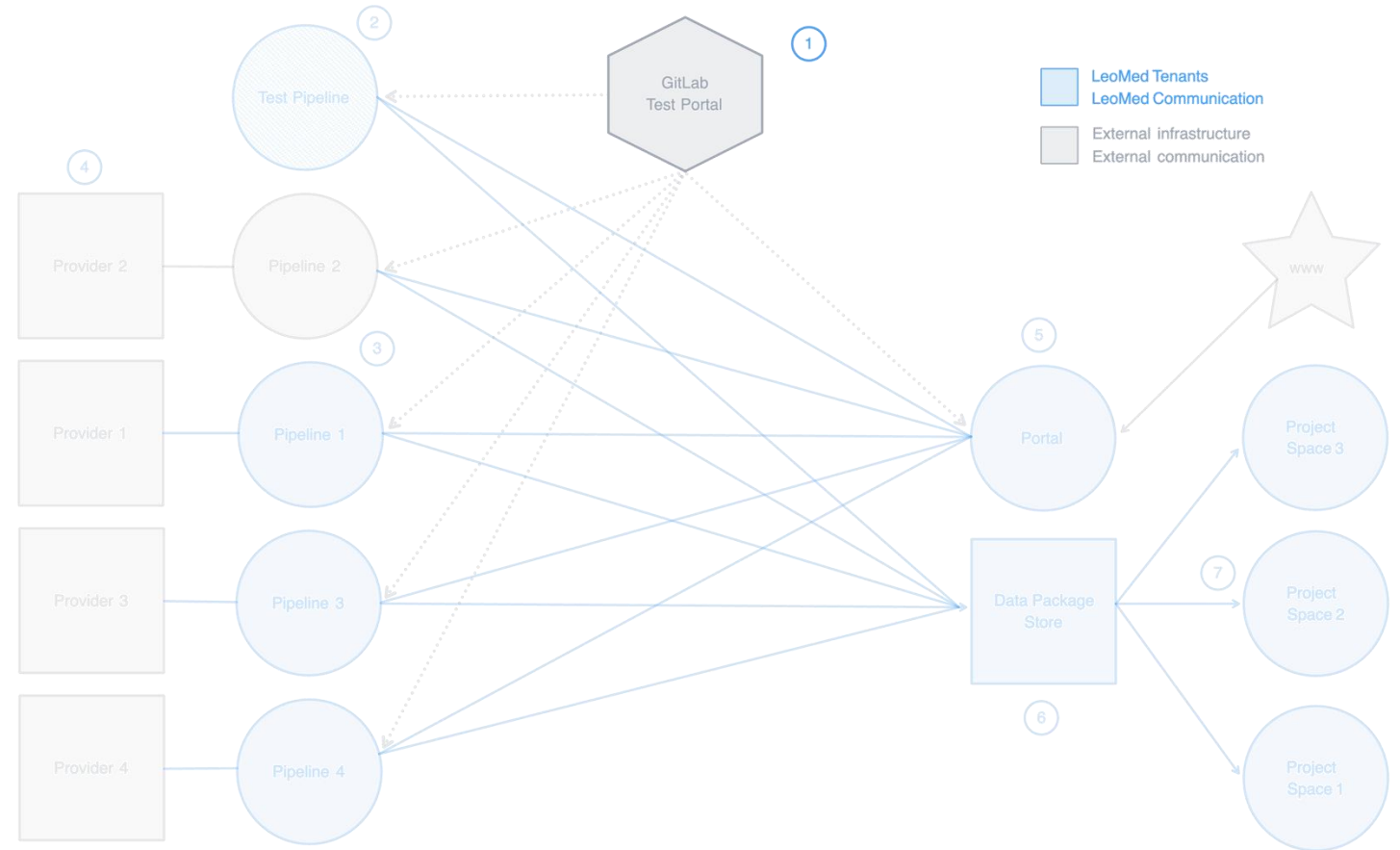
## Architecture

- Portal
  - Researchers interact with BMIP through the portal
  - Provides workflows for researchers and reviewers
  - Lives on a single VM / Tenant
- Data pipeline
  - Processes data
  - Storing data
  - Preparing data packages
  - Lives on multiple VMs / Tenants
- Leomed
- External hosting platforms

# Tech and Architecture

## External Tenant VM

- CI/CD
- Registry
- Code hosting
- Test Portal

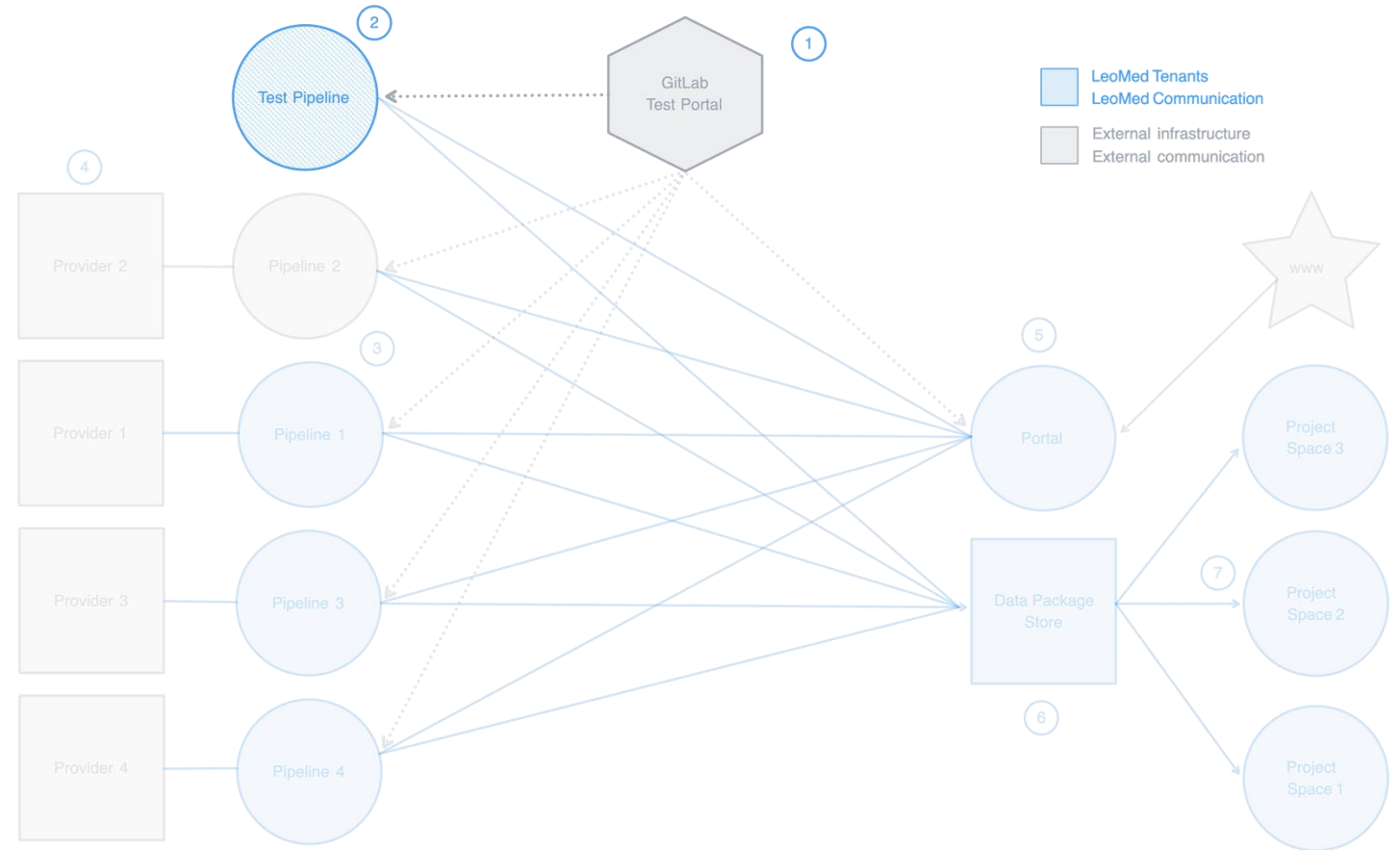




# Tech and Architecture

## Leomed Tenant VM

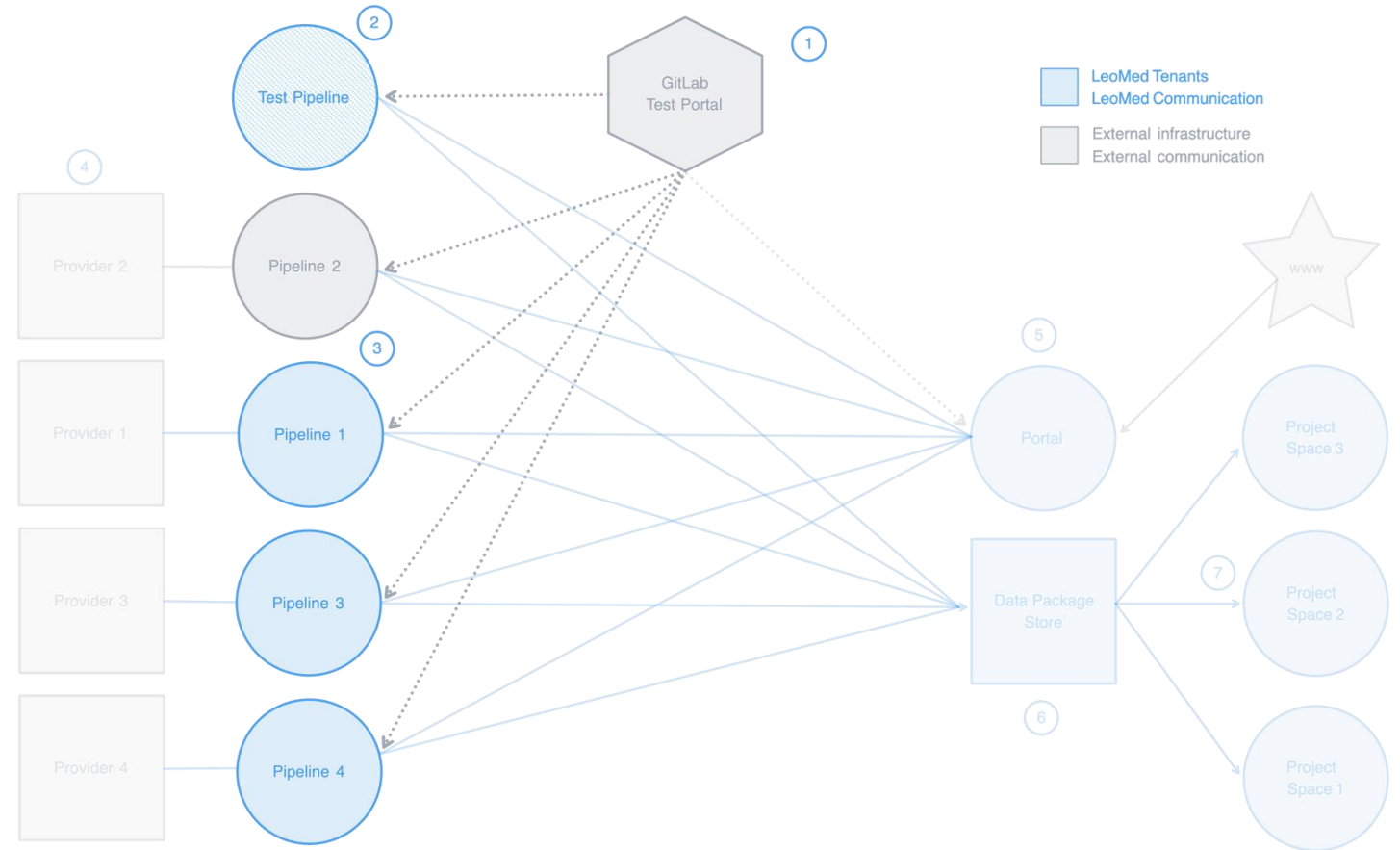
- Test pipeline
- Images from BMIP Gitlab



# Tech and Architecture

## Leomed Tenant VM and External Tenant VM

- Same as Test Pipeline
- Subset of Test Pipeline
- Images from BMIP Gitlab

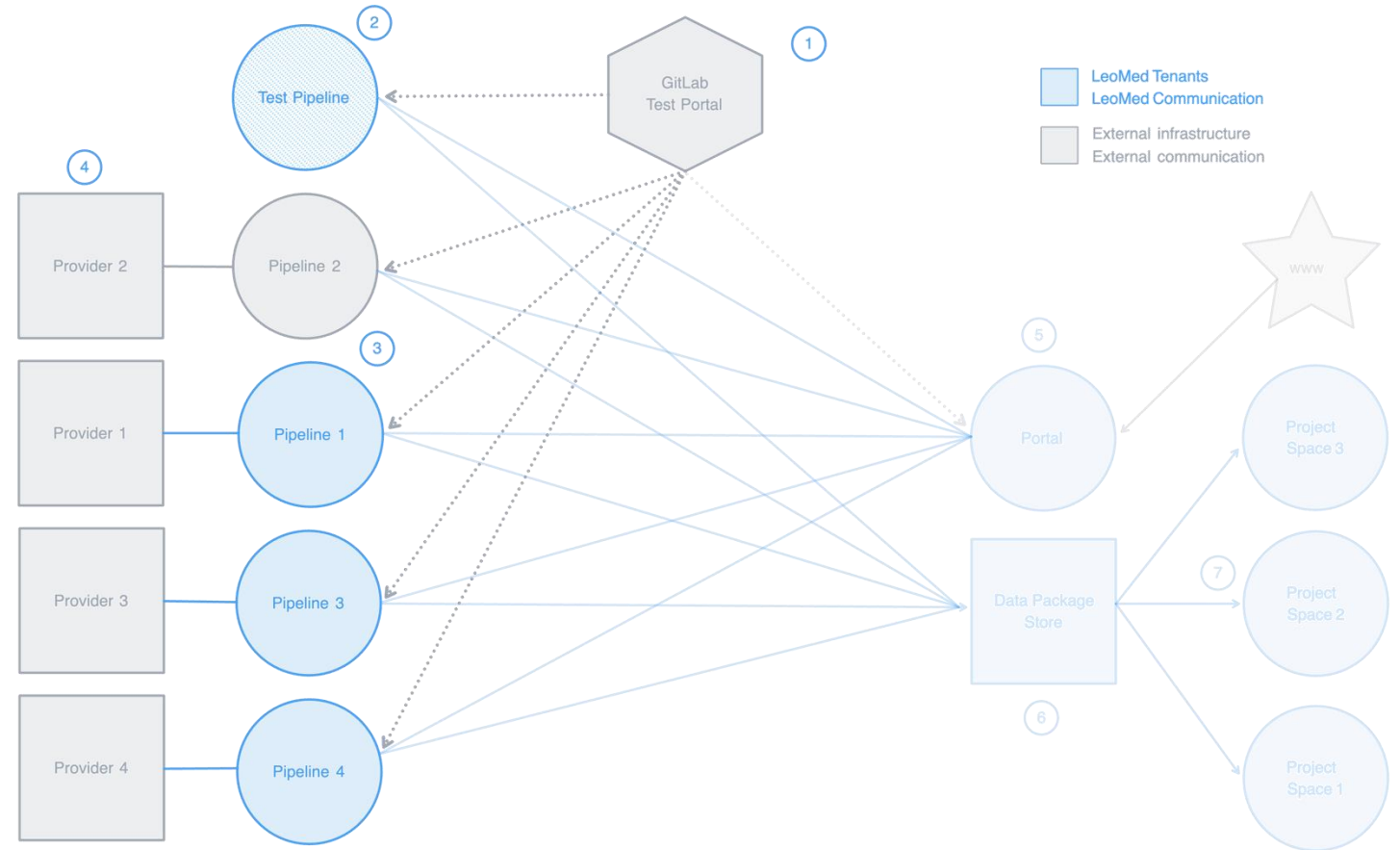


# Tech and Architecture

Providers connected to their respective pipeline tenants.

Providers with Leomed tenants need to be securely connected to the tenants.

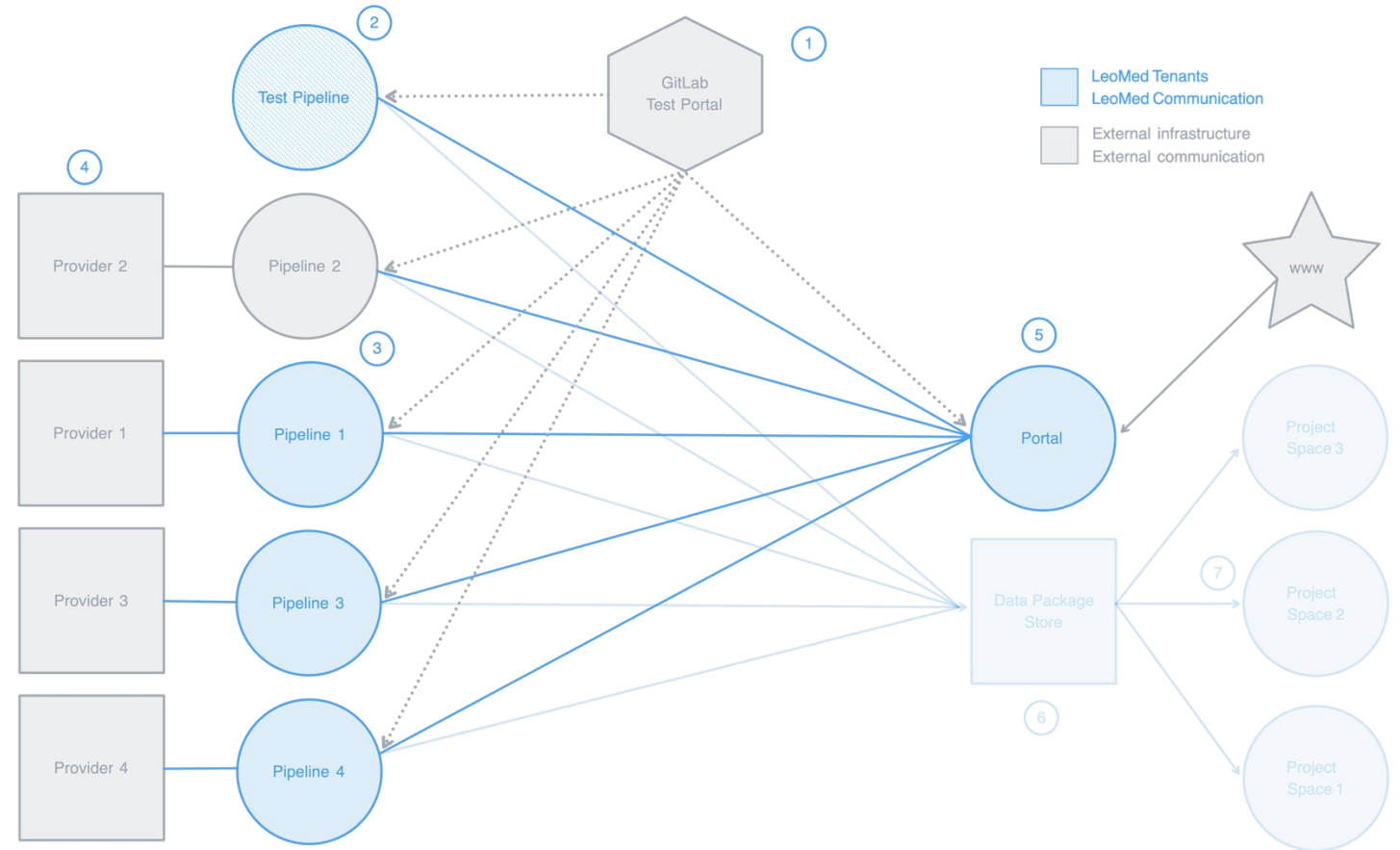
Providers submit data to the pipelines for processing.



# Tech and Architecture

## Leomed tenant

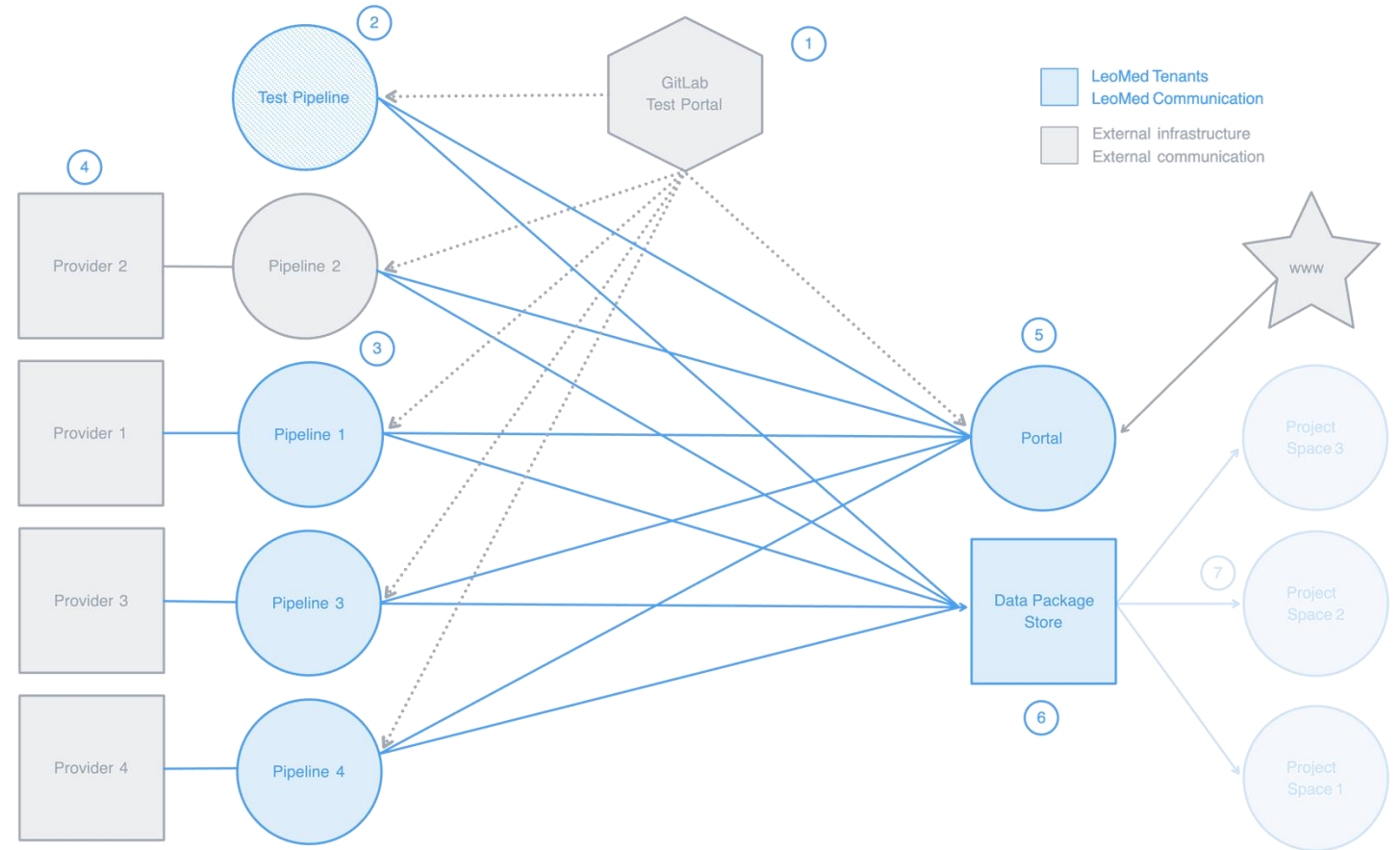
- Production version of the portal
- Two-way connection to the pipeline
- Two-way secure connection to the external pipeline
- External web access



# Tech and Architecture

## Leomed tenant

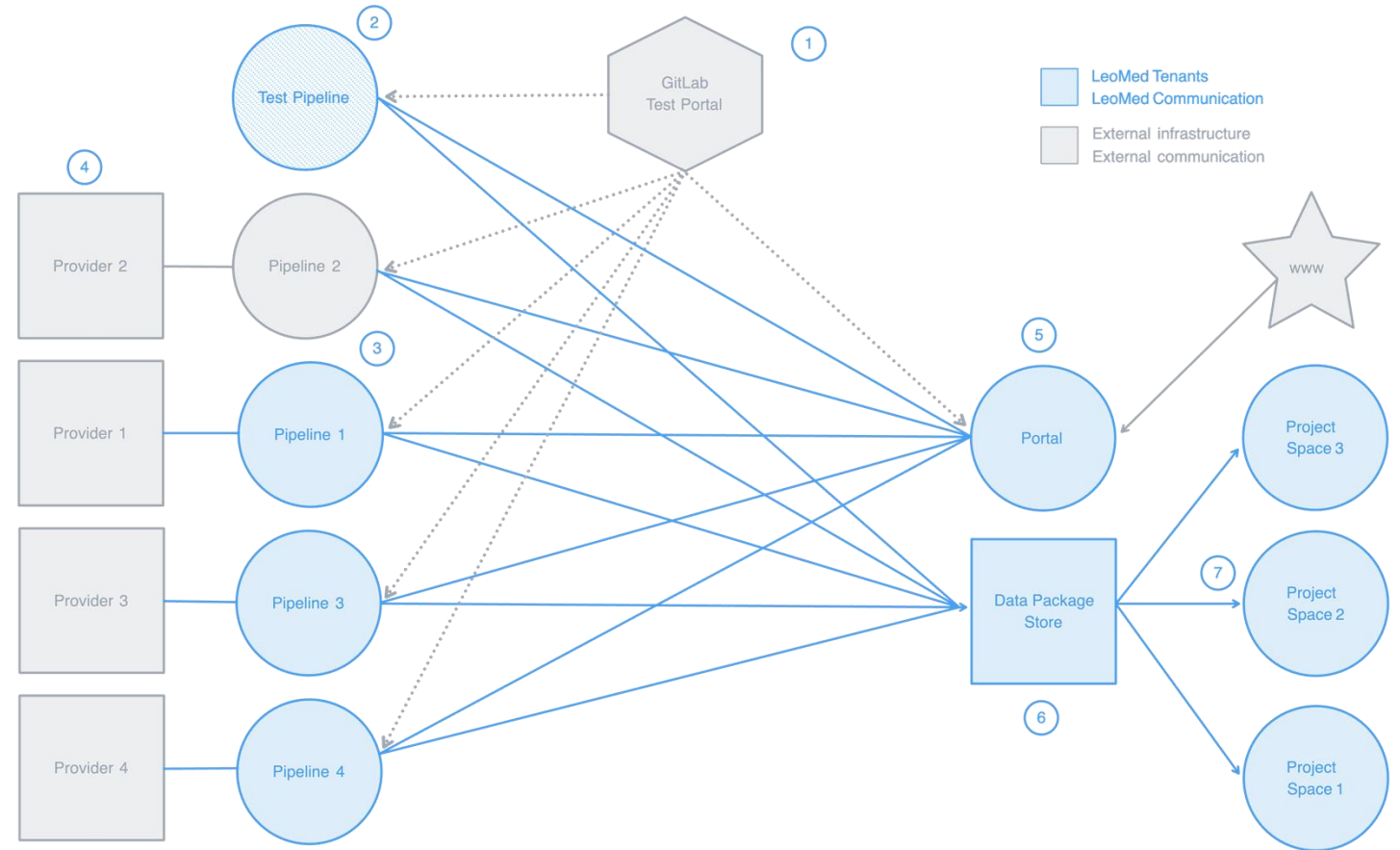
- MinIO instance for storing packages
- Pipelines provide data packages for a single project bucket
- Bucket has restricted access



# Tech and Architecture

## Leomed project tenants

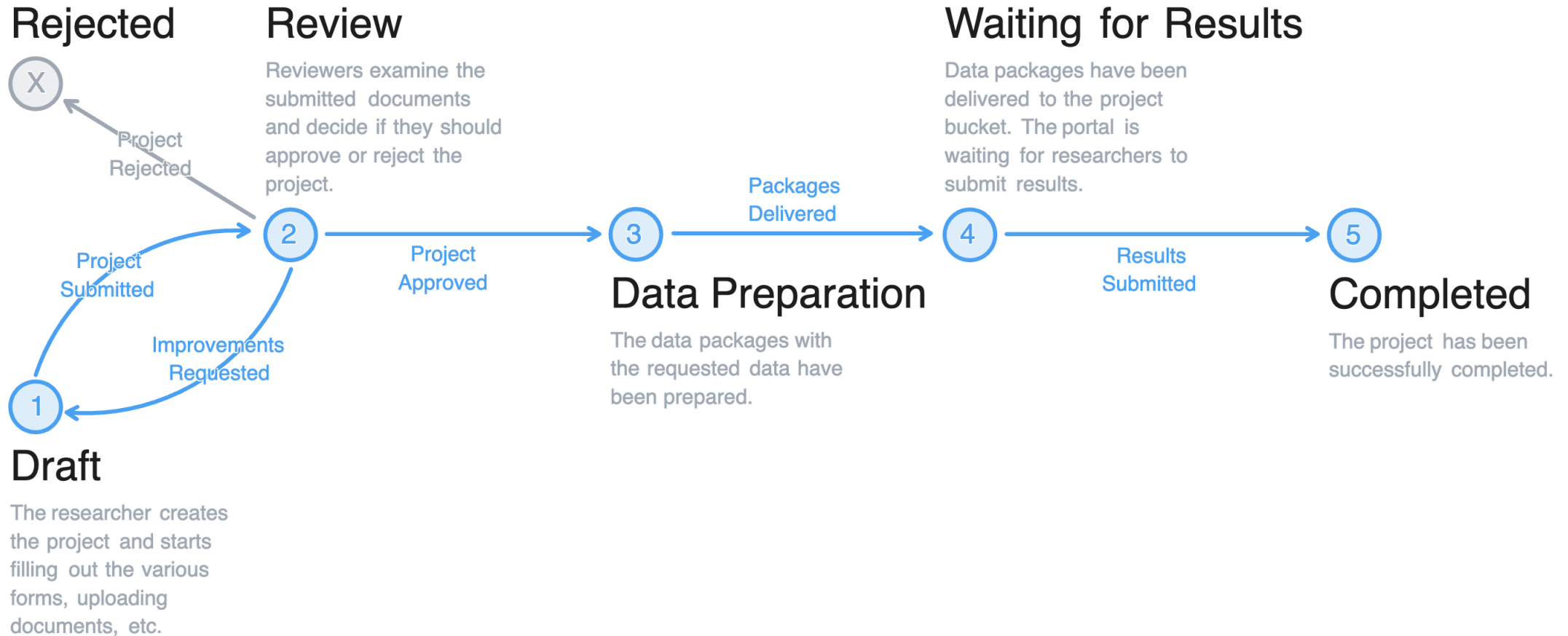
- Read access to bucket with their data in the MinIO instance



# Workflow



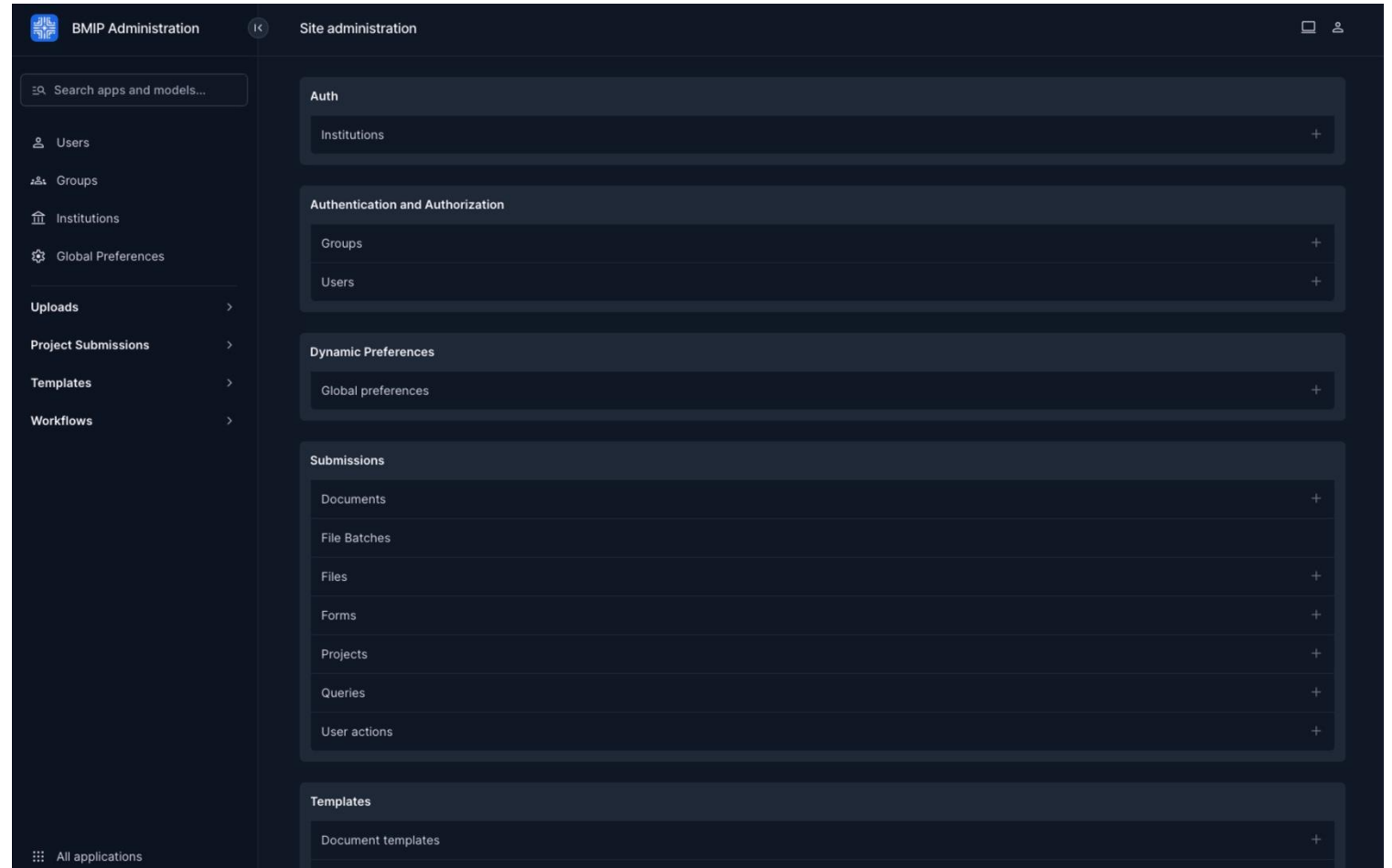
# Workflow



# Configurability

# Configurability

- Configurable global settings
- Configurable templates
  - Forms
  - Documents
  - Projects
- Configurable workflows
  - Actions
  - Steps
  - Order





# Live Demo

## BMIP Portal

Biomedical Informatics Platform



# Questions?

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