



gaia-x

Track 6 – Deployment / Minimal Viable Gaia-X Track Onboarding Presentation

–

Matej Feder, Kai Meinke



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01

Bootstrapping a Minimal
Viable Gaia-X ecosystem
(Ocean Protocol)

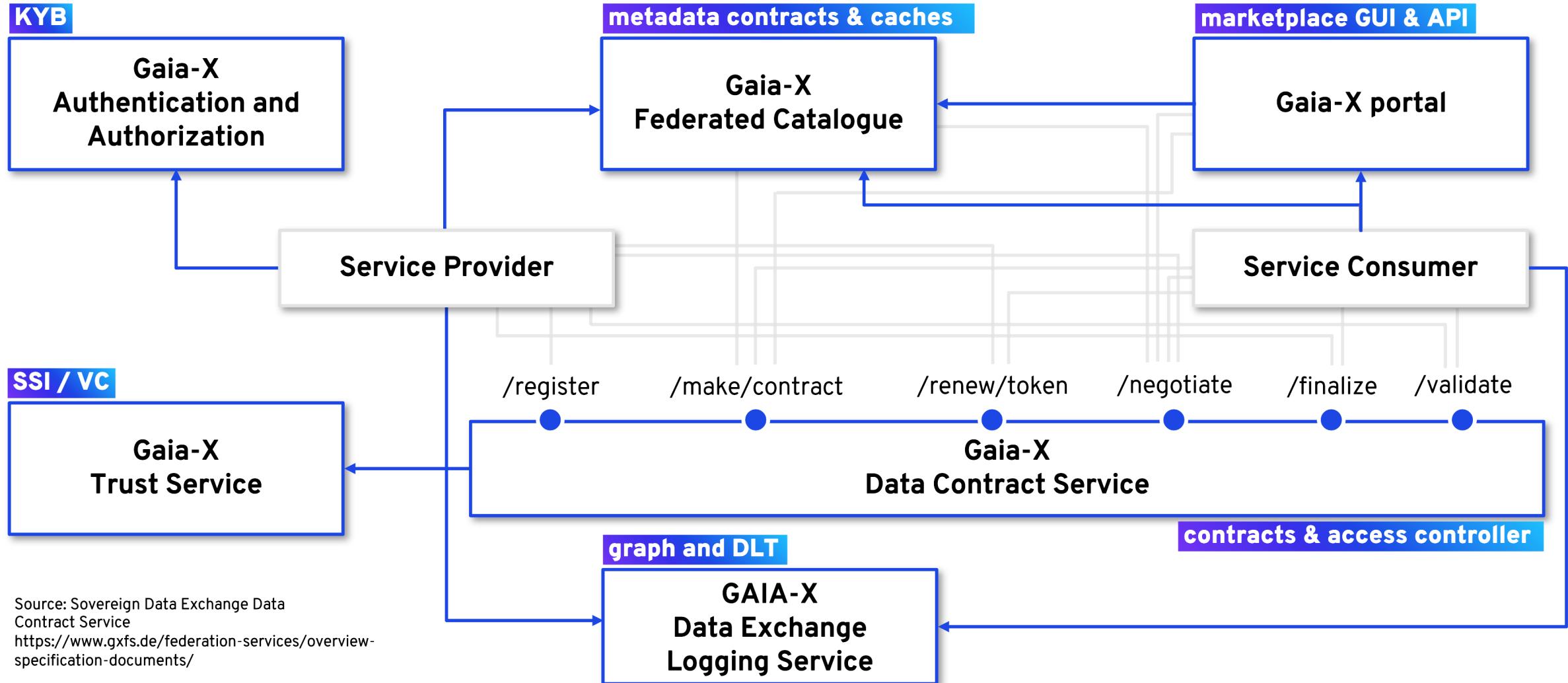
Kai Meinke

01 – Bootstrapping a Minimal Viable Gaia-X ecosystem



- **Session:** Introduction - How to bootstrap a decentralized ecosystem enabling technical data sovereignty and how to build towards Gaia-X Trust and Compliance
- **Goals:**
 - understand how a decentralized Web3.0 ecosystem is composed
 - understand how a decentralized Web3.0 ecosystem enables technical data sovereignty and aligns with the Gaia-X vision and mission
 - understand how we build towards Gaia-X Trust and Compliance

01 – Bootstrapping a Minimal Viable Gaia-X ecosystem



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Publish Profile Connect Wallet ⚙️

MVG Portal Demonstrator

A platform to find, publish and consume Data Services in the Gaia-X Test Network.

powered by

ocean

START NOW

Gaia-X on Ocean Protocol Academy

Gaia-X aims to be a decentralized, secure, transparent digital ecosystem for the European data economy. Understand the core concepts of Gaia-X and Ocean Protocol and learn how a Gaia-X built on Distributed Ledger Technology is operable today.

ADALIN-64 Heatmap der Ladensäuleninfrastruktur 0x8808...6441 ALGORITHM
Dieser Algorithmus erstellt eine Heatmap für die Umsetzung des gegebenen Anwendungsfalls
No price set ⓘ GAIAX-Testnet

JOCKRI-0 Heatmap der Ladensäuleninfrastruktur 0x8808...6441 ALGORITHM
Dieser Algorithmus erstellt eine Heatmap für die Umsetzung des gegebenen Anwendungsfalls
No price set ⓘ GAIAX-Testnet

PLEHAD-84 Privacy Preserving Business Analysis 🎯 Algorithm 0x8808...6441 ALGORITHM
This data service offering consists of the algorithm to facilitate a descriptive analysis of protected cust... 5 OCEAN GAIAX-Testnet

TENSHA-17 Privacy Preserving Business Analysis 🎯 Dataset 0x8808...6441 DATA SET
About this Data Service Offering safeFBDC, the Financial Big Data Cluster, joins the 2nd Gaia-X Ha... 5 OCEAN GAIAX-Testnet

POWPEL-68 AML Analysis Algorithm 0x8808...6441 ALGORITHM
About this Data Service Offering safeFBDC, the Financial Big Data Cluster, joins the 2nd Gaia-X Ha... 2 OCEAN GAIAX-Testnet

TASBAR-78 AML Analysis Dataset 0x8808...6441 DATA SET
About this Data Service Offering safeFBDC, the Financial Big Data Cluster, joins the 2nd Gaia-X Ha... 5 OCEAN GAIAX-Testnet

UBIPUF-74 CNN Object Detection Algorithm 0x8808...6441 ALGORITHM
Status Type Type About this Data Service Offering This data service offering consists of a traffic imag... 5 OCEAN GAIAX-Testnet

INCPOR-19 CNN Object Detection Sample Data 0x8808...6441 DATA SET
Status Type Type About this Data Service Offering This data service offering consists of data for a traff... 25 OCEAN GAIAX-Testnet

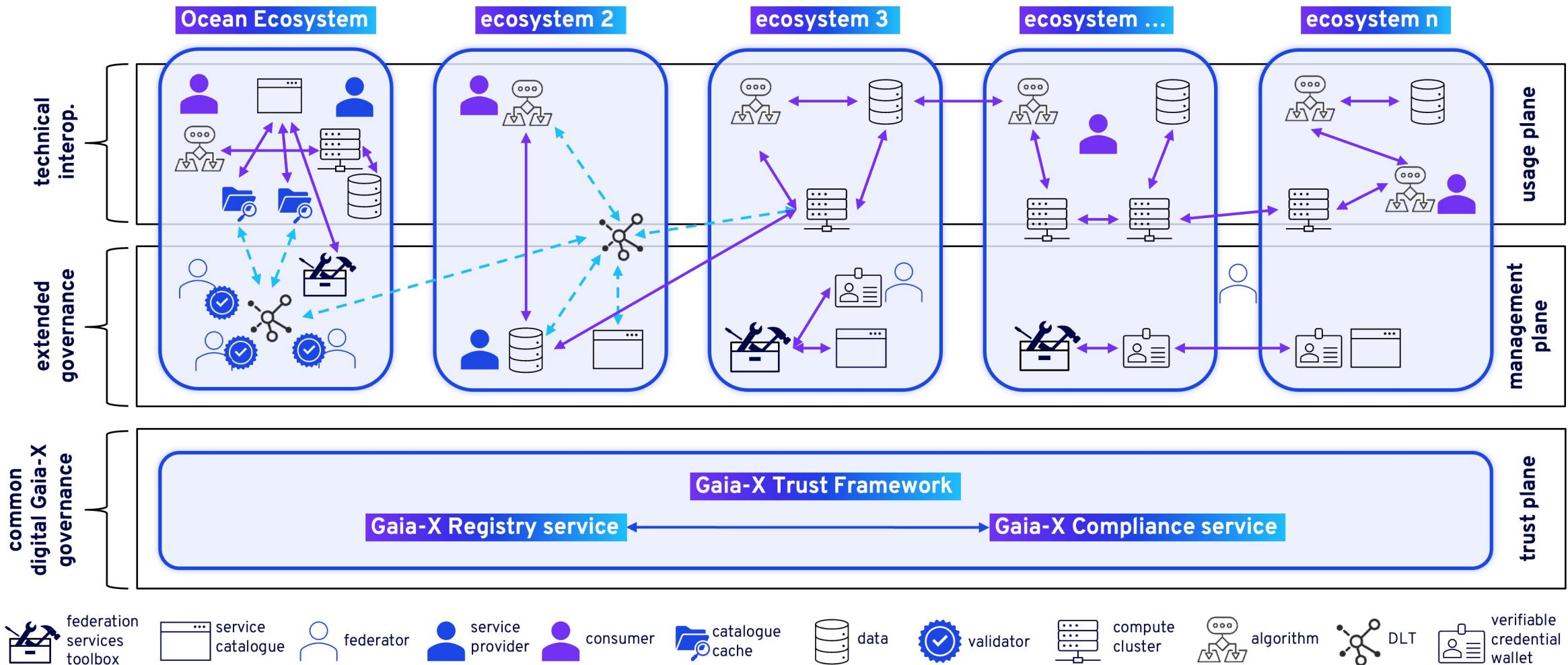
LOQPOR-49 YOLOv5 Object Classification 🎯 Sample Algorithm 0x8808...6441 ALGORITHM
This data service offering consists of a real-time object detection algorithm, which identifies specific o... 4 OCEAN GAIAX-Testnet

INSLOB-11 YOLOv5 Image Classification 🎯 Sample Data 0x8808...6441 DATA SET
This data service offering consists of data for a real-time object detection algorithm, which identifies s... 4 OCEAN GAIAX-Testnet

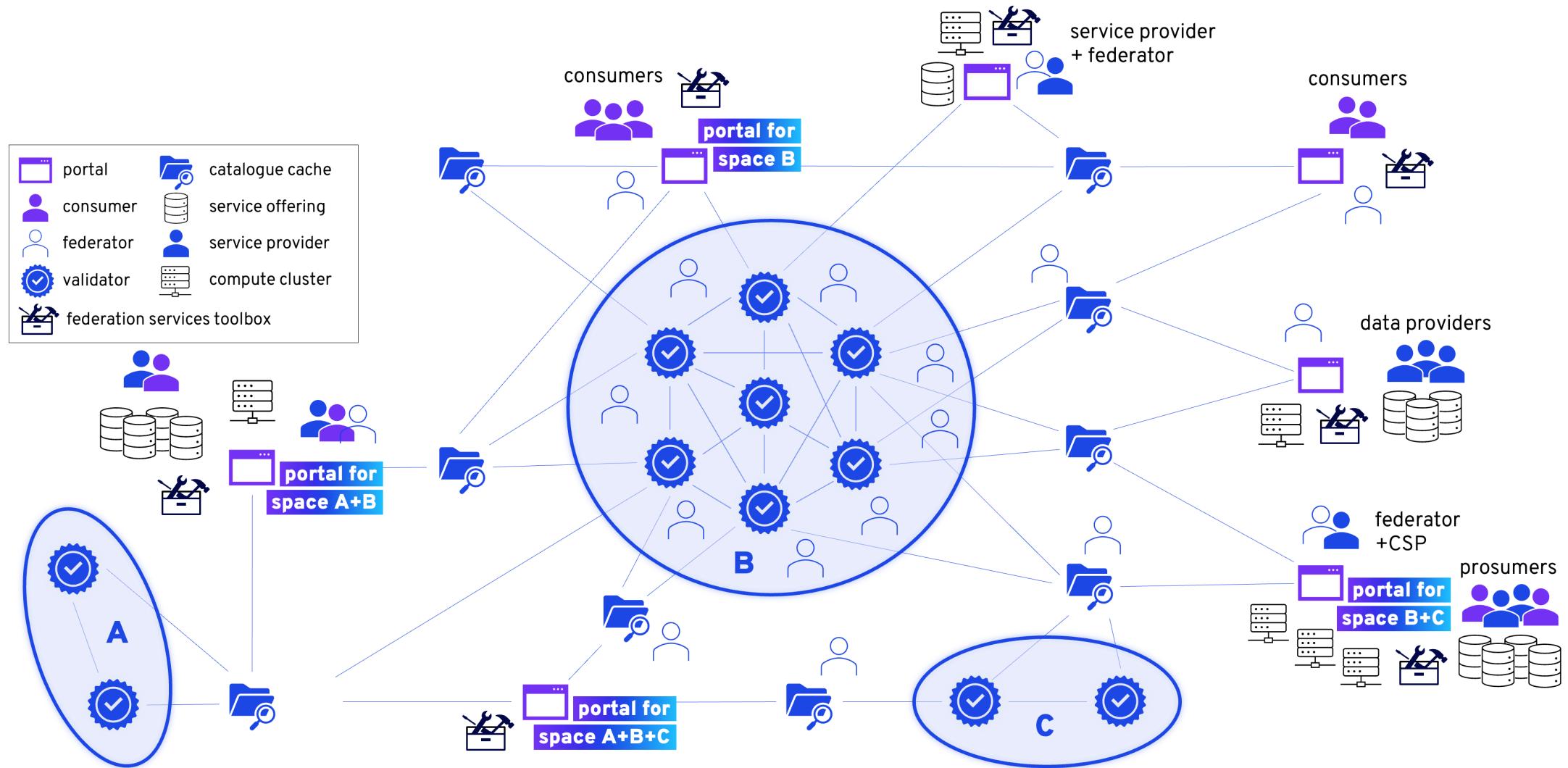
VOLFIS-97 Freesurfer Average Brain Surfaces fsaverage for Cortical Morphometr... 0x8808...6441 DATA SET
Collection of standardized brain surfaces in fsaverage space curated by templateflow in BIDS-style a... 1 OCEAN GAIAX-Testnet

CALSHA-66 Descriptive statistics for tabular data 0x8808...6441 ALGORITHM
Descriptive statistics based on Pandas describe(). For numeric data, the result's index will include cou... Free GAIAX-Testnet

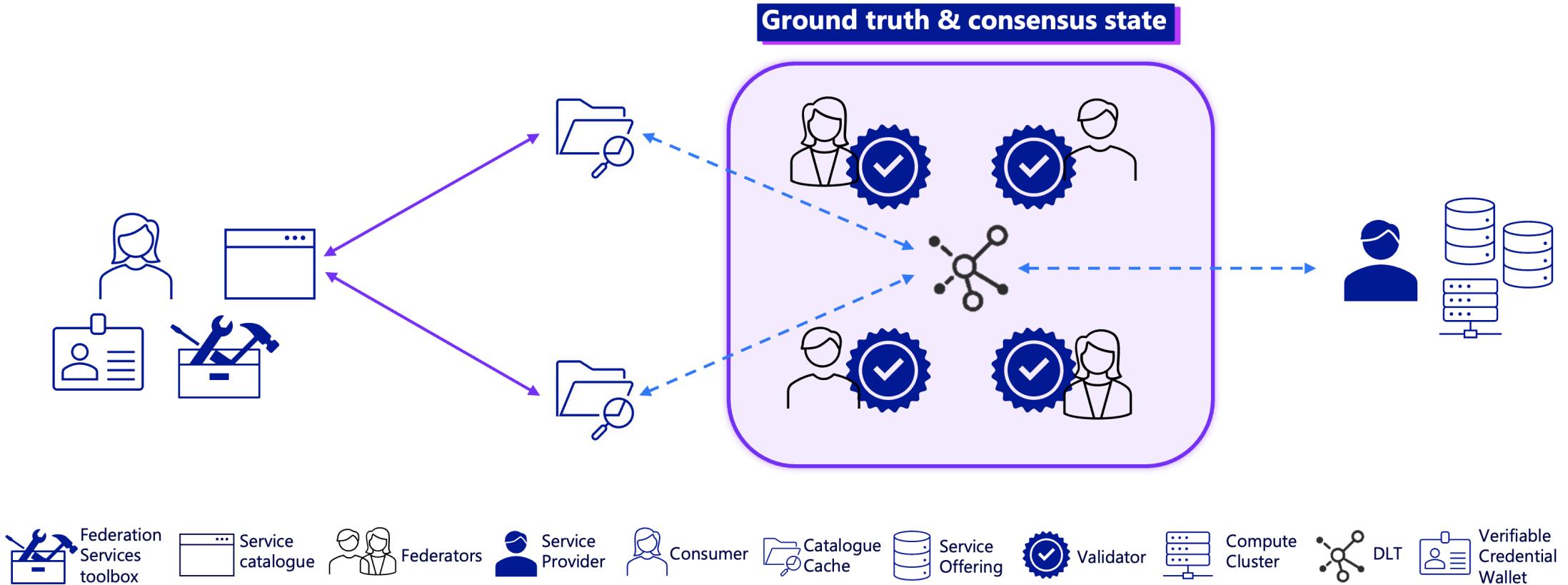
01 – Bootstrapping a Minimal Viable Gaia-X ecosystem



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02

Bootstrapping a Structura-X ecosystem
(Threefold)

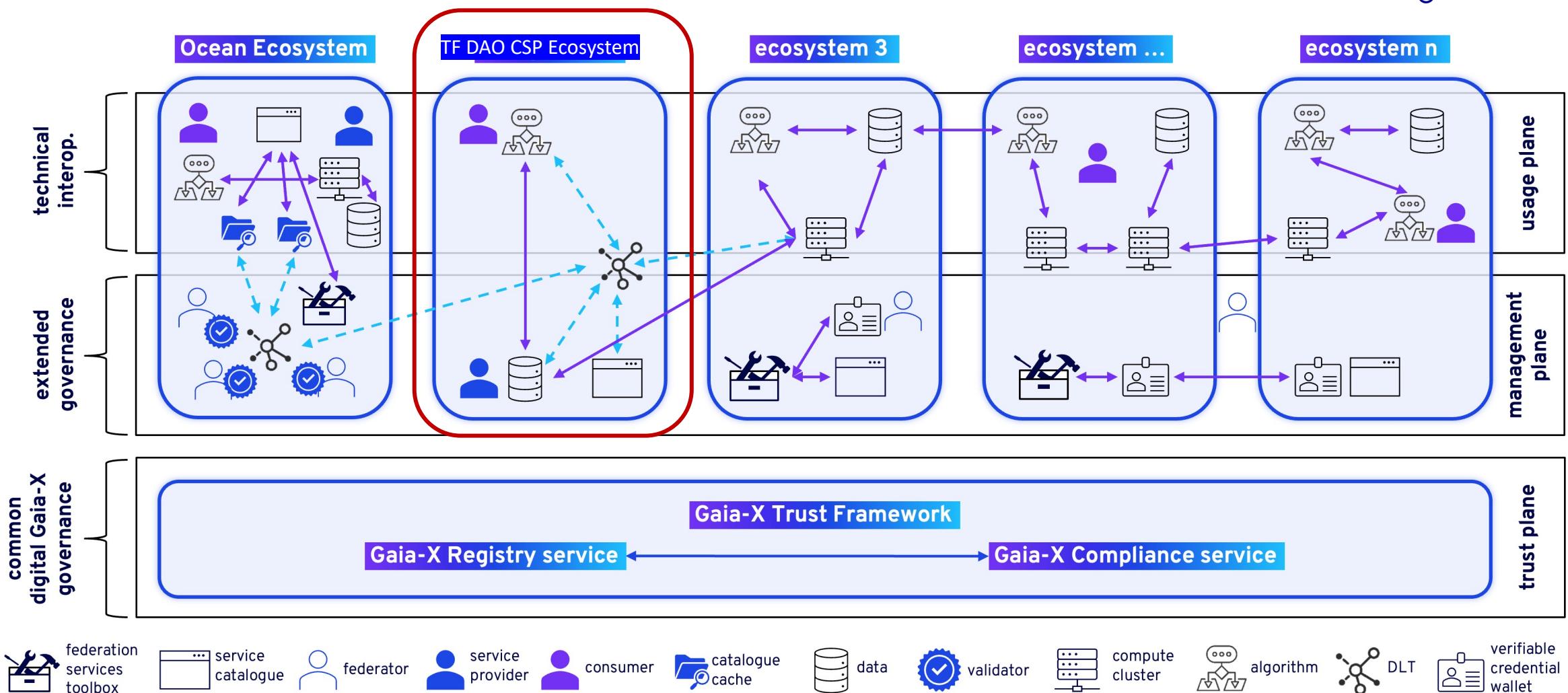
Geert Machtelinckx, Weynand Kuijpers

02 - Bootstrapping a Structura-X ecosystem (Threefold)



- **Session:** Bootstrap a Gaia-X ecosystem of interconnected hardware devices, owned by multiple cloud operators, taking up operationalisation issues (interoperability, security, privacy, commercial model, governance)
- ThreeFold Tech has developed open-source technology that combines the pieces of self-description and components of the trust framework (DID, VC) and brings a model that addresses interoperability, security, privacy-enabling, a commercial model and a governance on the table, in a trajectory to achieve a fully operationally ready Gaia-X cloud provider ecosystem (as pursued by Structura-X initiative). Hackathon will go through the concept, and go through a concrete setup.

02 – Bootstrapping a Structura-X ecosystem



02 – Bootstrapping a Structura-X ecosystem



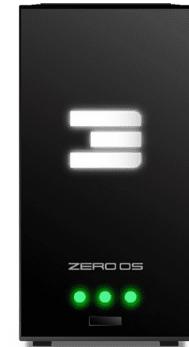
What solar panels did for the energy industry, we do for Internet capacity...
... making cloud interoperable, decentralized and ready to run on the edge.



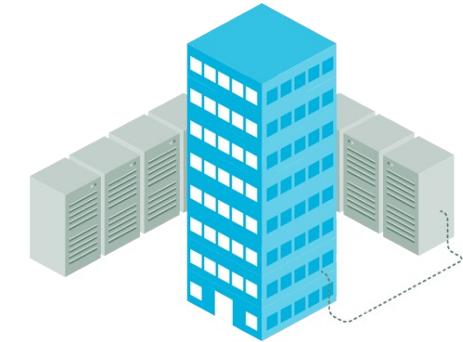
POWER PLANT



SOLAR PANEL



3NODE



DATACENTER



02 – Bootstrapping a Structura-X ecosystem



THREEFOLD

- Required features to get a Structura-X ecosystem

- interoperability, resilience, security, privacy, regulatory compliance, commercial model, governance (neutrality)

- Hacking Session using tooling

- Wallet and Portal
 - Zero-OS Bootstrap image
 - Terraform & JS for selecting capacity, ‘playground’ for deploying workloads
 - Signed workloads
 - TFChain blockchain / model



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03

Self-Description of MVG
infrastructure and service offerings

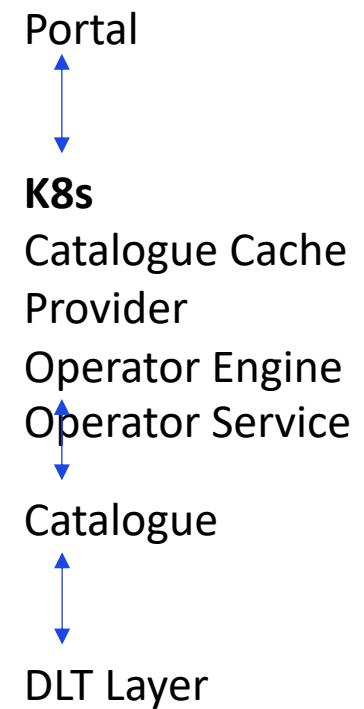
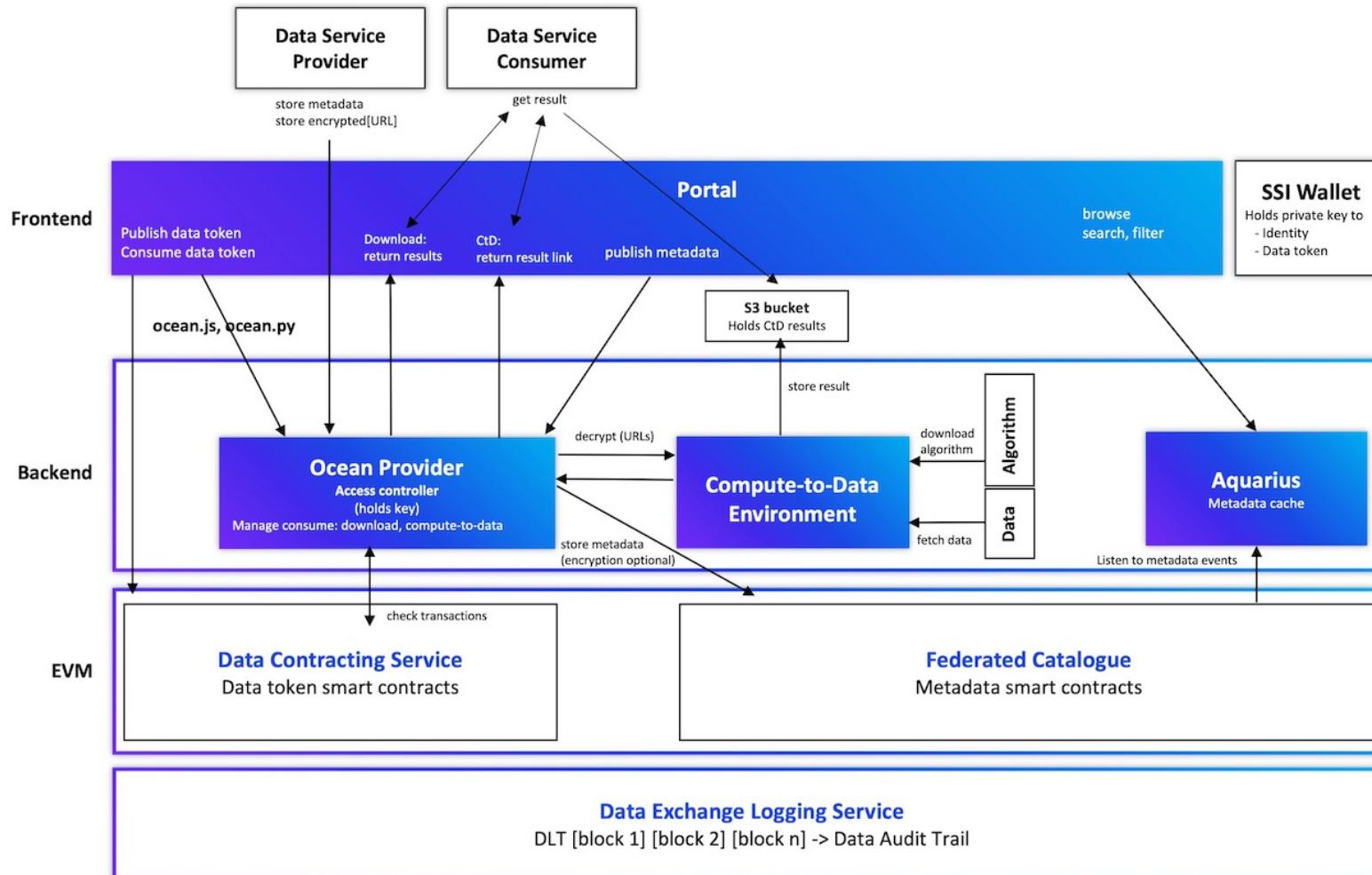
Frederic Schwill, Alexander Eger

03 - Self-Description of MVG infrastructure and service offerings



- **Session:** Describing the MVG infrastructure (Kubernetes cluster, Federation Services, etc.) and service offerings through self-descriptions, enabling transparency, based on the work of the SD Self-Description and Service Characteristics.
- **Goals:**
 - Understand the MVG Infrastructure and its backend architecture
 - Describe the infrastructure using service composition and Self-Descriptions
 - Describe service offerings using Self-Descriptions

03 - Self-Description of MVG infrastructure and service offerings



03 - Self-Description of MVG infrastructure and service offerings



SAGOCT-74

Traffic Image Classification 🚗

Sample Data

deltaDAO AG

This data service offering consists of data for a traffic image classification algorithm, which identifies r...

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GAIA-X Testnet

<https://minimal-gaia-x.eu/asset/did:op:d0bBC407c5Aa10d7Fd729A4bc00a9DC43535Cfe0>

VOLSHE-94

Traffic Image Classification 🚗

Algorithm

deltaDAO AG

This data service offering consists of a traffic image classification algorithm, which identifies road safet...

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GAIA-X Testnet

<https://minimal-gaia-x.eu/asset/did:op:b562a807b0db22bE0AD4FD53b35c460e17128F13>

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Traffic Image Classification 🚗 Algorithm

GAIA-X Testnet

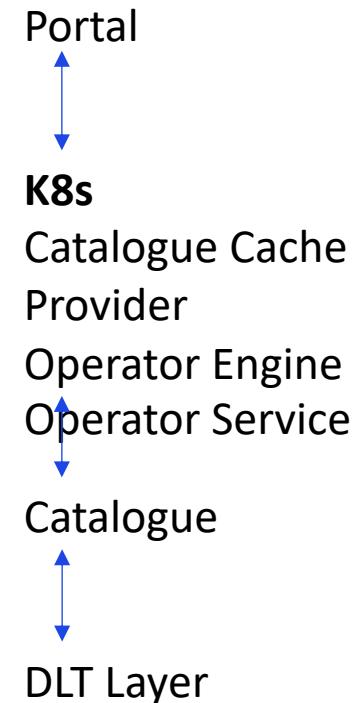
ALGORITHM | Voulble Shell Token — VOLSHE-94

Published By deltaDAO AG
6 months ago — updated 24 days ago

This data service offering consists of a traffic image classification algorithm, which identifies road safety relevant objects in a sample set of images. The algorithm uses features learned by a deep convolutional neural network to detect traffic related objects.

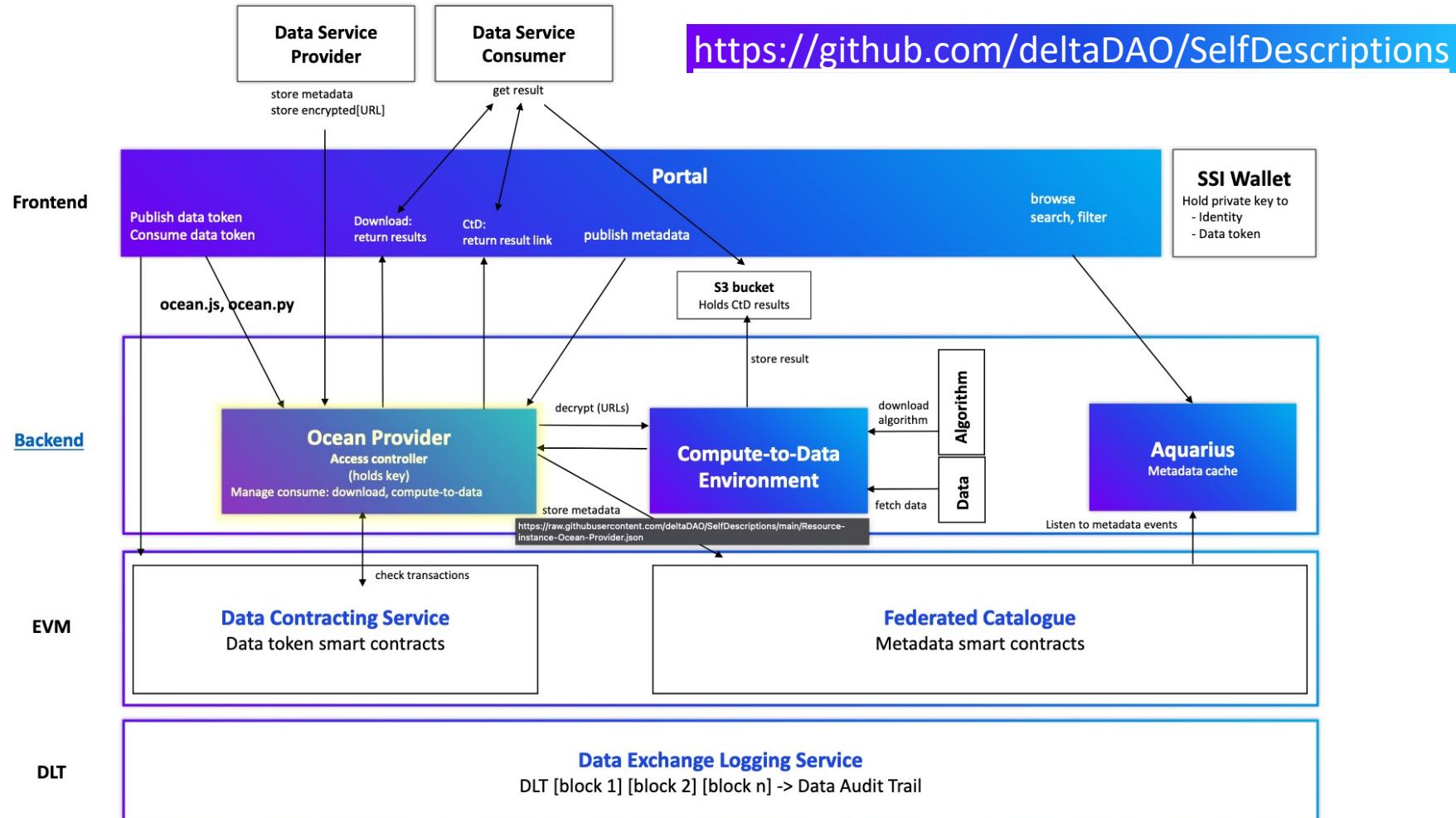
Service Online / Available
Type Machine Learning
Domain Mobility

The sample dataset and the whitelisted algorithm are listed in the [Minimal Viable Gaia-X Portal here](#).



03 - Self-Description of MVG infrastructure and service offerings

https://raw.githubusercontent.com/deltaDAO/SelfDescriptions/main/CtD_Architecture.pdf





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04

Rapid Cloud-Agnostic Deployment of
Federation Services

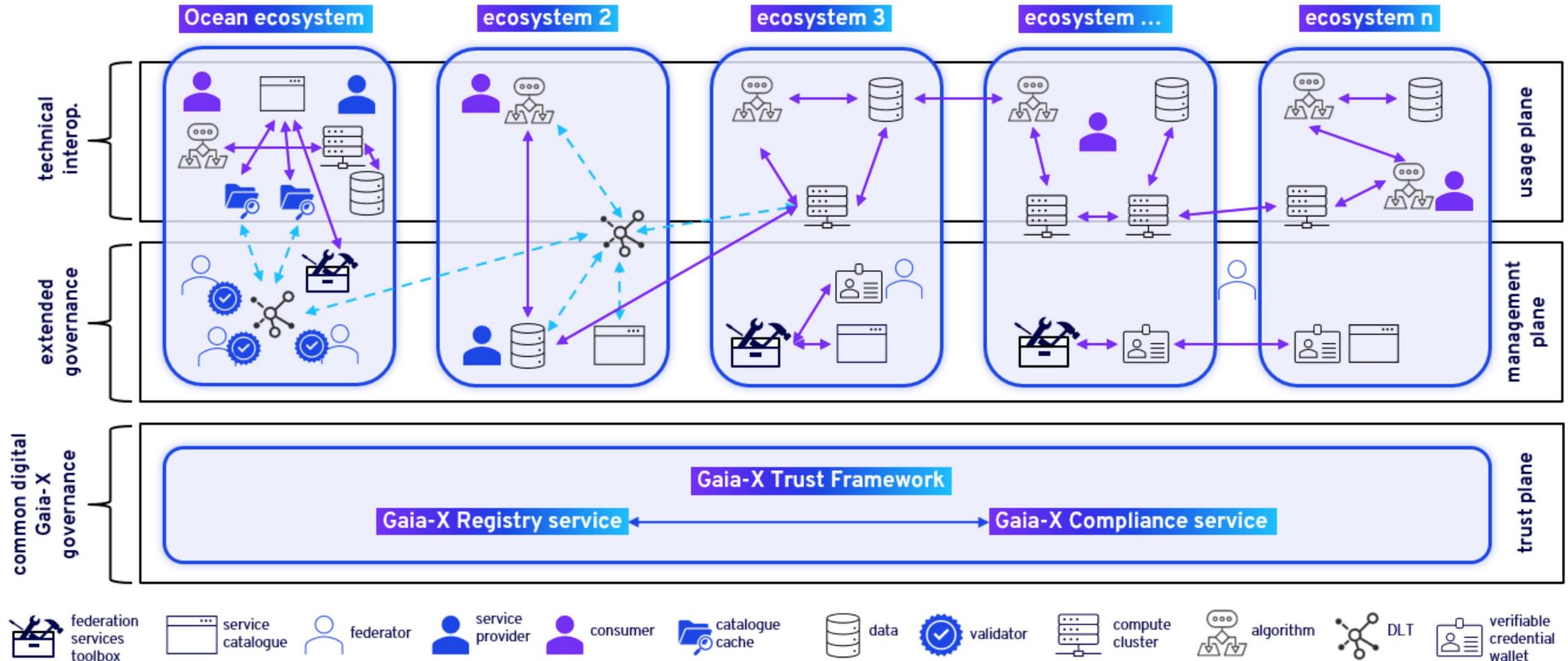
Julian Da Silva, Kai Meinke

04 - Rapid Cloud-Agnostic Deployment of Federation Services



- **Session:** Deploy a Federation Service, the Catalogue Cache, in a cloud-agnostic, modular and portable manner leveraging the open-source VMware Tanzu Community Edition. Connect it to the decentralized Core Grid (GX test network) in minutes.
- **Goals:**
 - Deploy a Federation Service on any cloud with VMware Tanzu
 - Establish abstraction layer to free apps from infrastructure
 - Build, run & manage applications on any cloud

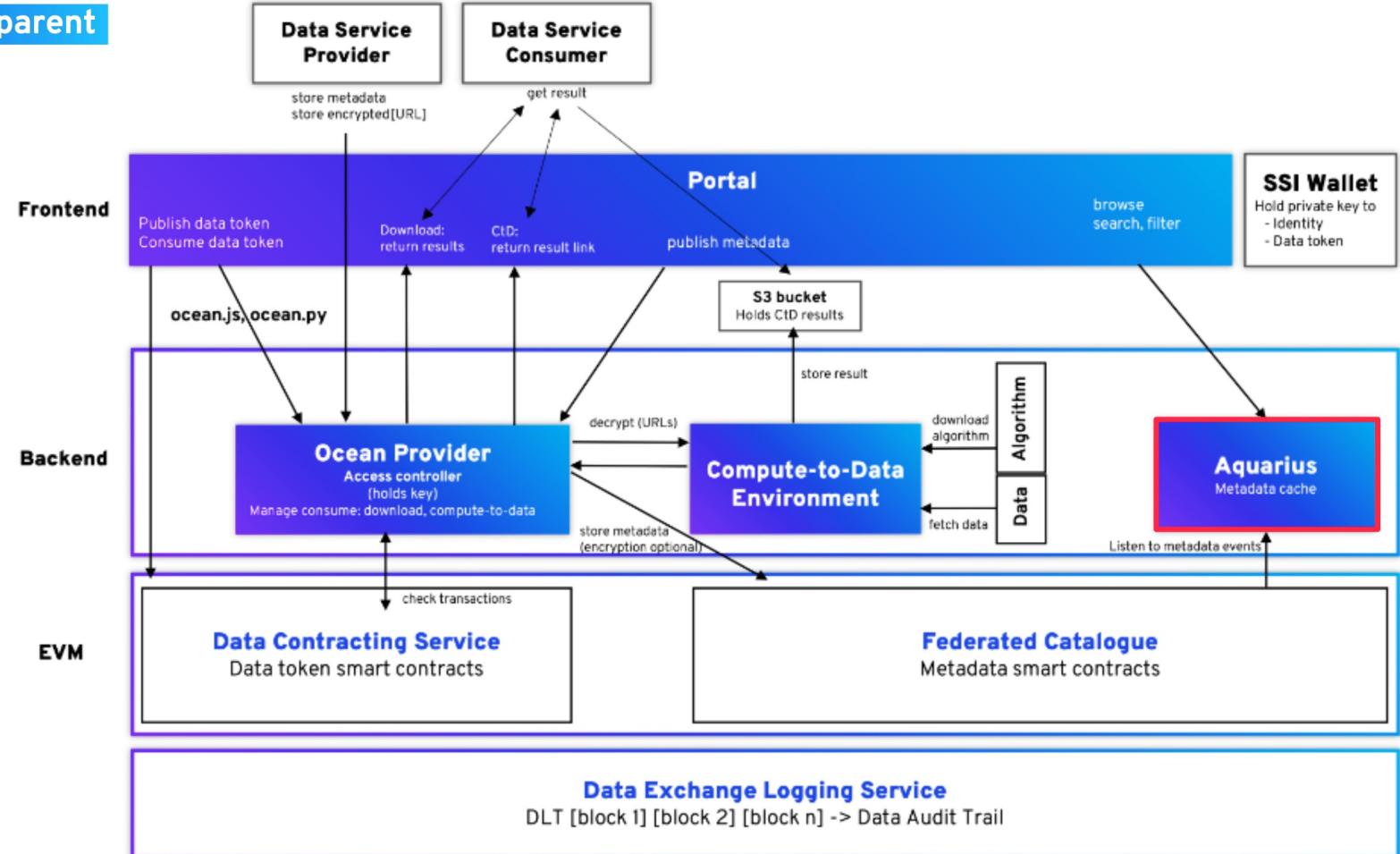
04 - Rapid Cloud-Agnostic Deployment of Federation Services



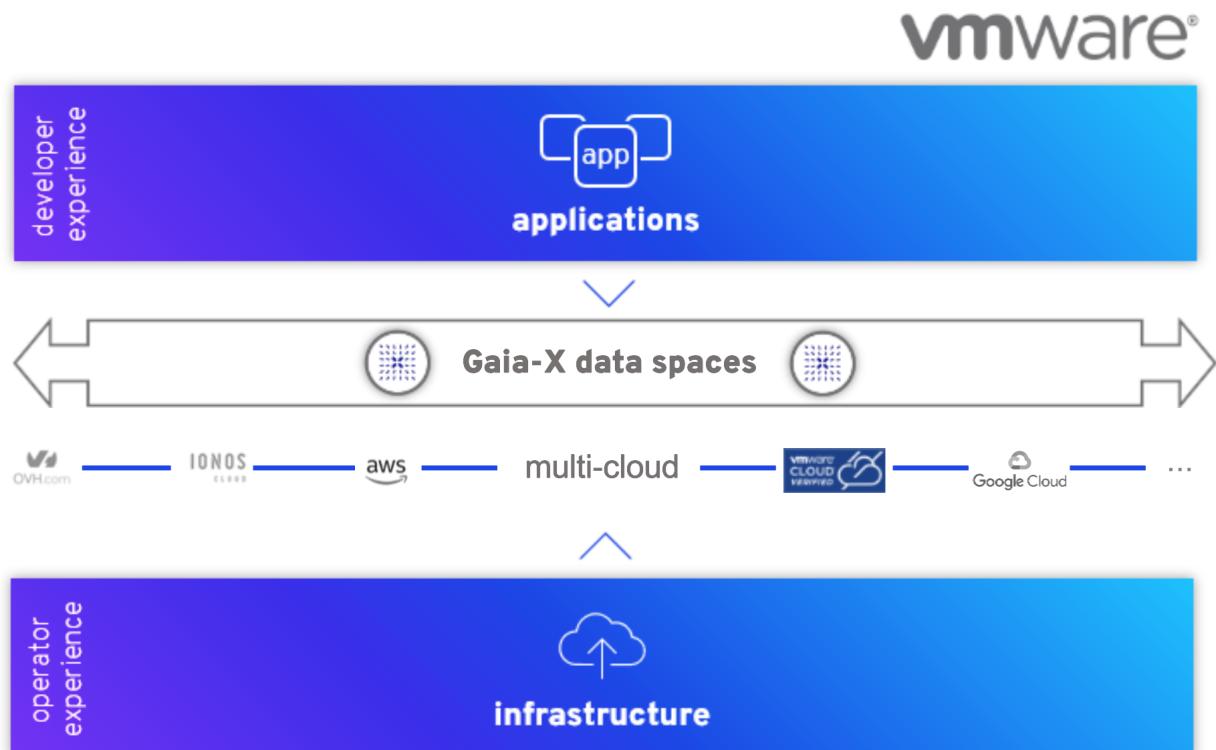
04 - Rapid Cloud-Agnostic Deployment of Federation Services



built on a permissionless and transparent
decentralized core grid



04 - Rapid Cloud-Agnostic Deployment of Federation Services



OBSERVABILITY	VISUALIZATION	Grafana
	MONITORING & ALERTING	Prometheus
	LOG FORWARDING	fluentbit
BUILD AND DEPLOY	SERVERLESS	Knative
	REGISTRY	HARBOR
	APP CATALOG*	Kubeapps
	BUILD SERVICE*	kpack
SERVICES	DATA PROTECTION	VELERO
	AUTHENTICATION	PINNIPED
	CONFORMANCE	SONOBUOY
	CERTIFICATES	CERT-MANAGER
	POLICY	Open Policy Agent
CONNECTIVITY	INGRESS & LOAD BALANCING	CONTOUR
	CONTAINER NETWORKING	MULTUS
	EXTERNAL DNS	ANTREA
		CALICO
COMPUTE RUNTIME	kubernetes	
	LIFECYCLE MANAGEMENT	CLUSTER API
	PACKAGE MANAGEMENT	CARVEL
PROVIDERS	LOCAL DEVELOPMENT	docker
	ON PREMISES	vmware vSphere
	PUBLIC CLOUD	aws

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05

Pilot-005 Deployment

Matej Feder, Roman Hros

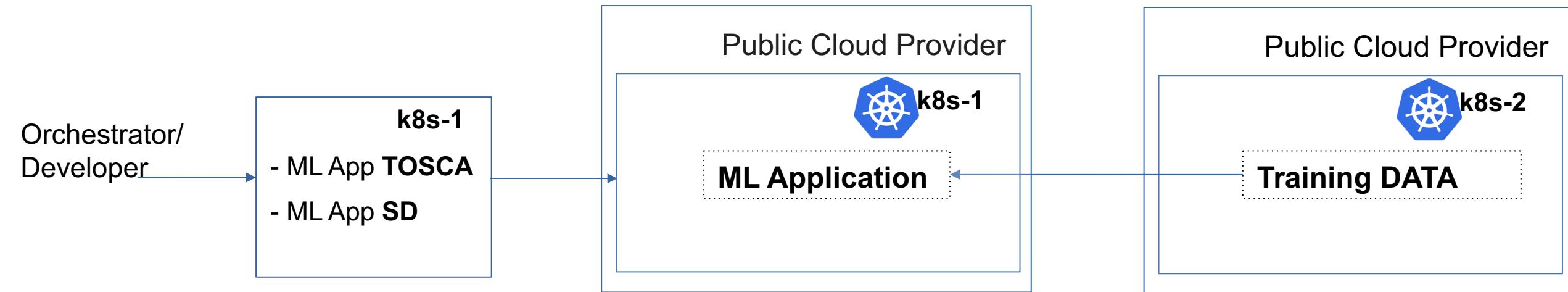
05 - Pilot-005 Deployment

- **Session:** Pilot-005 Deployment
- **Goals:**
 - Integrate GAIA-X Catalogue to the MVG Pilot-005 architecture
 - Complete the integration of the Authorization provider to the MVG Pilot-005 architecture

05 - Pilot-005 Deployment

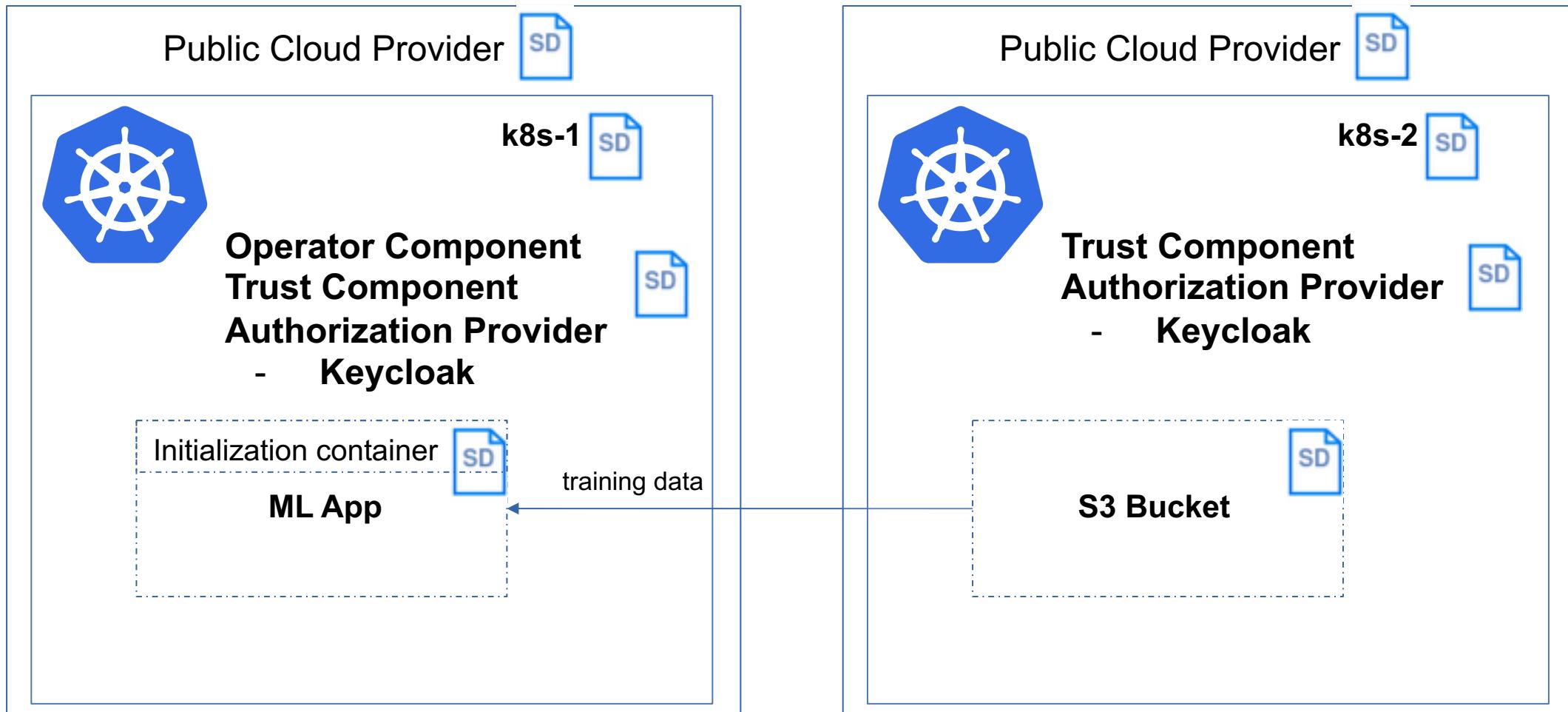
High Level Overview

- GDPR complaint?



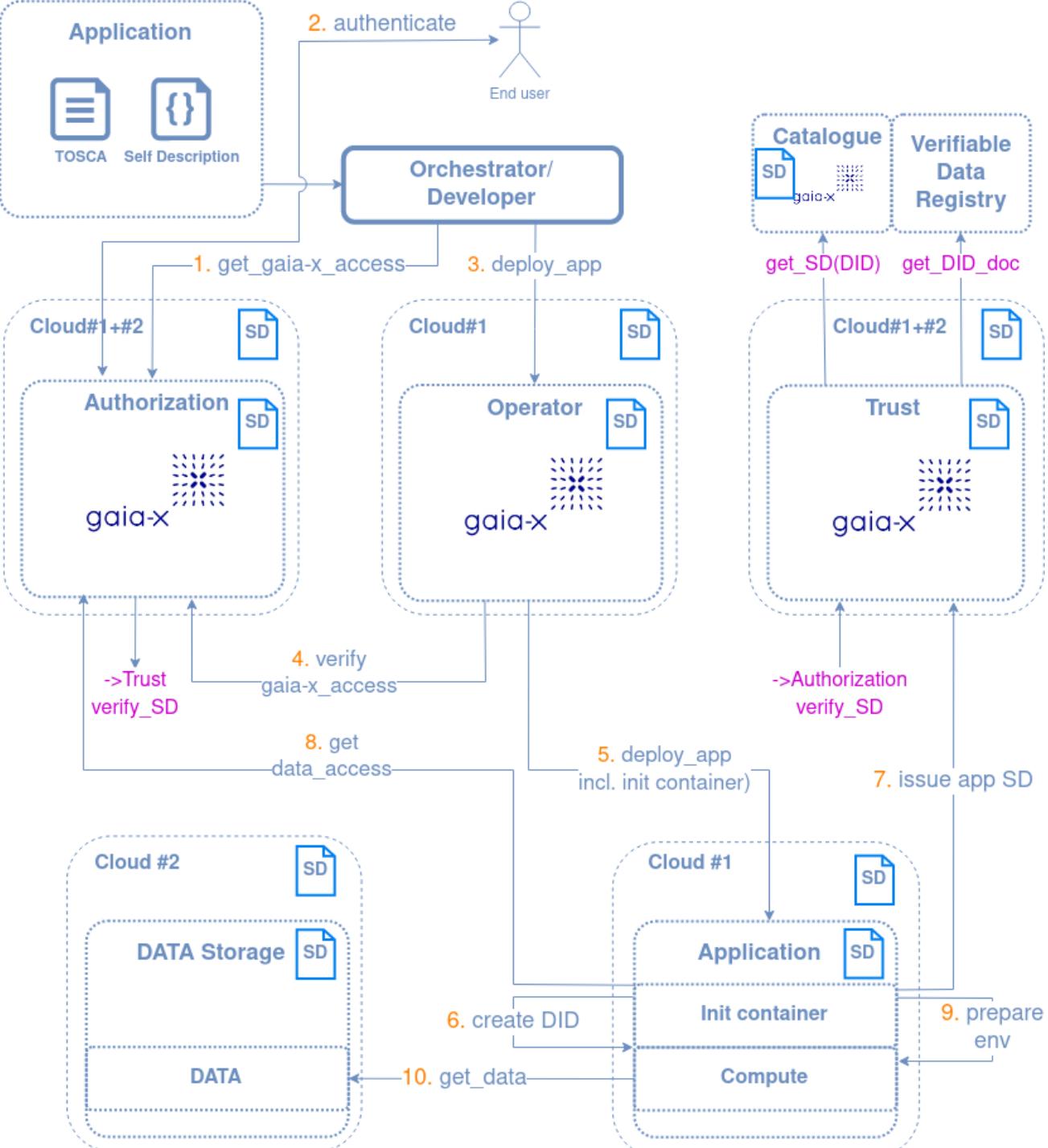
05 - Pilot-005 Deployment

High Level Overview



05 - Pilot-005 Deployment

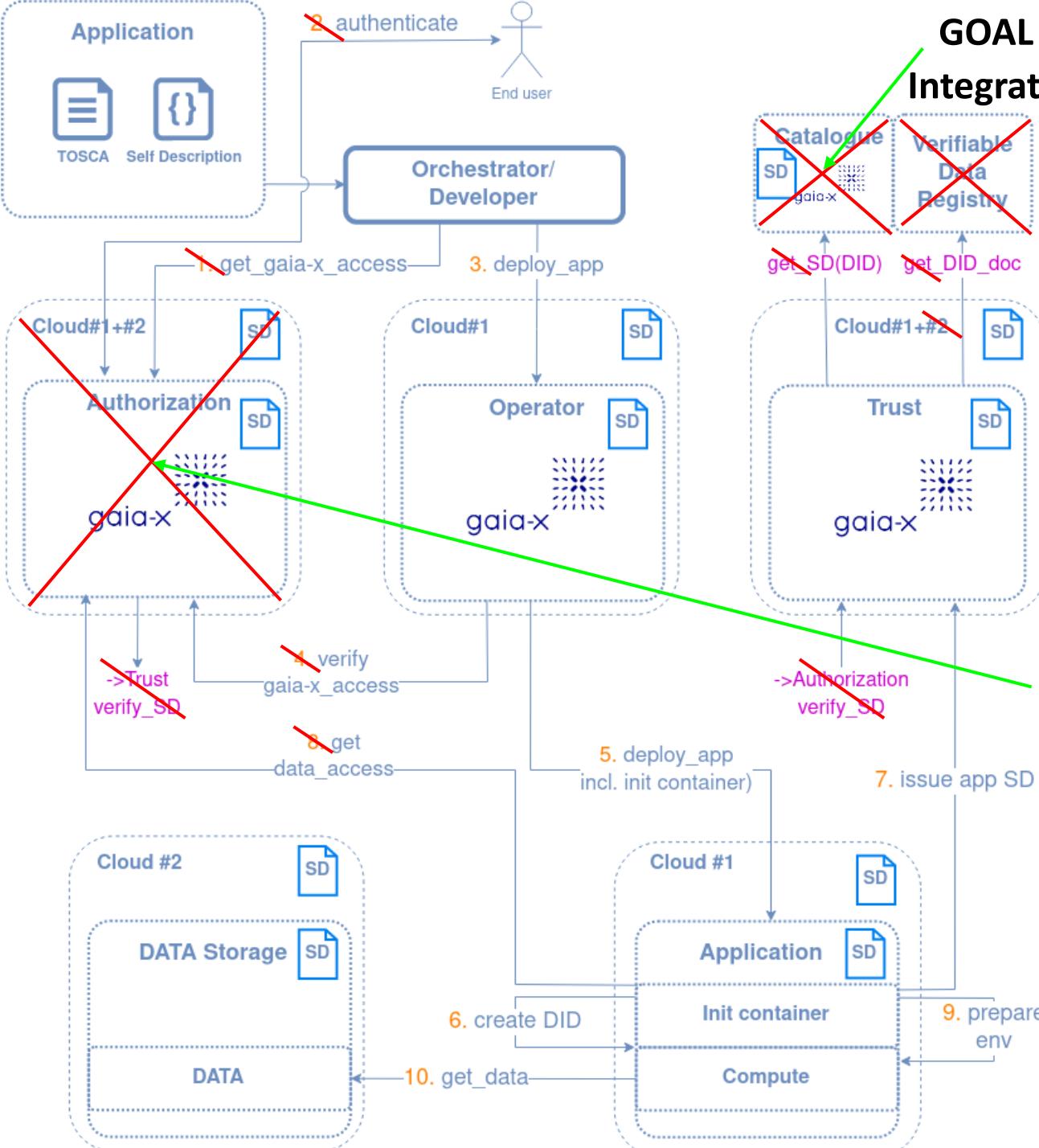
Desired state



05 - Pilot-005

Deployment

Current state



GOAL Hackathon#3

Integrate GX Catalogue

GOAL Hackathon#3

Integrate Authorization component



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Minimal Viable Gaia-X Onboarding and MVG Academy



Proof of Attendance NFT

Use the Gaia-X Web 3.0 Ecosystem and get your Gaia-X hackathon #3 NFT

Visit academy.delta-dao.com to get started



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Any questions or remarks?



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GO

Enjoy the Gaia-X Hackathon #3