Welcome to Simpl First Annual Community Event

The event will start at 4:11







Simpl Annual Community Event

30 January 2025

Keep in mind today

- 1. Hybrid event.
- 2. Comment and ask questions on Sli.do (code: 2151729)
- 3. Sessions are being recorded.
- Remember to silence your phones.
- Executive room available for brief calls in the morning.





What does your badge mean?

It's Simpl!



White - General interest



Purple - Simpl-Open



Speakers

Orange - Simpl-Live



Pay attention to the color of participants' badges to connect with people who share your interests!

Welcome address

Introducing the Speaker



Pearse O'Donohue
Director Future Networks
DG CNECT European Commission



Agenda

	Welcome address	09:00 – 09:15	
2.	Simpl: Enabling the dataspace ecosystem	09:15 – 10:00	
3.	Showcasing Simpl-Open MVP	10:00 – 11:00	· Coffee break
4.	Simpl-Labs PoC: Testing development and interoperability	11:30 – 12:00	Conce break
5.	Simpl-Live: Supporting data spaces with Simpl	12:00 – 12:45	Lunah
6.	Workshop sessions, part A	14:00 – 15:00	Lunch
	 Break-out 1: Unlocking Simpl-Open MVP: A Hands-On Exploration 		
	Break-out 2: Enabling value through Simpl		
7.	Workshop sessions, part B	15:20 – 16:25	Coffee break
	Break-out 1: Unlocking Simpl-Open MVP: A Hands-On Exploration		
	Break-out 2: Enabling value through Simpl		Transition to the
8.	Wrap up	16:40 – 17:00	plenary room
9.	Closing note	17:00 – 17:15	







Simpl: Enabling the data space ecosystem

Simpl Annual Community Event

Simpl: Enabling the data ecosystem

Introducing the Speakers



Manuel Mateo Goyet
Acting Head of Unit Cloud and Software
DG CNECT European Commission



Bjoern Juretzki
Head of Unit Data Policy and Innovation
DG CNECT European Commission



Jolanta SuarezSimpl Community and Engagement Manager,
Sovereign-X

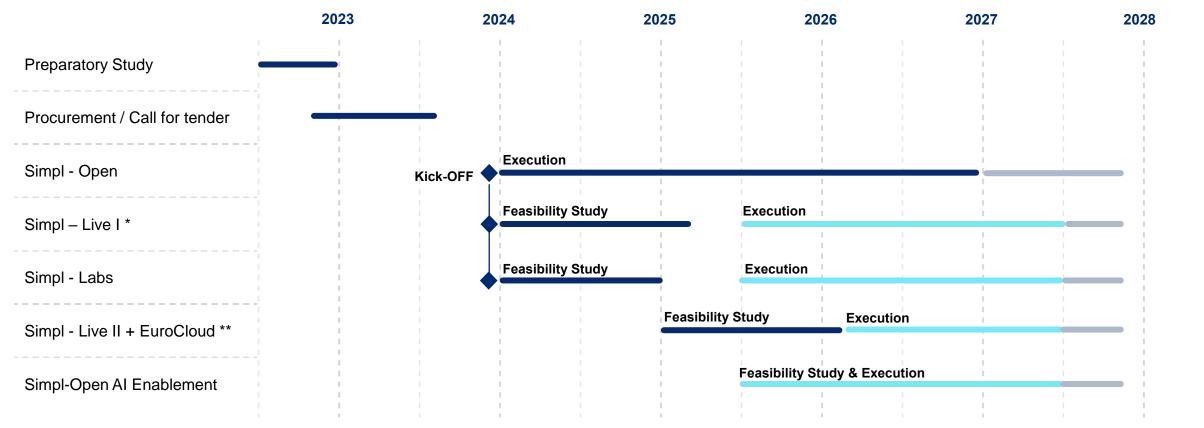




The Simpl Programme Roadmap

Simpl-Open, Simpl-Live, and Simpl-Labs

- Committed scope
- Possible Follow up Implementation of Simpl Live/Labs;
 Simpl-Live Feasibility Studies for new data space initiatives
- Potential next step still to be validated



^{*} Data spaces included: PPDS, EHDS2, LDS, EOSC, DestinE, SCDS ** Data spaces included: CEADS, GDDS, CEMDS, CEEDS













Showcasing Simpl-Open Minimum Viable Product

Simpl Annual Community Event

Showcasing Simpl-Open Minimum Viable Product

Introducing the Speakers



Dominique Roelants
Project Owner Simpl-Open,
DG CNECT European Commission



Nicolas Auricchio Lead Architect Simpl-Open, Sovereign-X



Melanie Mirjana Friedrich IT Architect Simpl-Open, Sovereign-X



Arian Firouzbackhsh
Data Space Architect Simpl-Open,
Sovereign-X



What is Simpl-Open?

Core middleware solution

Simpl-Open

- Open-source
- Middleware
- Cloud to edge federations
- Enabling major data initiatives

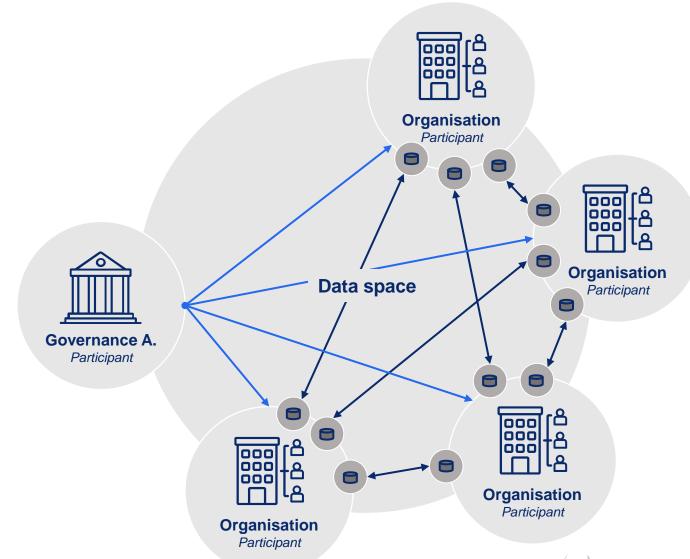




Data space fundamentals influencing Simpl-Open

The data space context

- Data spaces are data & service sharing ecosystems.
- Technology and contracts need to work hand in hand to enforce proper data sharing.
- Simpl-Open brings new features that allow a stronger technology-based enforcement.





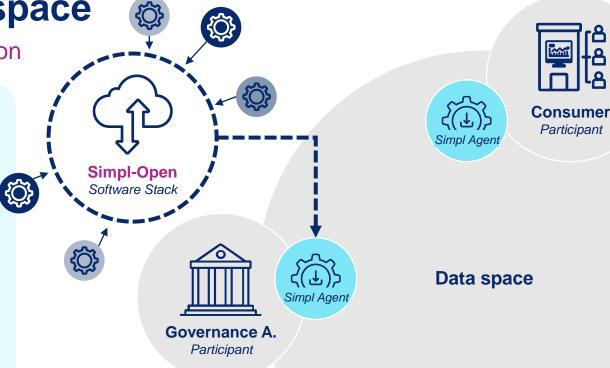
Simpl-Open covers the full landscape of a data space

Simpl-Open unique value proposition

Reuse, develop, integrate:

Simpl-Open:

- Identifies suitable existing components.
- Develops from scratch missing components.
- Integrates them to simplify the deployment and set up of a data space.







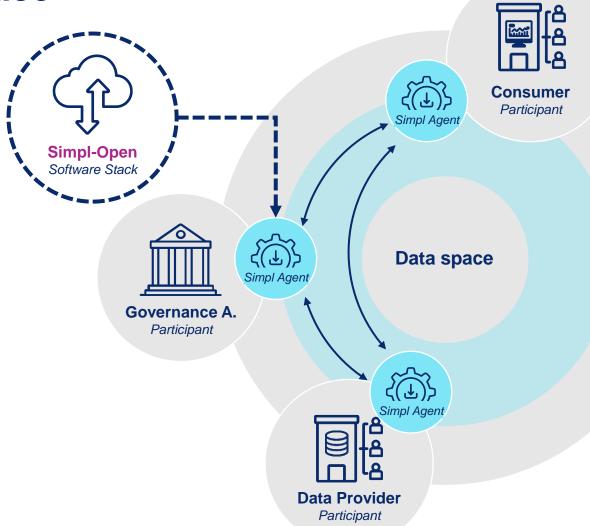
Simpl-Open covers the full landscape of a data space

Simpl-Open unique value proposition

Reuse, develop, integrate:

Engrained security:

The set-up of Simpl-Open secure communication is part of the onboarding of new participants.





Simpl-Open covers the full landscape of a data space

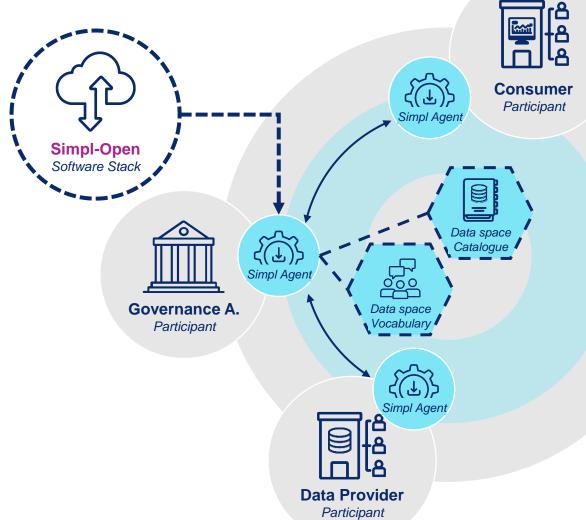
Simpl-Open unique value proposition

Reuse, develop, integrate:

Engrained security:

Flexibility through configuration:

Each data space can configure numerous elements, such as the rules for onboarding, the definition of identity attributes, the metadata required for publishing datasets/services, etc.





Simpl-Open covers the full landscape of a data space

Simpl-Open unique value proposition

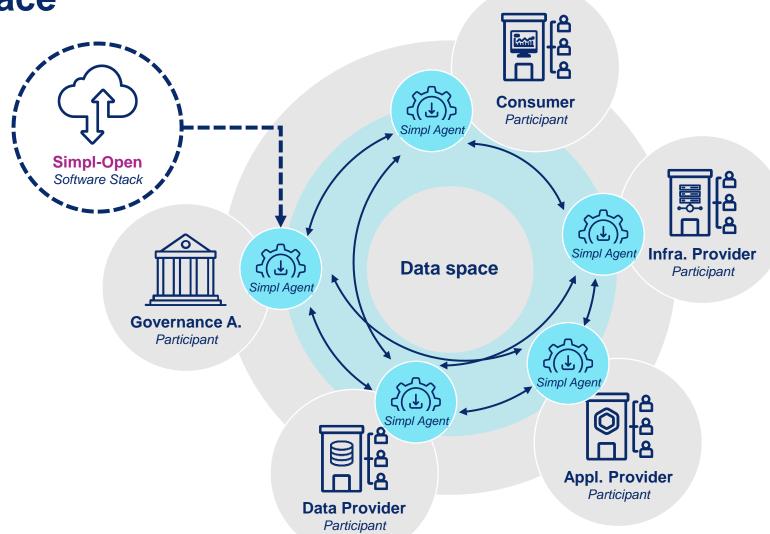
Reuse, develop, integrate:

Engrained security:

Flexibility through configuration:

Inclusion of new types of providers:

Simpl-Open also considers Infrastructure and Application providers, enabling providers to bundle infrastructure, application and datasets as they see the need.





Simpl-Open covers the full landscape of a data space

Simpl-Open unique value proposition

Reuse, develop, integrate:

Engrained security:

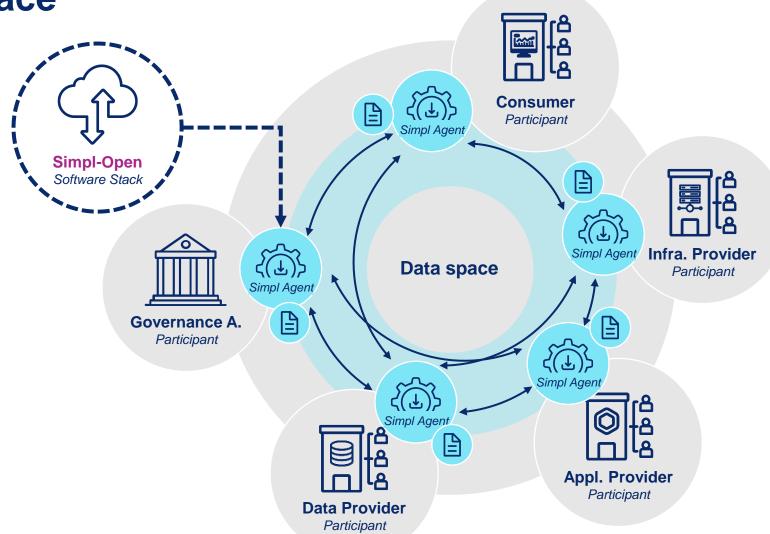
Flexibility through configuration:

Inclusion of new types of providers:

Improved data sovereignty:

Simpl-Open provides the possibility to define access policies, usage policies and contracts.

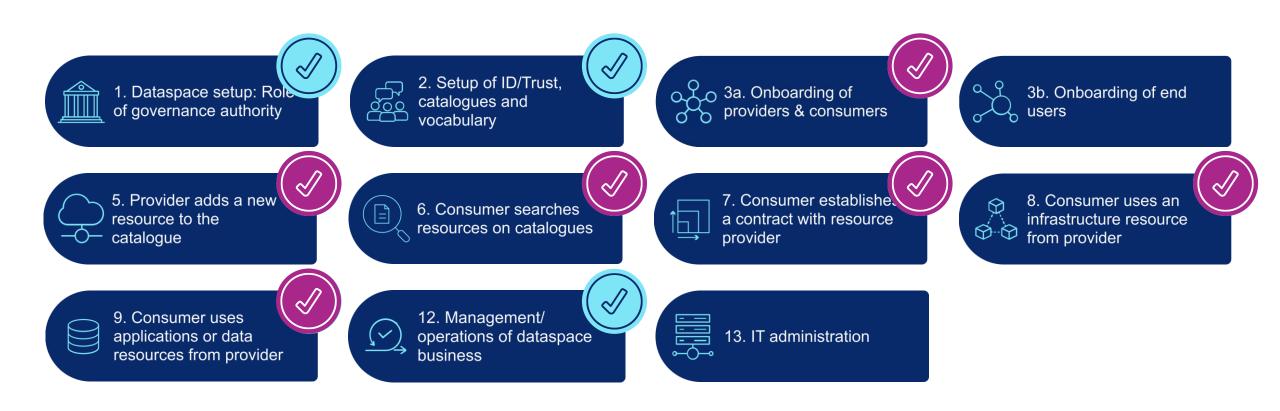
Simpl-Open also enables custom data sharing alternatives.





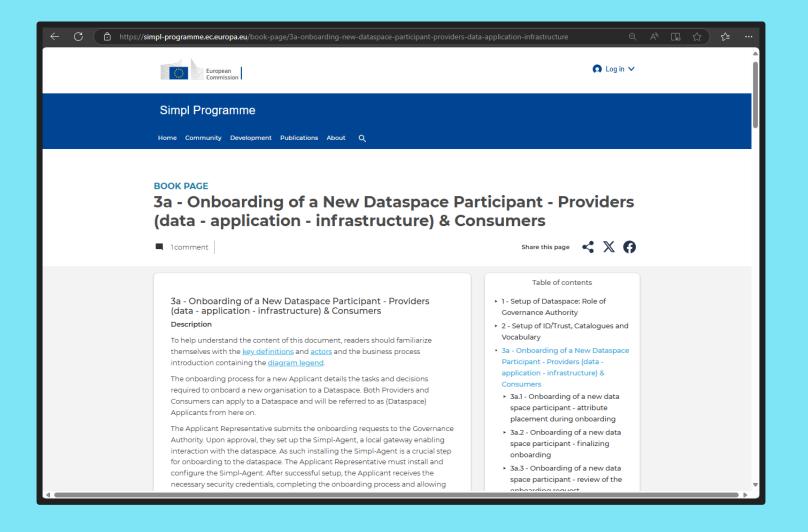
Simpl-Open State of play

Business Processes partially covered by MVP release



■ BP's covered in the MVP ■ BP's covered in today's demo





Explore the Business Processes in full and shape Simpl-Open with us

The Business Processes of Simpl-Open are available for review and feedback on the Simpl-Open website

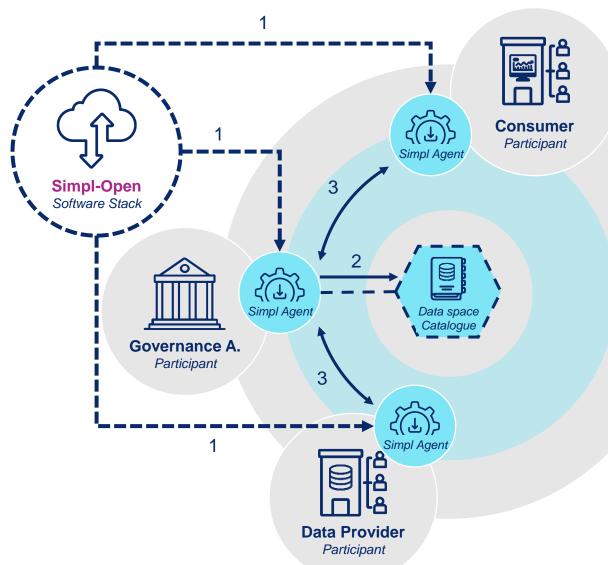




Setup of the demo

What has been prepared upfront

- Simpl agents have been installed for the Governance Authority, a Provider and a Consumer.
- 2. Governance Authority configured the catalogue by loading the schema and vocabulary.
- Consumer and Provider have been onboarded, received their security credentials and configured their agent with it.

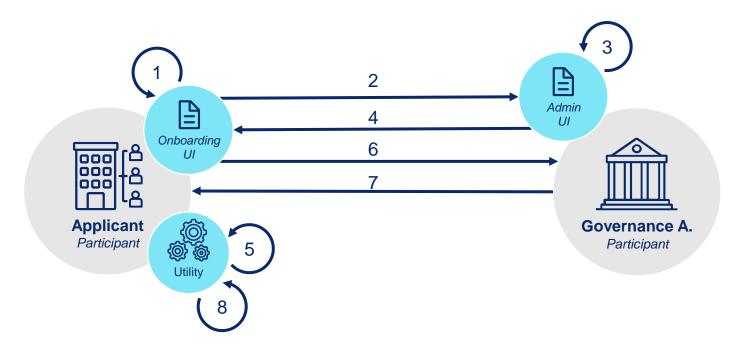




Onboarding

Zoom into the process

- Applicant prepares (1) and submits
 (2) an onboarding request.
- Governance Authority reviews (3) and approves/rejects the request (4).
- Applicant generates security credentials request (5).
- Applicant uploads security credentials request (6) and downloads signed credentials (7).
- Applicant configures security credentials in the agent (8).

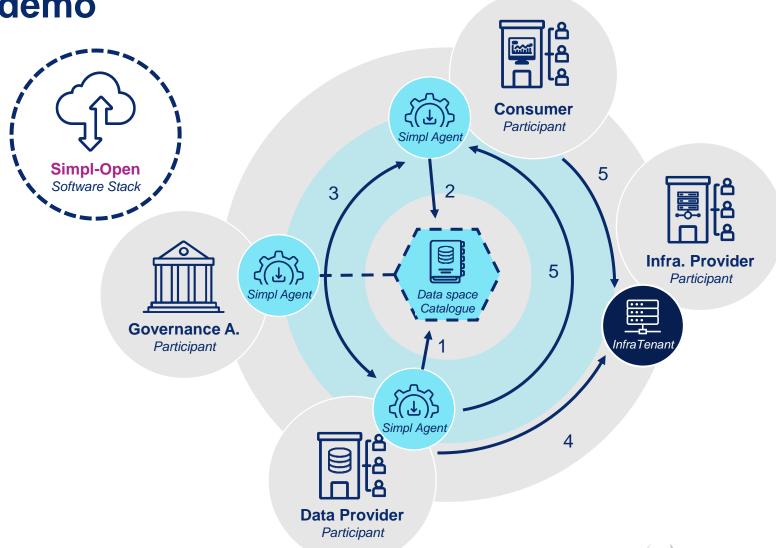




A bird-eye view on the demo

What you will see in this demo

- A provider publishes a service offering (combining data, application and infrastructure) to the catalogue.
- A consumer discovers the service offering with its details from the catalogue.
- 3. The consumer establishes a contract with the provider to consume the service.
- 4. The provider provisions the resources (infrastructure tenant with data accessible through an application).
- The consumer receives the access information and consumes the resource.



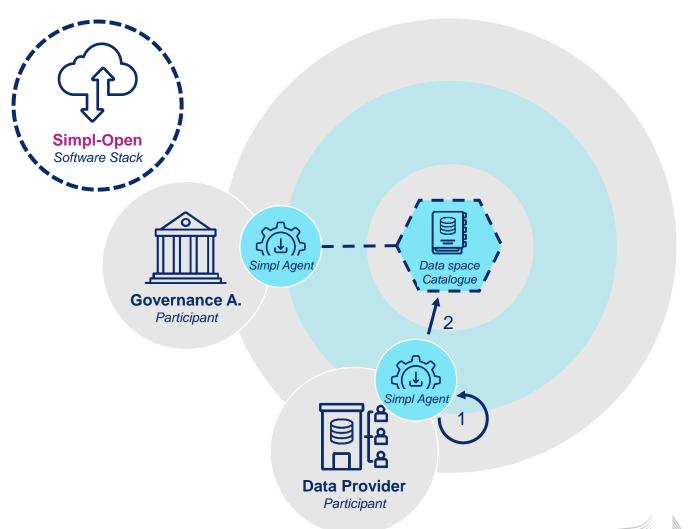


Publication of a resource in the catalogue

Simpl-Open MVP Demo

- Data Provider prepares service offering (combining data, application and infrastructure) with the visual editor provided by the Simpl Agent.
- 2. Data Provider publishes the service offering on the data space catalogue.



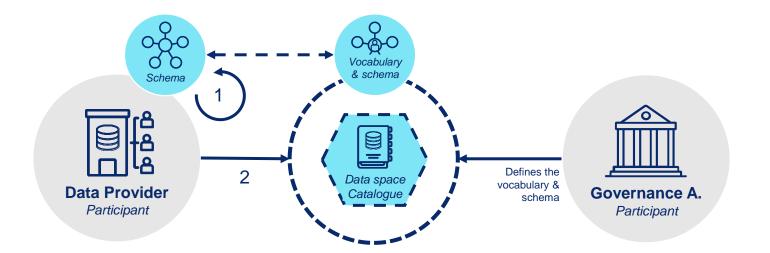




Syntax & Semantic Validation

Zoom into Validation

- Ensure Integrity and Consistency of the Resource Description in the Data Catalogue
- Syntax Validation: The data types and value constraints are validated
- Semantic Validation: Ensure conformance with vocabularies



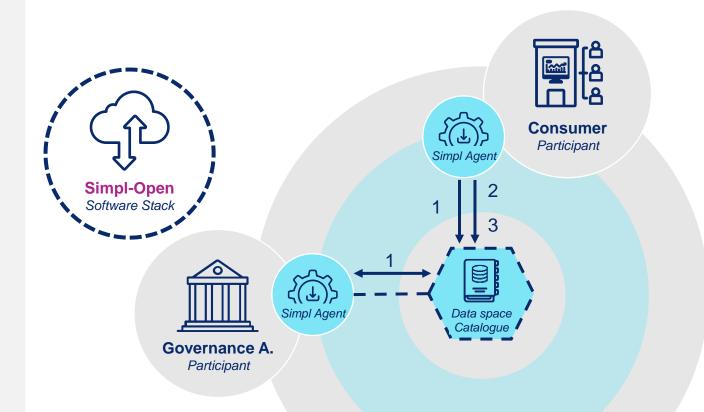


Search of resources in the catalogue

Simpl-Open MVP Demo

- 1. Consumer logs-in with its credentials to the catalogue.
- 2. Consumer uses the quick search function to browse through service offerings.
- 3. Consumer consults a specific service offering description.



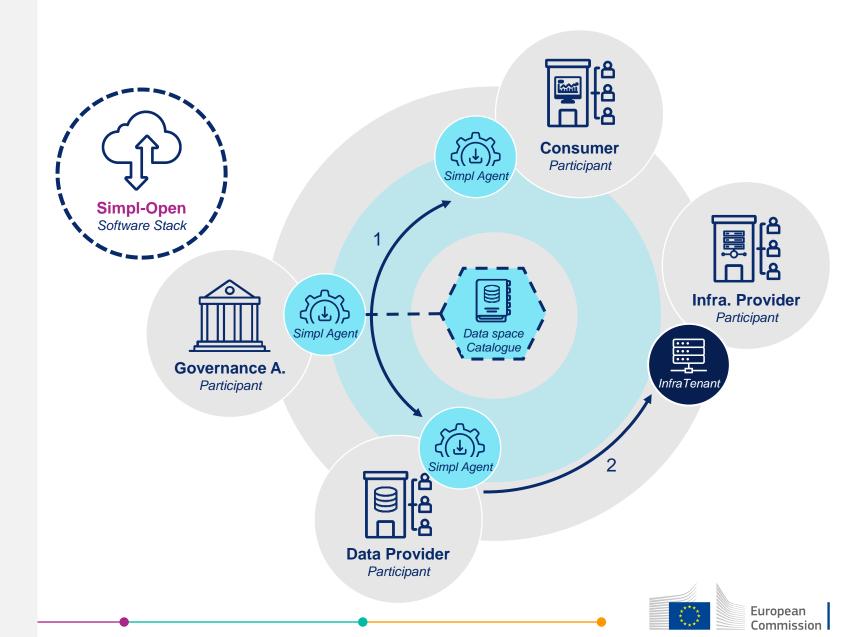




Consumption of a bundled service (infra, data and application)

Simpl-Open MVP Demo

- 1. Consumer requests the service offering from the Provider and establishes a contract.
- 2. Data Provider sets up a Virtual Machine on the cloud that runs a pre-configured analysis application.

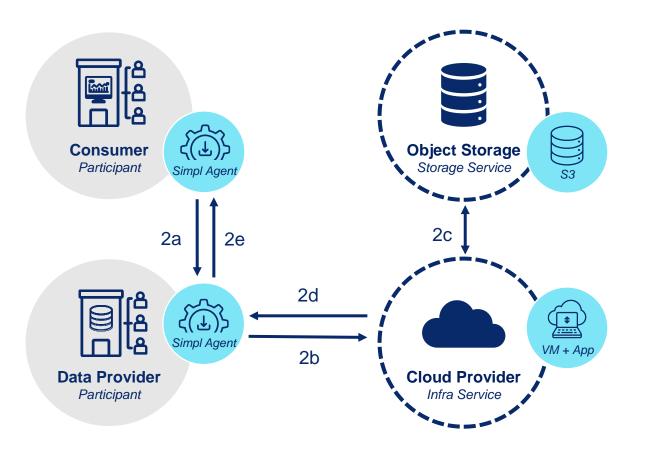




Multi-Cloud Sovereign Data & Service Sharing

Zoom into service set-up (step 2)

- Provisioning of infrastructure resource on another cloud provider (muti-cloud).
- Assignment of Storage resource from Storage providers (multicloud)
- Deployment of applications on the provisioned infrastructure resource



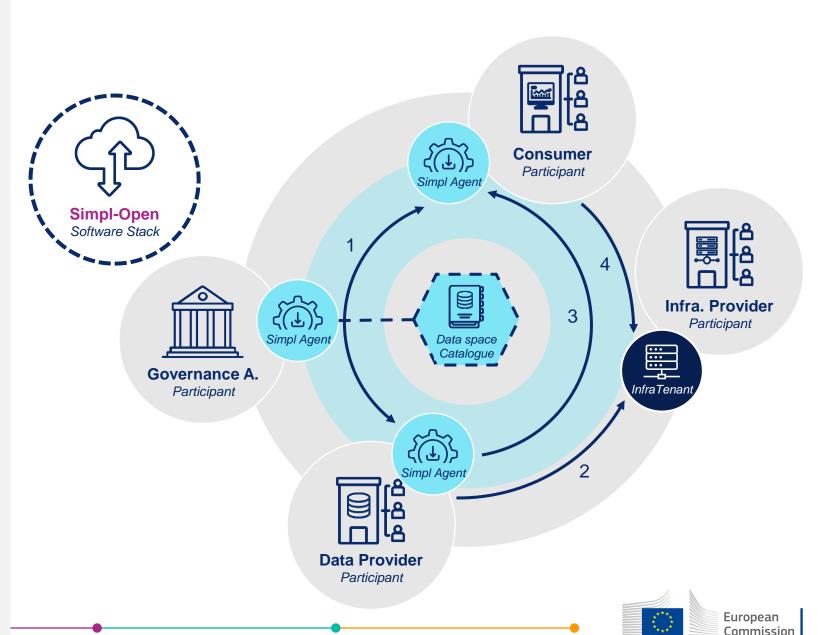


Consumption of a bundled service (infra, data and application)

Simpl-Open MVP Demo

- Consumer requests the service offering from the Provider and establishes a contract.
- 2. Data Provider sets up a Virtual Machine on the cloud that runs a pre-configured analysis application.
- 3. Provider provides the link of the application and its credentials to the Consumer.
- Consumer connects to the application and uses the service.

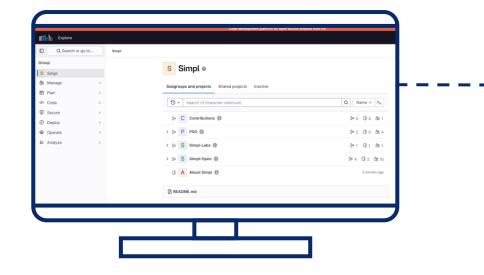


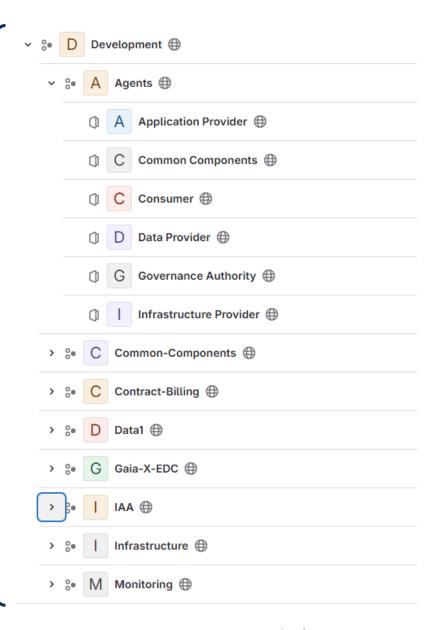


The Simpl-Open code is open source

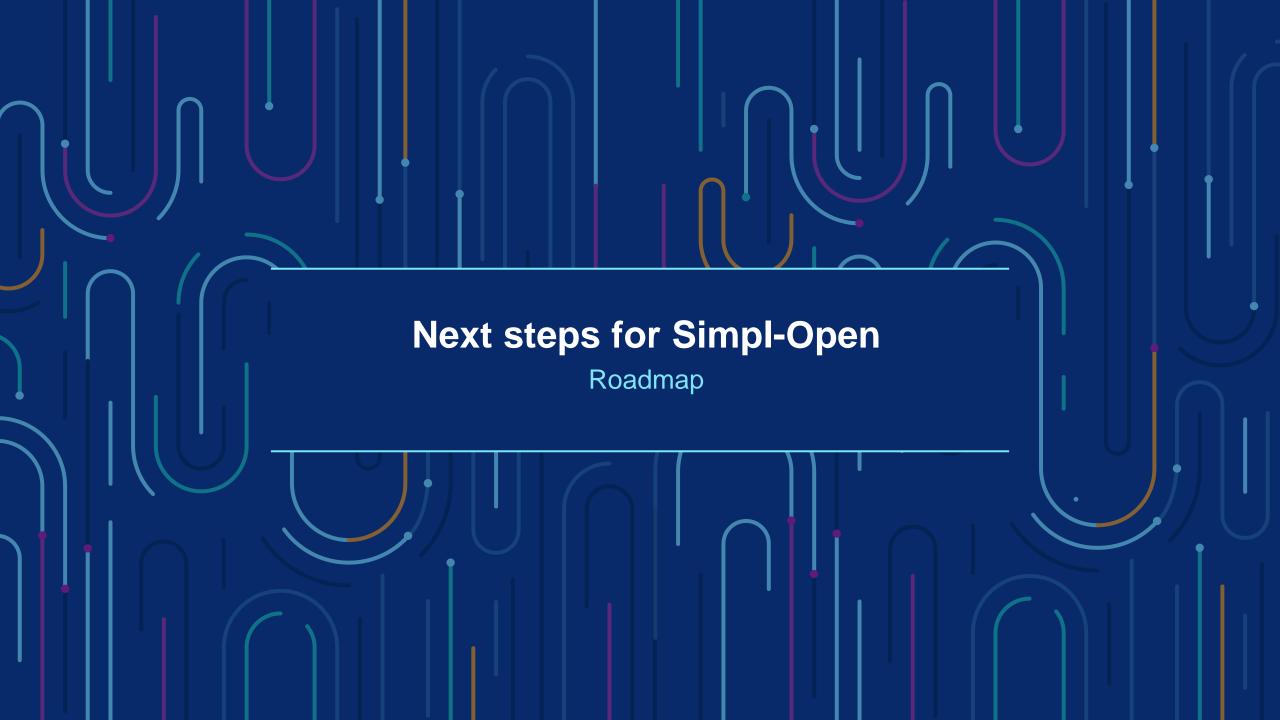
Openness is a key part of the architecture approach

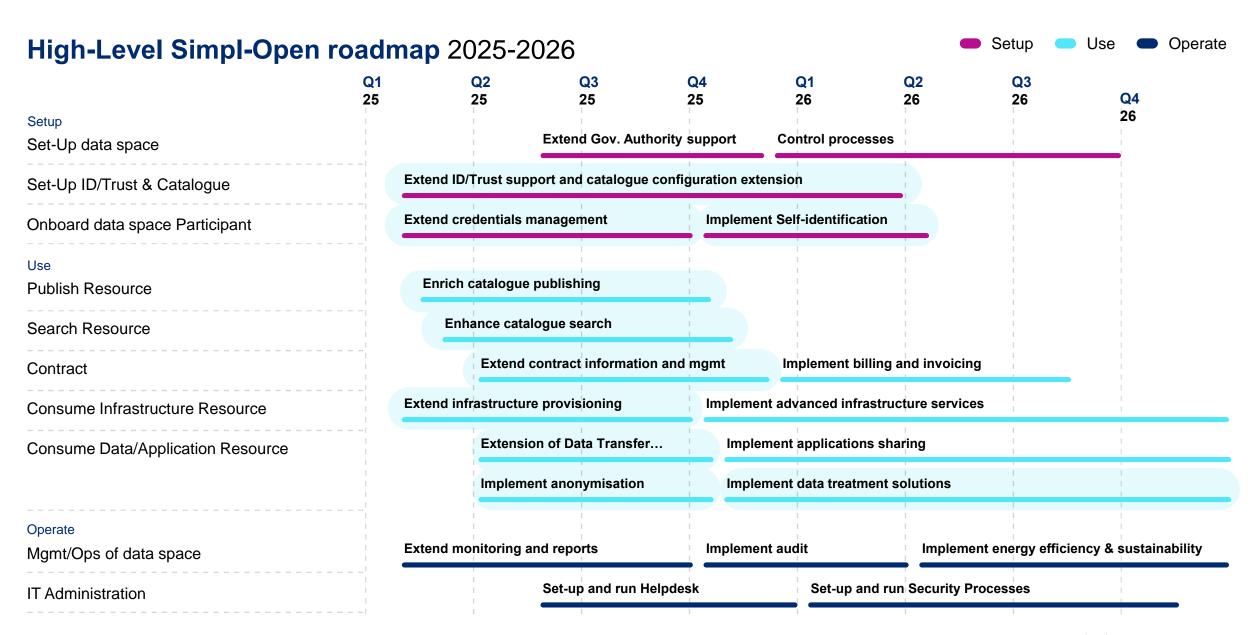
- Source code is freely accessible in code.europa.eu/simpl
- Installation and user readme.md file are part of the available packages.
- Releases are available for download.



















Break

Simpl Annual Community Event will resume at 11:30







Simpl-Labs Proof of Concept: Testing development and interoperability

Simpl Annual Community Event

Simpl-Labs Proof of Concept: Testing development and interoperability

Introducing the Speakers



Ana Juan Ferrer
Project Owner Simpl-Labs,
DG CNECT European Commission



Alessandra Urbani Business Analyst Simpl-Labs, Sovereign-X



Federico Paparoni Solution Architect Simpl-Labs, Sovereign-X

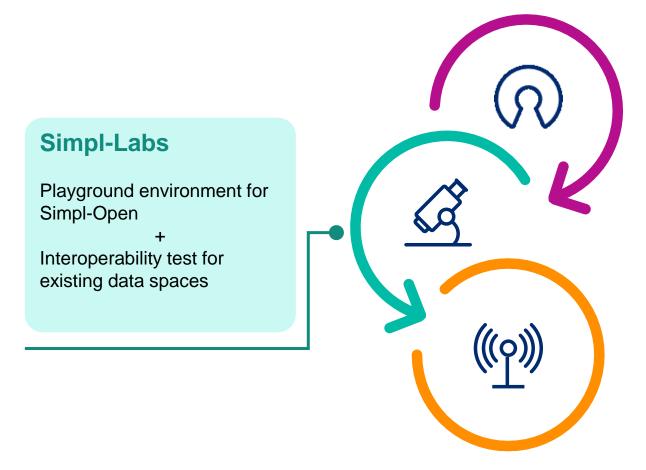


Experimenting with Simpl-Labs

What is Simpl-Labs?

Simpl-Labs is a product designed to test and experiment with Simpl-Open and is aimed at both public and private data spaces.

The platform facilitates the **exploration** and adoption, while also enhancing compatibility and interoperability across different projects and initiatives.





Data spaces target

How does Simpl-Labs support different data spaces?

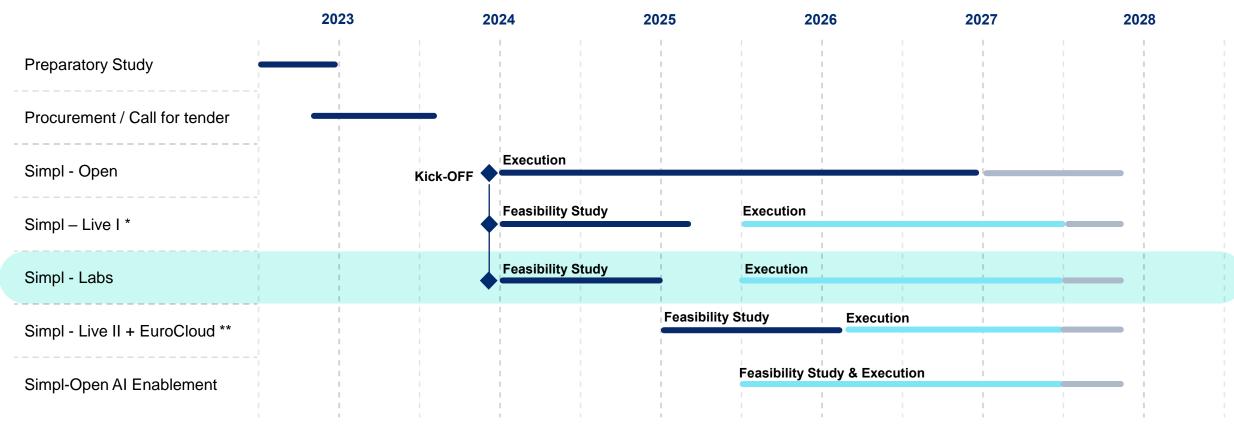




What can be expected from Simpl-Labs next?

Simpl Programme Roadmap

- Committed scope
- Possible Follow up Implementation of Simpl Live/Labs;
 Simpl-Live Feasibility Studies for new data space initiatives
- Potential next step still to be validated

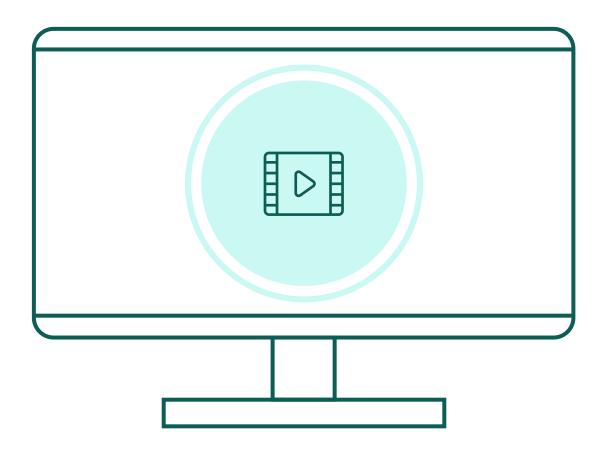






Simpl-Labs in a nutshell

Watch the Simpl-Labs promotional video

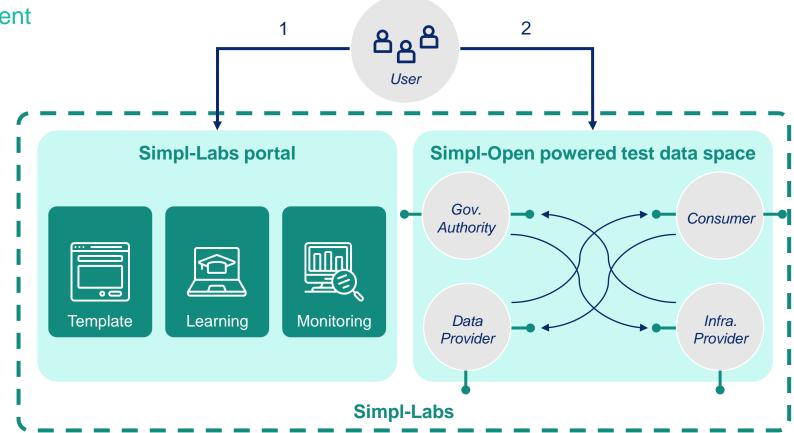




Playground environment

Simpl-Labs as a playground environment

- A portal for managing the setup of data spaces, a catalog of reusable templates, learning paths, and information about resource usage.
- 2. A playground environment based on Simpl-Open technology, with custom instances of test data spaces useful for experimentation





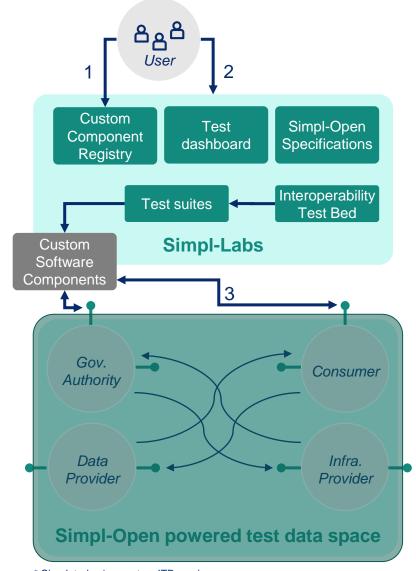
Interoperability testbed for Simpl-Open

Simpl-Labs as an interoperability testbed

- Deploy a custom software component within the testbed environment
- 2. Access the **conformance testing** dashboard to select and launch test suites in order to verify the **interoperability levels** within the Simpl ecosystem.
- 3. Execute **test suites** for various scenarios. Precise tests are performed to verify API and data compliance.

The **interoperability testing capability** will be developed by leveraging the services offered by the European Commission's **ITB** platform.

https://joinup.ec.europa.eu/collection/interoperability-test-bed-repository/solution/interoperability-test-bed

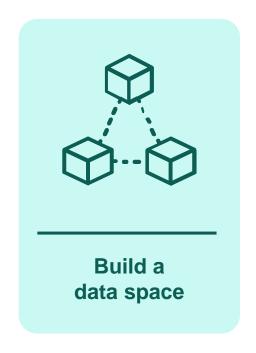


^{*} Simulated using custom ITB services

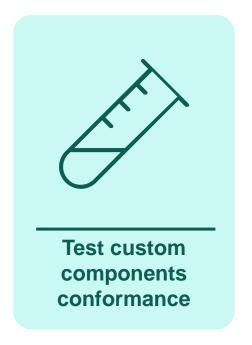


Proof of Concept use cases

Three PoC use cases





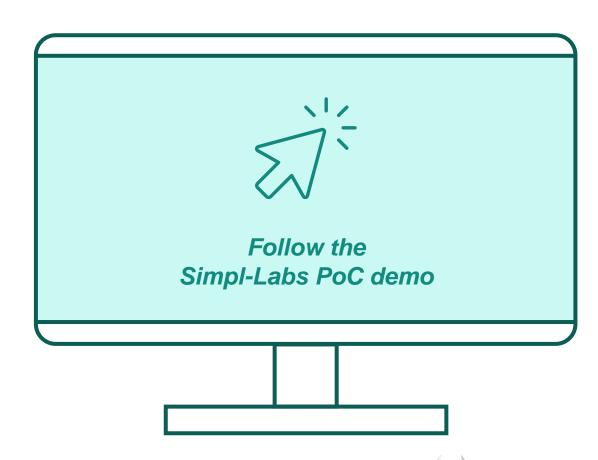




Proof of Concept Demo

Showcasing the Simpl-Labs PoC

- As an authorized user, you can access the platform and utilise a testing environment for Simpl-Open technology.
- Using a guided wizard, you can create a data space based on Simpl-Open, tailored to your experimental needs, with access via both UI and console.
- During the experimentation, you receive important monitoring insights regarding resource usage related to your activities.
- You can access a testbed that allows you to run conformance tests on your software to ensure interoperability with the Simpl-Open data space.





Feasibility study outcomes

Four key outcomes from the Simpl-Labs feasibility studies









Functional and non-functional requirements

Simpl-Labs architecture

Working Proof of Concept

https://code.europa.e u/simpl/simpllabs/poc-simpl-labs Feasibility study report





Scan the QR Code, take part in this survey, and help us evolve Simpl-Labs!













Simpl-Live: Supporting data spaces with Simpl

Simpl Annual Community Event

Simpl-Live: Supporting data spaces with Simpl

Introducing the Speakers



Ralf Resch
Project Owner Simpl-Live,
DG CNECT European Commission

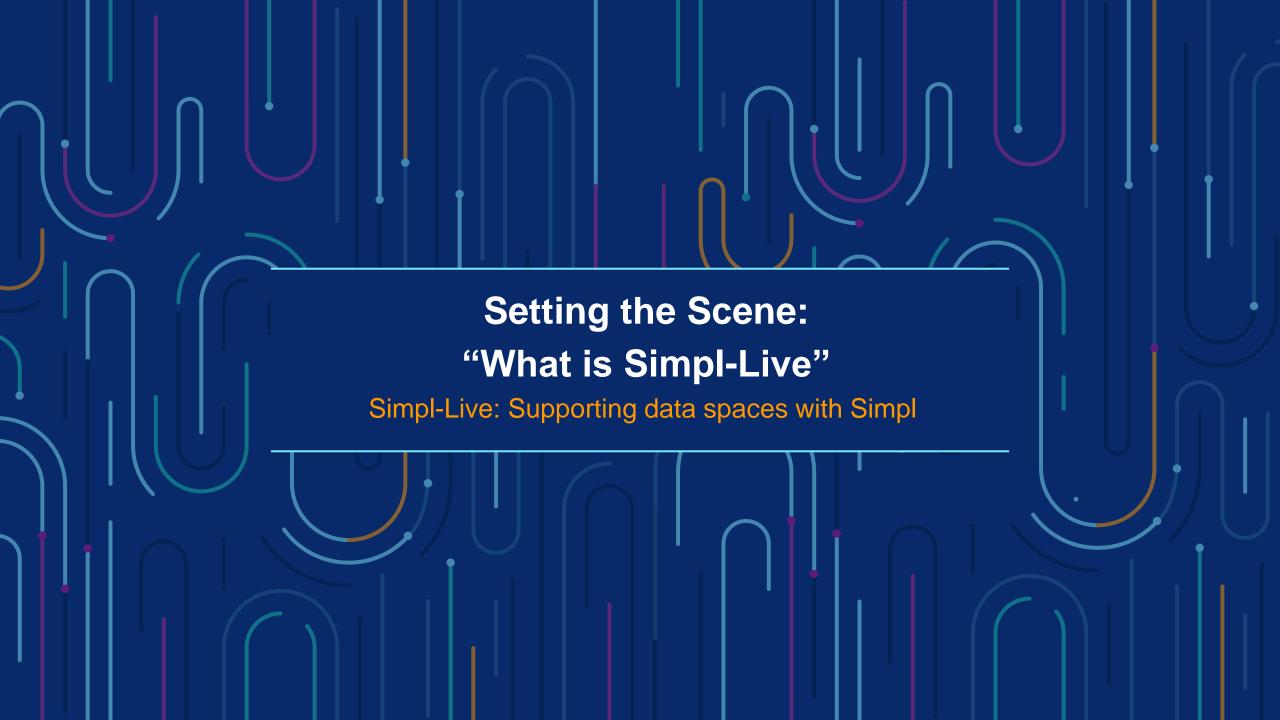


Daniel GonzálezProject Manager Simpl-Live,
Sovereign-X



Mirthe Boerdijk Relationship Manager Simpl-Live Sovereign-X





Simpl-Live Focuses on Instances of Simpl-Open for data spaces

What is Simpl-Live

Simpl-Live

- distinct instances of Simpl-Open software stack
- deployed for specific sectoral data spaces/ initiatives
- European Commission plays an active role in their management.

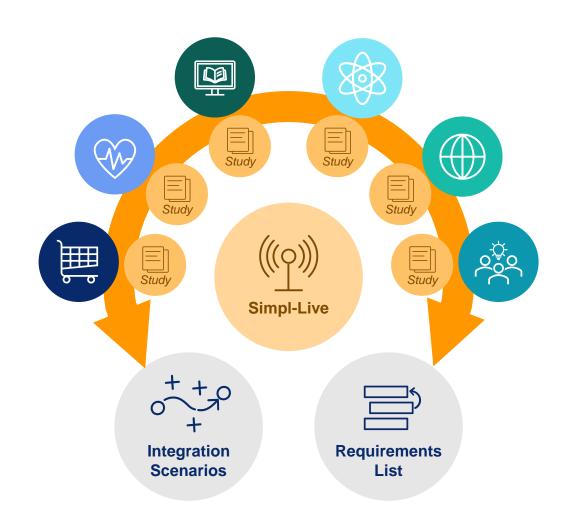




Simpl-Live objectives

Three core objectives

- Simpl-Live supports the implementation of Simpl-Open in existing data spaces/initiatives, via feasibility studies.
- Simp-Live defines the integration scenario and roadmap of Simpl-Open deployment in selected data spaces/initiatives.
- By working directly with the data spaces/initiatives, Simpl-Live provides common requirements to be considered and prioritised by Simpl-Open.

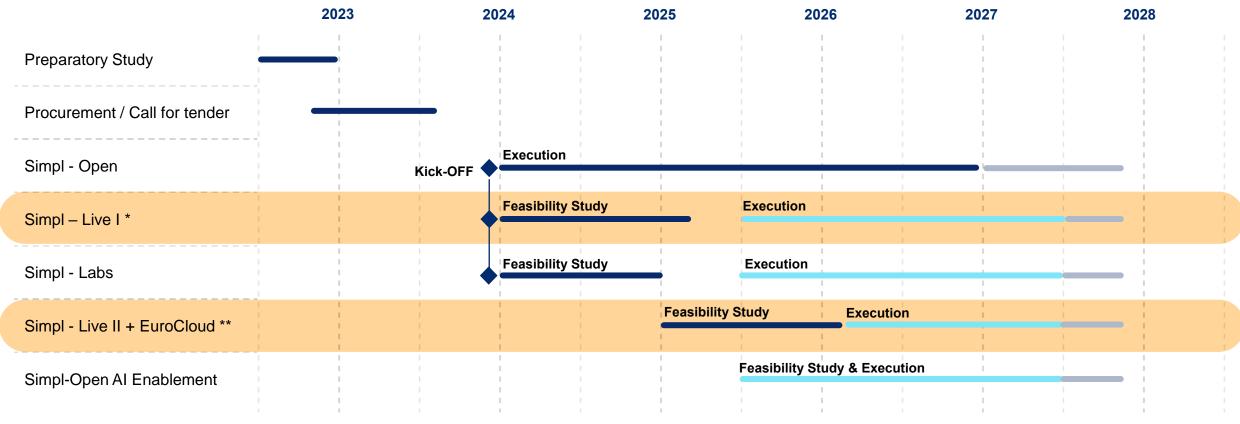




What's next for Simpl-Live?

Simpl Programme Roadmap

- Committed scope
- Possible Follow up Implementation of Simpl Live/Labs;
 Simpl-Live Feasibility Studies for new data space initiatives
- Potential next step still to be validated







Overview of Simpl-Live Feasibility Studies 2024 (Contract 1)

The assessment of the feasibility of Simpl-Open deployment has been conducted with six initiatives



Public Procurement Data Space (PPDS)

Unites European public procurement data.



European Health Data Space of Secondary Data (EHDS2)

Enables secondary use of health data for research and policy.



Language Data Space (LDS)

Platform for multilingual language data sharing and reuse.



European Open Science Cloud (EOSC)

Seamless research data storage, management, and analysis across borders.



Destination Earth (DestinE)

"Digital Earth" model to monitor&predict interaction between nature and human activities.



Smart Communities Data Space (SCDS)

Trustworthy AI and interoperability for cross-sectoral government services.



Overview of Simpl-Live Feasibility Studies 2025 (Contract 2)

The assessment of the feasibility of the Simpl-Open deployment will be continued with five selected initiatives



Energy Data Space
Supports innovative energy services aligned with sustainability goals, promoting sector integration



Agriculture Data Space
Optimizes natural resource
use and stimulates datadriven innovations in
agricultur by facilitating
data sharing



European Mobility Data
Space

Enhances efficiency, safety and sustainability by data access, pooling, and sharing in transport



Green Deal Data Space
Enables access to
environmental and climate
data for a sustainable
Europe by creating a data
ecosystem



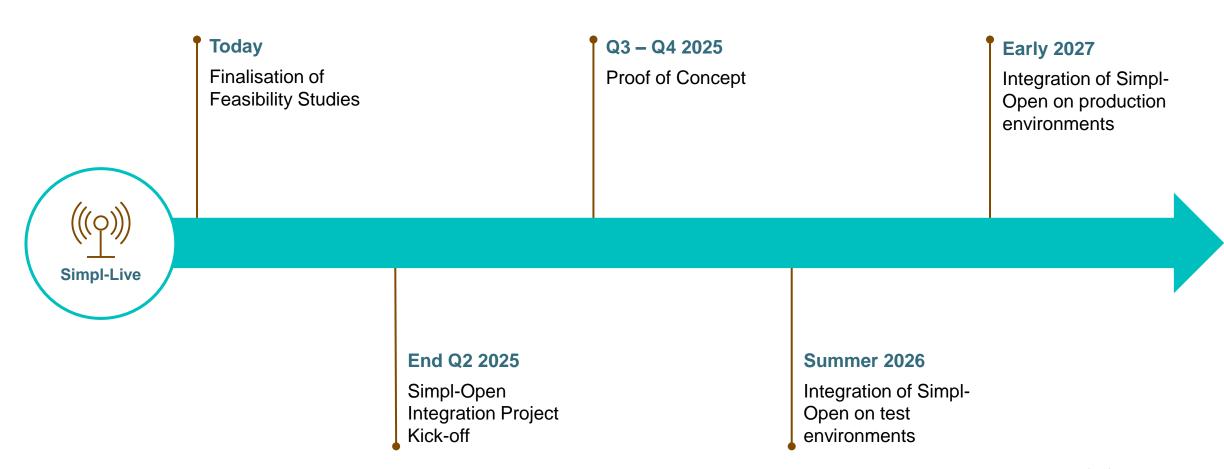
EuroCloud initiative

European Commission initiative to foster a true federation of EU public sector cloud and edge infrastructures, services and data to enable resource sharing amongst participating EU public sector organisations.



Next steps* for the data spaces/initiatives from 2024

Each data space/initiative has its own integration scenario with its own roadmap

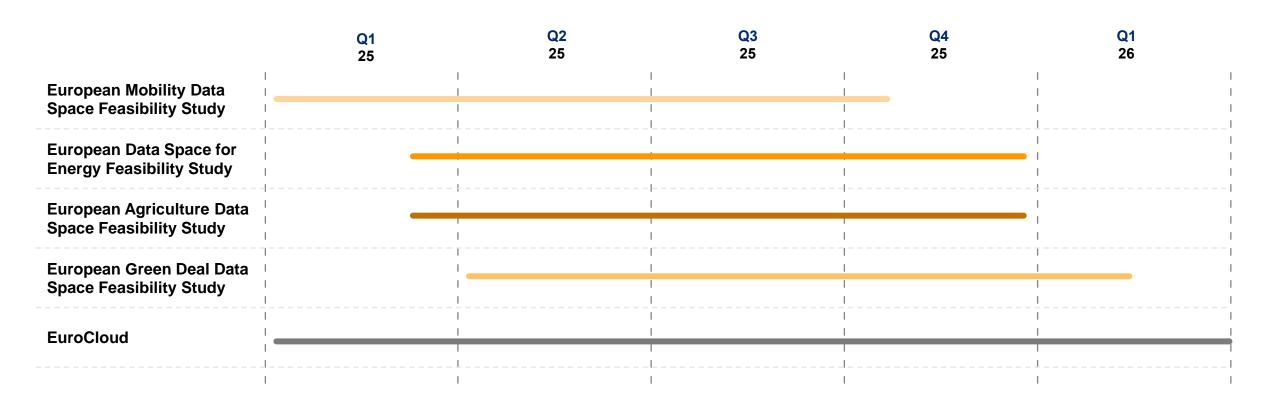


*Tentative roadmap subject to contractual procedures.

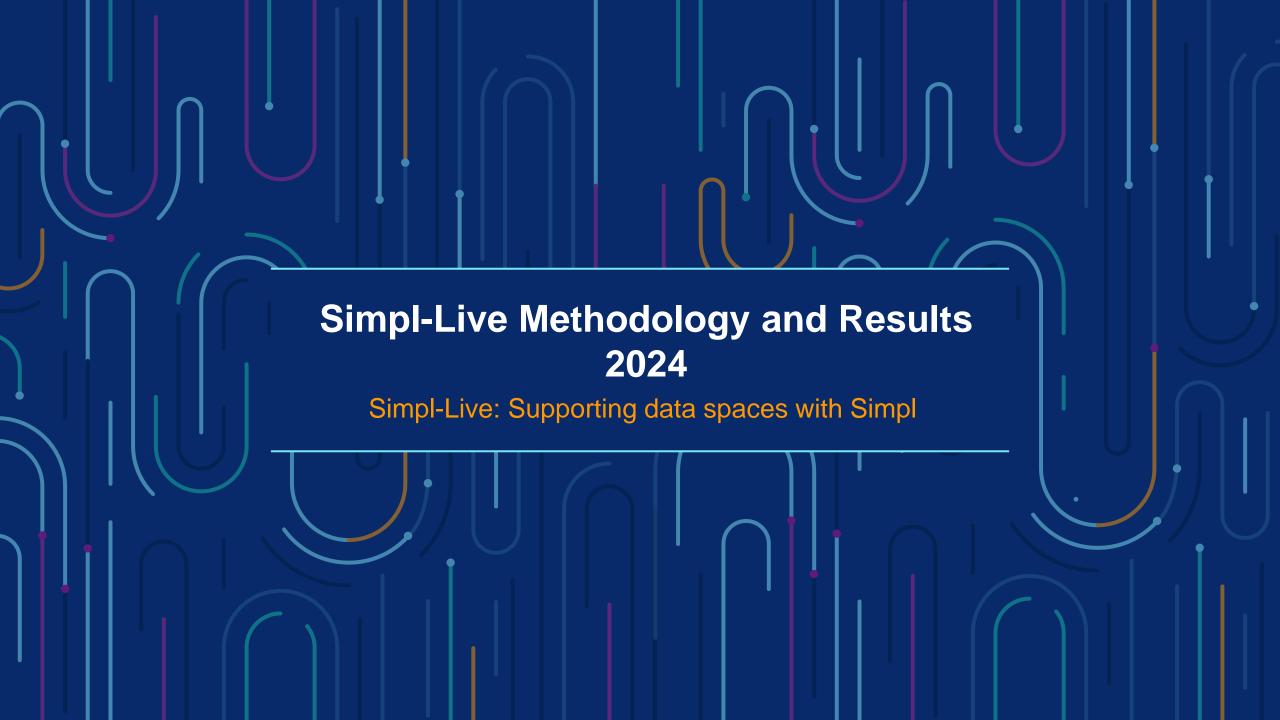


Next steps for data spaces from 2025 feasibility assessment

Overall timeline – Contract 2







Simpl-Live Methodology

Sequential actions guide the assessment process, focusing on a fit-gap analysis and implementation strategies

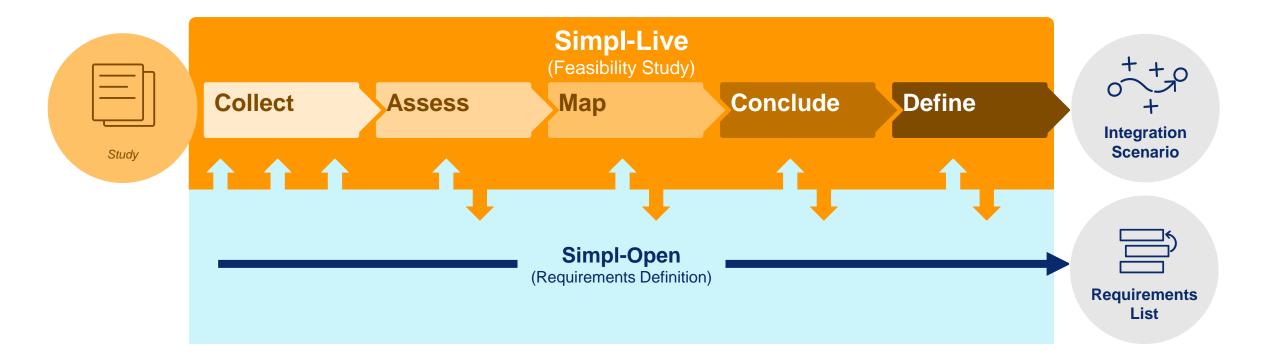
Simpl-Live (Feasibility Study) Collect Assess Map Conclude **Define** Consolidate and Collect Simpl-Open Assess data spaces Map status-quo of **Define Simpl** specifications and /initiatives data spaces/ conclude results in implementation specify assessment characteristic and initiatives on Simplfeasibility study roadmap for each criteria for data capabilities based Open requirements report for each data data space/initiative spaces/initiatives. on their maturity (Fit-Gap Analysis). space/initiative. based on and status-quo. assessment results. Simpl-Open (Requirements Definition)

Regular alignments with Simpl-Open facilitate feedback integration and ensure coherence with project objectives.



Simpl-Live Methodology and its objectives

By following the Simpl-Live methodology, the objectives of the project are fulfilled



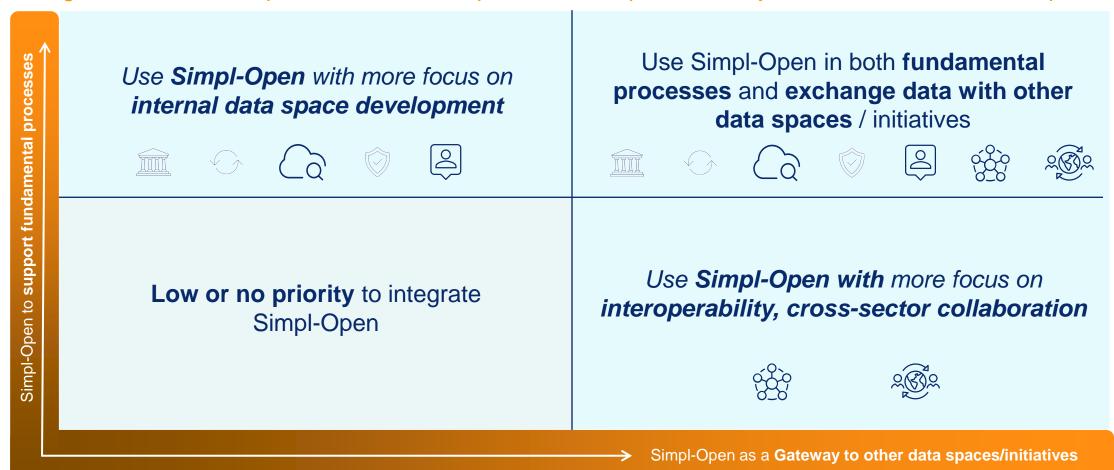
The results of the Simp-Live feasibility study provide feedback for both Simpl-Open and each data space on how to integrate Simpl.





Different ways to use Simpl-Open for integration scenarios

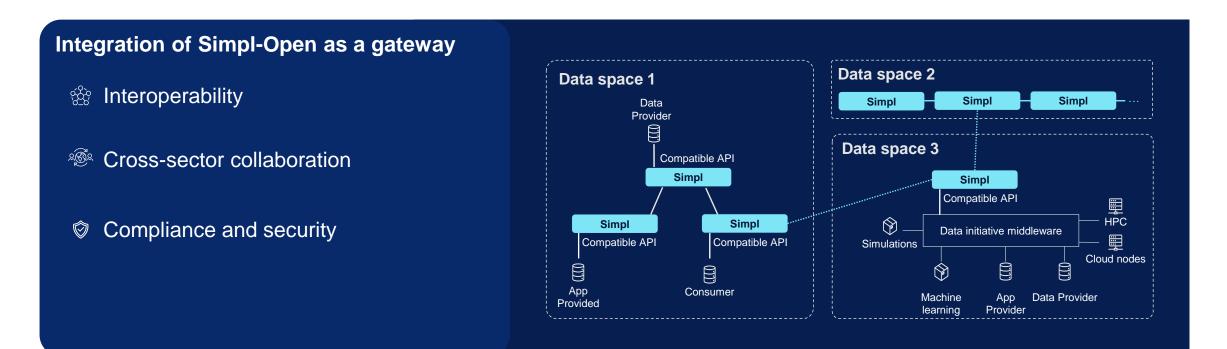
The integration scenario depends on the data space initiative priorities, objectives and state of development





Case 1: Simpl-Open as a gateway to other data spaces / initiatives

Different ways of using Simpl-Open for the integration scenarios

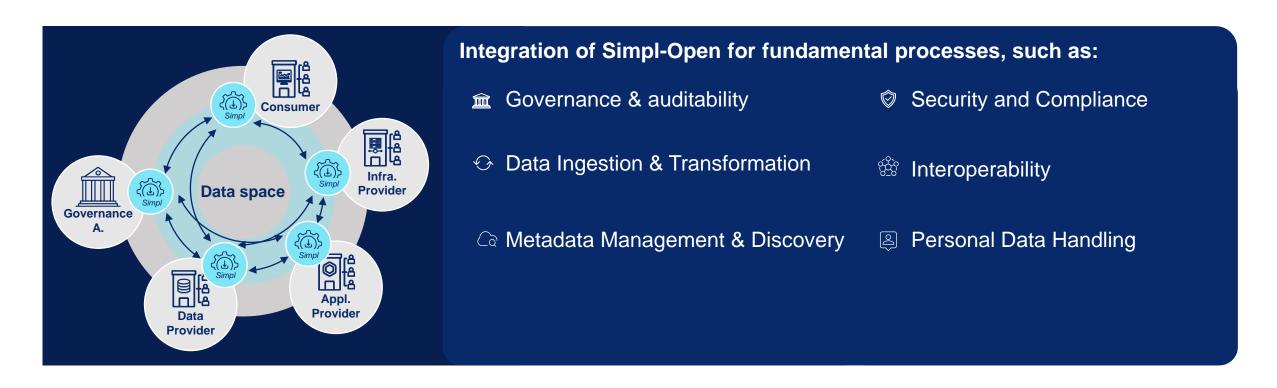


Simpl-Open as a gateway allows for connecting to a single source, facilitating collaboration across data spaces/initiatives and sectors.



Case 2: Simpl-Open to enable data space fundamental processes

Different ways of using Simpl-Open for the integration scenarios

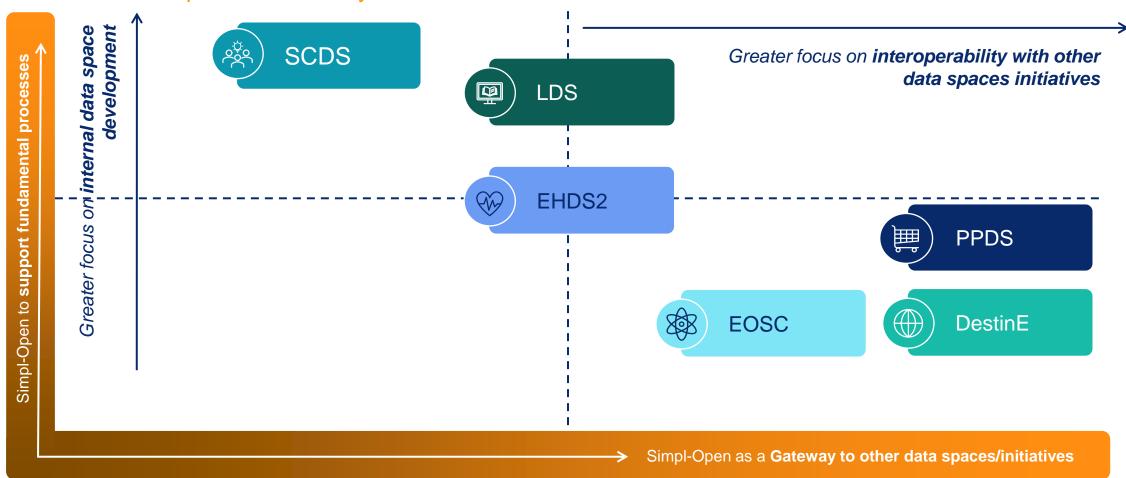


Simpl-Open provides building blocks to facilitate essential internal business processes and governance.



Mapping of the data spaces/initiatives into the different ways of using Simpl-Open*

Initiatives of the Simpl-Live Feasibility Studies 2024

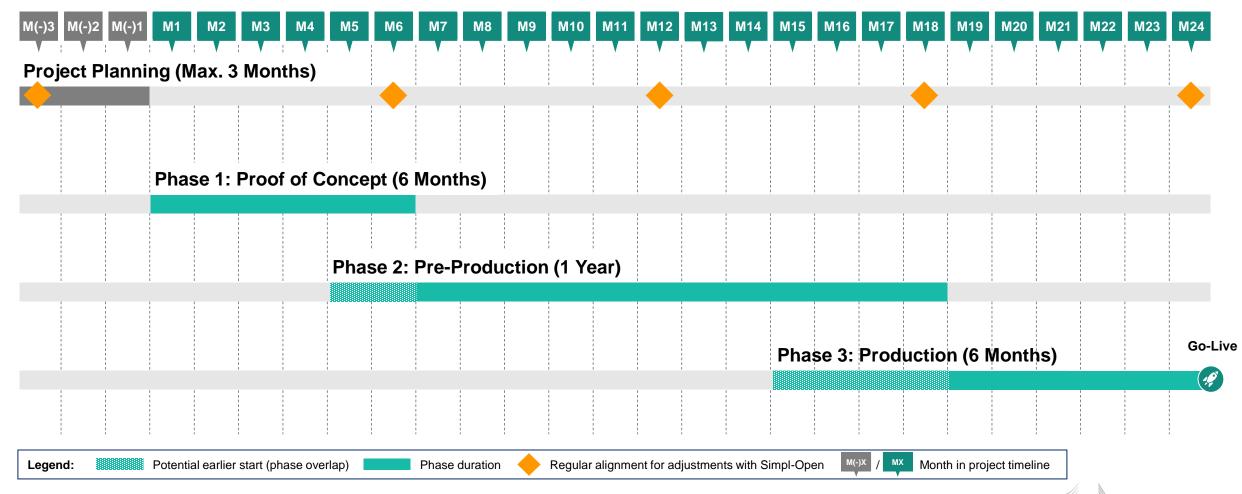


^{*} The integration scenarios presented are subject to final validation with the European Commission and the respective data space initiatives.



Integration Roadmap – Timeline

A tentative roadmap, subject to contractual steps, is presented for each data space initiative





Requirements from Simpl-Live data spaces / initiatives

The data spaces/initiatives provided specific requirements and needs to be included in the Simpl-Open backlog

Data Validation and Quality Control Multi-tiered helpdesk Advanced search User interface translation Request for disconnection Authentication Self-management of participants groups Dedicated forums for providers and consumers Role-Based Access Control Threat monitoring Incident response Al enhancement in search functions Forwarding of metadata Forwarding of results Approve disconnection Metadata Management and Discovery
Audit Logging HDAB onboarding HDAB disconnection HDAB disconnection Interoperability with Existing Systems Offering Monetisation Data curation Policy Setup
Connect between Asset and Actual Data Credit based usage for consumers Registration Recommendation based on previous search More Compliance Check and Approval NCP Compliance Check NCP Compliance Check Submit NCP Details Policy Enforcement Approval workflow for onboarding participants Registration Recommendation based on previous search Compliance Check and Approval Public Key Infrastructure (PKI) Support Credential Management Central Platform login IAA - DG SANTE authorisation IAA - DG SANTE authorisation
Real-Time Monitoring and Reporting Data user account removal Request for participation Request for disconnection Real-Time Monitoring of Data Usage Metadata models and validation rules management Metadata results publishing Approve or reject participation Metadata description NCP configuration Metadata description NCP configuration Metadata versioning NCP Compliance Self-check Republishing of results Health data upload Results flagging Metadata models and rules versioning Metadata models and rules versioning



Common Requirements from Simpl-Live data spaces / initiatives

The data spaces/initiatives requirements were clustered on high-level categories

Simpl-Live Functional Common Requirements



Monitoring data usage and user activities



Authentication and authorisation



Metadata management and search capabilities



Data exchange and interoperability



Data governance, compliance and audit



Access control mechanisms

Simpl-Open BP / Requirements



Monitoring data usage and user activities are mapped to Management /operations of data space

The data spaces/initiatives requirements were clustered on high-level categories



Monitoring data usage and user activities



Authentication and authorisation



Metadata management and search capabilities



Data exchange and interoperability



Data governance, compliance and audit



Access control mechanisms

Simpl-Open Business Processes



Simpl-Open Business Process Requirements

- 12.1 Application sharing Compliance Monitoring
- 12.2 Enable and enforce usage policies Logging
- 12.3 Logging Simpl agent usage
- 12.4 Monitoring Simpl agent health
- 12.5 Monitoring compliance with EU regulation
- 12.6 Logging data or application consumption
- 12.7 Monitoring business actions
- 12.8 Central logs repository per Simpl-Open agent

...

🕒 Simpl-Live Common Requirements 🌑 Simpl-Open Business Process 🌑 Included in Simpl-Open MVP



Authentication and authorisation are mapped to data space setup and onboarding of providers/consumers

The data spaces/initiatives requirements were clustered on high-level categories





Authentication and authorisation















Simpl-Open Business Processes Requirements

1.4 - Federated authentication

3a.1 - Onboarding of a new data space participant

- attribute placement during onboarding
- 3a.2 Finalising onboarding
- 3a.3 Onboarding procedure
- 3a.4 Participant actions
- 3a.5 Registration of onboarding request

Simpl-Live Common Requirements Simpl-Open Business Process Included in Simpl-Open MVP







Metadata management and search capabilities are mapped to add and search of resources in the catalogues

The data spaces/initiatives requirements were clustered on high-level categories





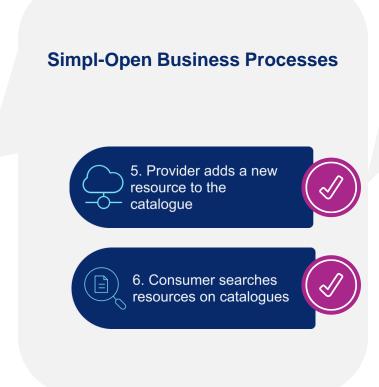


Metadata management and search capabilities









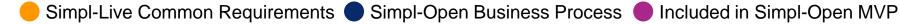
Simpl-Open Business Processes Requirements

5.4 - Enable and enforce usage policies -Assignment of a policy

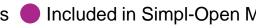
- 5.5 Enable and enforce usage policies Definition of a policy
- 5.6 Onboarding new dataset
- 5.9 Validation of metadata onboarding
- 5.11 Access policy

6.1 - Data quality assessment

- 6.2 Search in data/application/infrastructure catalogue in another federated data space
- 6.3 Search in data/application/infrastructure catalogue through a UI or an API
- 6.4 Request a resource
- 6.5 Search Results









Data Exchange and Interoperability are mapped to use of applications or data resources from provider

The data spaces/initiatives requirements were clustered on high-level categories









Data exchange and interoperability









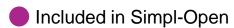
Simpl-Open Business Processes Requirements

9.9 - Support for (near)real time data within/across data spaces

9.10 - Various types of data sharing









Governance, compliance and audit are mapped to business process related to enforce usage policies

The data spaces/initiatives requirements were clustered on high-level categories





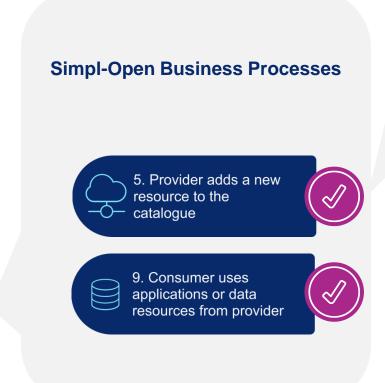






Data governance, compliance and audit



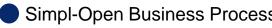


Simpl-Open Business Processes Requirements

5.4 - Enable and enforce usage policies -Assignment of a policy

9.6 - Enable and enforce usage policies -**Enforcement**

Simpl-Live Common Requirements Simpl-Open Business Process Included in Simpl-Open MVP







Access and control mechanisms are mapped to onboarding business processes

The data spaces/initiatives requirements were clustered on high-level categories



Monitoring data usage and user activities



Authentication and authorisation



Metadata management and search capabilities



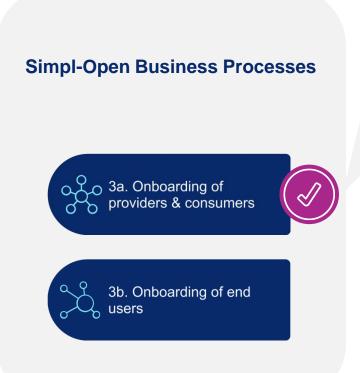
Data exchange and interoperability



Data governance, compliance and audit



Access control mechanisms



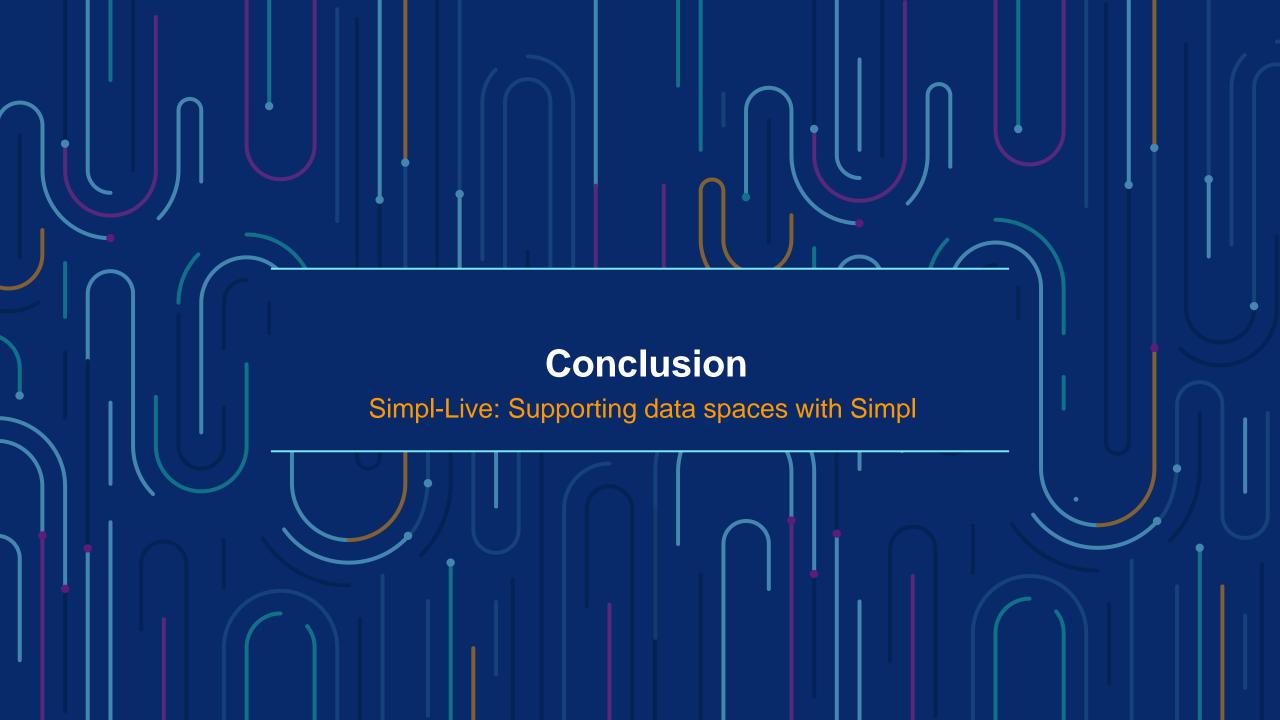
Simpl-Open Business Processes Requirements

3a.6 - Access control - end users to agent

3b.1 - Access control - roles management

Simpl-Live Common Requirements 🔵 Simpl-Open Business Process 🔵 Included in Simpl-Open MVP





Conclusions

Recap of the topics discussed



We presented what Simpl-Live is about and its objectives



We presented the **methodology** of the feasibility studies



We showed the different integration scenarios



We presented the list of (common) functional requirements



We invited you to understand Simpl-Live, and prepare to integrate Simpl-Open









After Lunch

Go to the workshop you selected at the momment of registration

Technical Unlocking Simpl-Open Enabling value MVP: A Hands-On through Simpl **Exploration Classic Lounge** Minerva Non-**Technical**



Lunch Break

Simpl Annual Community Event will resume at 14:00





Unlocking Simpl-Open MVP: A Hands-On Exploration

Parallel workshops
Simpl Annual Community Event

Unlocking Simpl-Open MVP:A Hands-On Exploration

Introducing the Speakers



Nicolas Auricchio Lead Architect Simpl-Open, Sovereign-X



Melanie Mirjana Friedrich IT Architect Simpl-Open, Sovereign-X



Arian Firouzbackhsh

Data Space Architect Simpl-Open,
Sovereign-X



Richard Mrasek
Integration Architect Simpl-Open,
Sovereign-X



Pietro Bartoccioni Lead Architect IAA, Sovereign-X

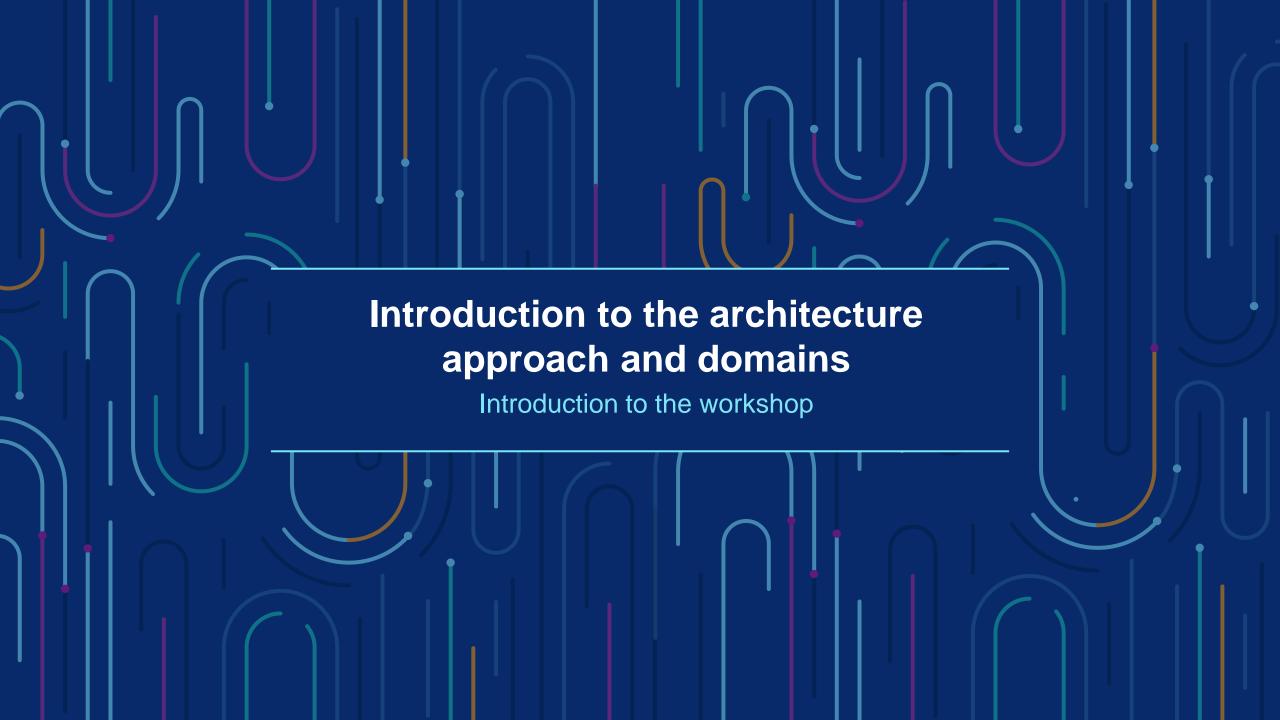


Dario Andrei Architect IAA, Sovereign-X



Paulo Cabrita Solutions Architect Simpl-Open, Sovereign-X





Introduction to the Architecture

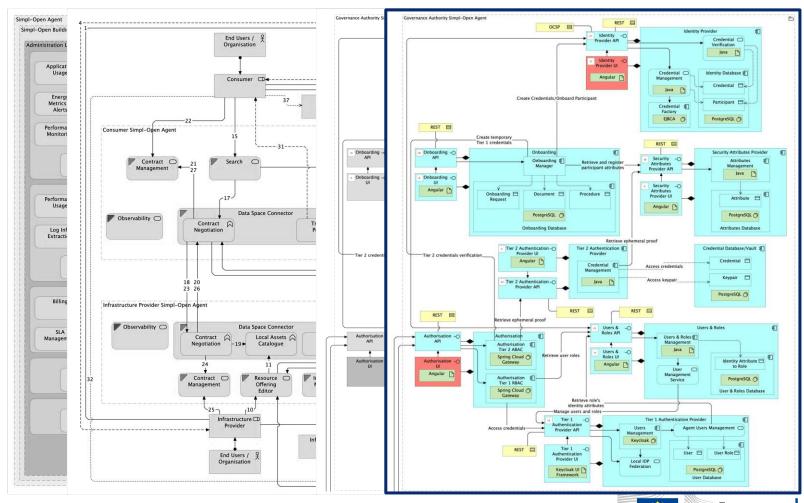
The architecture of Simpl-Open is created using a layered approach

High-Level Architecture

Business Architecture

Application Architecture

Technology Architecture





Introduction to the Architecture

Key architecture principles

Resilience Federation Simpl-Open will serve as a federation of both data and infrastructure, Simpl-Open's architecture components must be fault enabling interoperability and decentralisation tolerant, so that failures have minimal impact. Discoverability Modularity Simpl-Open architecture must be defined in a All services provided by Simpl-Open must be modular way and with open-source technologies publicly exposed and discoverable in a service registry or catalogue Security, privacy & trust Loose coupling **Architecture** Simpl-Open must provide a secure and trustworthy The implemented components should be loosely **Principles** environment while complying with relevant regulations coupled to minimise dependencies between them Openness and agnosticism Scalability & elasticity Simpl-Open must provide means to accommodate larger Simpl-Open's components must be designed following open specifications and standards and implemented workloads and assure correct resource pooling and allocation while allowing new entities and users without using open-source technologies impacting performance Interoperability Composability & extensibility Simpl-Open must ensure that all participants will be able to Simpl-Open's architecture must allow for open to iterative interact with each other and exchange data and resources growth while allowing the addition of new services and in a well-specified way. capabilities



Introduction to the Architecture

Simpl-Open is decomposed into 3 functional domains



Onboarding & IAA

Provides the means to join a data space and establish trust between participants.



Publish and consume resources

The essence of a data space: allow to share resources (datasets, infrastructure, applications) between the participants.

Management/Operation of data space

Provides the functionalities that are necessary to manage and operate a data space.





Onboarding & IAA

Stay on this room



Pietro Bartoccioni Lead Architect IAA, Sovereign-X



Dario Andrei Architect IAA, Sovereign-X





Publish and Consume Resources

Go to the terrace



Richard Mrasek
Integration Architect Simpl-Open,
Sovereign-X



Arian Firouzbackhsh
Data Space Architect SimplOpen, Sovereign-X



Paulo Cabrita
Solution Architect Simpl-Open,
Sovereign-X



Melanie Mirjana Friedrich IT Architect Simpl-Open, Sovereign-X



Technical Workshop

Breakout Room Setup

2,5 hrs including a 20 min break



Submit your question via Sli.do

Hybrid Breakout Room

- Classic Lounge
- □ & Online

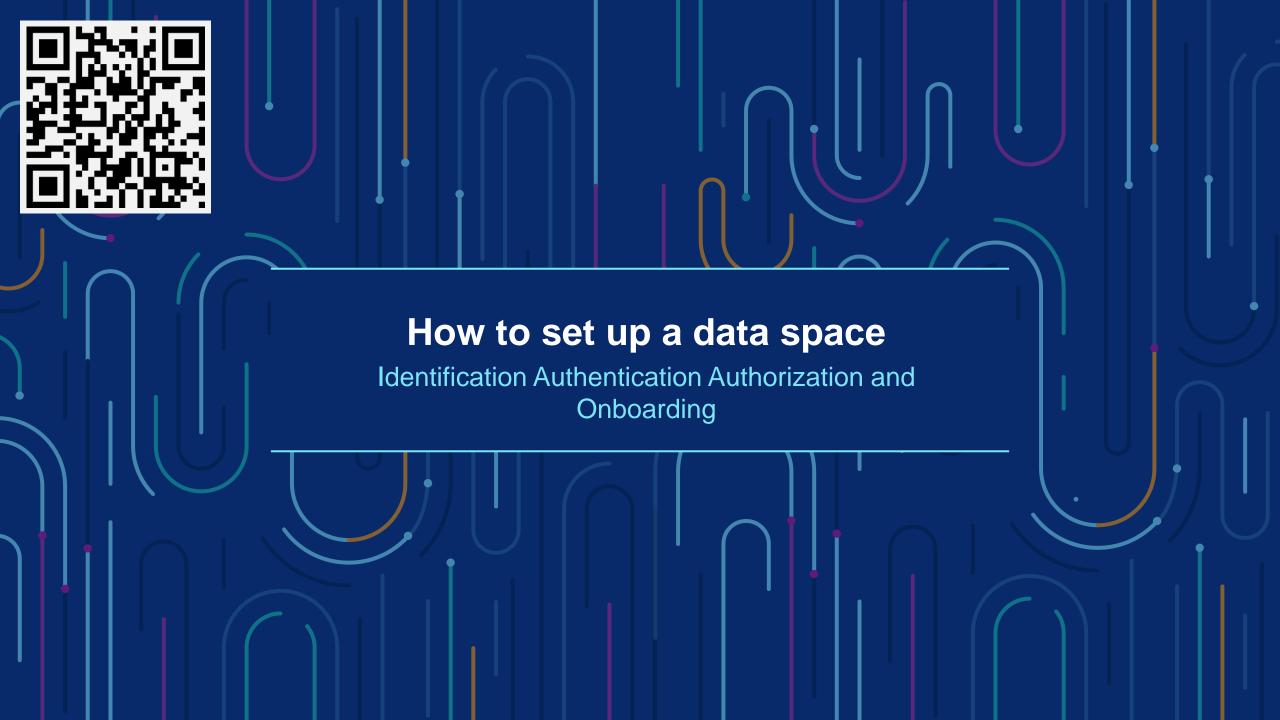
Use of data space



Terrace

Setting up a data space

Raise your hand to ask a question



Agenda

Break out: How to set up a data space

1

IAA Architecture

- Two-tier approach
- Identity attributes
- Roles and relation with identity attributes

2

Anatomy of Simpl-Open service

- Built-in service
- Access-through service

3

Interoperability and comparison with IDS RAM 4.0

- Interoperability
- IDSA comparison

4

Where to start to set up an agent?

- Official resources
- Workshop demo scope

5

Onboarding participants

"On Hands" demo



Two-tier approach - summary

IAA will not issue:

- Digital identities, only integrate existing ones (EU Login, eID, EUDIW, ...);
- Digital signature certificates or PIDs, rely on existing ones (eIDAS, EUDIW, ...);

Tier 1

IAA for participant's agent end users.

Follows access control based on roles (RBAC).

Tier 2

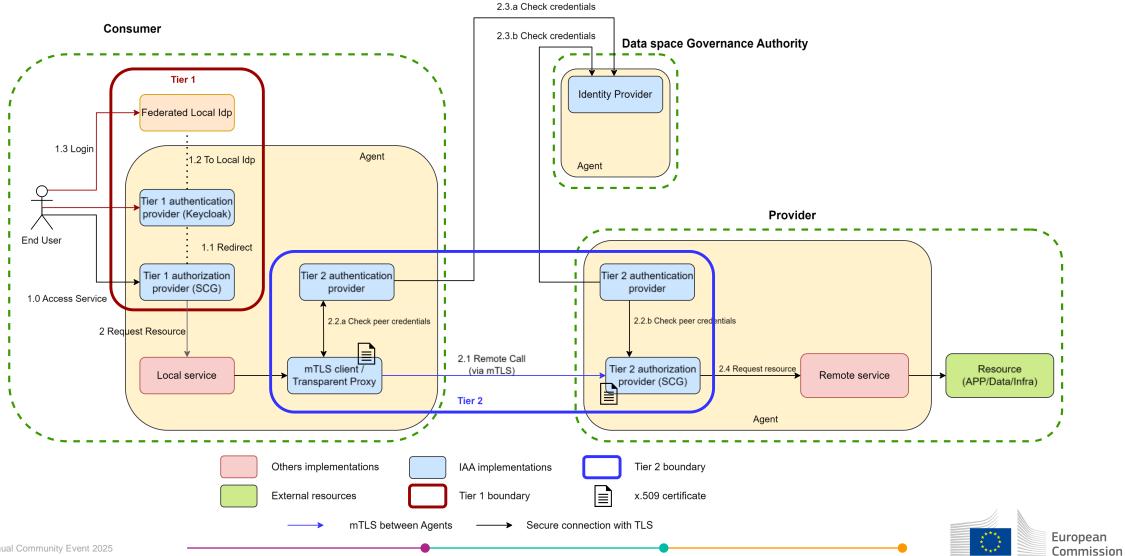
IAA for communication between dataspace agents.

Follows access control based on identity attributes (ABAC).

The access to the data space functionalities is exclusively performed through Tier 1, end users see only his/her agent's functionalities.



Two-tier approach - diagram



Identity attributes

Defined by the data space Governance Authority (DGA), used to identify:

- Participant types (DGA, consumer, data/app/infra provider);
- Permissions across all agents (searching catalogue, publishing on catalogue,...);
- Rights to perform specific actions data space wide (signing contracts, consuming resources, ...);

Given by the DGA to any participant.

Assignable – by the participant's governance to a role; any user with that role inherits the attribute (permission/right).

Read-only (predefined):

- Have the same meaning data space-wide and eventually across data spaces (enabling common federation identity attributes);
- Not editable by the DGA;
- Used to enforce ABAC in the tier 2 communication:

Customizable:

Allows to define additional data space permissions/rights;



Roles and relation with identity attributes

Defined by the governance of a participant, are standard OIDC roles and are used to:

- Specify types of end users in the agent;
- Regulate the access of agent's features and functionalities;

Relation with assignable identity attributes allows the governance of a participant to:

- Delegate to a role one or more of its data space wide rights or permissions;
- Manage the received attributes independently, distributing them to groups of its end users;
- Establish which role (end users) operates on behalf of the participant;

An example of an identity attribute as a right is the RESEARCHER identity attribute used in the catalogue search engine to filter service offerings results.



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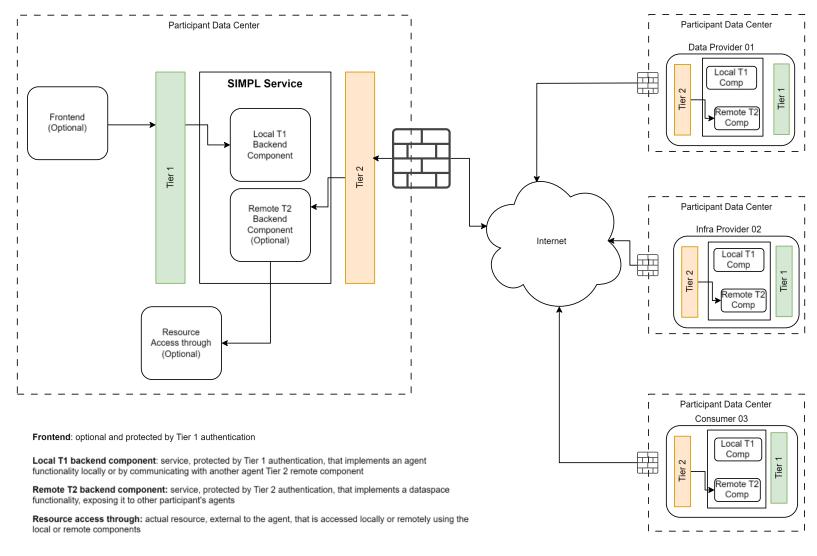
5

Onboarding participants

"On Hands" demo



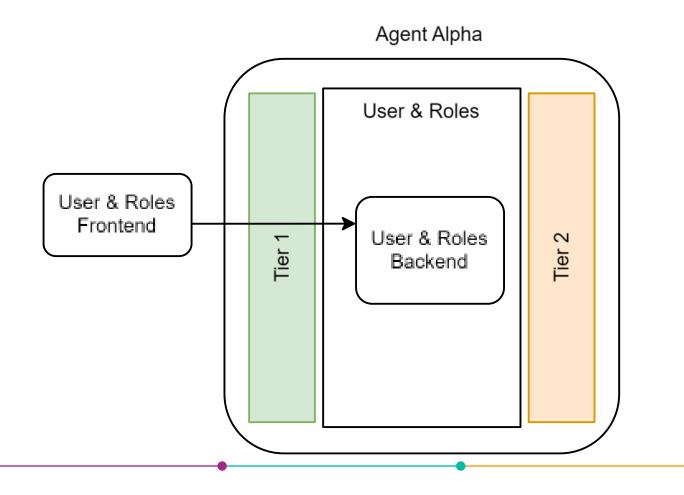
Anatomy of a service





Built-in - Local service

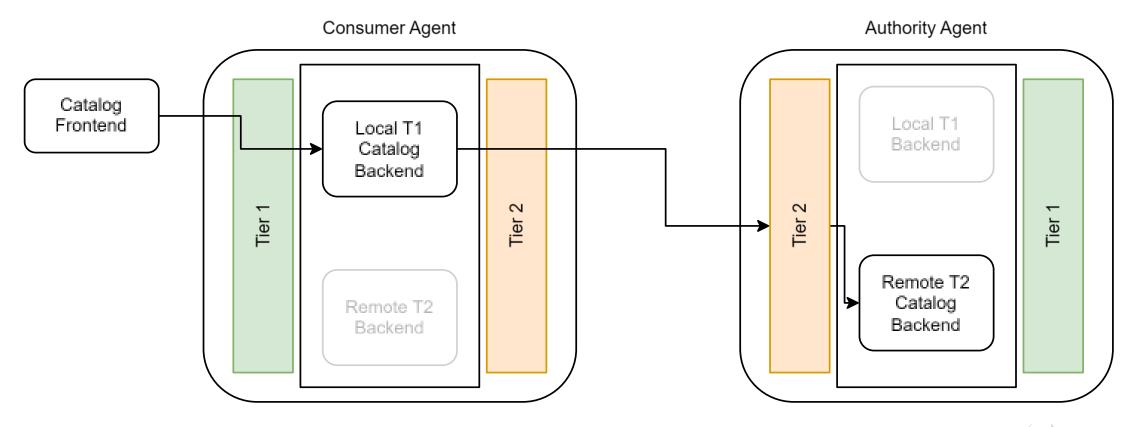
Uses a frontend (optional) and a local tier 1 backend. Implements a local core functionality: e.g. users and roles management.





Built-in - Across agent's service

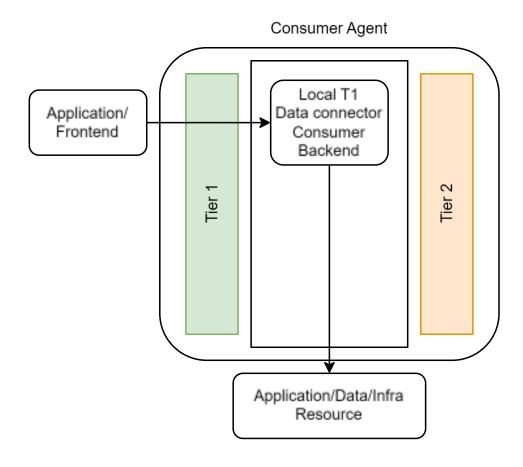
Uses a frontend (optional) and a local Tier 1 backend, working with a remote Tier 2 backend. Implements a remote core functionality: e.g. searching catalogue.





Access-through - Local service

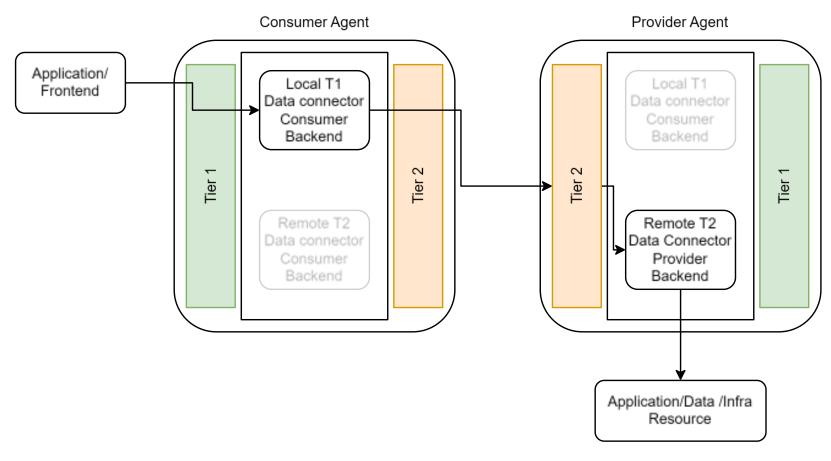
Uses a frontend (optional) and a local Tier 1 backend that accesses a local resource (external to the agent).





Access-through - Across agent's service

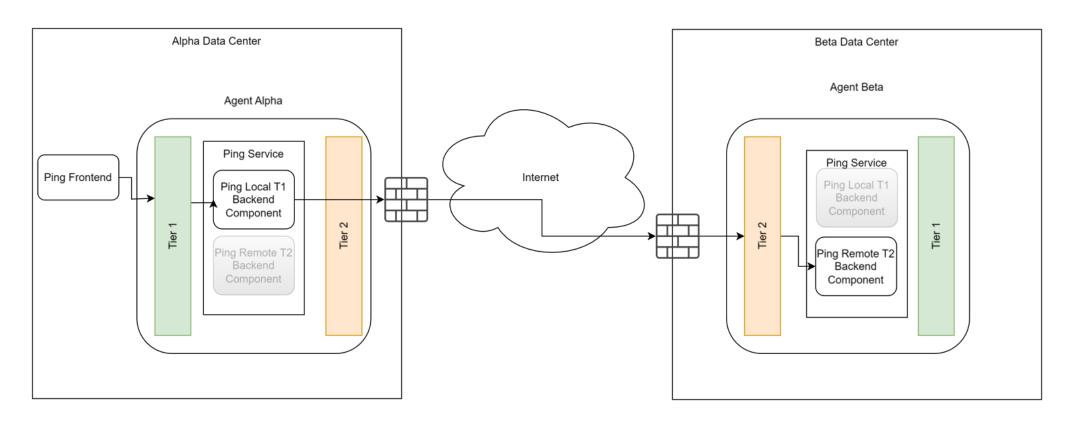
Uses a frontend (optional) and a local Tier 1 backend, working with a remote Tier 2 backend, accessing a remote resource (external to the agent).





An example: "Echo"

Example of a IAA enabled service: will become the template project to integrate IAA functionalities





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Interoperability of IAA

Built-in in Keycloak:

Identity Brokering and Social Login

Enabling login with social networks is easy to add through the admin console. It's just a matter of selecting the social network you want to add. No code or changes to your application is required.

Keycloak can also authenticate users with existing OpenID Connect or SAML 2.0 Identity Providers. Again, this is just a matter of configuring the Identity Provider through the admin console.



User Federation

Keycloak has built-in support to connect to existing LDAP or Active Directory servers. You can also implement your own provider if you have users in other stores, such as a relational database.



Additional integrations*:

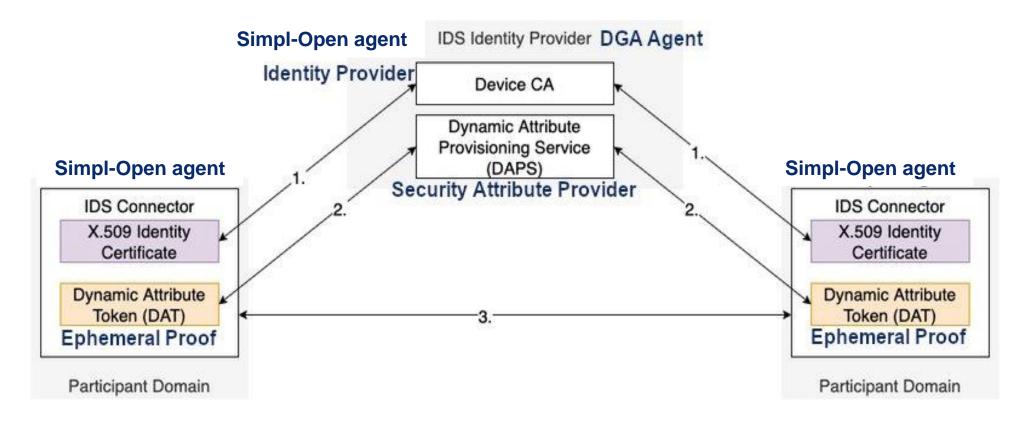
- OIDC4VC (EUDIW, OCM, walt.id, ...);
- EU Login;
- elD;

* not part of MVP

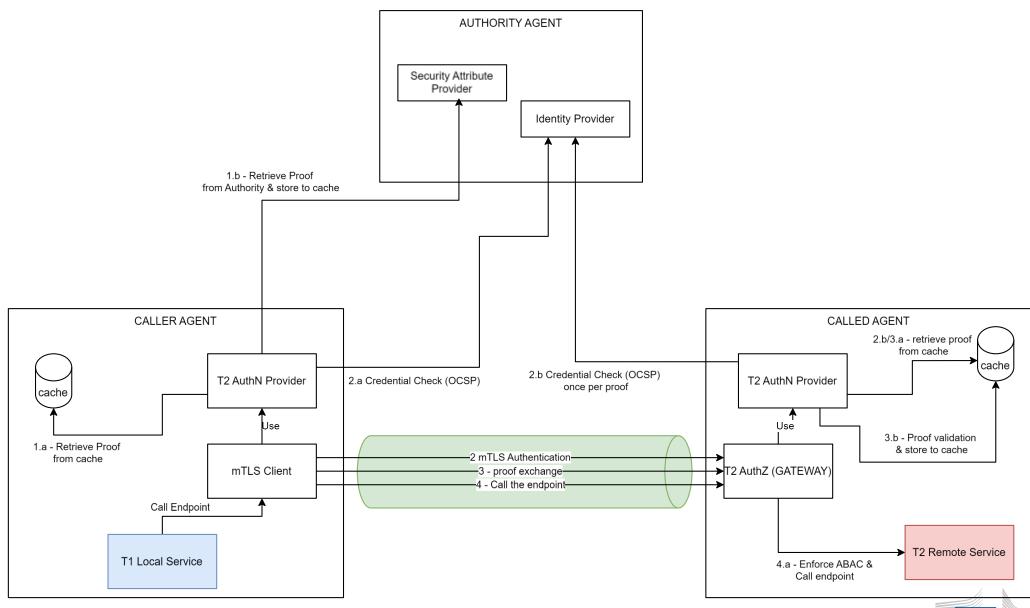


Comparison with IDS RAM 4.0

The agent is also designed to be treated as an <u>IDS device</u> (RAM 4.0 Knowledge Base). In the following picture the mapping between IDS RAM and Simpl-Open components (in blue).







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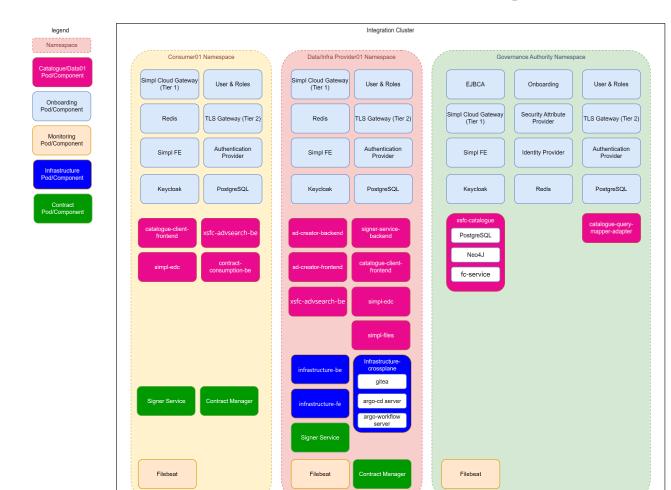
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Onboarding participants

"On Hands" demo



Where to start to setup an agent?



Metricbeat

HashiCorp Vault

Heartbear

Integration team repositories:

- Governance Authority;
- Data Provider;
- Consumer;
- Common Components;



Where to start to setup an agent?

Workshop demo

Onboarding components

Kubernetes cluster with four namespaces to simulate the four participants' data centers:

- iaa-demo-authority data space Governace Authority premise;
- iaa-demo-data-provider data provider agent, already onboarded;
- iaa-demo-consumer consumer agent, not onboarded;
- iaa-demo-new-consumer consumer agent, will deploy it;



How an IAA agent stack is deployed

Helm chart

```
apiVersion: v2
                                                                                 name authority
                                                                                 version 2.0.0
hostFe: fe.iaa-ds-new-consumer.demo.aruba-simpl.cloud
hostBe t1.iaa-ds-new-consumer.demo.aruba-simpl.cloud
                                                                                 description: This Chart deploys a SIMPL Authority.
hostT2: t2.iaa-ds-new-consumer.demo.aruba-simpl.cloud
hostAuthority: t2.iaa-ds-authority.demo.aruba-simpl.cloud
                                                                                  repository: https://charts.bitnami.com/bitnami
                                                                                  repository: https://charts.bitnami.com/bitnami
            id: keycloak
                                                                                  repository: https://charts.bitnami.com/bitnami
            uri: ${keycloak.url}
               Path=/auth/**
                                                                                  name: ejbca-community-helm
                StripPrefix=1
                                                                                  repository: "https://keyfactor.github.io/ejbca-community-helm"
            id: users-roles
                                                                                  alias: ejbca
            uri: ${users-roles.url}
                                                                                  name: onboarding
               - Path=/user-api/**
                                                                                  repository: https://code.europa.eu/api/v4/projects/770/packages/helm/stable
                StripPrefix=1
                                                                                  name: security-attributes-provider
                                                                                  repository: https://code.europa.eu/api/v4/projects/861/packages/helm/stable
        method GET
        path: "/v3/api-docs/**"
                                                                                  name: simpl-cloud-gateway
                                                                                  repository: https://code.europa.eu/api/v4/projects/772/packages/helm/stable
        method: GET
        path: "/auth-api/keypair"
                                                                                  name: users-roles
                                                                                  repository: https://code.europa.eu/api/v4/projects/771/packages/helm/stable
        path: "/auth-api/keypair/import"
                                                                                  name: identity-provider
            ONBOARDER_M
                                                                                  repository: https://code.europa.eu/api/v4/projects/913/packages/helm/stable
        path: "/auth-api/keypair/**"
            ONBOARDER_M
        method: POST
                                                                                  repository: https://code.europa.eu/api/v4/projects/769/packages/helm/stable
        path: "/auth-api/csr/generate"
                                                                                  name: authentication-provider
           ONBOARDER M
        path: "/auth-api/keypair"
                                                                                  repository: https://code.europa.eu/api/v4/projects/939/packages/helm/stable
        method: HEAD
            ONBOARDER_M
                                                                                  repository: https://code.europa.eu/api/v4/projects/860/packages/helm/stable
```

Full example is here

What we will do:

- deploy an agent;
- configure an onboarding procedure;
- doing an onboarding for the consumer agent;
- review the agent deployed at the first step;



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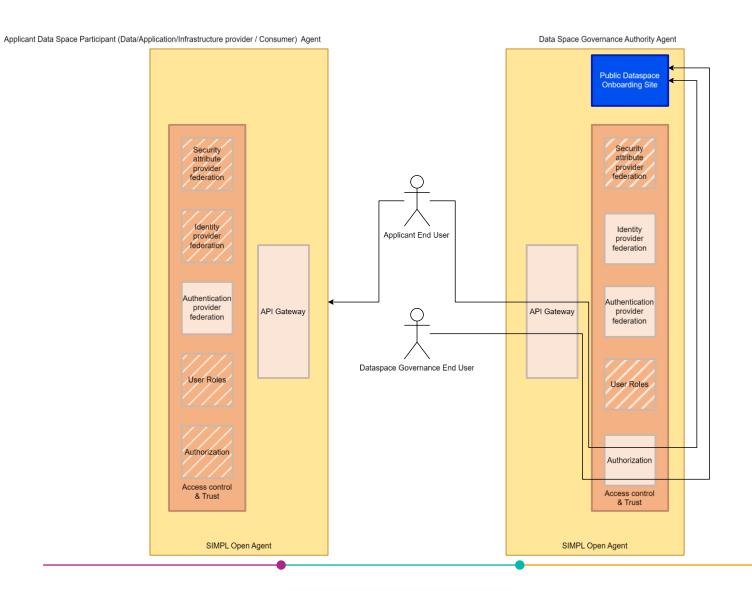
Onboarding participants

"On Hands" demo



Onboarding participants

Diagram





Onboarding participants

Actors:

Where	Who	Role	Role description
Consumer Agent	ssaxander Williams <a.w@email.com></a.w@email.com>	ONBOARDER_M	Setup administrator role, the one who is in charge of the agent initialization
DGA Agent	Emily Johnson <e.j@email.com></e.j@email.com>	T2IAA_M	In charge of defining and changing the onboarding procedure itself
DGA Agent	Alexander Williams <a.w@email.com></a.w@email.com>	APPLICANT	end user responsible for onboarding an applicant data space participant
DGA Agent	Micheal Thompson <m.t@email.com></m.t@email.com>	NOTARY	In charge of taking care of onboarding requests and follow their process

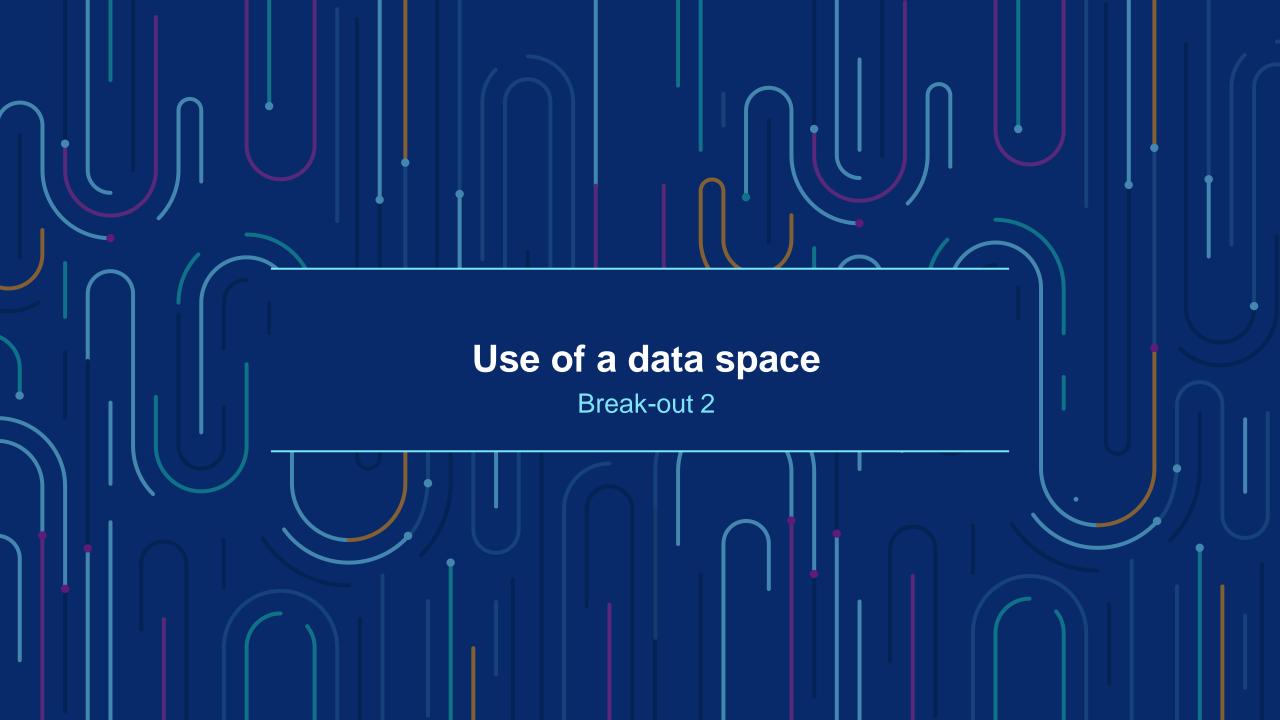
Pages:

Where	Purpose	Page	
Consumer Agent	Agent credential configuration	/participant-utility/agent-configuration	
DGA Agent	Onboarding template management	/onboarding/administration/management/onboarding-procedures	
DGA Agent	Onboarding kick off	/onboarding	
DGA Agent	Onboarding administration dashboard	/onboarding/administration	
DGA Agent	Onboarding summary page	/onboarding/application/additional-request	









Break out: Use of a data space

1

Simplified Architecture

 Fundamental architecture concepts. 2

Deployment Scripts

- Explaining Deployment Scripts and their structure.
- How to add deployment scripts and How to add infra or bundle offerings to the catalogue.

3

Creating and Adding Service Offerings

- Explaining usage and access policies and their types.
- Using identity attributes with access policies.
- Validation process for the Self-Descriptions.

4

Search of Service Offering

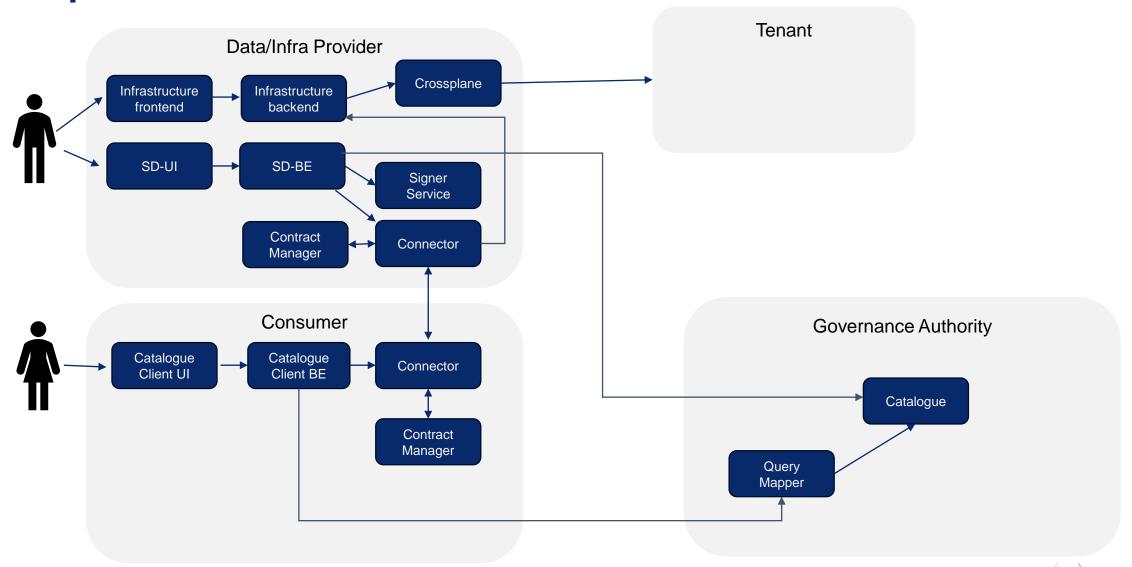
- Show different users with different access levels, searching for Resource Descriptions that they do/don't have access to.
- Show Quick Search and Advanced Search.

5

- Requesting and receiving a dataset via connector (traditional data space use case)
- Reviewing the offers and their policies, contracting and accessing the resource (Bundle).



Simplified Architecture





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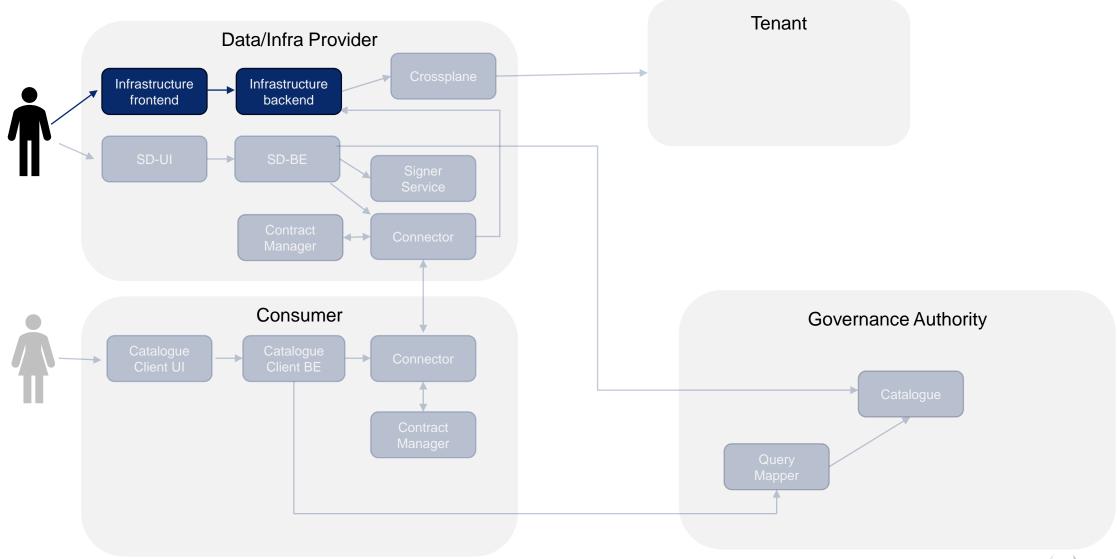
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Deployment Scripts





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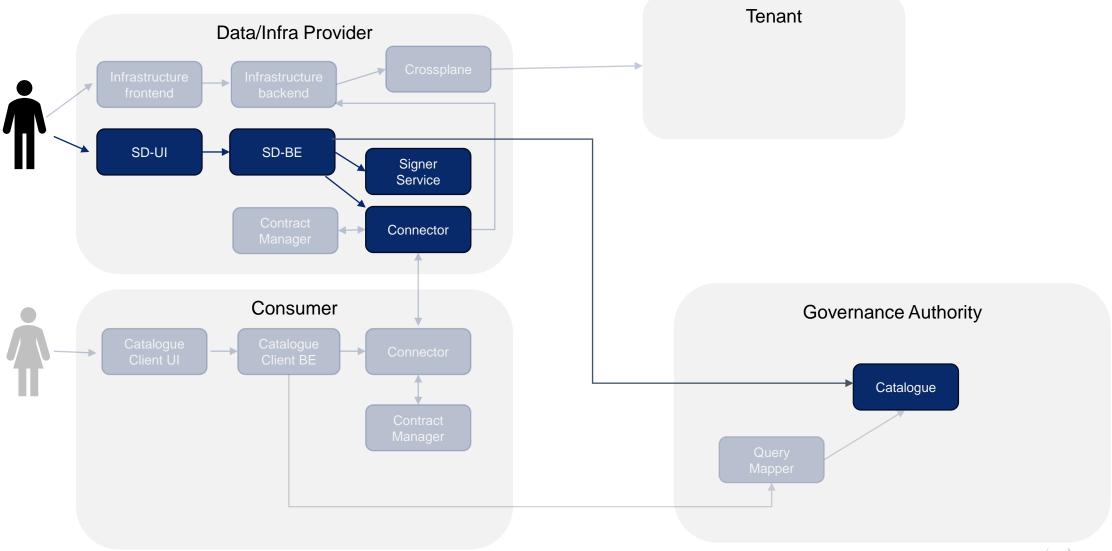
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Creating and Adding Service Offerings





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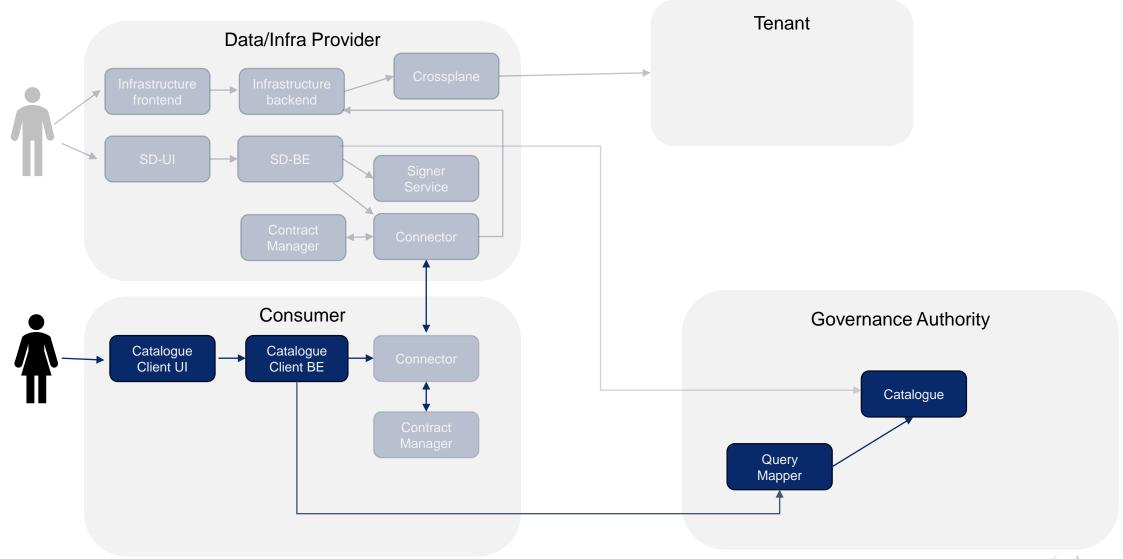
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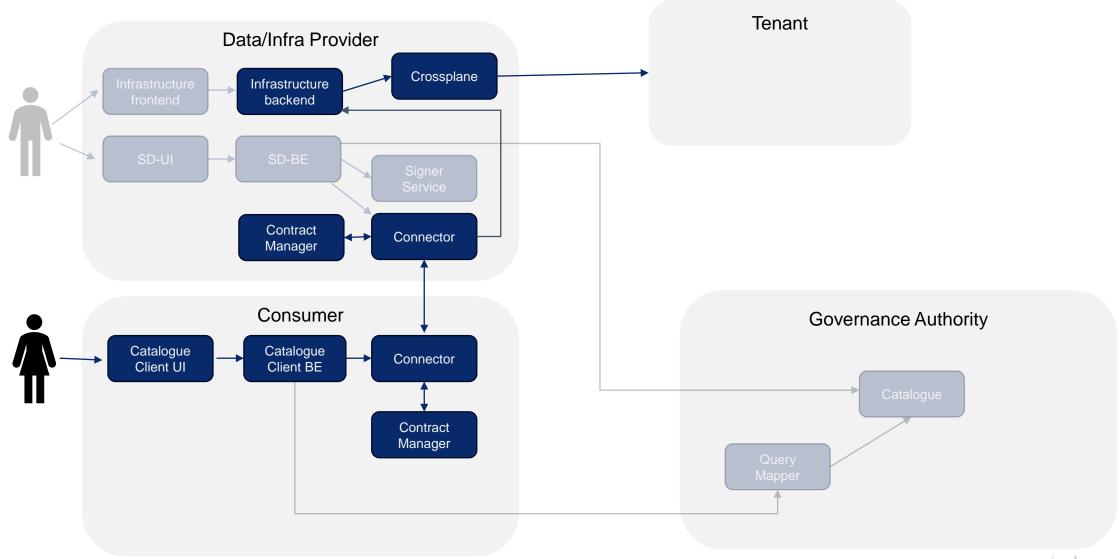
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Break

Simpl Annual Community Event will resume at 15:20





Enabling value through Simpl

Non-Technical

Parallel Workshops
Simpl Annual Community Event

Enabling value through Simple

Introducing the Speakers



Ilya Koshkin Engagement Manager, Sovereign-X



Ana Juan Ferrer
Project Owner Simpl-Labs,
DG CNECT European Commission



Nikolaos Lagos Data Strategy Consultant, Indra



Matthijs Punter
Blueprint Architect,
Data Spaces Support Centre



Coen Janssen
Policy Officer,
DG CNECT European Commission



Malte Beyer-Katzenberger
Team Leader
DG CNECT European Commission



Enabling value through Simpl

1

Data Spaces and Simpl for Al

How can Simpl leverage Al to enhance data spaces?



Ana Juan Ferrer

2

Models of Data Spaces

How Simpl can support **all** European Data Spaces and beyond?



Nikolaos Lagos



Matthijs Punter

3

Data Value Chain

How does Simpl enhance the economic value of data in European Data Spaces?



Coen Janssen

4

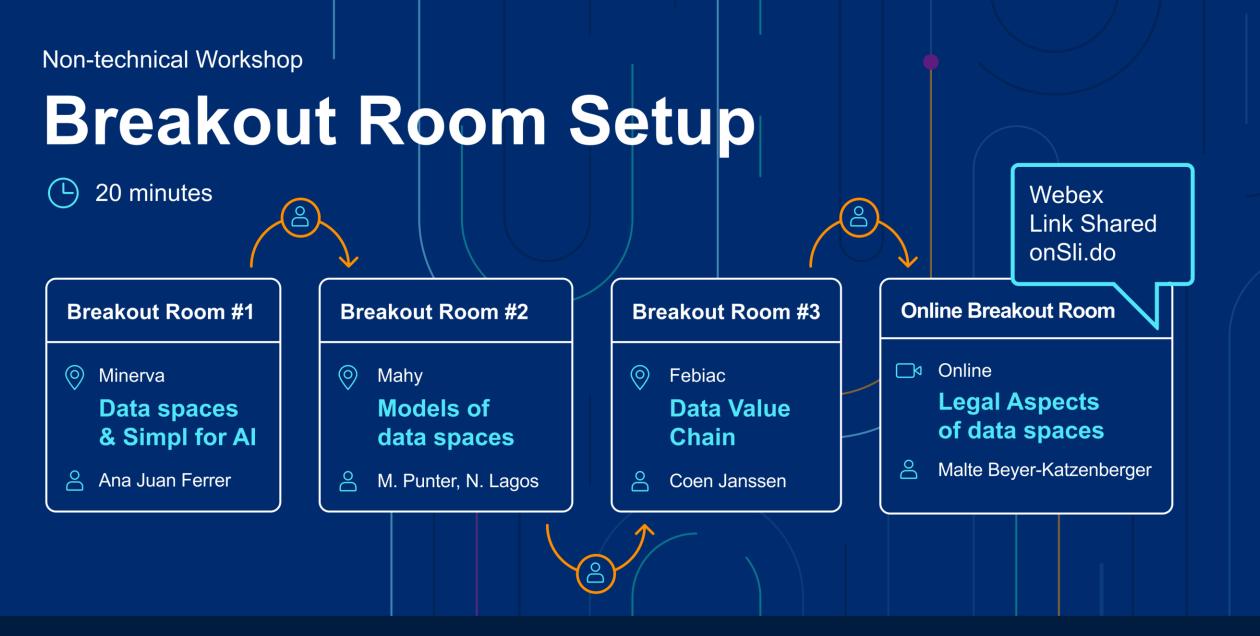
Legal Aspects in Dataspaces

How can Simpl help navigate legal challenges in data spaces and ensure compliance?



Malte Beyer-Katzenberger





By the end of the workshop, everyone will have discussed all four topics!

Schedule

14:40-15:00

15:20-15:40

15:40-16:00

16:00-16:20

Round 1

Round 2

• Round 3

Round 4

Coffee break

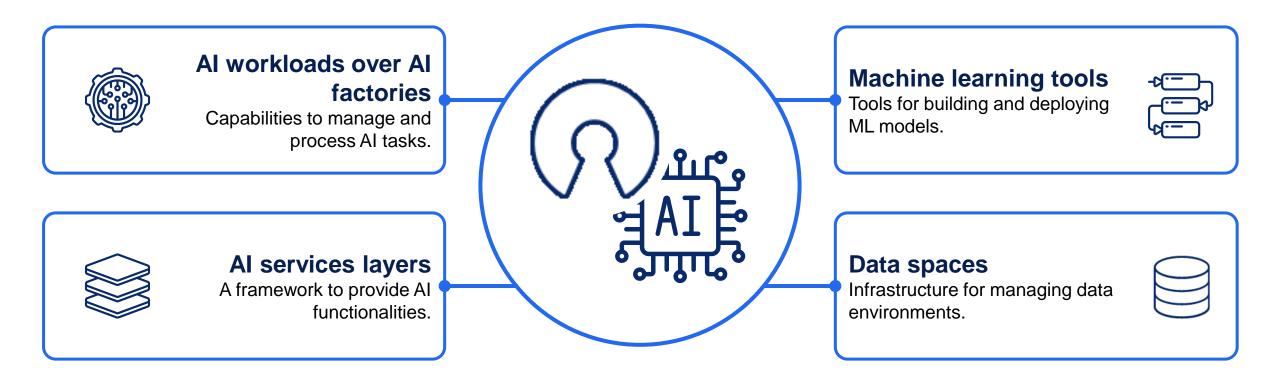
Stay comfortable in your room. The facilitators will come to you.



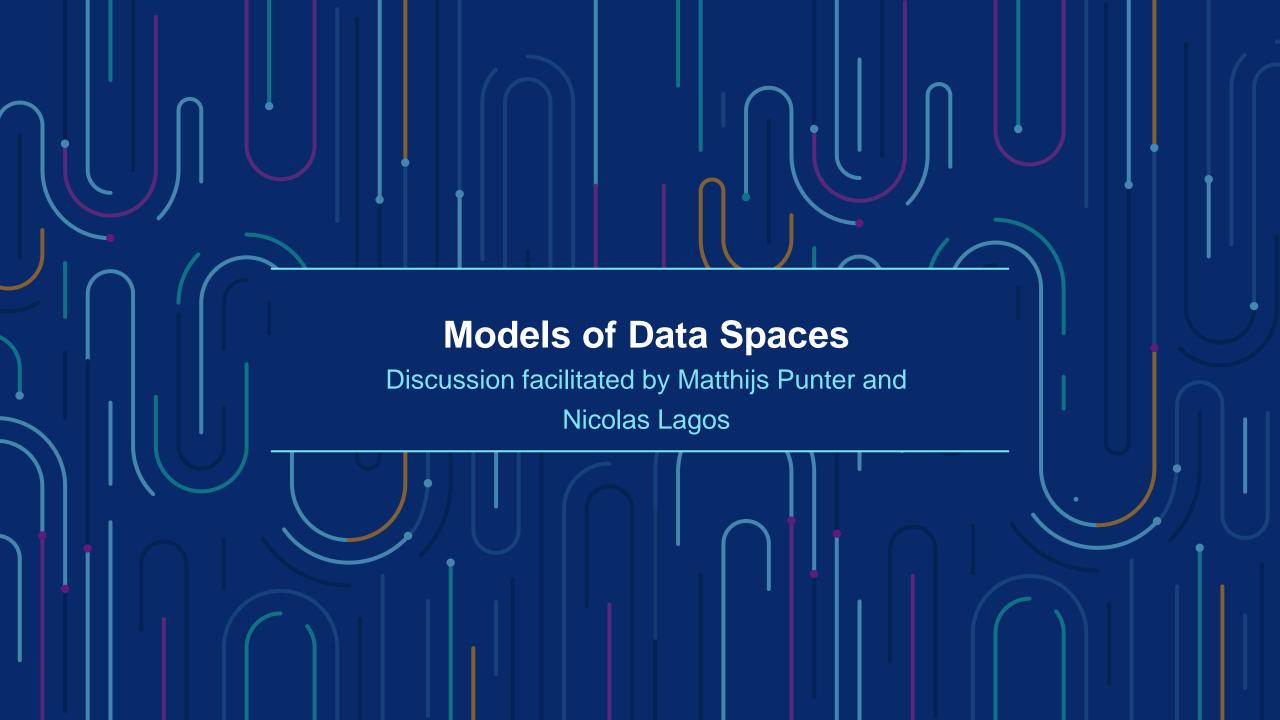


Data spaces and Simpl for Al

Enhancing Simpl-Open with AI tools and Services







What is the role of a data space?

Break-out: Models of data spaces



Image "Ambulance passing by", © 2015 Albert Lugosi, https://flic.kr/p/y8eLnr



Data or applications?

Break-out: Models of data spaces



Data, and the applications using that data, are separate things.

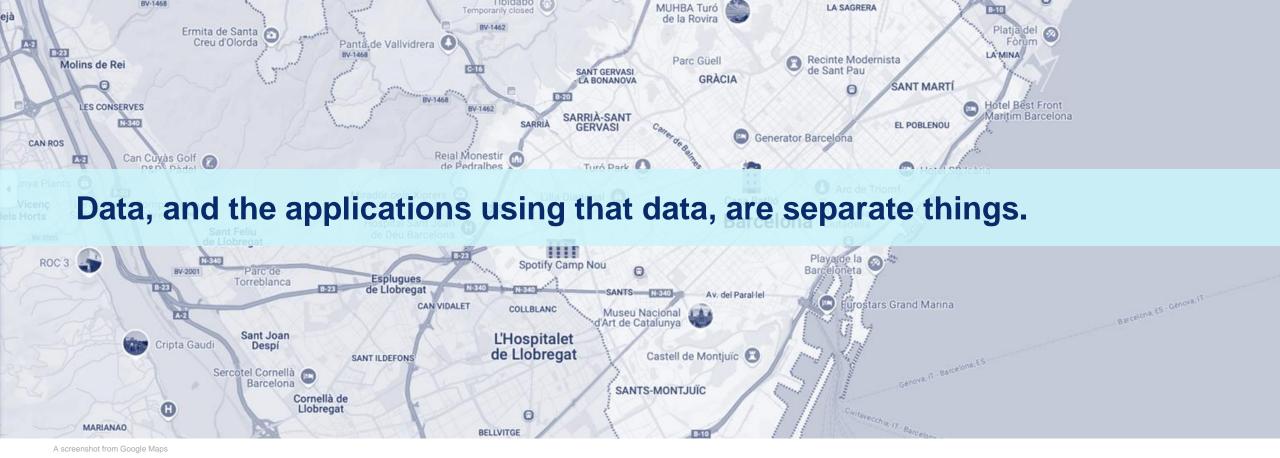


Image "Sign about traffic cameras", © 2015 Erica Fischer, https://flic.kr/p/ug4V3P



Data or applications?

Break-out: Models of data spaces





Software for data spaces or software for applications?

Break-out: Models of data spaces



The software providing functionality to the data space is different from the software that implements the applications.



Image "Data Center", © 2009 Sean Ellis, https://flic.kr/p/6UDnWP



One middleware to serve them all?

Break-out: Models of data spaces





Data Value Chains

Discussion topic

One of the key objectives of Simpl is to support Common European Data Spaces and the European data economy.

Data Products and **Data Transactions** underscore the economic value (both monetary and non-monetary) of data. In **Data Value Chains**, data products from various parties are integrated to develop new services and applications.

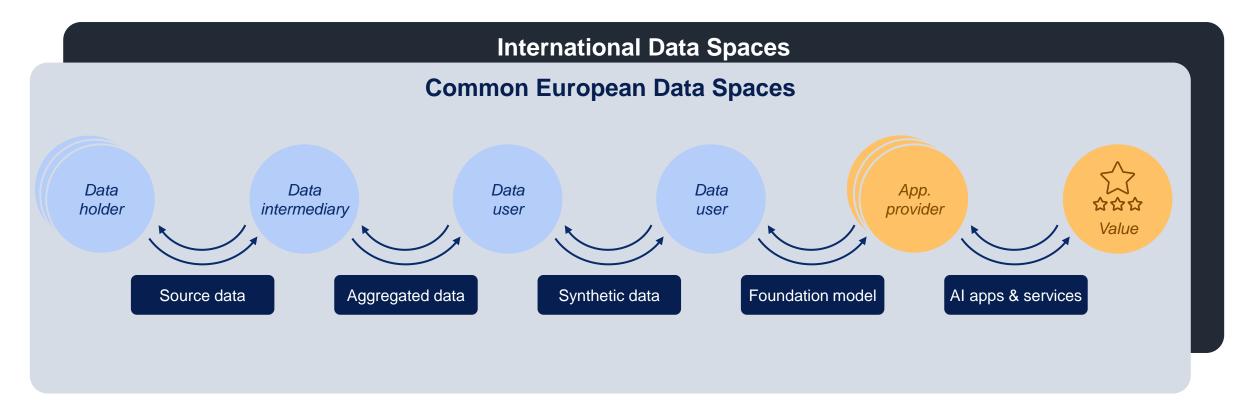


Which **features** and external **enablers** can assist individual parties in managing their data products, data transactions, and data value chains more effectively?



Data Value Chains

Illustration 1

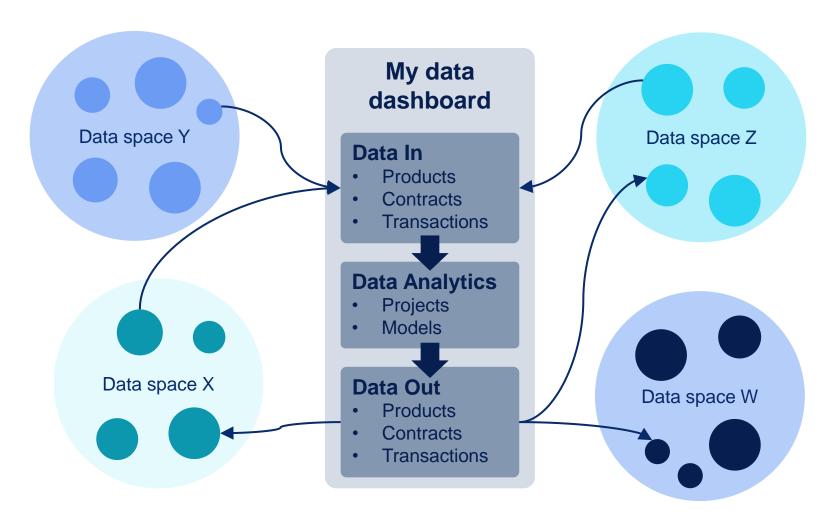


Trusted data transactions and high-quality data products as cornerstones of trustworthy data value chains.



Data Value Chains

Illustration 2





Group 1

Key features of Simpl	Key external enablers
1. Location: Coordinates to be used by a number of data spaces.	1.Mindset (alignment).
2. Insight in usage & traceability of the data.	2. Legal aspects: How can we track and enforce rights of use and attribution.
3. Standards on the value clearing house of data transactions (common layer)	3.
4. Value chain composer.	
5. App store.	
6. Controlling the visibility of your data on the catalogue.	
7. Subscribe to changes in data.	

- Pre-requisite: each person gains more value than alone.
- How can we make sure that there is some value for the one at the beginning of the chain (data source)? How can we keep this motivation going? A monitoring mechanism that collects how often my data is reused and for what?
- "Financial clearing house mechanisms". What types of exchanges are possible? Money->data, data->data. ("Digital barter").

Group 2 (Online)

Key features of Simpl	Key external enablers
1. To translate data ontologies from different data spaces; making different data formats adaptable across different DSs.	1. Contractual aspects should be manageable by SME's.
	2. Have measures to check if Providers are Trustful or not. (a nd Consumers).
3. Traceability across the entire chain	3.
4. Feature for marketplace(s) in future.	

- Fundamental to have Trust on all the dataspaces. Multiple federated dataspaces clarity on governance principles.
- Marketplace? If data can be monetized?



Group 3

Key features of Simpl	Key external enablers
1. Support for semantics (minimal interoperable mechanism).	1. Data models for specific domains of data spaces.
2. Support for limited groups with specific use cases.	2.
3. Facilitation for data space onboarding (plug and play for dat a holders and users).	3.
4. Tracking data quality (ex. Sources) (with metadata)	
5. Federation in-between catalogs.	
6. Support for data transformations.	

- There are existing descriptions on how to create data value chains in detail.
- There are small group relationships (limited groups) where stakeholders do not want to publish their resources on a catalogue.
- Useful services: Model transformation, from one grid system to another. Data integration (in-between formats). These tools do exist.



Group 4

Key features of Simpl	Key external enablers
1. Catalog registries (to be able to see how what is available c an complement what you have).	1. Incentives for putting your data out there. (Monetary and no n-monetary). It may be enabled by trust, governance, but the end goal is fundamental (think about the enablement of monet ary systems).
2. Gateway to non-eu data spaces	2. Clarity in international rules
3. How do we return the value of the end products to all the st akeholders in the data value chain?	3.
4. Tools to verify the (semantic) quality of data> Scoring and predictability of the quality. How to scrutinise said quality?	
5. Data quality verification engine.	
6. Data quality ranking.	

- Simpl covers the bidding part but not the transactional part.
- Should data quality be defined per data space?





Legal aspects in Data Spaces

Consent Management

Illustration



Usage Policies

Defines how data can be used within legal boundaries



Break

Simpl Annual Community Event will resume at 15:20



Break

Simpl Annual Community Event will resume at 16:40





Wrap up

Simpl Annual Community Event

Wrap-up

Introducing the Speakers



Valentina Staveris Programme Coordinator, DG CNECT European Commission



Nicolas Auricchio Lead Architect Simpl-Open, Sovereign-X

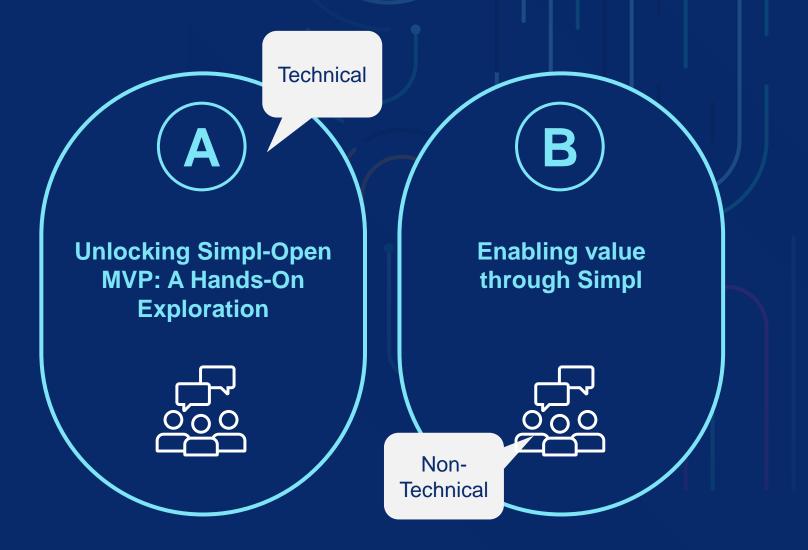


Ilya Koshkin Engagement Manager, Sovereign-X



Workshop Recap

How was the discussion at the workshops?





Get involved and participate

It's Simpl!



Website

Visit our website for Simpl documentation, requirements and latest news.



Social Media

Join and engage with our growing community!



Forum

Keep a look out for Simpl's forum launch! Coming soon!



Webinars & Workshops

Join technical and business sessions, online and in person.



Code Repository

Check out and review the code!



Surveys

Help us improve!



Scan me for more information about Simpl





Closing note

Manuel Mateo Goyet

Closing Note

Introducing the Speaker



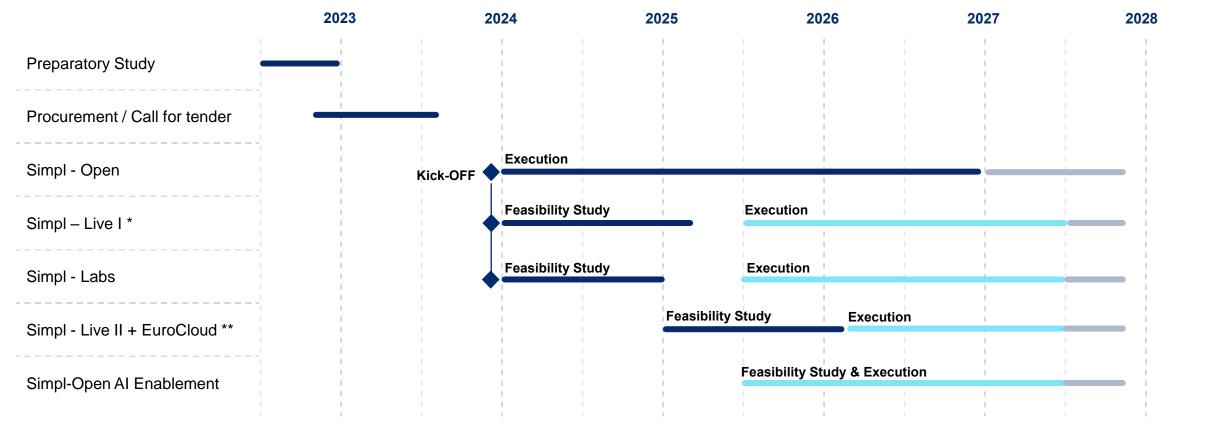
Manuel Mateo Goyet
Acting Head of Unit Cloud and Software
DG CNECT European Commission



The Simpl Programme Roadmap

Simpl-Open, Simpl-Live, and Simpl-Labs

- Committed scope
- Possible Follow up Implementation of Simpl Live/Labs;
 Simpl-Live Feasibility Studies for new data space initiatives
- Potential next step still to be validated



^{*} Data spaces included: PPDS, EHDS2, LDS, EOSC, DestinE, SCDS ** Data spaces included: CEADS, GDDS, CEMDS, CEEDS





Set-Up ID / Trust & Catalogue

Onboard data space Participant

Consume Infrastructure Resource

Consume Data/Application Resource

Set-Up data space

Publish Resource

Search Resource

Setup

Use

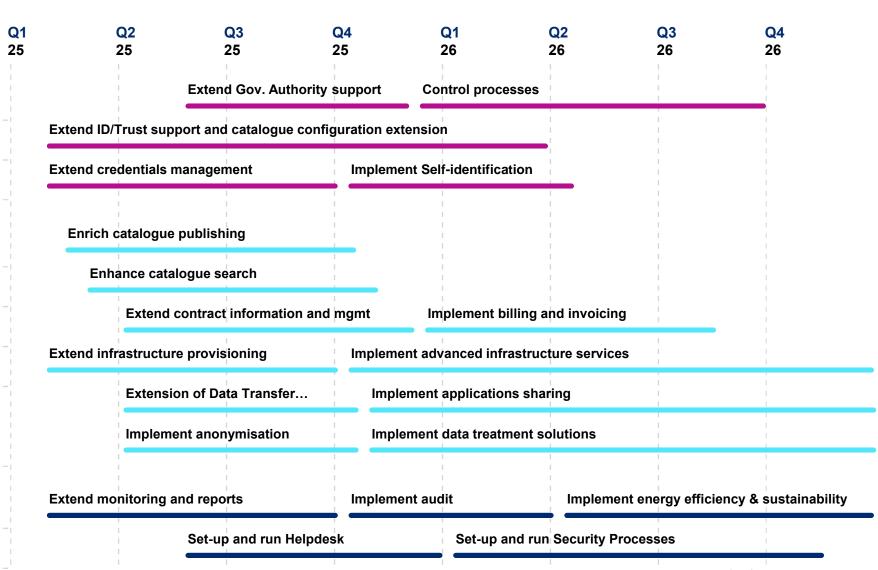
Contract

Operate

High-Level Simpl-Open roadmap 2025-2026

Setup Use

Operate





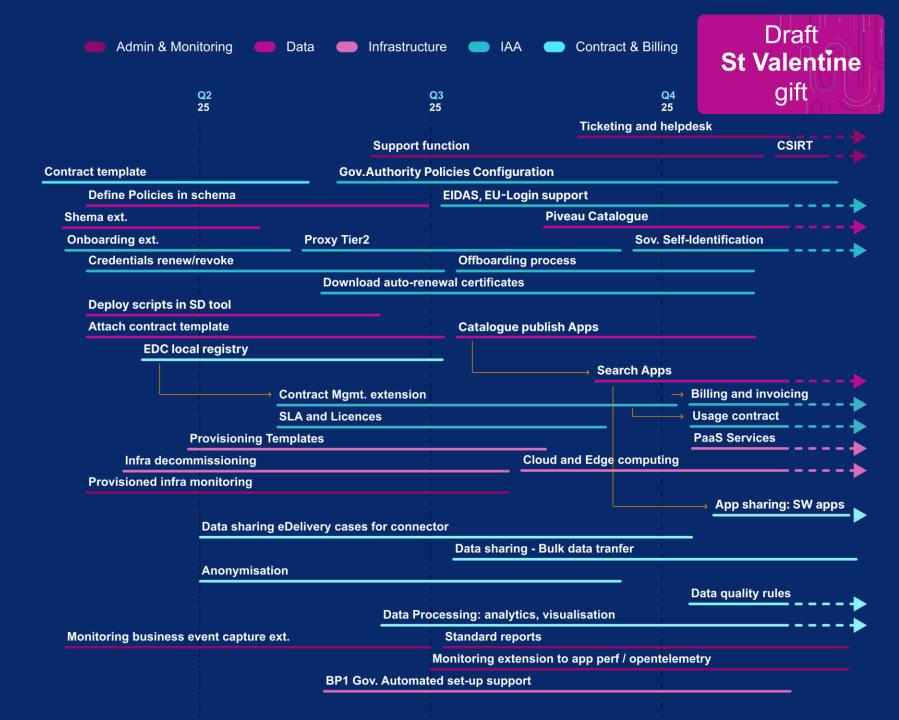


Mgmt/Ops of data space

IT Administration

Simpl-Open roadmap 2025





Unanswered questions 1/3

Anonymous
What is the scope of the Personal
Data Handling? Is it aligned with
guidelines from the EDPB & data
protection authorities re exercise of
data subject rights?

Matthijs Punter With Simpl being a gateway between dataspaces: how to deal with any legal/contractual matters? Will Simpl provide guidance?

Anonymous

Are you aligned with DSSC blueprint? It was not mentioned during the presentation nor during the demo.



Unanswered questions 2/3

Josep Blanch

Can you tell more on Eurocloud and the relevance for Public Sector?

Mark Dietrich

For the 1st 6 feasibility studies, the MVP spec was not available. Now that this exists will you update the gap analyses?



Unanswered questions 3/3 Collaboration

Anonymous

Could be introduced in the open Simpl catalog, tools developed by third companies? These tools should be free or can have a price?

Emmanuel MONDON

How bottom-up approaches such as Location Data Space and Space Data Space (not yet Common European Data Spaces) could interact with Simpl Live?

Anonymous

You say ao procedures and consent licenses are still missing, are you working with existing live frameworks like iSHARE to not reinvent the wheel there?

Anonymous

Do you plan to merge your forces with some European other initiatives like you?





Mark the date!

Simpl Annual Community Event

29 January 2026





How to keep people engaged after the event?



