

# Al on-demand platform for regional interoperable DIHs Network

Interoperability with Al-On-Demand Platform
<a href="https://www.dih4ai.eu/">https://www.dih4ai.eu/</a>
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Al4EU TGB meeting

04/03/2022



## Interoperability with AI Experiment - Components

#### **CUSTOMER JOURNEY – TECHNOLOGY USER**

#### **Search Information**

- Passive behaviour
- Access to proposed contents
- Come across the concept of I4.0 by chance

#### Understand benefits and challenges

- Active behaviour
- Set targeted information
- Evaluate opportunities

#### **Proof of Concept**

- Introduce new technologies
- Introduce new skills
- Access to technological and business opportunities

### Test the prototype inside company's facility

- Prototype testing in the company's environment
- KPIs analysis
- Organizational roadmapping

### Decision of invest in the new technological facility

**ADOPTION** 

- Choice of technological adoption at company level
- New organizational models and schemas
- New business models/

#### **CUSTOMER JOURNEY – TECHNOLOGY PROVIDER**

DESIGN AND ENGINEEERING

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### Consolidate and validate the business idea

- Identify a need on the market
- Sketch the idea
- Understand the competition

#### **Develop the solution**

- Understand requirements from the market
- Define the idea
- Define the technical requirements

### Test the solution and verify its business potential

- Develop the prototype
- Customers' discovery

#### Find early adopters and financial resources

- Validation of the technological solution
- Revision of the market requirements
- Revision of the technical requirements
- Find funds

#### Get prepared to launch the technology on the market

- Customers' acquisition
- Marketing
- Find distribution channel
- Manage legal issues

### Concept



#### The AloD Platform and DIH-Europe Interoperability

Regional DIH platforms (DIHIWARE) as IDS Network nodes with AloD Catalog / Marketplace / Experiments Platform (portal data cloud).

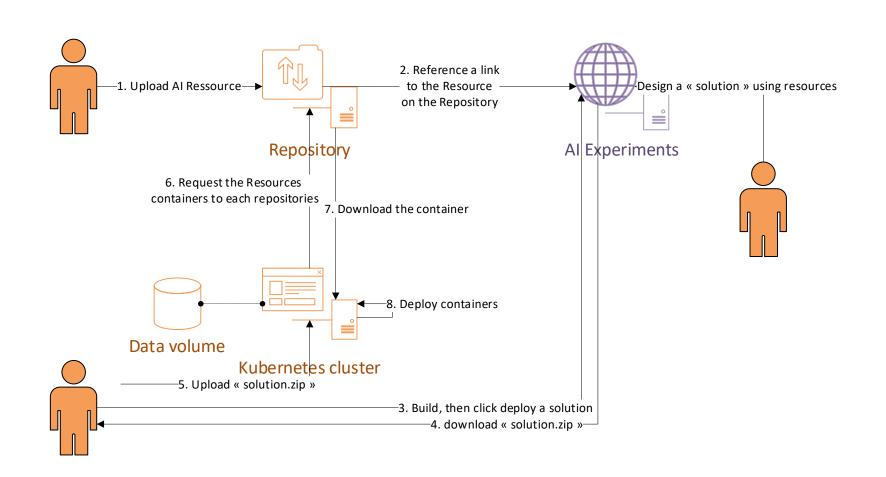
- → Deploy all needed components to go from Al assets creation to deployment, all though Al4EU Al Experiments
- → Allow DIHs to hold a role and provide services at each steps of the journey

#### DIHs Services around AI Experiments

- 1. Create, edit, enhance, store source in Public or Private GIT source repository.
- Create, edit, enhance, host and distribute a packaged container in Public or Private Container Repository.
- 3. Onboard, publish and serve an Al resource in Al4EU Experiment.
- 4. Create, modify and publish Solutions in AI4EU Experiment.
- Deploy, test, evaluate a Solution from AI4EU Experiment in the Kubernetes Cluster
- 6. Propose an access to the Solution to the final users.

#### **Scenarios**

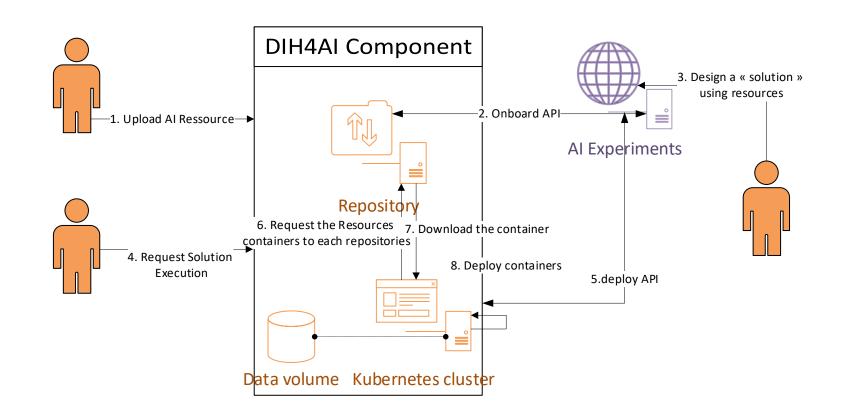
- Onboarding AI4EUcompliant models
- Enabling AI4EUcompliant experimentation facility for DIHs.



## Interoperability with AI Experiment - Integration

#### **Scenarios**

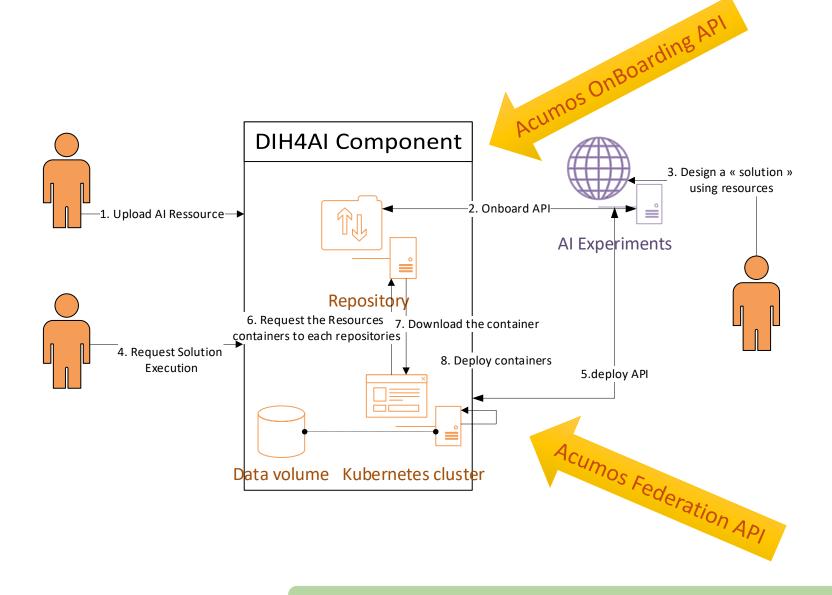
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Delivery planned: end of March 2022

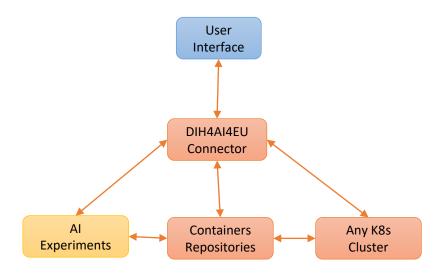
#### **Scenarios**

- Onboarding AI4EUcompliant models
- Enabling AI4EUcompliant experimentation facility for DIHs.



Delivery planned: end of March 2022

#### **Status**



Step #1 Onboard an AI resource on AI4EU Experiments – IN DIH4AI-Gitlab

- 1. Gather or write the source of the module.
- 2. Package modules and gRPC server in Docker containers.
- 3. Push the image to the container registry.
- 4. Onboard the resource in AI4EU Experiments
- 5. Publish the resource

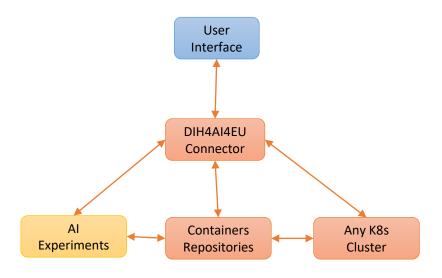
Step #2 Compose a solution – IN AI4EU – AI4EU EXPERIMENTS

- 6. AI4EU Experiments Design Studio
- 7. Compose a solution

Step #3 Deploy a solution – IN DIH4AI KUBERNETES CLUSTER

- 8. Package and deploy the solution from AI4EU Experiments
- 9. Unzip and install the requirements of the solution
- 10. Deploy in the namespace
- 11. Run the Orchestrator
- 12. Access to the demo GUI
- 13. Access the demo, test before invest

#### **Status**



Step #1 Onboard an AI resource on AI4EU Experiments – IN DIH4AI-Gitlab

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Ongoing

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Step #3 Deploy a solution – IN DIH4AI KUBERNETES CLUSTER

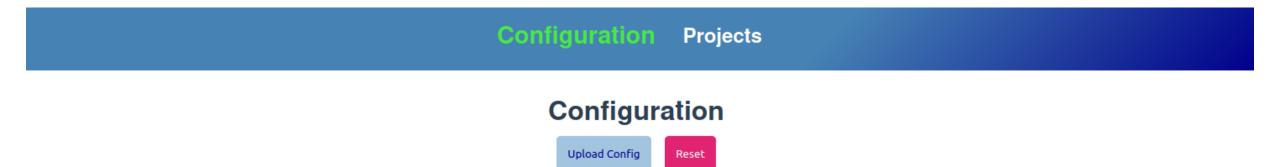
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Integrated

#### **Demo**

### Setup

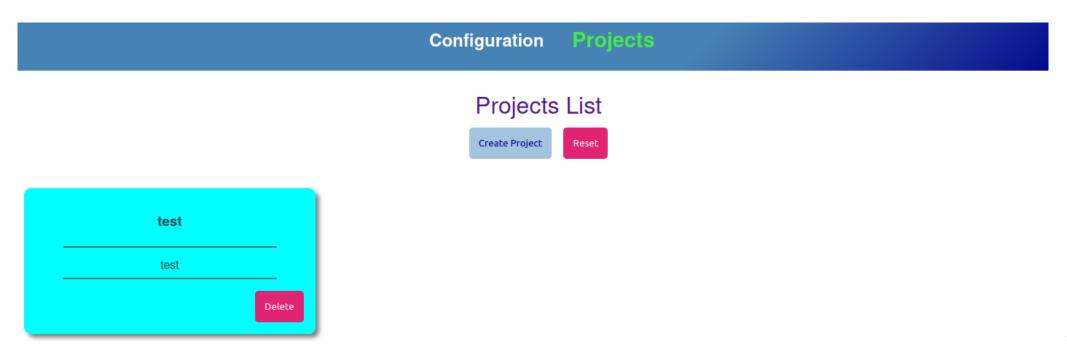
Kube Config setup



apiVersion: v1
clusters:
- cluster:
- cluster:
- cluster:
- cluster:
- cluster:
- cluster:
- certificate-authority-data:
- certificate-authority-data:
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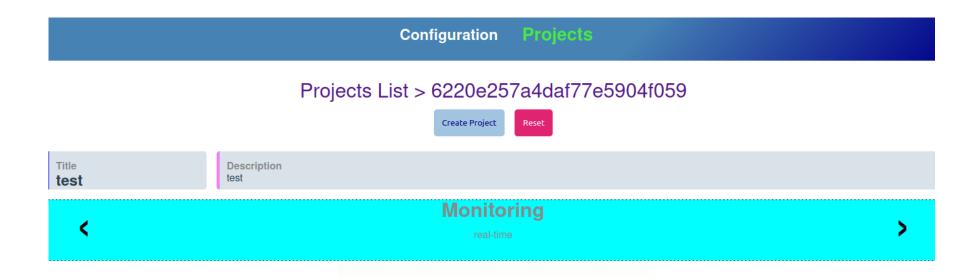
#### **List Solutions**

- Upload a « solution.zip »
- Choose in the list of published « public » solutions from AI Experiments (Federation API)



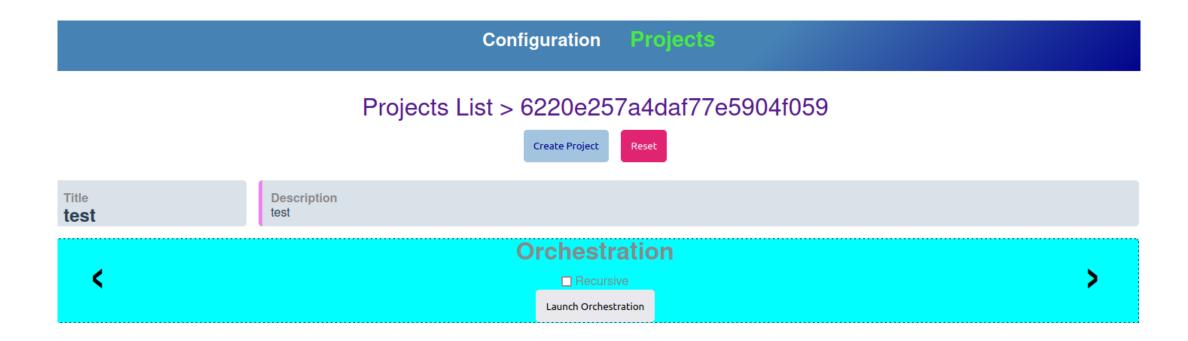
#### Control container deployment

Realtime feedback on container deployment



#### Launch orchestration

Launch the orchestration and get feedback



#### **Next Step**

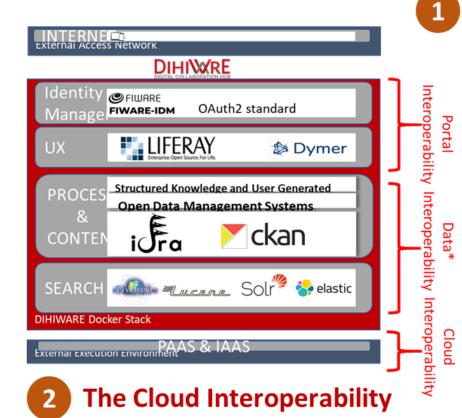
For this iteration (March 2022)

- Full API integration
- Security and orchestrator fix (external clusters)
- UX Design integration

#### For the next iteration

- Integration with DihiWare (GIT // Docker Repository // AI Experiments // Execution) to fill the gap with portal interoperability
- IDS connector in AI Experiments to fill the gap with data interoperability

#### DIH4Al Portal, Data & Cloud Interoperability with AloD



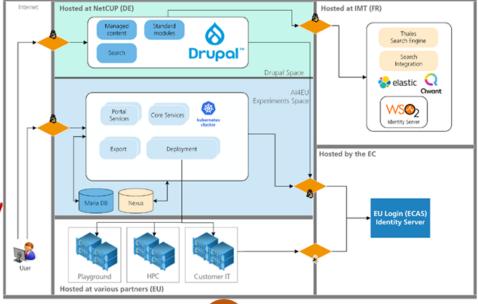
To integrate Services and AI Infrastructures of

both the Regional and the European platforms.

**The Portal Interoperability** 

To integrate **Users** and **search content** of both the Regional and the European platforms.

INTERNATIONAL DATA SPACES ASSOCIATION



DIH content page

> Cross Search

> > SSO?

Data Space

Experiments

3 The Data Interoperability

To integrate **Data Repositories** of both the Regional and the European platforms





#### **Next steps and questions**

Two User journey to consider:

- Persona1 coming from the DIH4AI ecosystem and willing to continue their exploration from the DIH4AI Portal to the AI-on-Demand Platform
- Persona2 coming from the AI4EU ecosystem and able to seamless receive information from the AI-on-Demand Platform of the DIH4AI ecosystem

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**Identities** 

Search

**CMS** 

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Identities Search CMS

We would like to know more about APIs and Components related to these topics:

Which Project? Status of the API? Access to the API (certificate, app token)? How to exchange over requirements?

SSO and Identities: Application/system level trust, Organization identification/authentication, and user-level (additional fields?)

Search: Any plan to integrate an API holistic layer to get a full view of Experiments & CMS

CMS: Any news regarding CMS API (scope, technology, status, organizations/projects in charge)?