



DATA SPACES
SUPPORT CENTRE

DSSC Insight Series The Blueprint v.2.0

24 April 2025 | 16:00 CEST | online



Boris Otto
Fraunhofer ISST



Heidi Korhonen
VTT



Matthijs Punter
TNO



Giuditta del Buono
Gaia-X



Jelte Bootsma
TNO

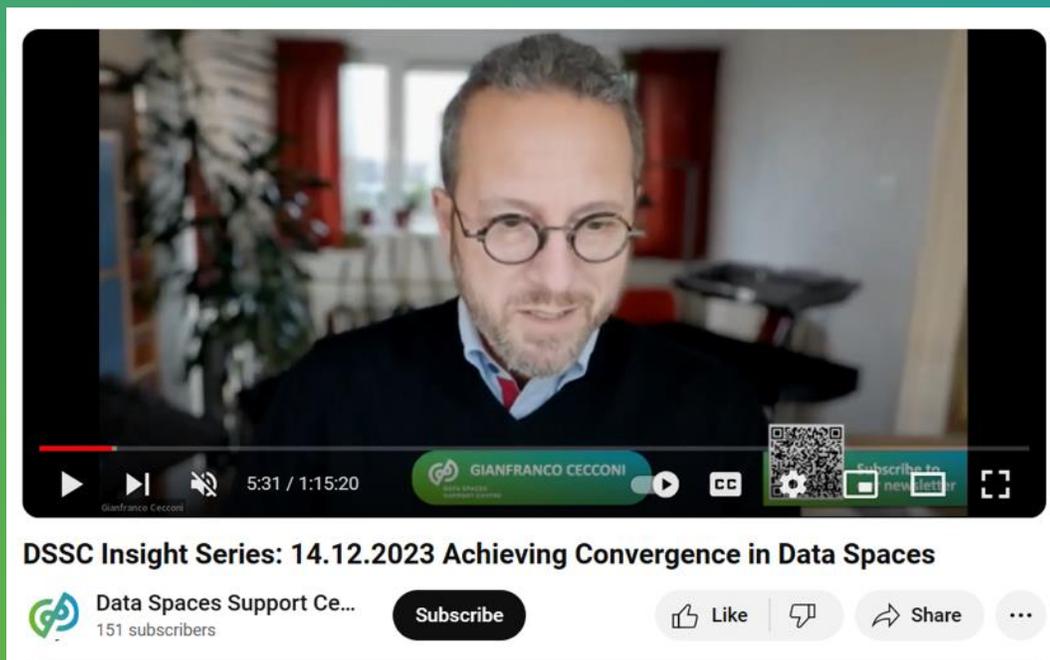


Viivi Lähteenoja
MyData



Frank Berkers
TNO

- **Intro** – Prof. Dr. Boris Otto, Fraunhofer ISST
- **The Blueprint v.2.0 Introduction** – Matthijs Punter, TNO
- **Business and Organisational Building Blocks** – Heidi Korhonen, VTT
 - **Intermediaries and Operators** - Viivi Lähteenoja, MyData
 - **Business Models** - Frank Berkers, TNO
- **Technical Building Blocks** – Matthijs Punter, TNO
 - **Data Models** – Jelte Bootsma, TNO
 - **Trust** – Giuditta Del Buono, Gaia-X Association for Data and Cloud AISBL
- **Q&A** (You can ask questions in the chat!)



This webinar is recorded. Did you know? Previous DSSC insight series recordings are available on our Youtube channel. Videos from our annual event are also available!

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Blueprint for European Data Spaces



Take-off &
get to a higher flight level



Faster

Protect your investment



Future proof

Achieve synergies between
data spaces

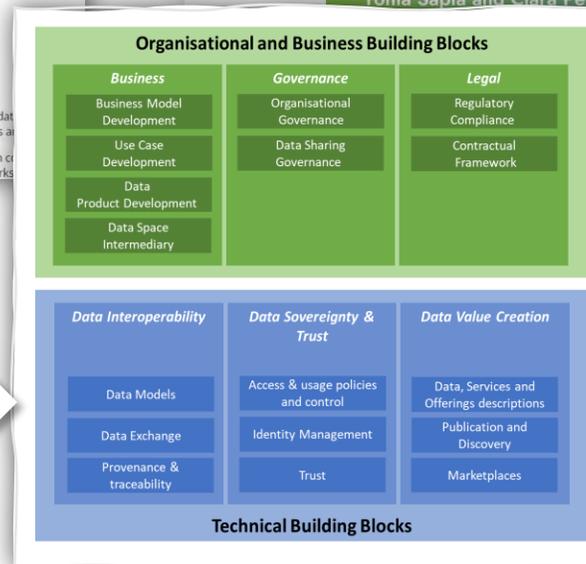
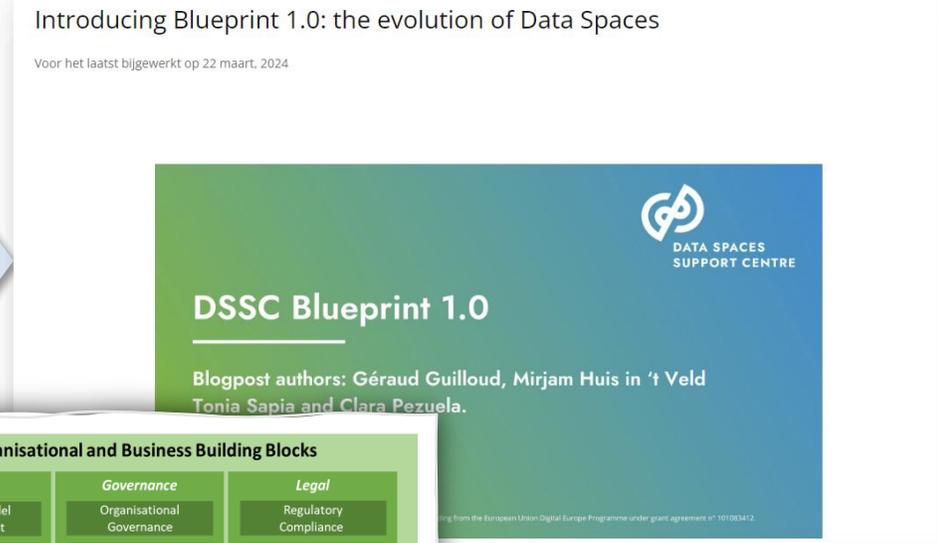
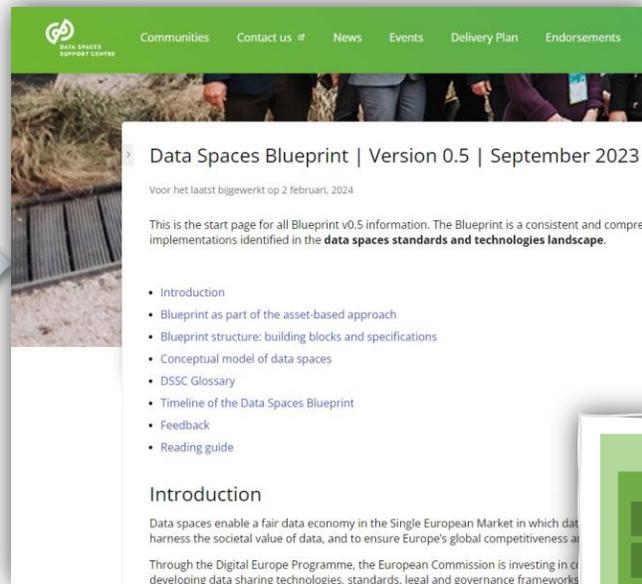


Federations

The Data Spaces Support Center receives funding from the European Union Digital Europe Programme under grant agreement n° 101083412.



Evolution



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Evolution

Communities Contact us News Events Delivery Plan Endorsements

Data Spaces Blueprint | Version 0.5 | September 2023

Voor het laatst bijgewerkt op 2 februari, 2024

This is the start page for all Blueprint v0.5 information. The Blueprint is a consistent and comprehensive set of implementations identified in the **data spaces standards and technologies landscape**.

- Introduction
- Blueprint as part of the asset-based approach
- Blueprint structure: building blocks and specifications
- Conceptual model of data spaces
- DSSC Glossary
- Timeline of the Data Spaces Blueprint
- Feedback
- Reading guide

Introduction

Data spaces enable a fair data economy in the Single European Market in which data is shared and used to harness the societal value of data, and to ensure Europe's global competitiveness and leadership in the digital era.

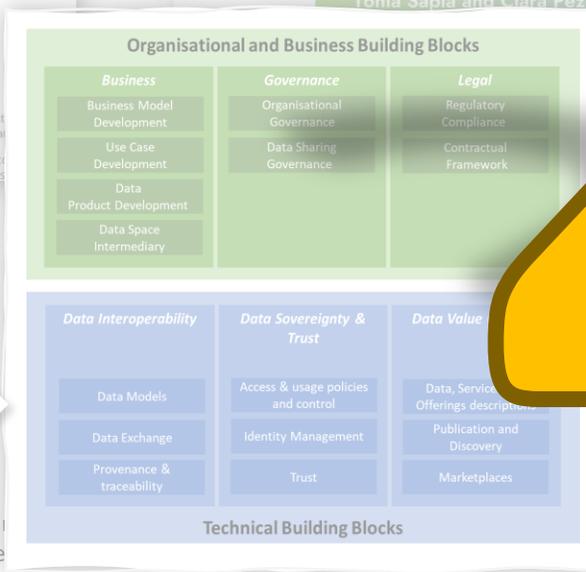
Through the Digital Europe Programme, the European Commission is investing in creating a data ecosystem by developing data sharing technologies, standards, legal and governance frameworks.

Introducing Blueprint 1.0: the evolution of Data Spaces

Voor het laatst bijgewerkt op 22 maart, 2024

DSSC Blueprint 1.0

Blogpost authors: Géraud Guilloud, Mirjam Tonia Sapia and Clara Pezuola.



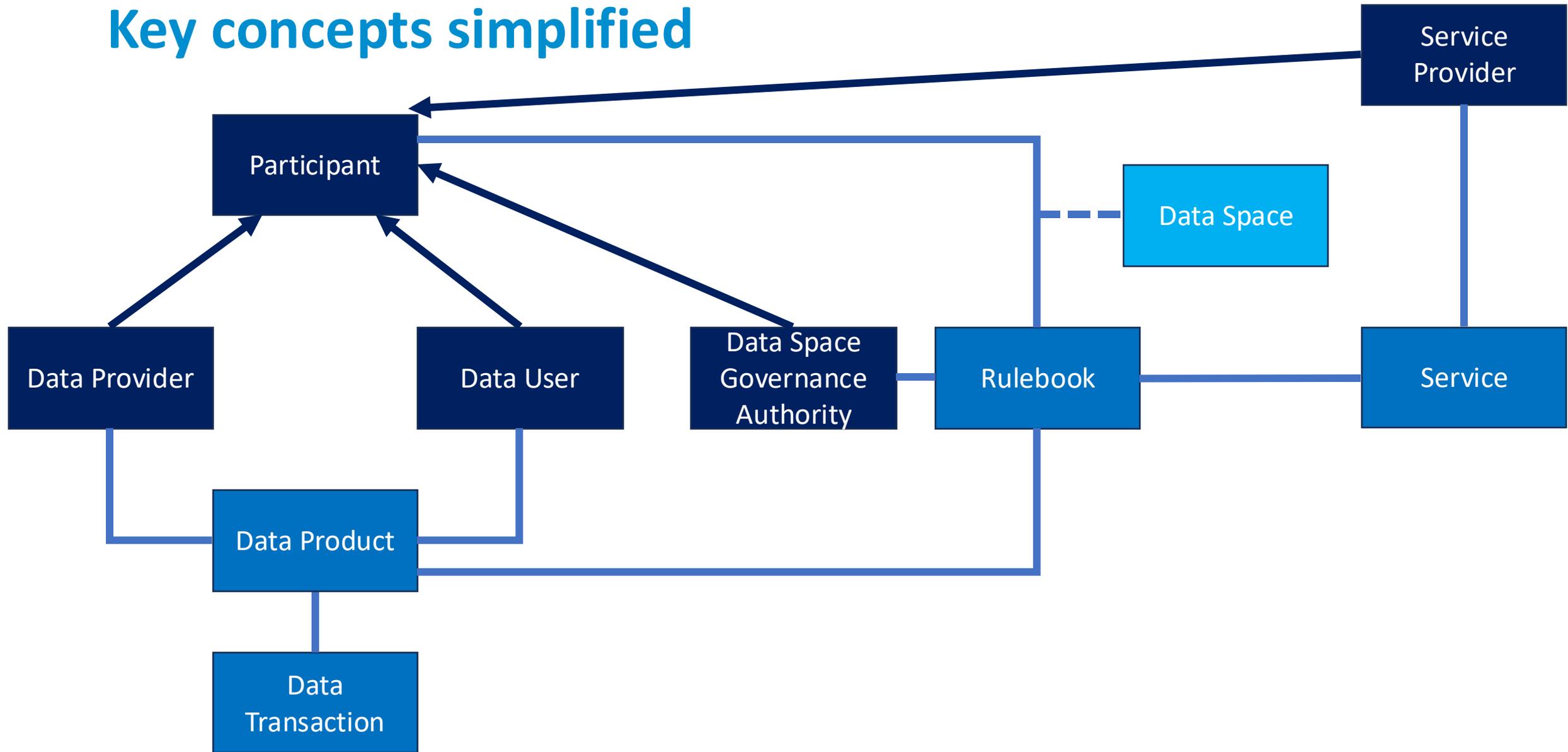
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Evolution

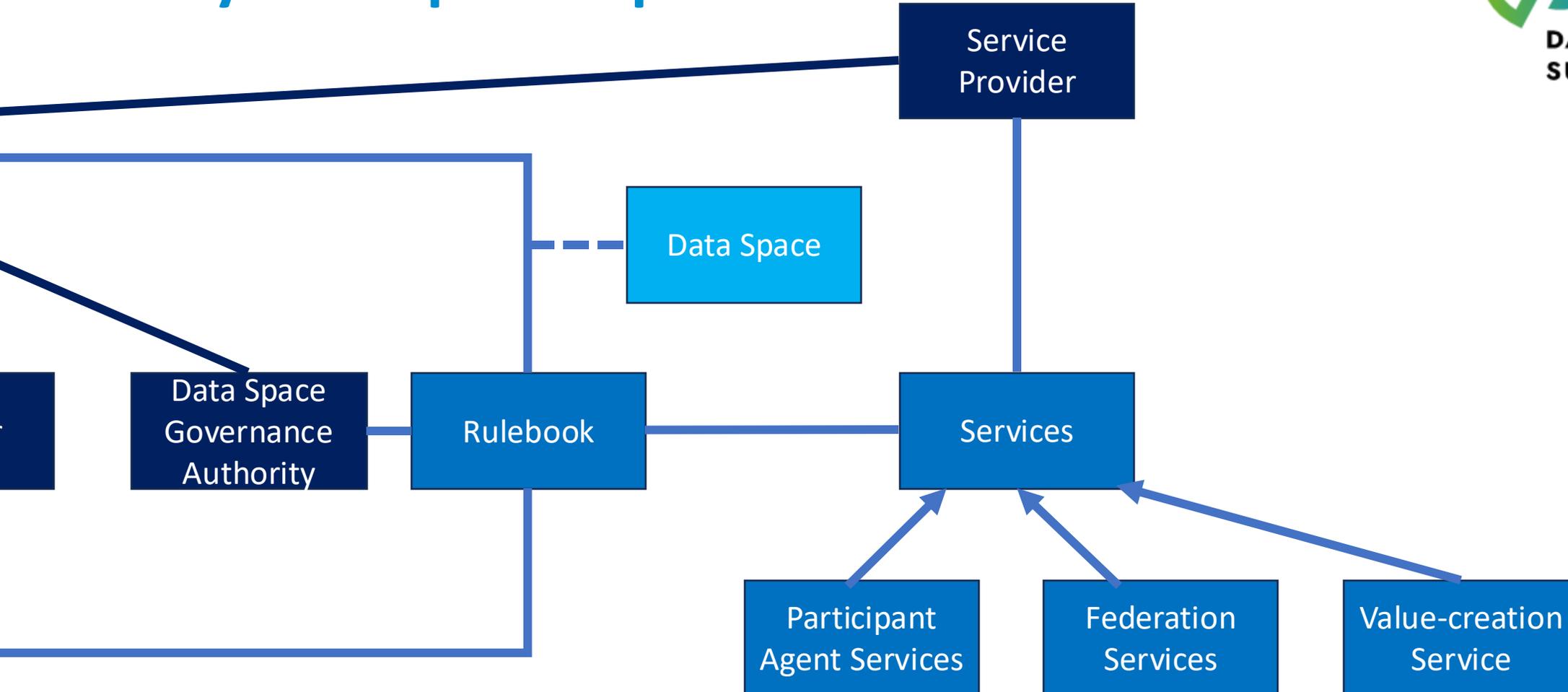
2.0

- ✓ Alignment with regulatory & standardisation developments
- ✓ New content in various building blocks
- ✓ Convergence of technical standards & services
- ✓ Cross-dataspace interoperability
- ✓ Input & validation by our Community of Practice

Key concepts simplified

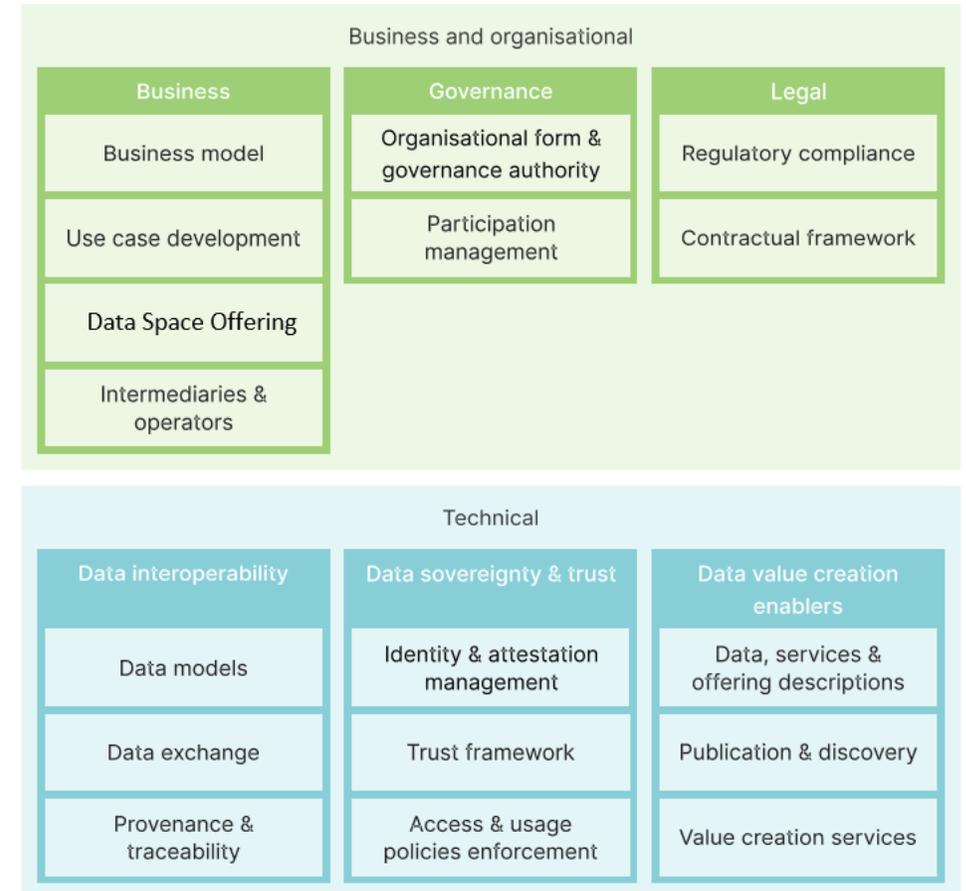


Key concepts simplified

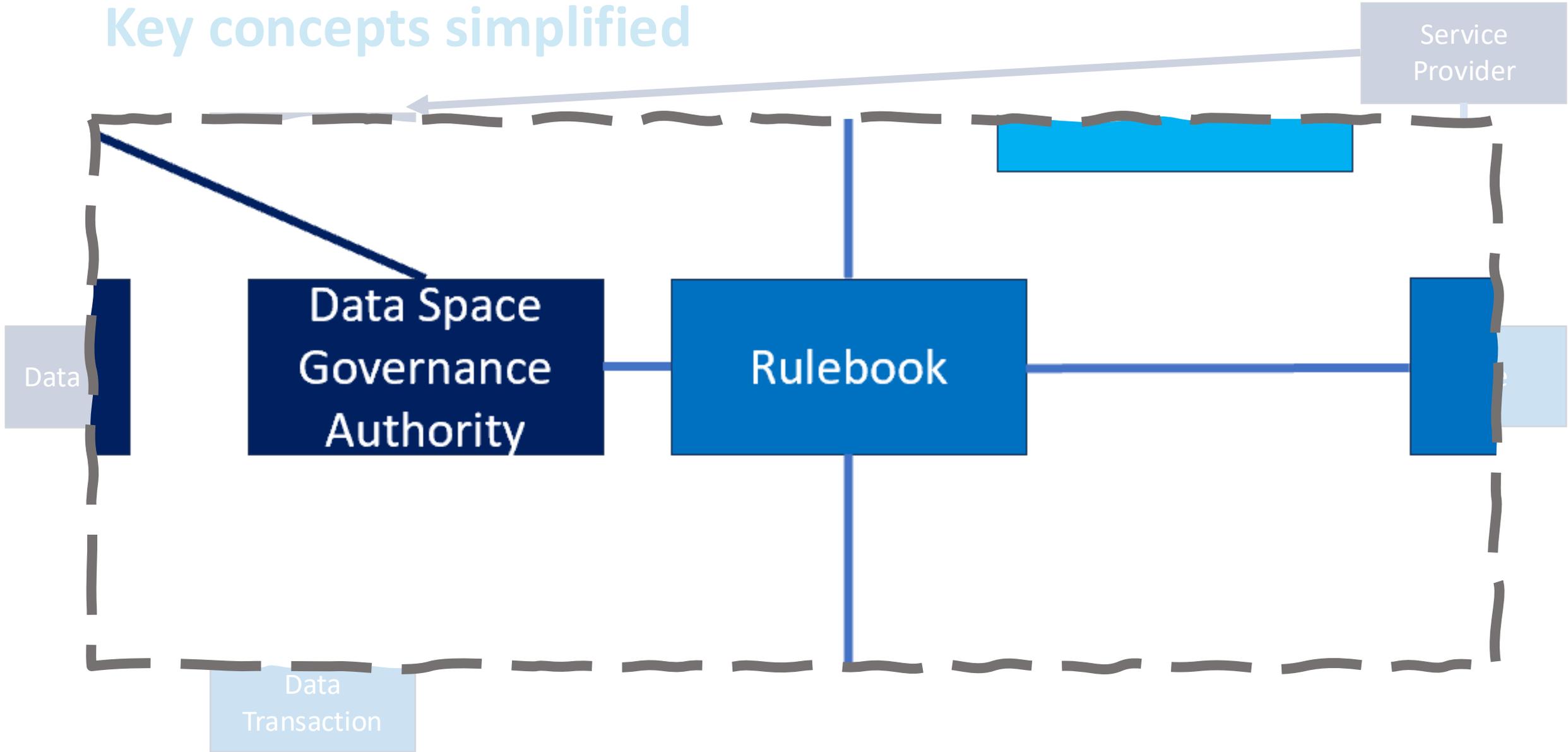


What is a blueprint?

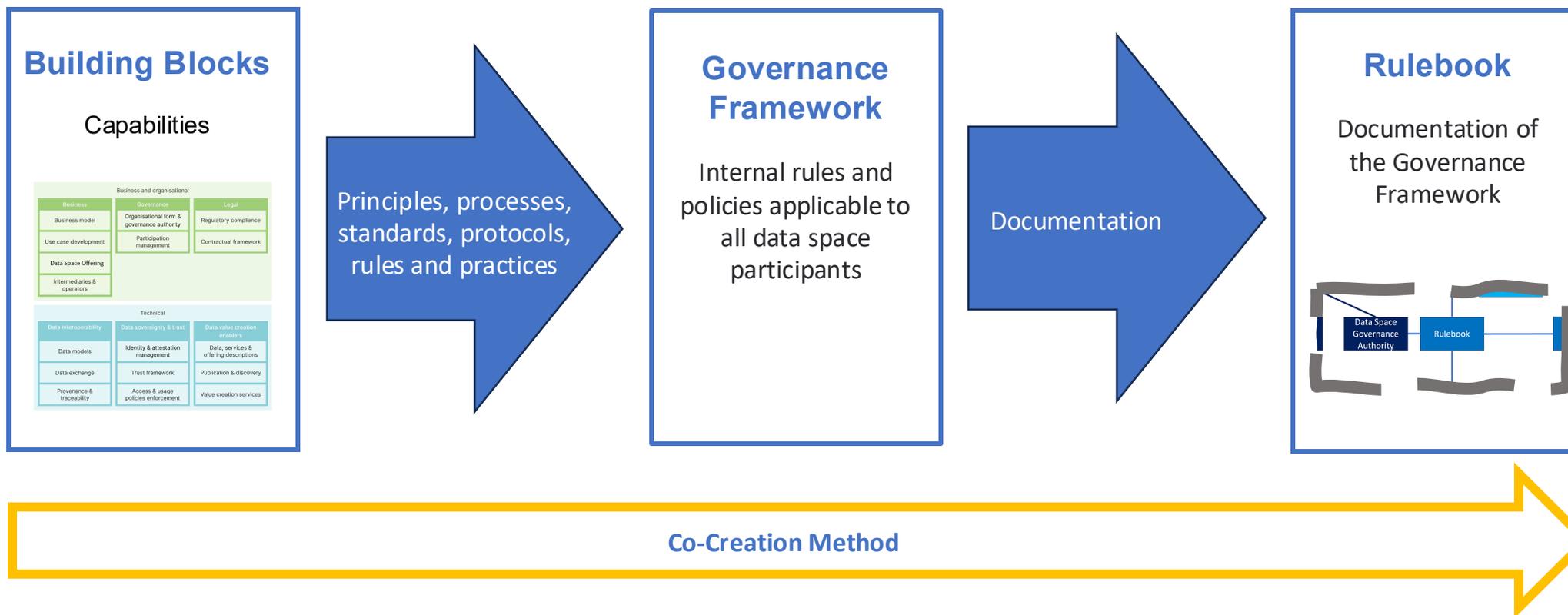
- Building block = required capability for a data space
 - Business & organisational
 - Technical
- Common specifications
- Co-Creation Method: design decisions for individual data spaces



Key concepts simplified

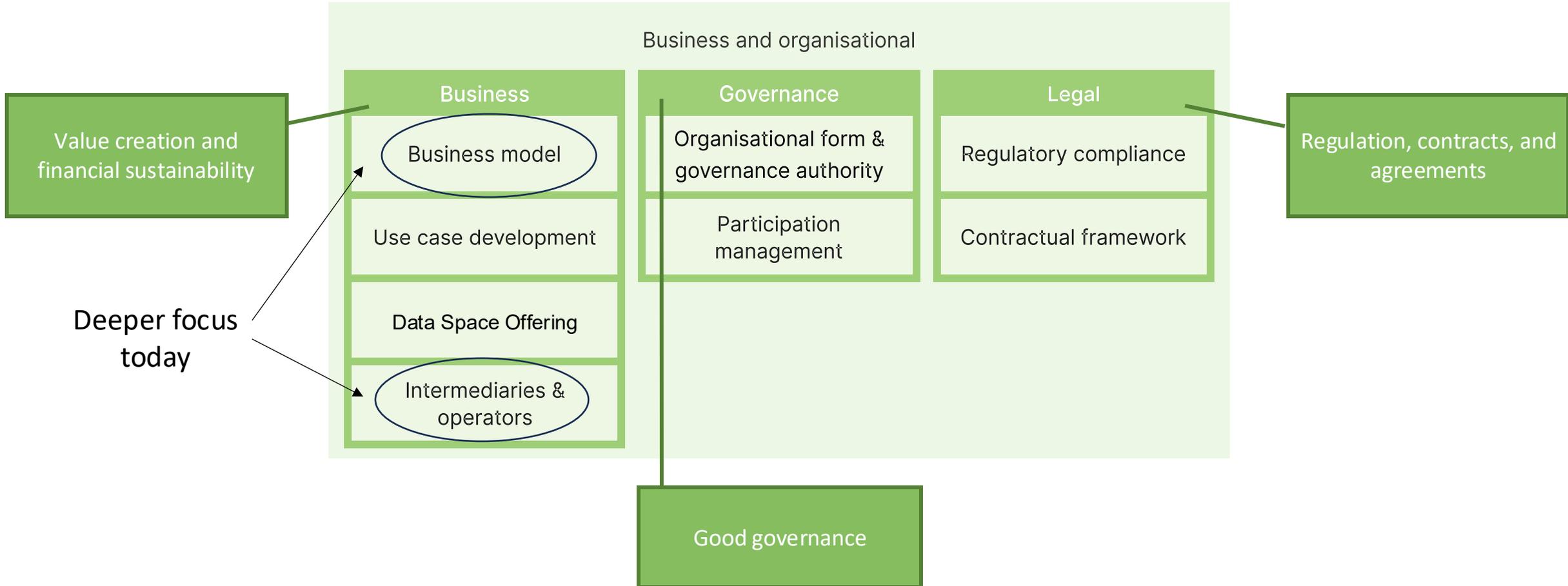


Building blocks feed into governance framework and rulebook



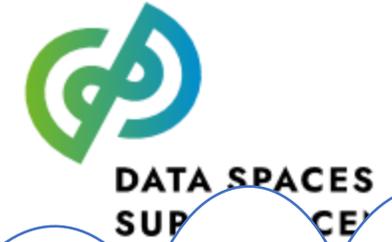
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Business & organisational building blocks



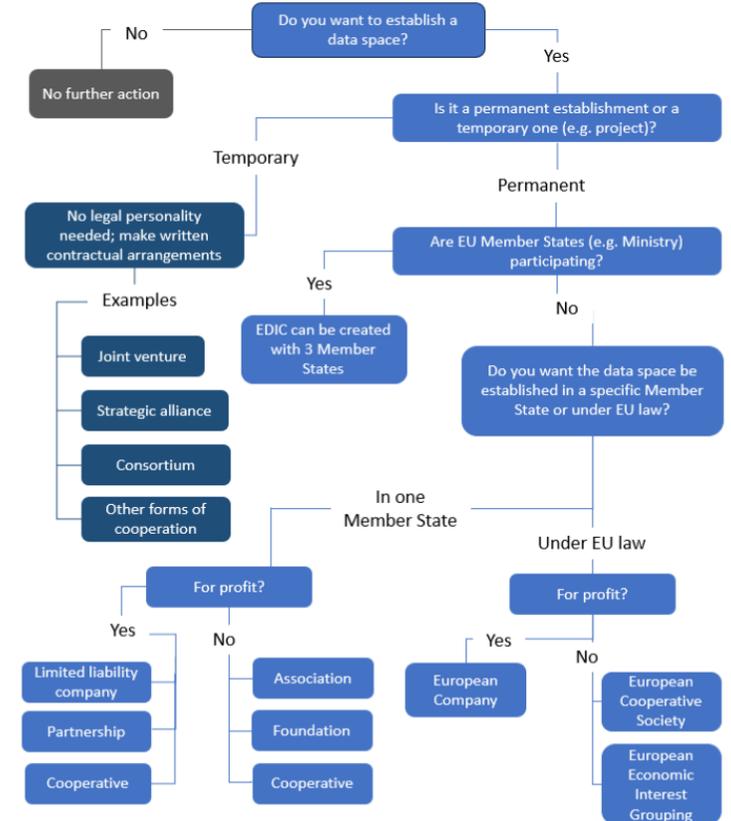
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Organisational Form and Governance Authority



Organisational form and governance authority building block helps choose organisational form, create governance framework, and create governance authority.

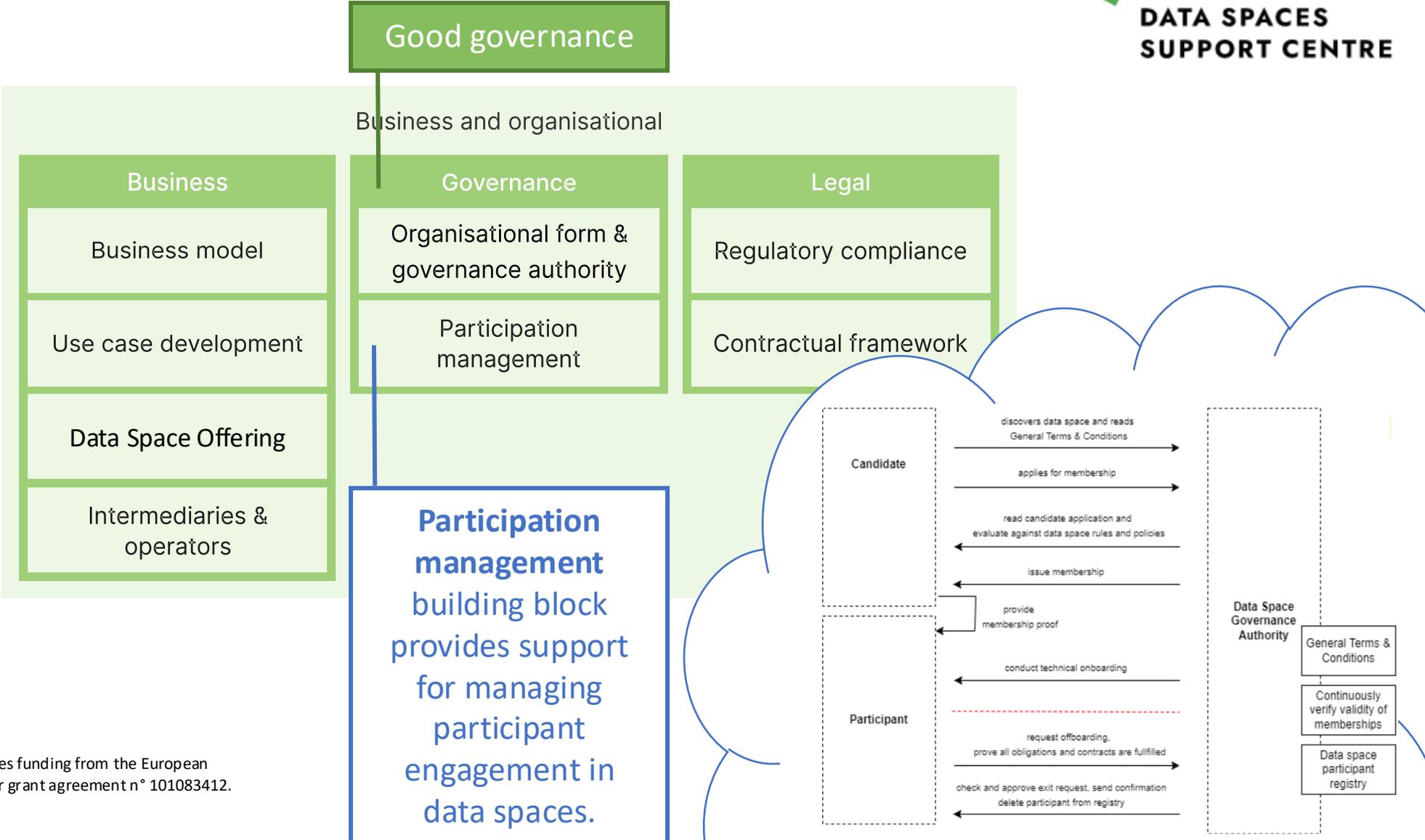
Decision tree for organisational form



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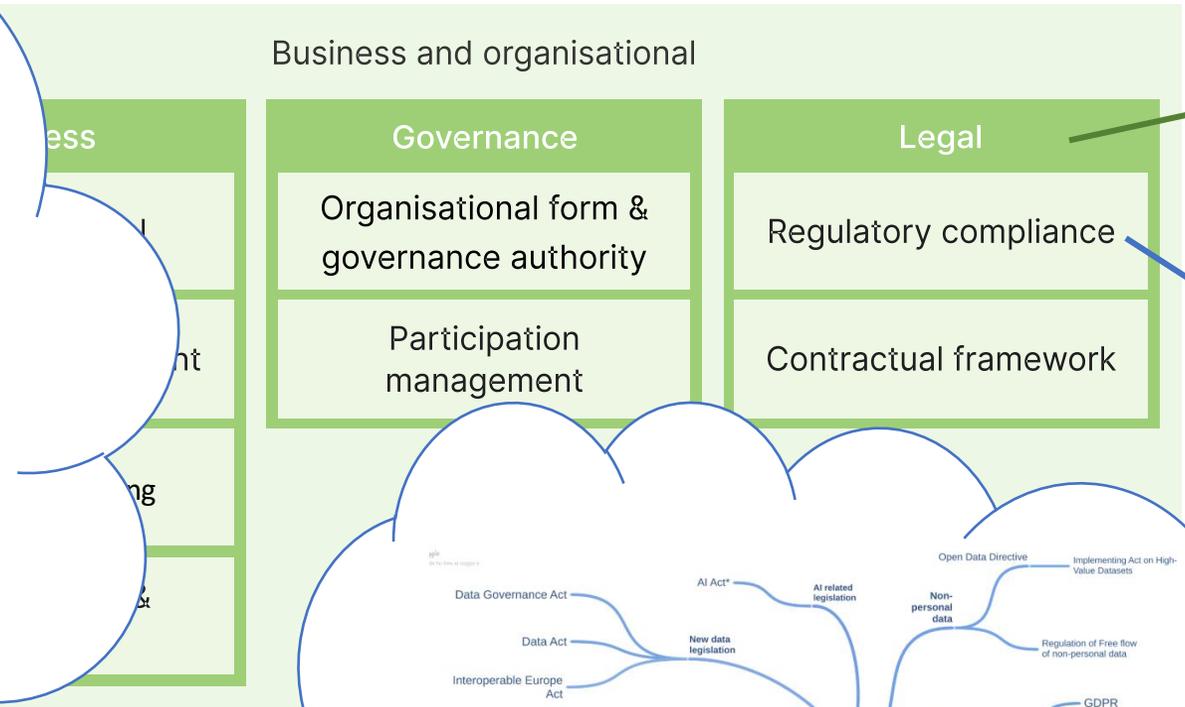
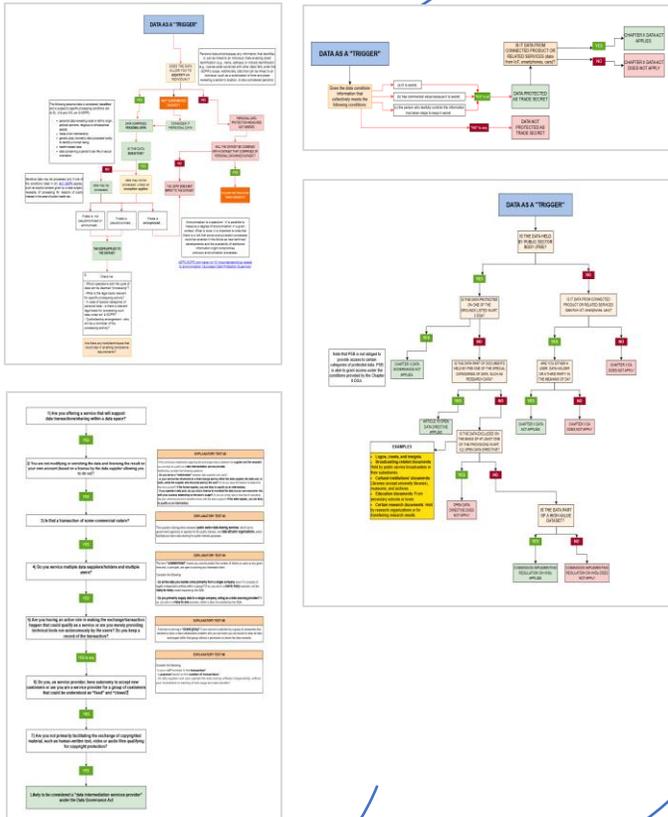
Participation Management



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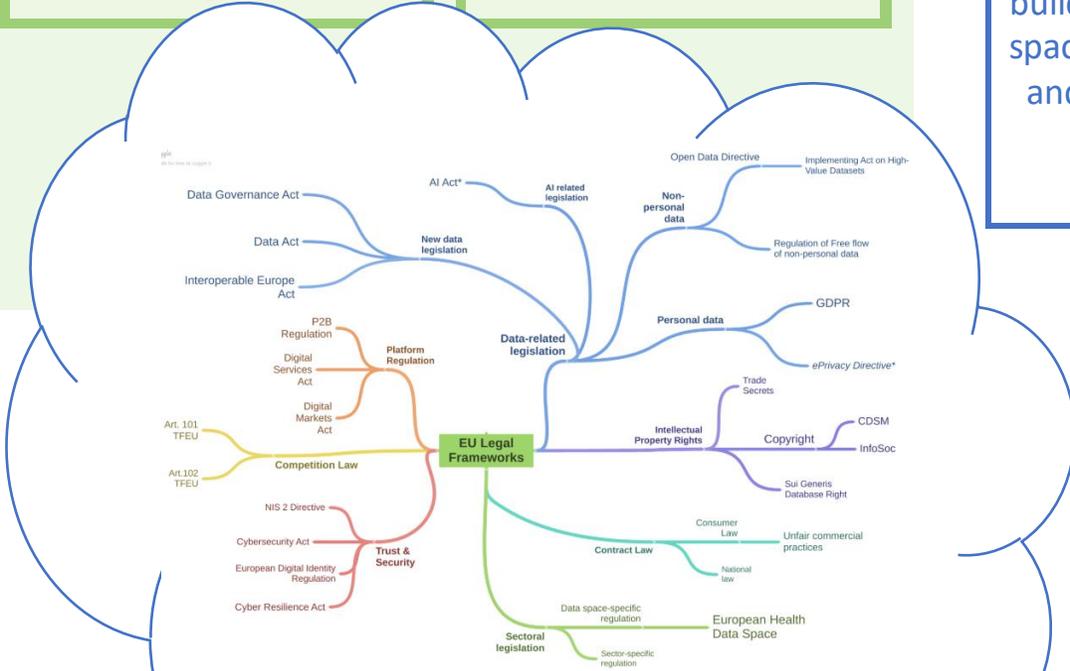


Regulatory Compliance



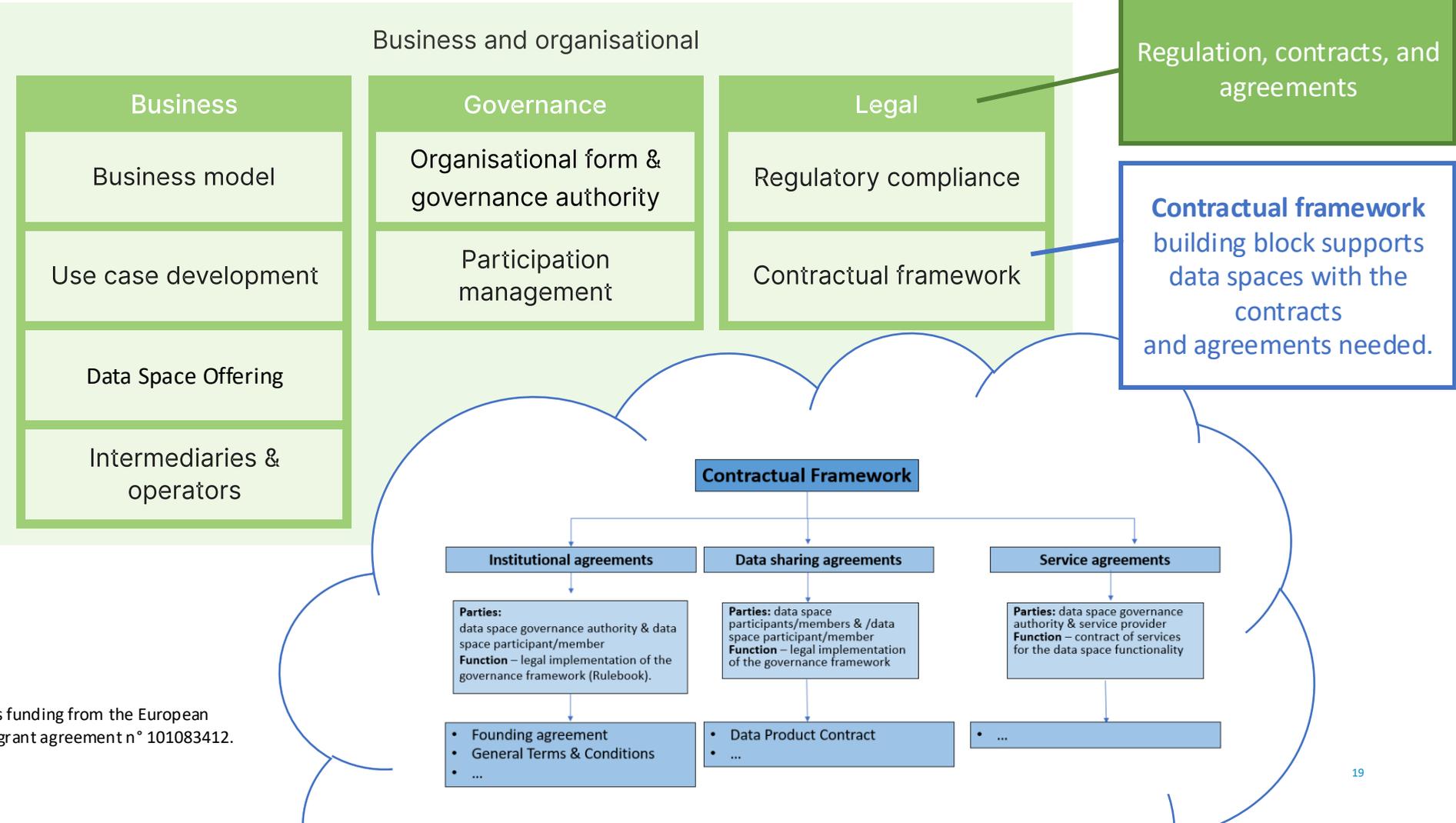
Regulation, contracts, and agreements

Regulatory compliance building block guides data spaces to apply legal rules and ensure compliance.



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Contractual Framework



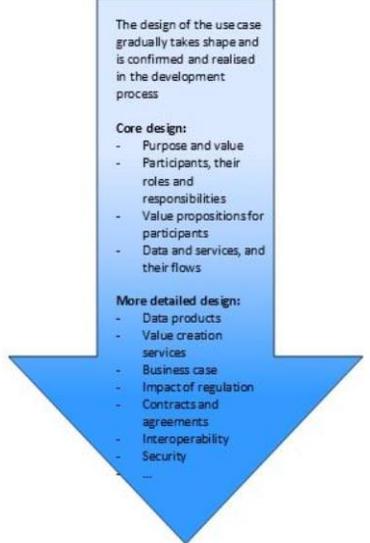
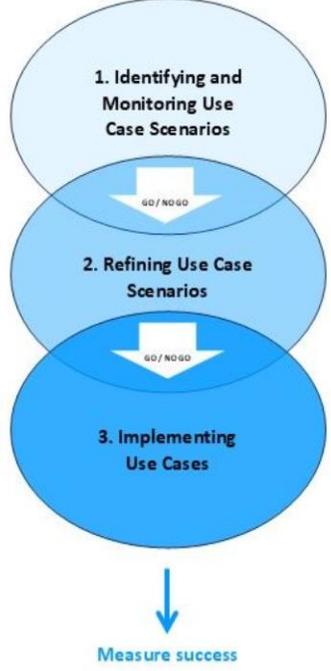
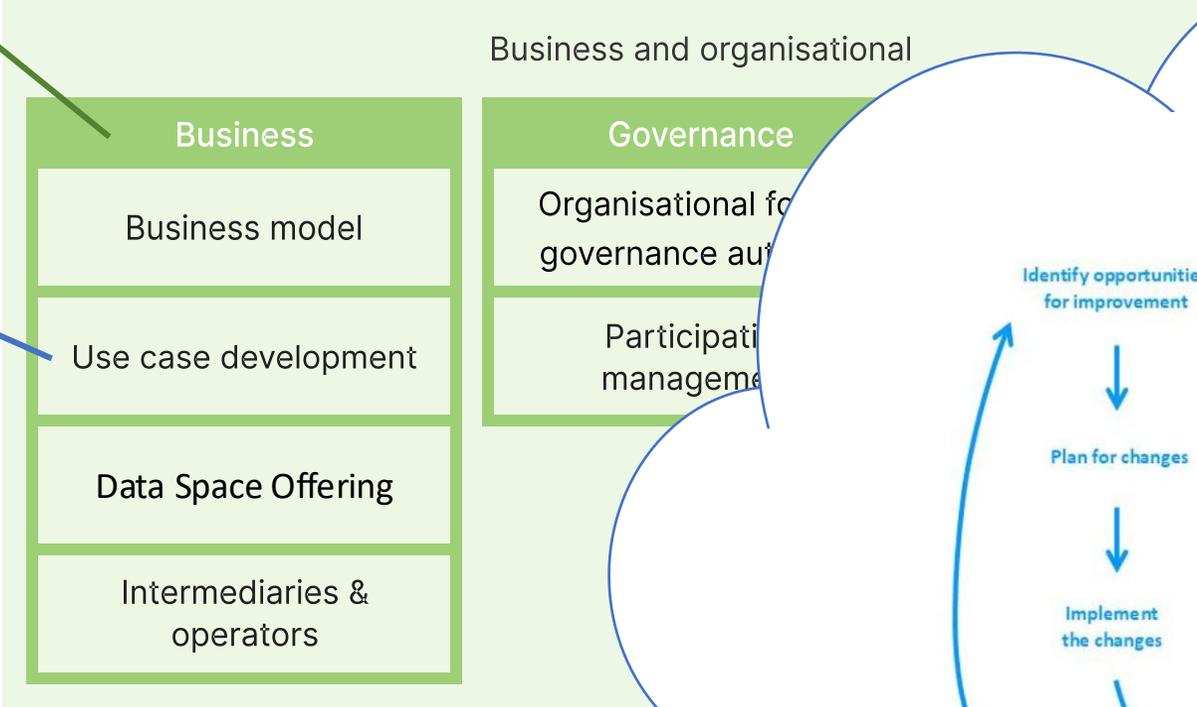
The Data Spaces Support Center receives funding from the European Union Digital Europe Programme under grant agreement n° 101083412.

Use Case Development



Value creation and financial sustainability

Use case development building block provides process guidance on how to develop use cases.



4. Continuous Improvement Process
Throughout the Life Cycle of Use Cases:
Development → Introduction to market → Growth → Maturity → Decline

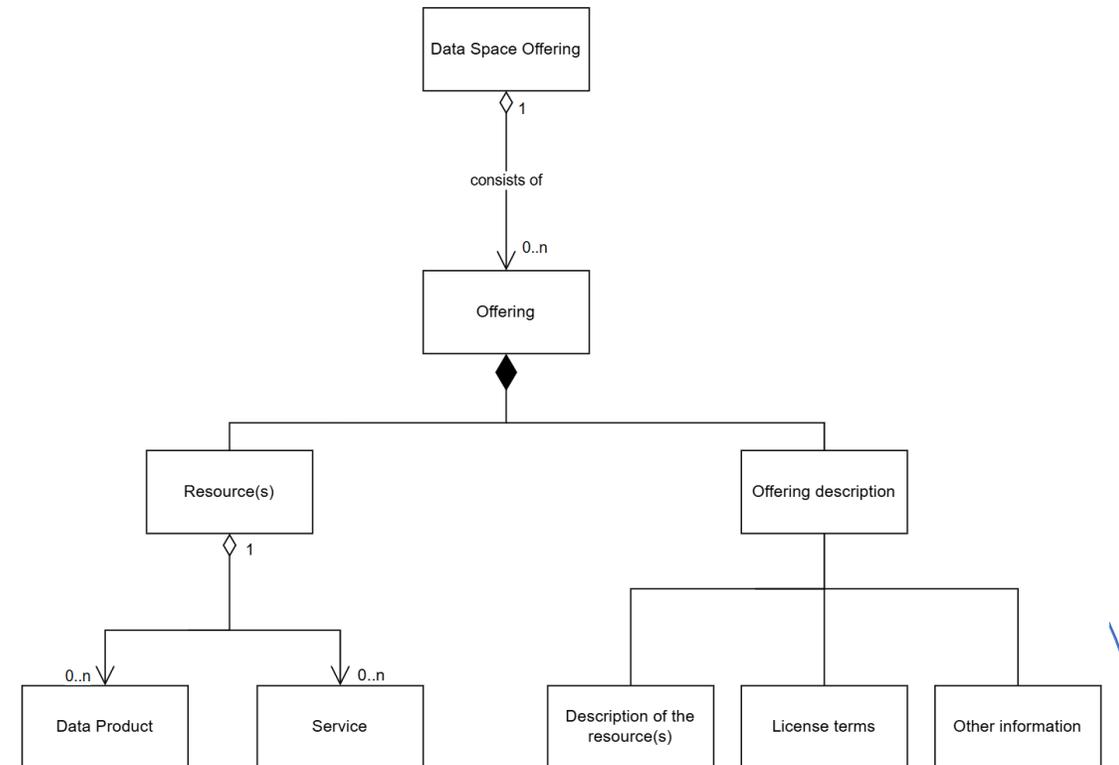
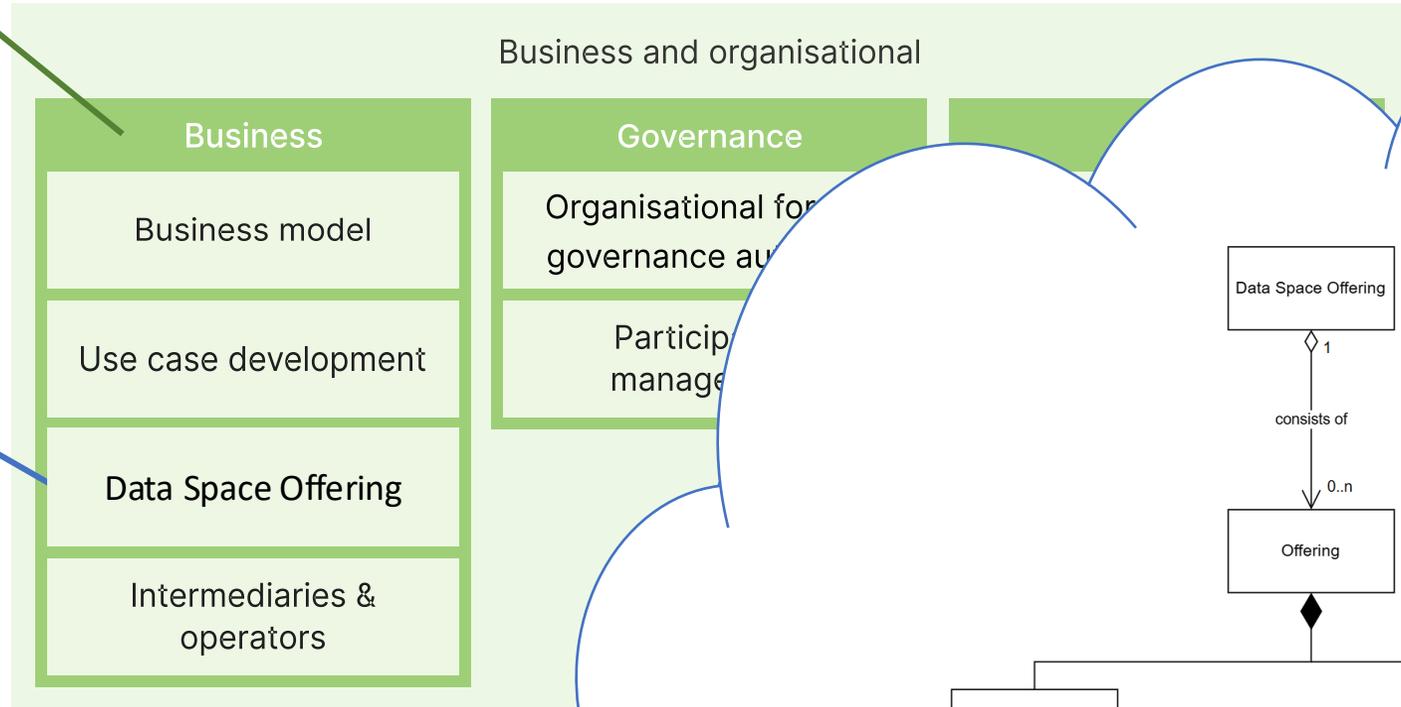
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Data Space Offering

Value creation and financial sustainability

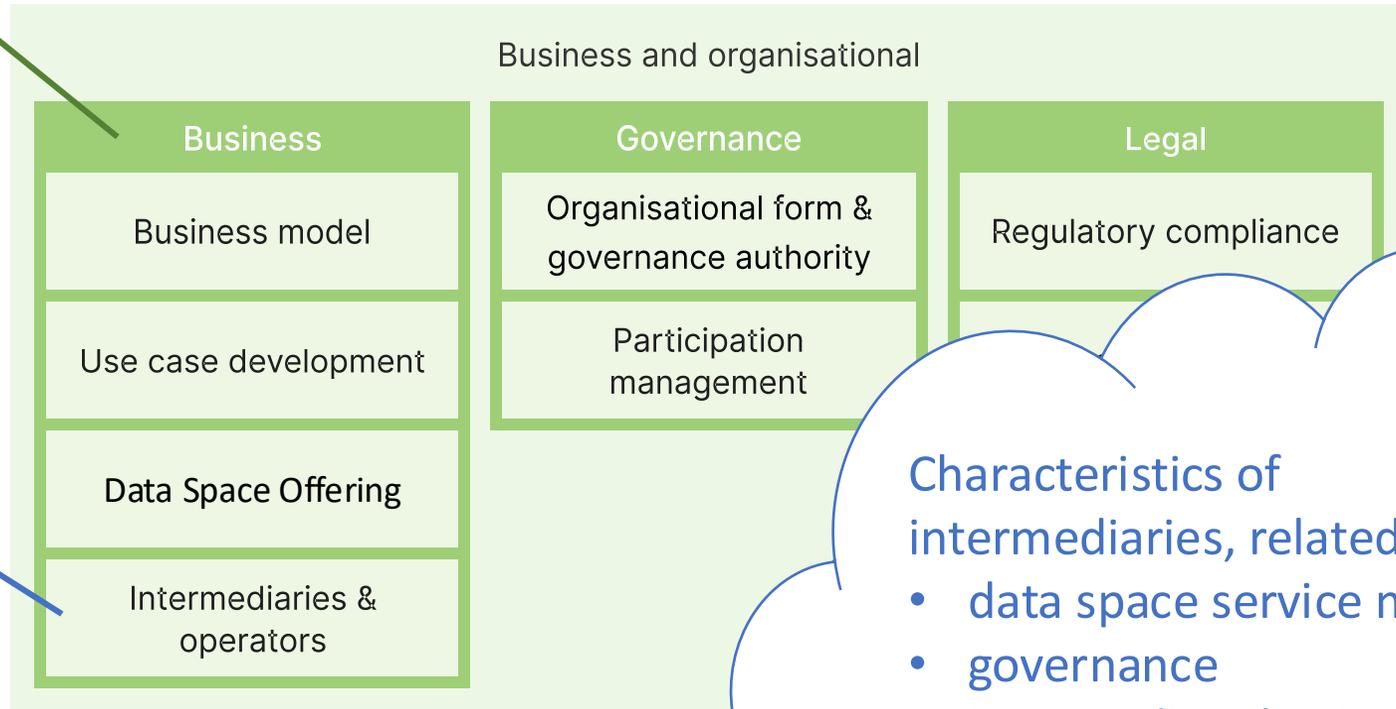
Data space offering building block supports data spaces with the services and data products that are offered through a catalogue.



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Intermediaries and Operators

Value creation and financial sustainability



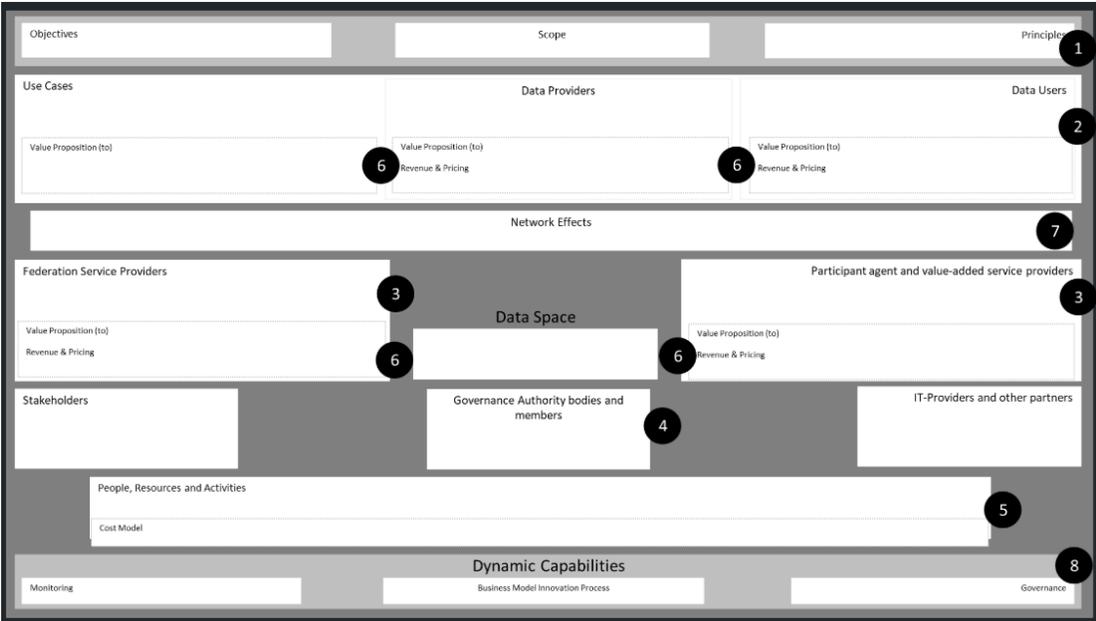
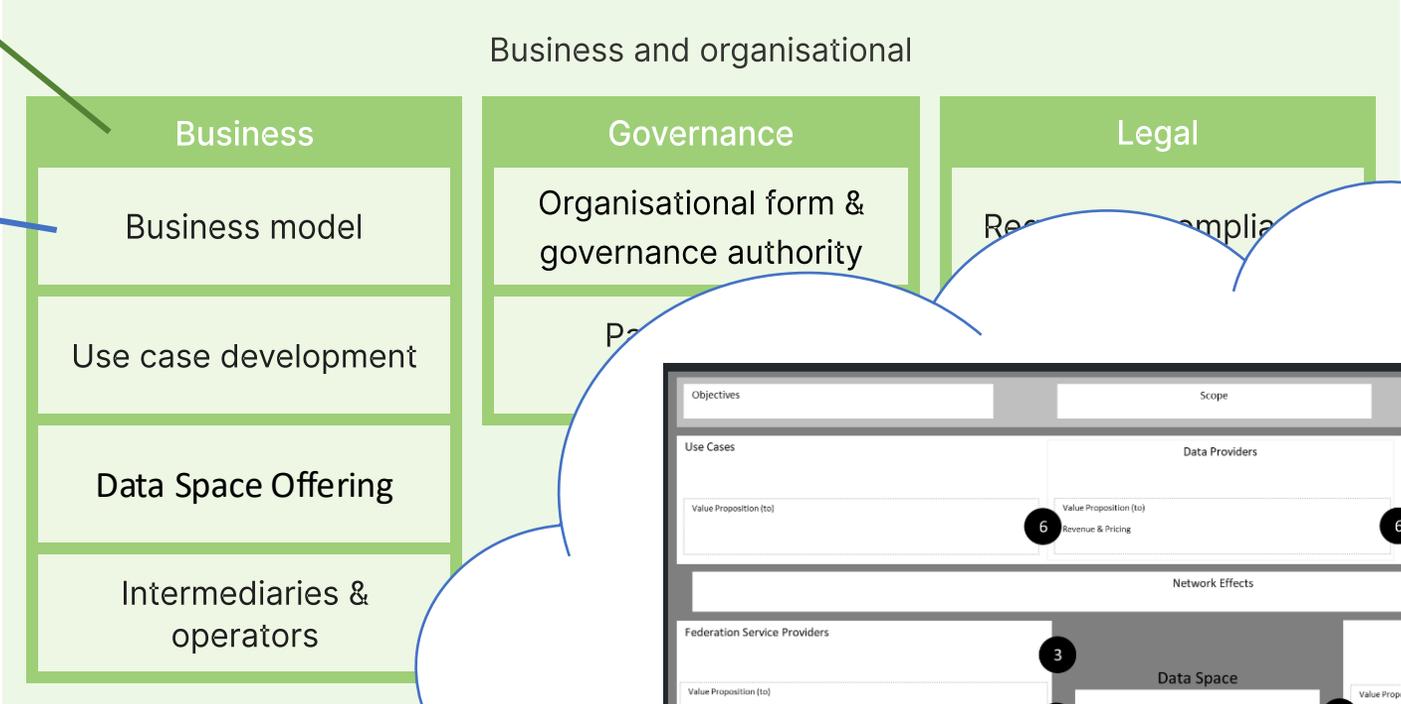
Intermediaries and operators building block helps data spaces to think of their options for using different kinds of intermediaries.

- Characteristics of intermediaries, related to
- data space service model
 - governance
 - intermediary business and revenue model
 - regulatory compliance
 - risk management

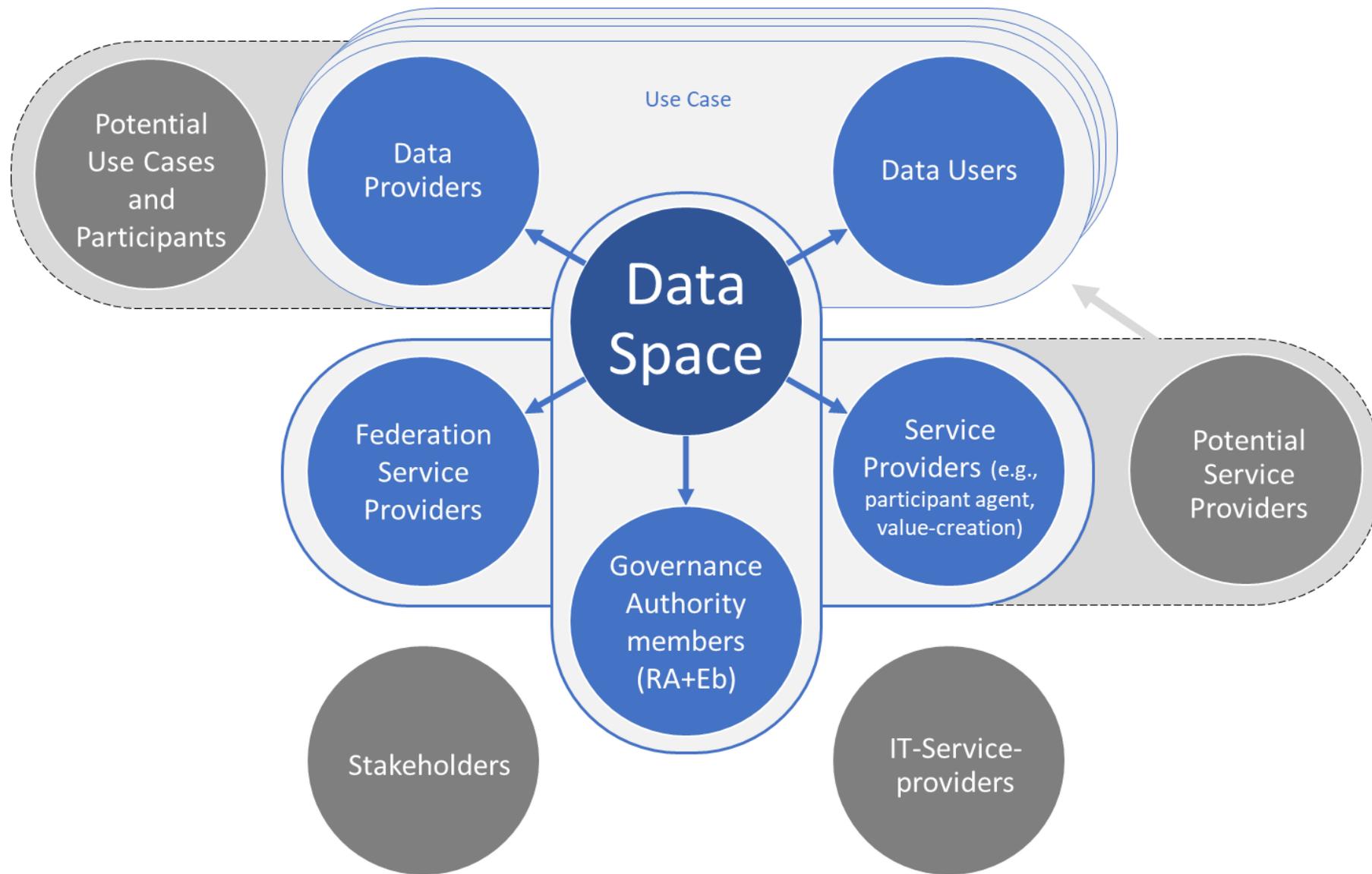
Business Model

Value creation and financial sustainability

Business model building block provides guidelines for a successful business model of a data space.

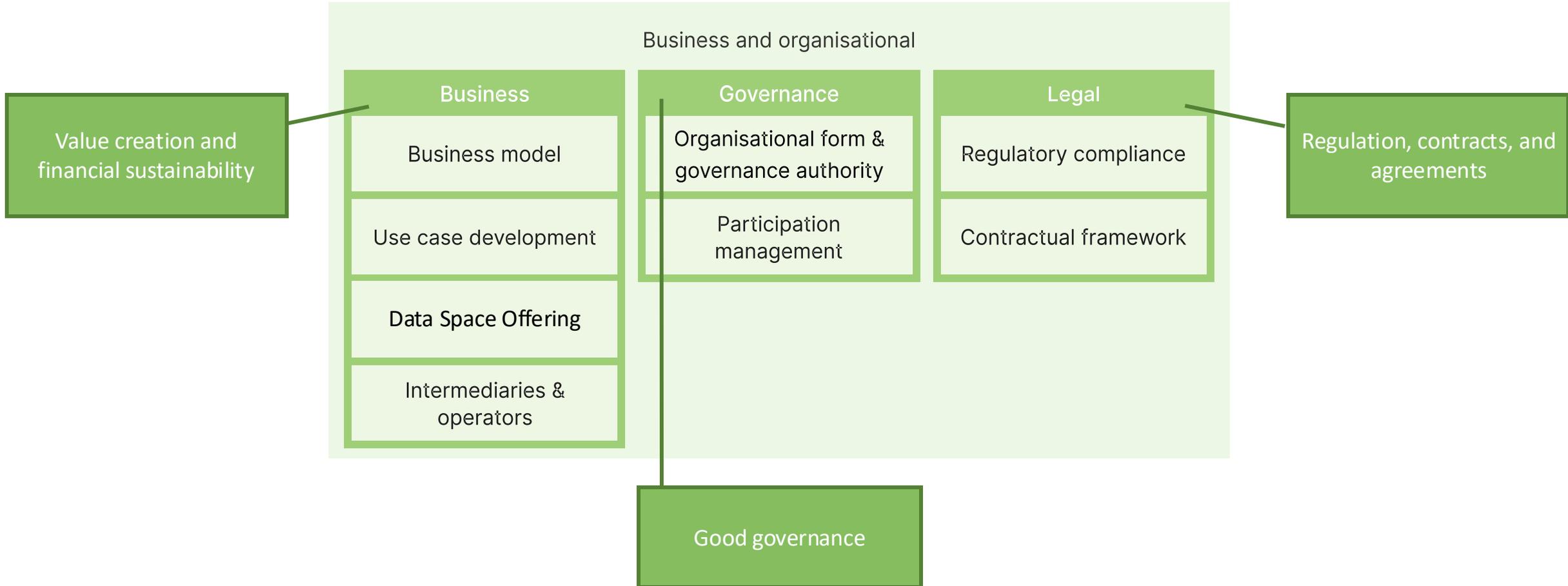


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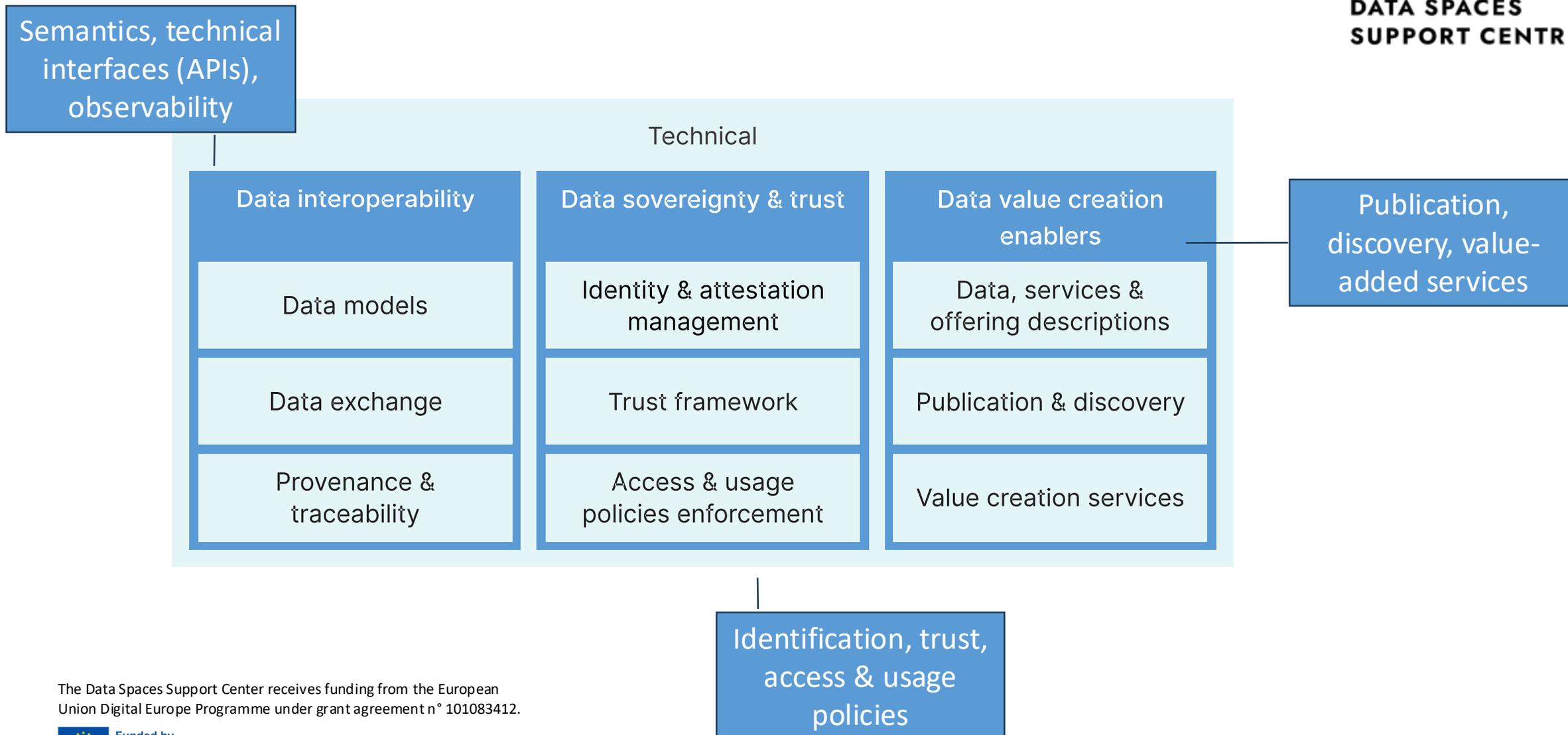
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Business & organisational building blocks



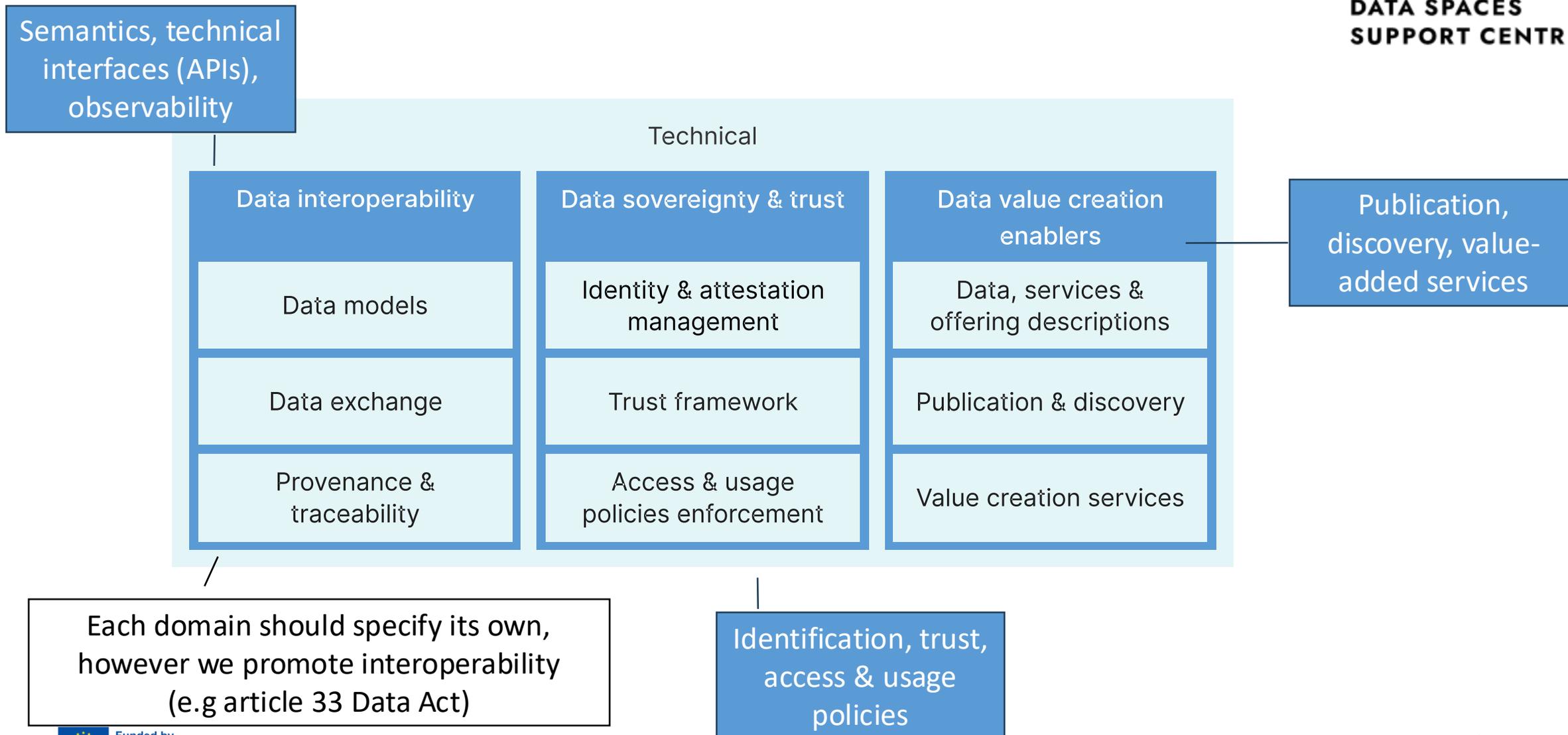
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Technical building blocks



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Technical building blocks



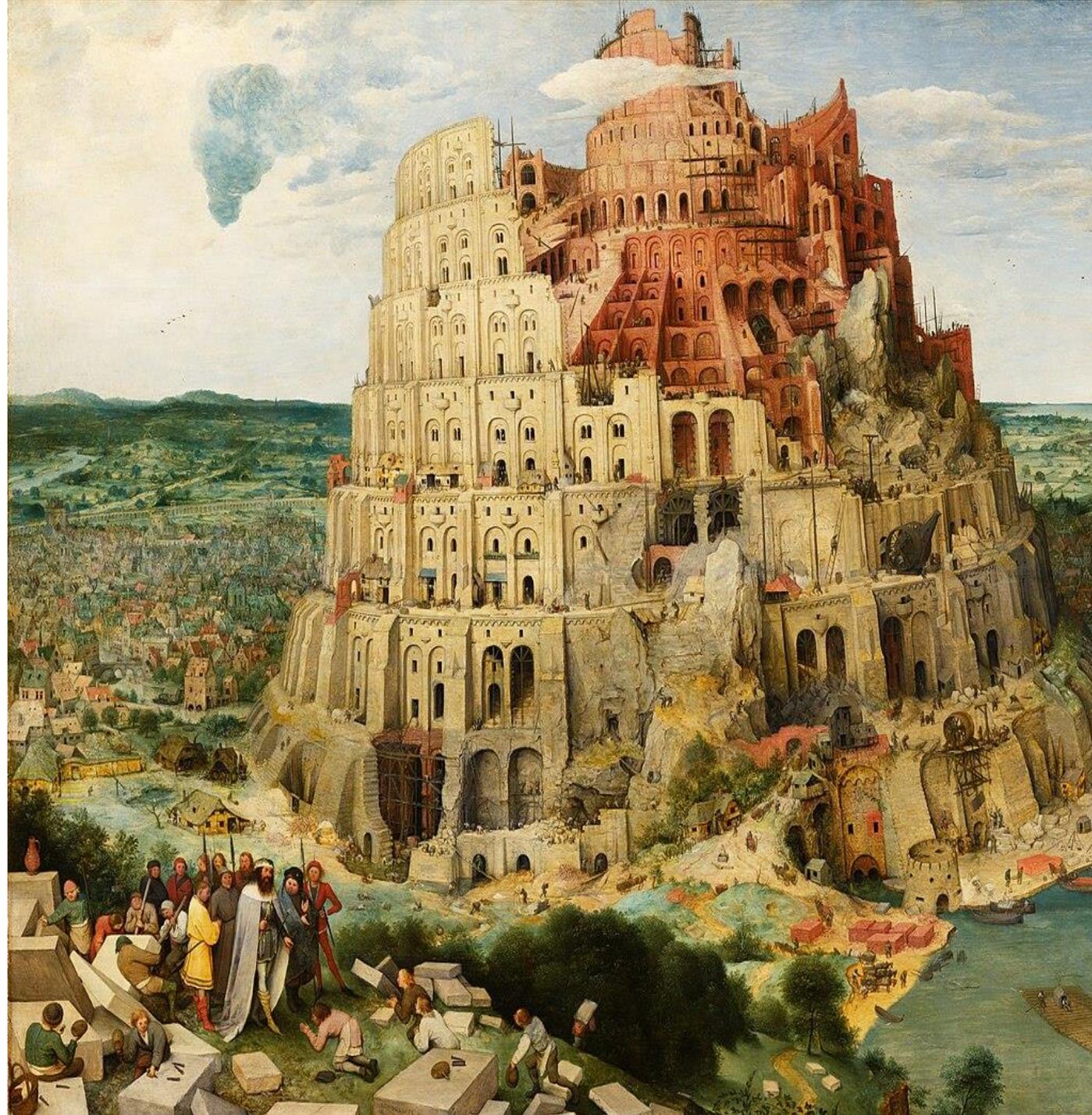
Why data models matter

Context: data offered in a catalogue, let the data sharing begin

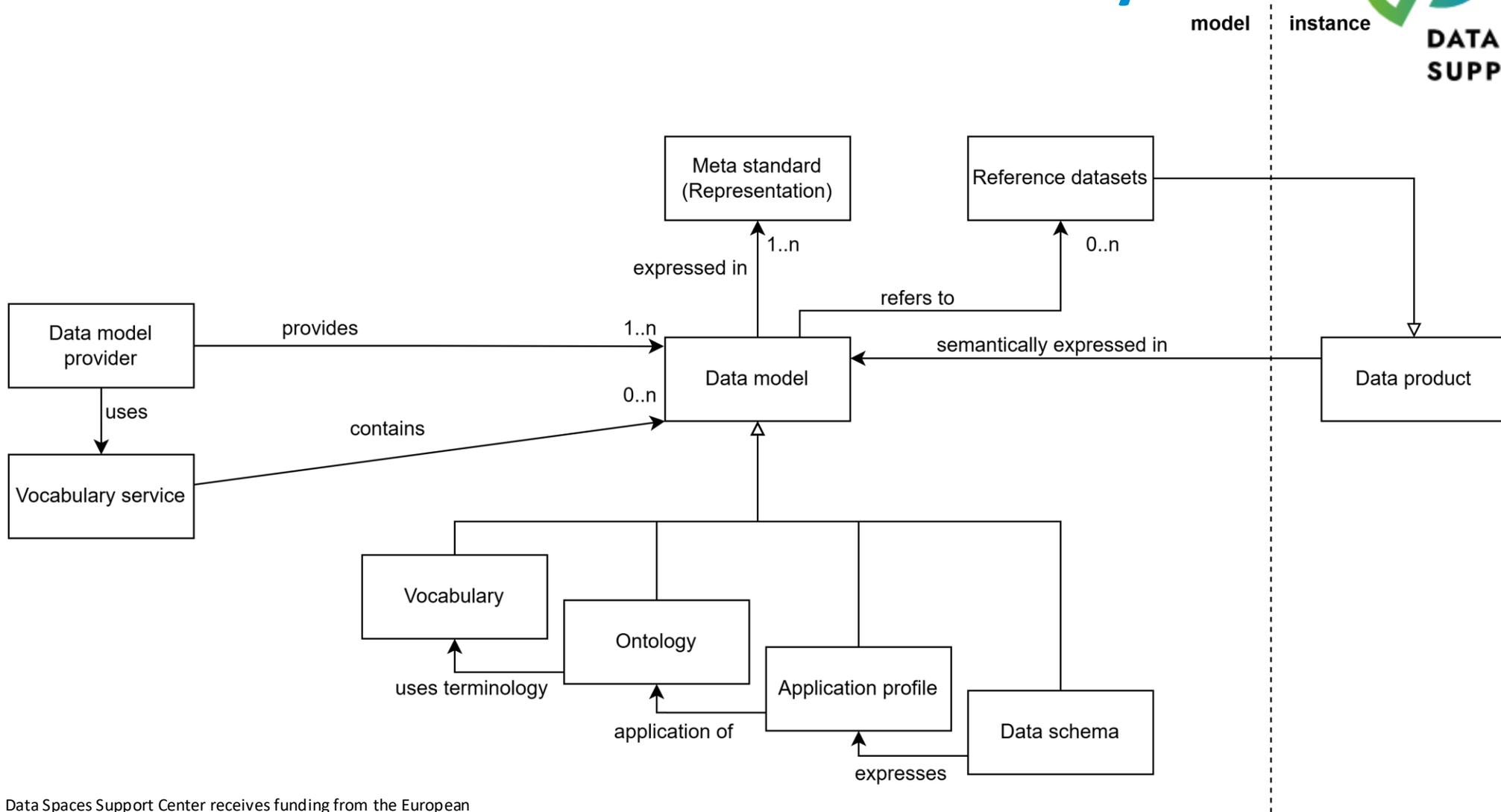
Problem: we are speaking different language, leading to misinterpretation

Solution: data models create a shared structure that enable accurate data exchange

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Data models in different abstraction layers



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What do data spaces initiatives need to do?

Implementing this building block

1

Evaluate the scope of your data products

2

Determine whether data models can be reused or should be developed

3

Decide upon the meta-standard for your data model

4

Decide upon the reference datasets for your data model

5

Decide upon the governance of the data model

6

Select and acquire tooling support (vocabulary service)

Vocabulary Service

Check it out: <https://toolbox.dssc.eu/>

The screenshot displays the Vocabulary Service interface, which is organized into several main sections:

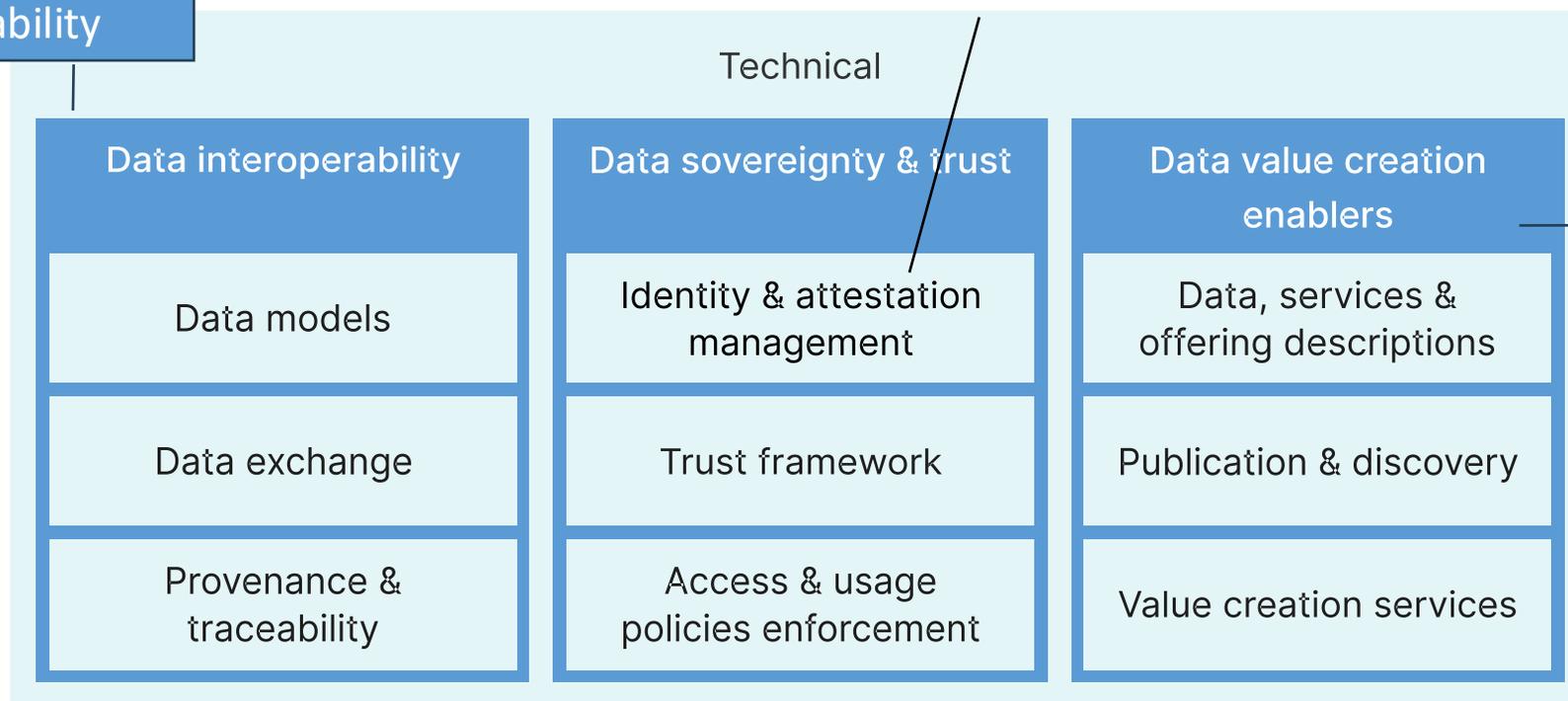
- Left Sidebar:** Contains the SCSN logo and navigation links for Specifications, Codelists, Validator, Issues, Groups, People, Organizations, Accounts, Business rules, Message mappings, Uploads, SCSN website, SCSN docs (gitbook), and Contact.
- Top Navigation:** Shows 'Specifications' and 'Message specifications' with a dropdown menu. The 'Message specifications' section is currently selected, showing a group of 'SCSN public'.
- Message Specifications List:** A list of message specifications is shown. The 'Order message' entry is highlighted with a red box. It includes a green checkmark icon, the title 'Order message', a description: 'This part of the standard contains all concepts used in the process of placing new or changing...', version 'v2.0', and options for 'Tree view' and 'Validate'. Below it, the 'Invoice' entry is visible, labeled as 'EXTERNAL', with a description: 'Message model for e-invoicing according to the European Norm for e-invoicing. For the use within...', version 'v1.0', and options for 'Tree view' and 'Validate'.
- Order message Detail View:** Shows the selected 'Order message' specification. It includes a search bar with 'CTRL+K' and a filter icon. The specification details are listed as follows:
 - 1...1 Order message
 - 1...1 ID
 - 1...1 Issue date
 - 1...1 Order type
 - 0...n Note
 - 0...1 Quotation reference
 - 0...n Additional document reference
 - 0...1 Contract reference
 - 1...1 Buyer customer party
 - 1...1 Seller supplier party
 - 1...1 Accounting customer party
 - 0...1 Delivery terms
 - 0...1 Payment terms
 - 0...1 Transaction conditions
 - 0...n Allowance charge
 - 0...1 Total amount
 - 1...n Order line

- Right Panel:** Provides detailed information for the selected 'Order message' specification.
- ID:** scsn:OrderMessage > scsn:ID
- Definition:** An identifier for this document, assigned by the sender of this message.
- Type:** IdValueType
 - urn:scsn/core#IdValueType
- Usage notes:** For the Order Message this field will contain the ID given the buyer customer party. For the order response message this field will contain the ID for this order given by the seller supplier party. Note that the Order Response holds another field that conveys the ID of the Order Message as given by the buyer customer party.
- Example data:** <cbc:ID>123</cbc:ID> (with Expand and Copy icons)
- Issues:** No issues (with a + Create new button)
- Review comments:** No review comments (with a + Create new button)

Technical building blocks

Semantics, technical interfaces (APIs), observability

Common technical standards (based on W3C VCs), but governance mechanisms will differ per data space



Publication, discovery, value-added services

Identification, trust, access & usage policies

Three categories of trust

Trust among data space participants

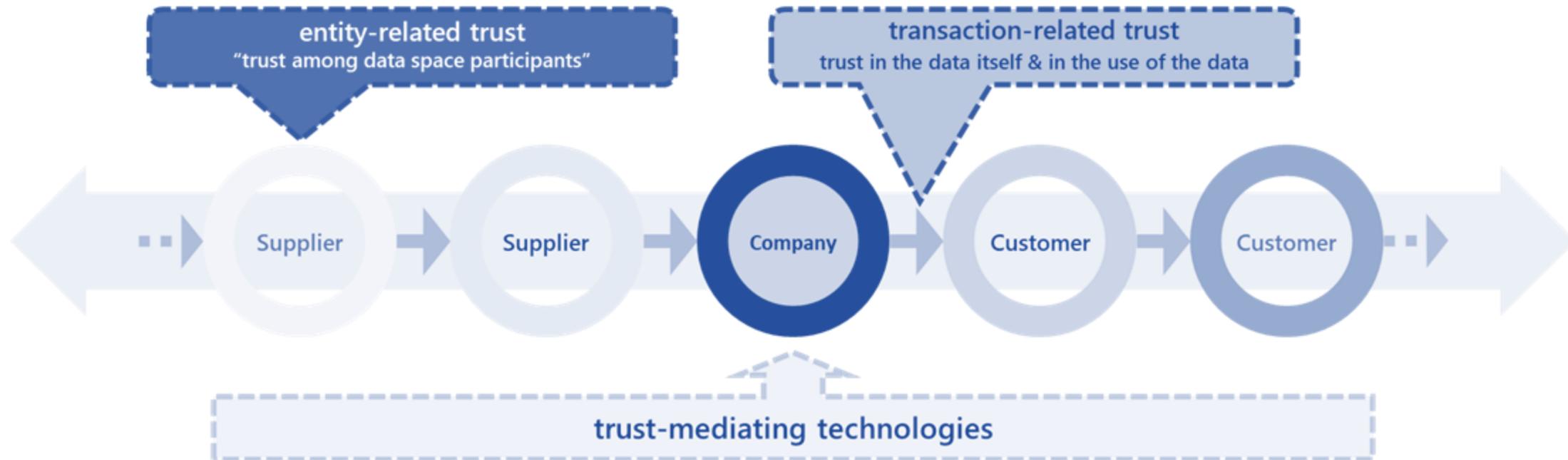
Data space participants need to trust the other parties (i.e., other participants) they interact with, including their identity and other relevant characteristics (ref. Data Sovereignty and Trust pillar, Blueprint v2.0).

Trust in data itself

Will be addressed in Blueprint 3.0.

Trust in the use of the data

Ref. Data Sovereignty and Trust pillar, Blueprint v2.0



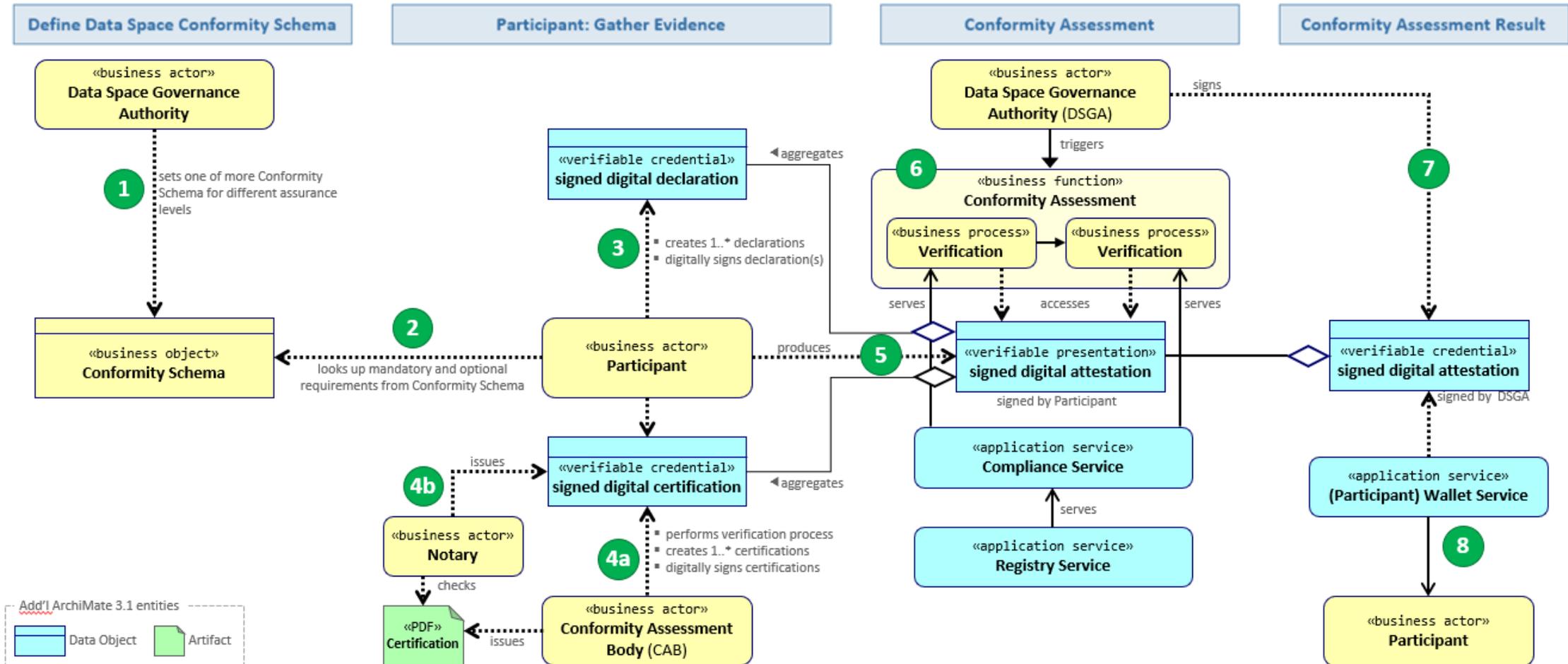
Using Trust Frameworks



- **Trust Frameworks** facilitate and accelerate data exchanges, supporting the growth of data spaces.
- **Simplifying and potentially automating compliance verification** enables broader participation in data spaces, particularly for **SMEs**.
- The **Data Space Governance Authority (DSGA)** is responsible for verifying compliance with the **Data Space Rulebook** (onboarding and issuance of Data Space Membership credentials).
- A **Trust Framework** consists of:
 - **Business-related policies, rules, and standards**, which are consolidated and documented in the **Data Space Rulebook**.
 - **Procedures for automation and implementation**, which support both the automation and the organisational implementation of the business-related components.
- It also includes the **identification of trust roles**, such as **trust anchors, trust service providers, trusted data sources, and notaries**.

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Conformity Assessment Workflow

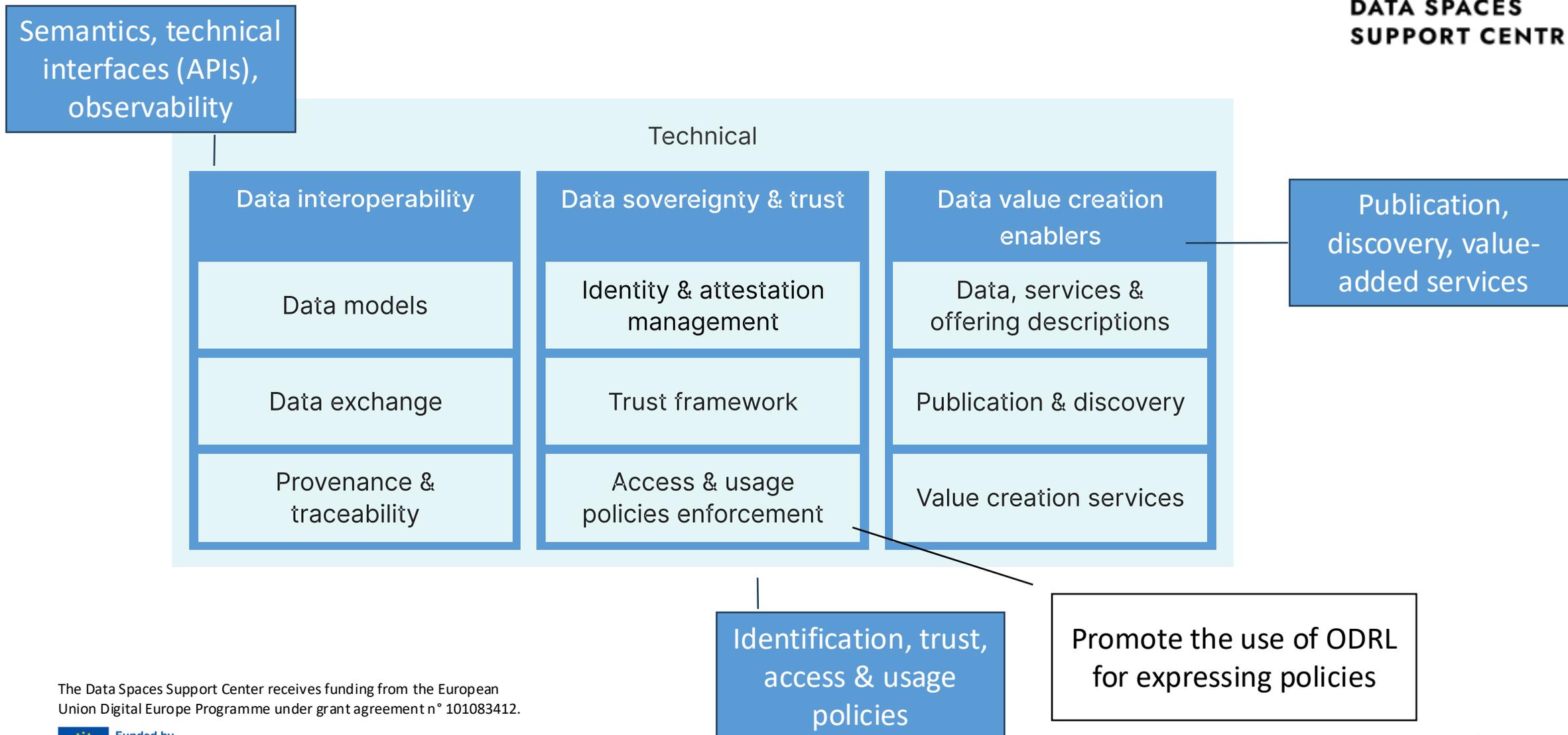


Common types of attestations in a data space



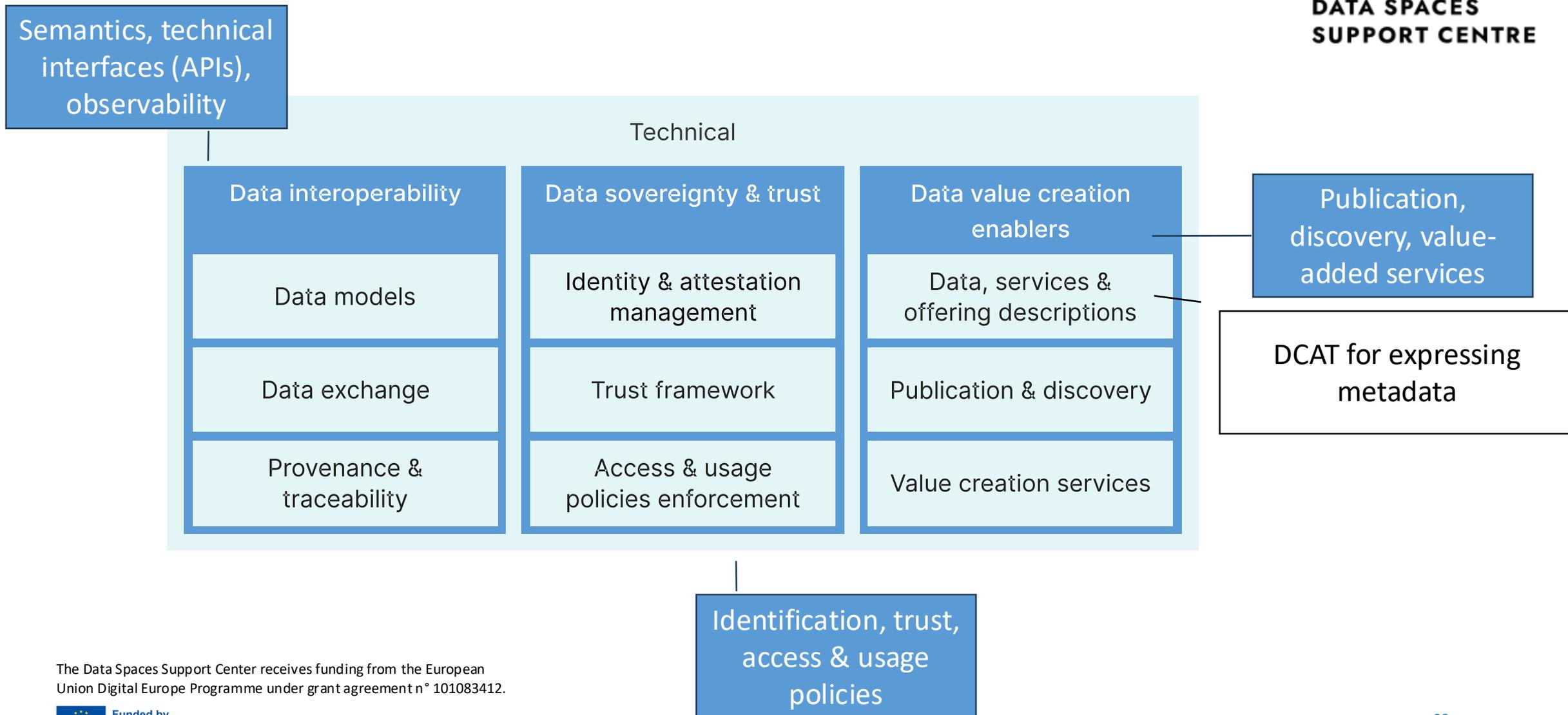
- **Identity attestations** (possible choice to rely on eIDAS QTSPs)
- **Membership attestation** (the DSGA acts as the Trust Anchor)
- **Compliance attestations** (including attestations related to data quality, usability, accuracy, and attestations related to value creation services offered within a data space)

Technical building blocks



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Technical building blocks



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Global & European Standards

Foundational (global) technical standards

- W3C DCAT → for describing your datasets and services
- W3C ODRL → for defining (technical) access and usage policies
- W3C VC/VP → for the exchange of identities and attestations
- W3C RDF → for specifying semantic models



Protocols

- Dataspace Protocol (DCAT/ODRL)
- Identity/Claims Protocols (VC/VP)
- Conformity Assessment Policy and Credential Profile (VC/VP)

(IDSA, Gaia-X, Eclipse and others)



Key technical specifications for data space services



Legal requirements

- Data Act (e.g. article 33)
- eIDAS
- Data Governance Act



Harmonised EU Standards

- CEN/CENELEC + ETSI
- JTC25
- Data Act standardisation request



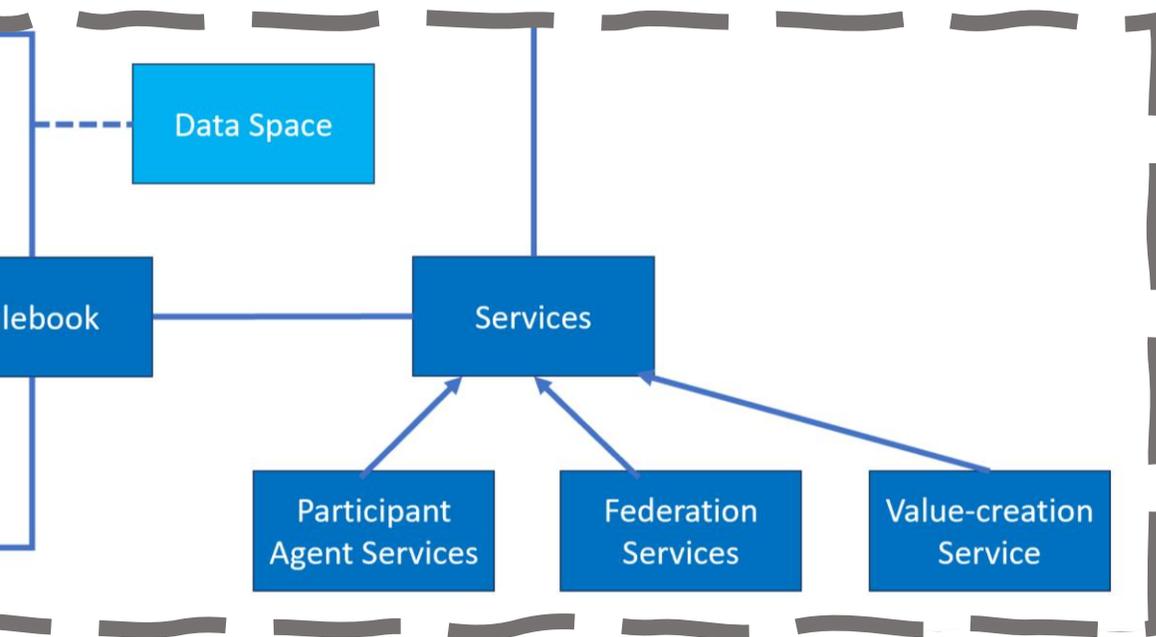
Domain specific choices

- Policies
- Data Models
- APIs



Technical rulebook for your data space initiative

Implemented using technical services



- **Participant Agent Services** → for participants to join a Data Space
- **Federation Services** → to support the interplay of participants
- **Value Creation Services** → services 'on top of' the Data Space

Where to start?



1. Read our introduction on key concepts
2. Use the Co-Creation Method
3. Apply the specifications in the building blocks
4. Use the DSSC Toolbox



Happy to help

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Q&A

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