

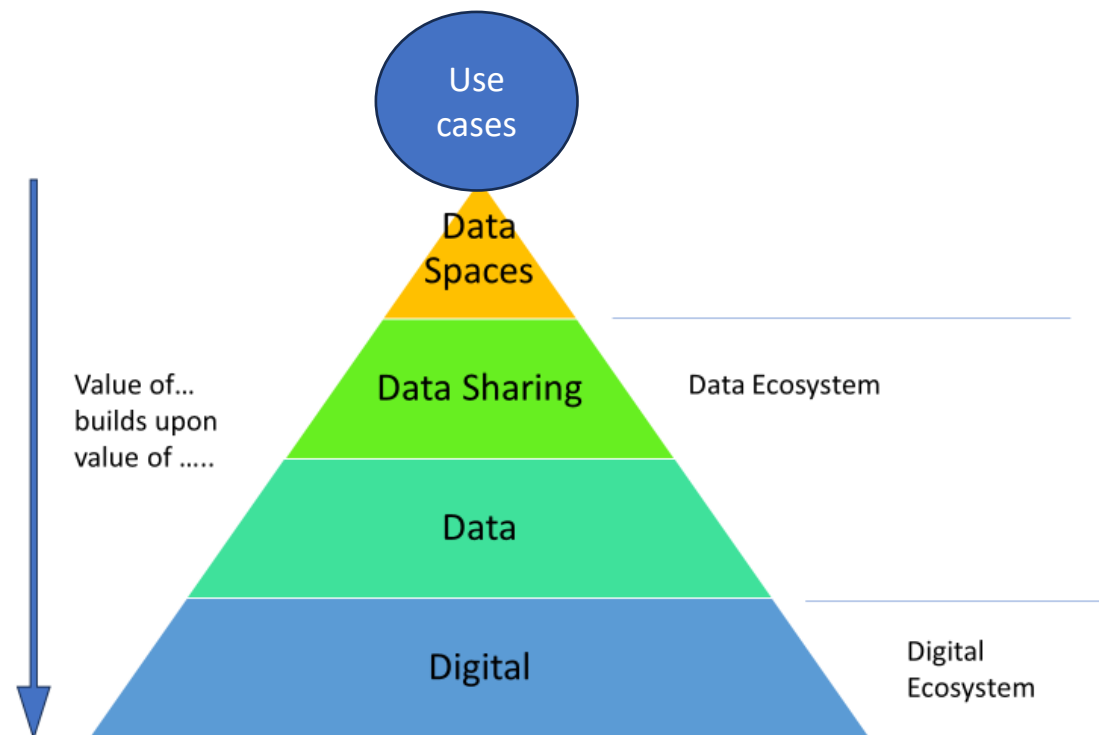
Data Spaces Support Center (DSSC) outcomes and activities

Clara Pezuela (FIWARE Foundation)

eDelivery Network meeting – 9 November 2023

Context of data spaces

- The value of data spaces relies on the value of data sharing and therefore on the value of data
- Data Spaces operate in digital ecosystems and inherit some of their characteristics
- Data Spaces were introduced in the European Data Strategy to support the idea of “single market of data”
- Being concrete through use cases



Data Space concept

A distributed system defined by a governance framework that enables secure and trustworthy data transactions between participants while supporting trust and data sovereignty. A data space is implemented by one or more infrastructures and enables one or more use cases.

(DSSC Glossary)

What is?

- Distributed system
- Governance framework
- Enabling trusted data transactions
- Supporting data sovereignty
- Several infrastructures supporting one or more use cases

What is not?

- A data lake
- Only a data platform
- Only a digital ecosystem

Others are sharing data but...why data spaces?



- Remove barriers in data sharing (interoperability, trust, sovereignty...)
- Minimize the risk of data sharing (security, costs...)
- Offer additional incentives for data sharing (reduce costs, access to more data...)
- Operate with different types of data (cross-domain data sharing...)
- Involve a large variety of participants (directly or through intermediaries)
- Federate with other data spaces
- Adhere to EU rules and values

DSSC mission



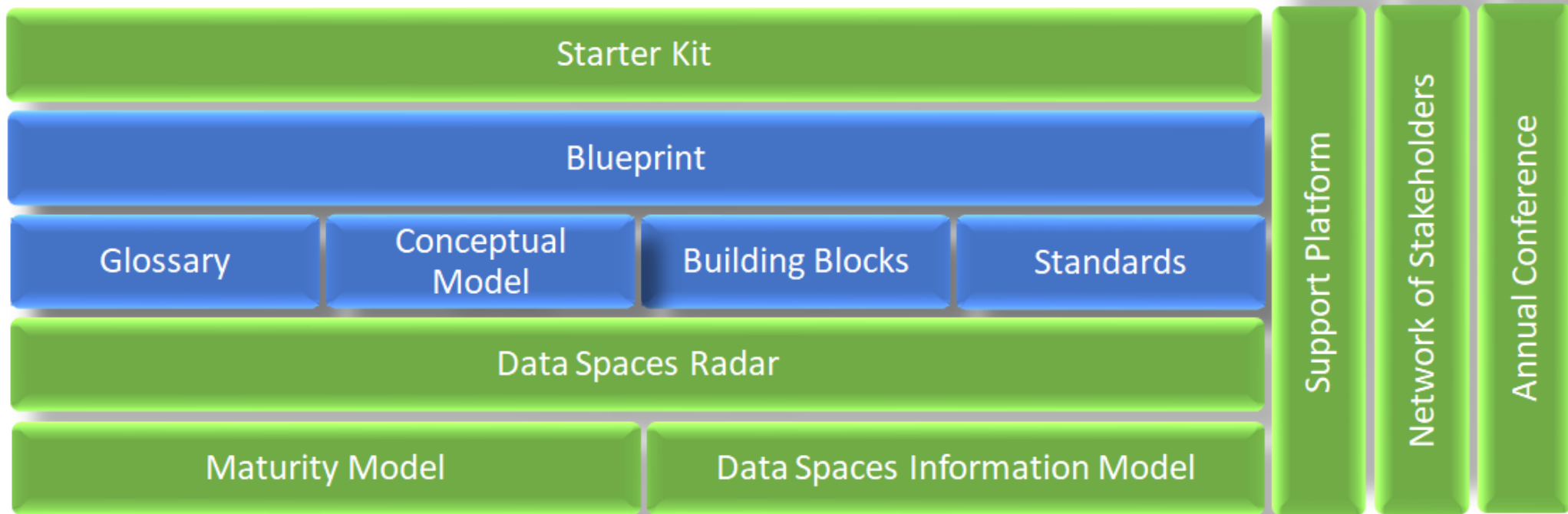
- Enable data spaces to reach a higher flight level faster: a **quick start** and an **accelerated scale-up**
- Provide the tools to address the **basic organizational and technical matters**, required by every data space
- This includes a **blueprint**, best practices, common standards and reference implementations which will be developed according to a **co-creation process**
- Enable dataspaces to focus on their domain-specific business challenges and **provide business benefits to their participants**



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



DSSC assets



[DELIVERY PLAN](#)

DSSC Network of Stakeholders (NoS)



DSSC Network of Stakeholders

Initiatives and bodies DS need to collaborate with for alignment and/or holistic picture

Bring requirements, knowledge, influence, alignment

Collaborations and liaisons
Other relevant initiatives and bodies

Set up, run or provide technology for Data Spaces

Hands-on community
Learn from each other, align, contribute

Community of Practice (CoP)
Data Spaces initiatives
BB implementers

Enablers, influencers and users of Data Spaces

Have expertise on the matter
They have committed resources
Advice, give direction and contribute

Strategic Stakeholder Forum (SSF)
Organisations with expertise in Data Spaces

DG DIGIT | Directorate-General For Informatics

SUPPORT

Data Spaces Support Centre

ASSETS

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

Blueprint v0.5 recently released!

<https://dssc.eu/page/knowledge-base>



Starter Kit



Blueprint



Building Blocks



Conceptual model

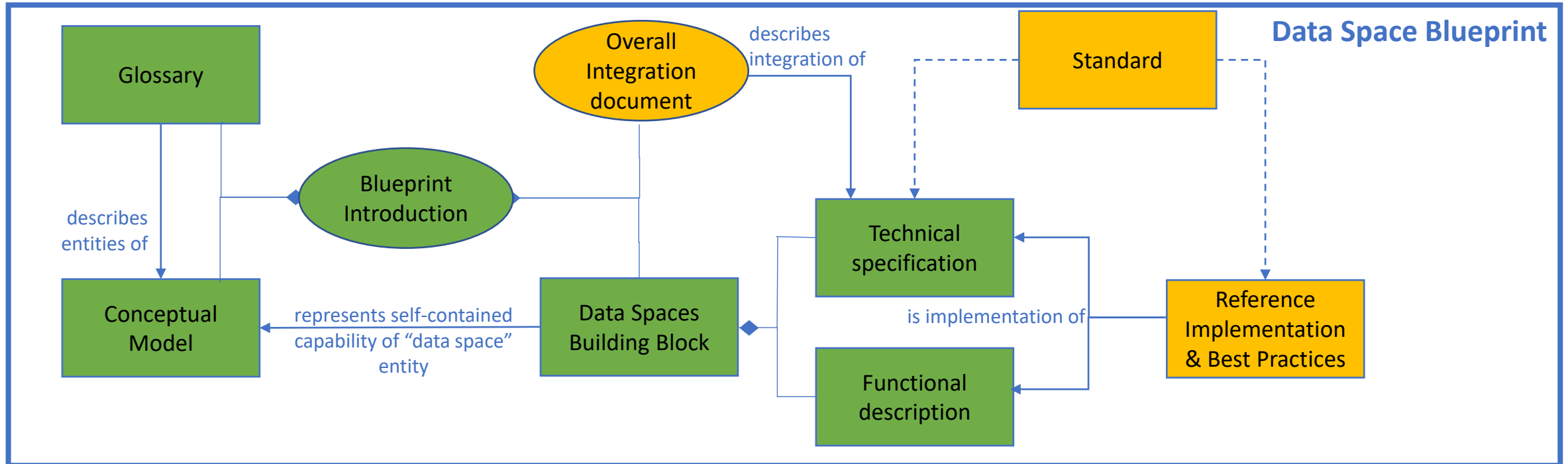


Glossary

Available [webinar](#) at Data Europe Academy

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Data Spaces Blueprint Structure



Glossary, Conceptual Model Level 1, Functional Specs BBs,
Collection of existing standards as candidates for BBs tech specs



V0.5 – Publication: September 2023

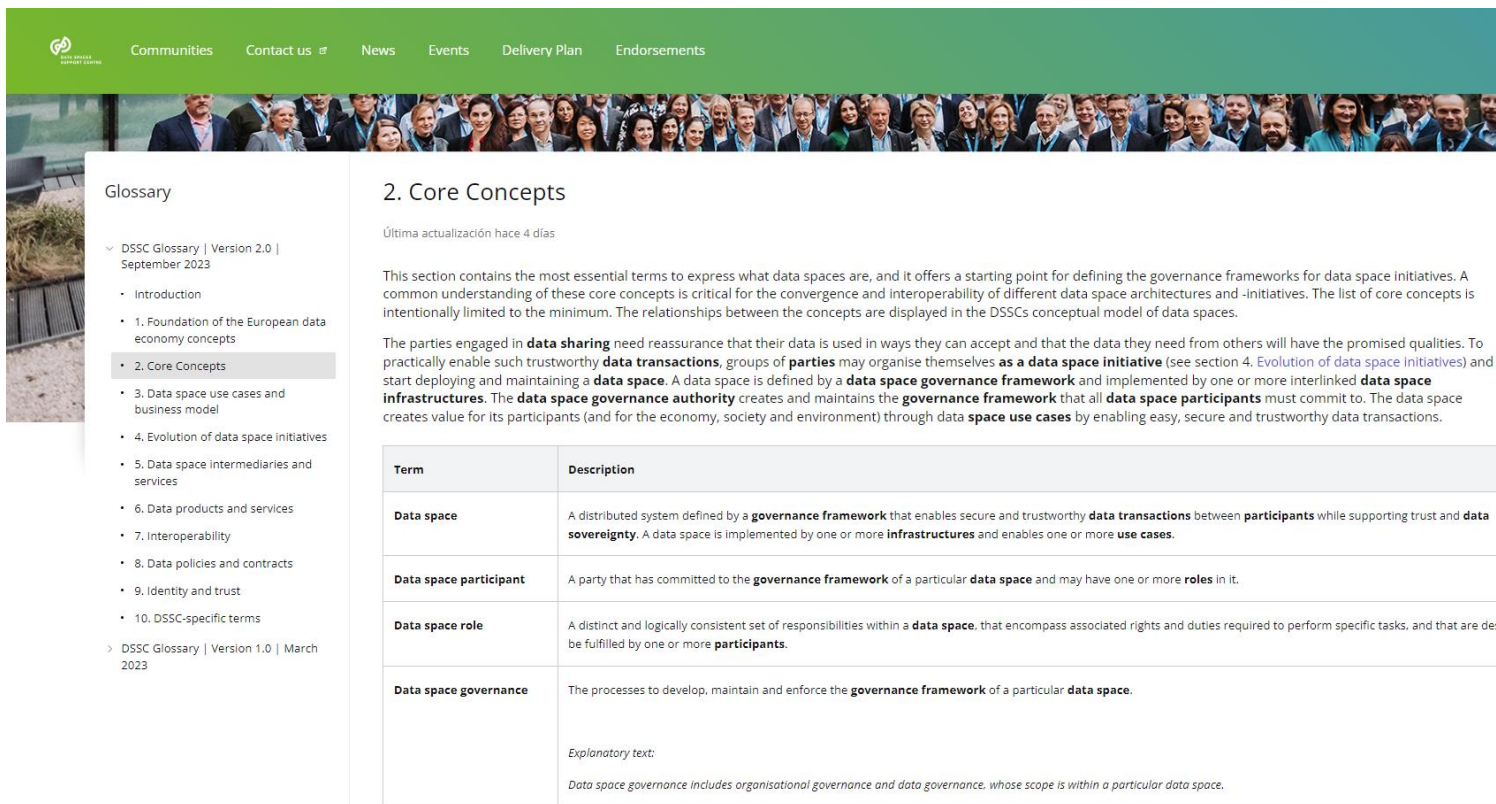
Glossary, Conceptual Model Level 2, Systems architecture, Tech
Specs BBs, Overall Integration, Recommended standards
included in the tech specs of BBs



V1.0 – Publication: April 2024

Glossary

- In co-development with data spaces
- Common vocabulary for DSSC publications and communications
- Terms are provided with a criterion and definition
 - Same term may have different meanings in different contexts
- Others may keep their own terminology
- Adopting definitions from EU legislation and international standards, when possible



The screenshot shows the DSSC Glossary website. The header is green with navigation links: Communities, Contact us, News, Events, Delivery Plan, and Endorsements. Below the header is a large photo of a diverse group of people. The main content area is divided into two columns. The left column is a navigation menu for the 'Glossary' section, listing various topics with '2. Core Concepts' highlighted. The right column is titled '2. Core Concepts' and contains introductory text and a table of terms.

Glossary

- ▼ DSSC Glossary | Version 2.0 | September 2023
 - Introduction
 - 1. Foundation of the European data economy concepts
 - **2. Core Concepts**
 - 3. Data space use cases and business model
 - 4. Evolution of data space initiatives
 - 5. Data space intermediaries and services
 - 6. Data products and services
 - 7. Interoperability
 - 8. Data policies and contracts
 - 9. Identity and trust
 - 10. DSSC-specific terms
- DSSC Glossary | Version 1.0 | March 2023

2. Core Concepts

Última actualización hace 4 días

This section contains the most essential terms to express what data spaces are, and it offers a starting point for defining the governance frameworks for data space Initiatives. A common understanding of these core concepts is critical for the convergence and interoperability of different data space architectures and -initiatives. The list of core concepts is intentionally limited to the minimum. The relationships between the concepts are displayed in the DSSCs conceptual model of data spaces.

The parties engaged in **data sharing** need reassurance that their data is used in ways they can accept and that the data they need from others will have the promised qualities. To practically enable such trustworthy **data transactions**, groups of **parties** may organise themselves **as a data space initiative** (see section 4. Evolution of data space initiatives) and start deploying and maintaining a **data space**. A data space is defined by a **data space governance framework** and implemented by one or more interlinked **data space infrastructures**. The **data space governance authority** creates and maintains the **governance framework** that all **data space participants** must commit to. The data space creates value for its participants (and for the economy, society and environment) through **data space use cases** by enabling easy, secure and trustworthy data transactions.

Term	Description
Data space	A distributed system defined by a governance framework that enables secure and trustworthy data transactions between participants while supporting trust and data sovereignty . A data space is implemented by one or more infrastructures and enables one or more use cases .
Data space participant	A party that has committed to the governance framework of a particular data space and may have one or more roles in it.
Data space role	A distinct and logically consistent set of responsibilities within a data space , that encompass associated rights and duties required to perform specific tasks, and that are desired to be fulfilled by one or more participants .
Data space governance	The processes to develop, maintain and enforce the governance framework of a particular data space .

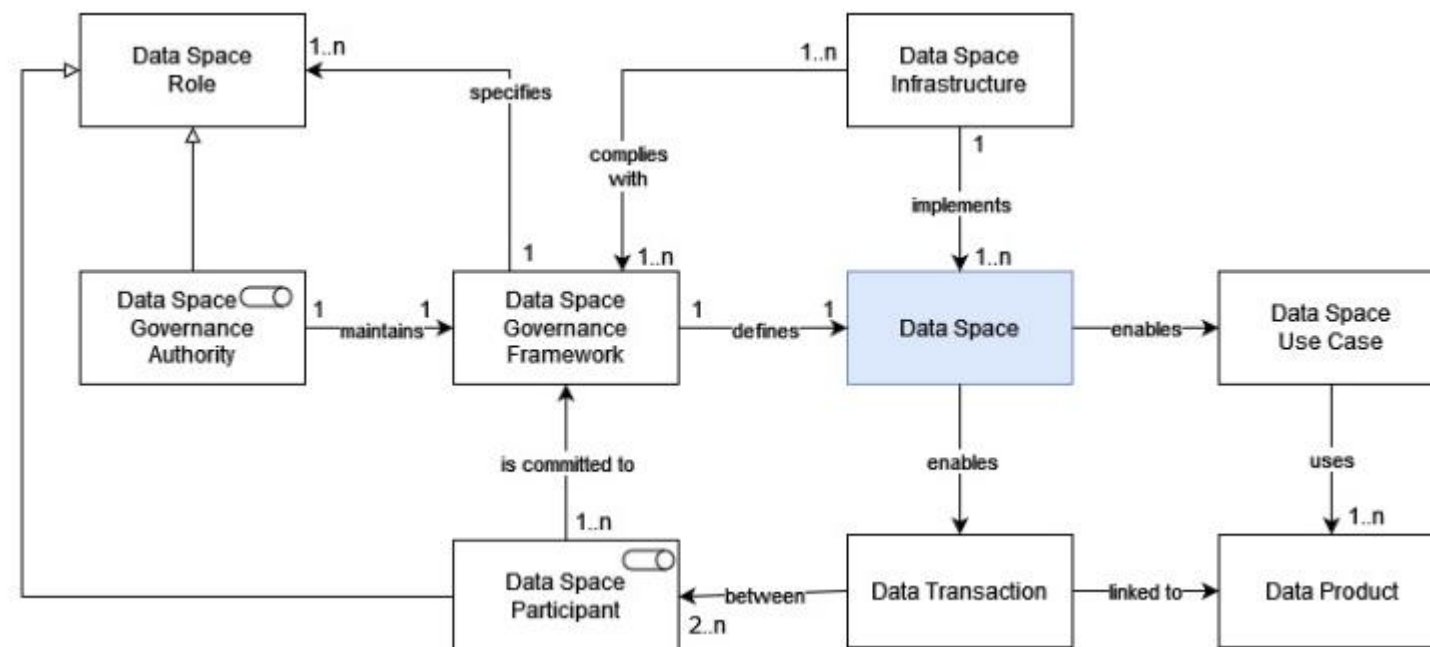
Explanatory text:
Data space governance includes organisational governance and data governance, whose scope is within a particular data space.

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

Conceptual Model

- Provide a well-defined language
- Provide a high-level view of what a data space is
- Future structure will provide:
 - An overarching view of the data space environment (level 0)
 - Detailed view on individual concepts (level 2)

Level 1: basic terminology and key concepts

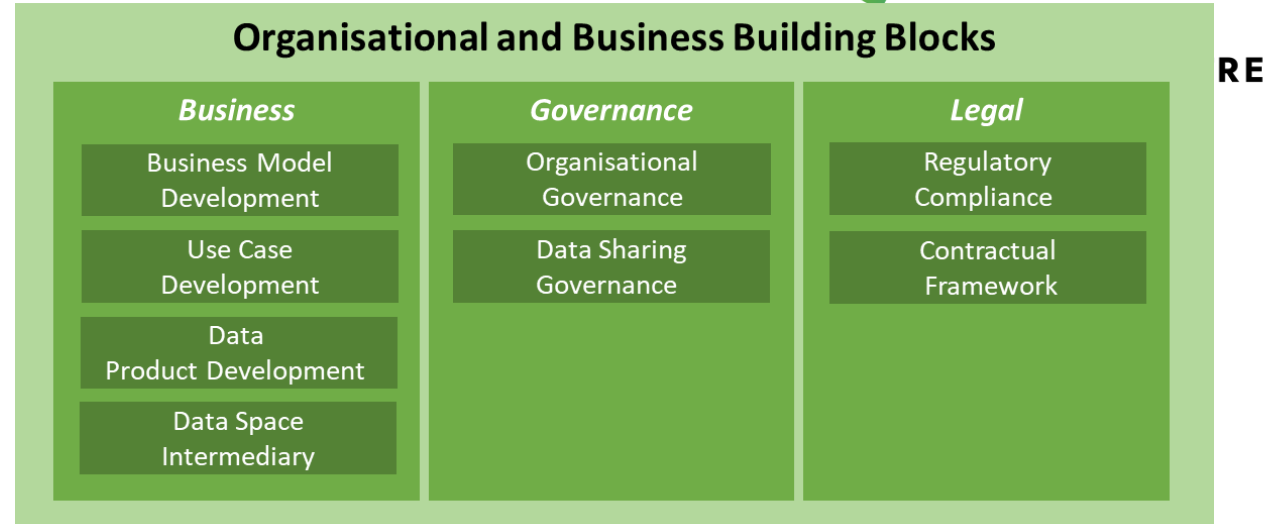


Building Blocks (BBs)



Organisational & business building blocks

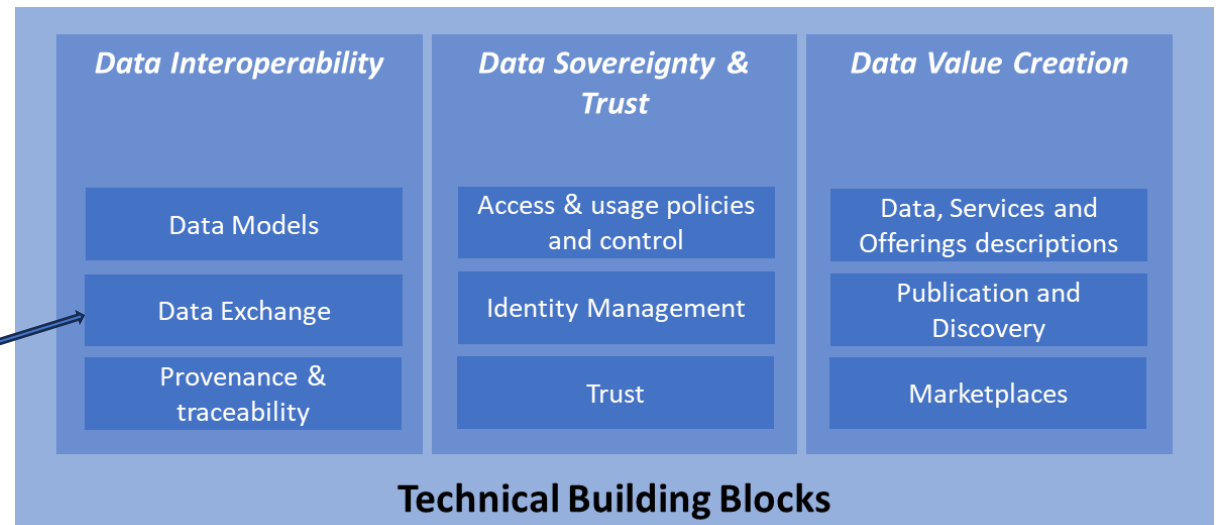
Describe capabilities on a governance, legal and business level.



Technical Building Blocks

Describe capabilities on a technical level about:

- Data Interoperability*
- Data Sovereignty & Trust*
- Data Value Creation*

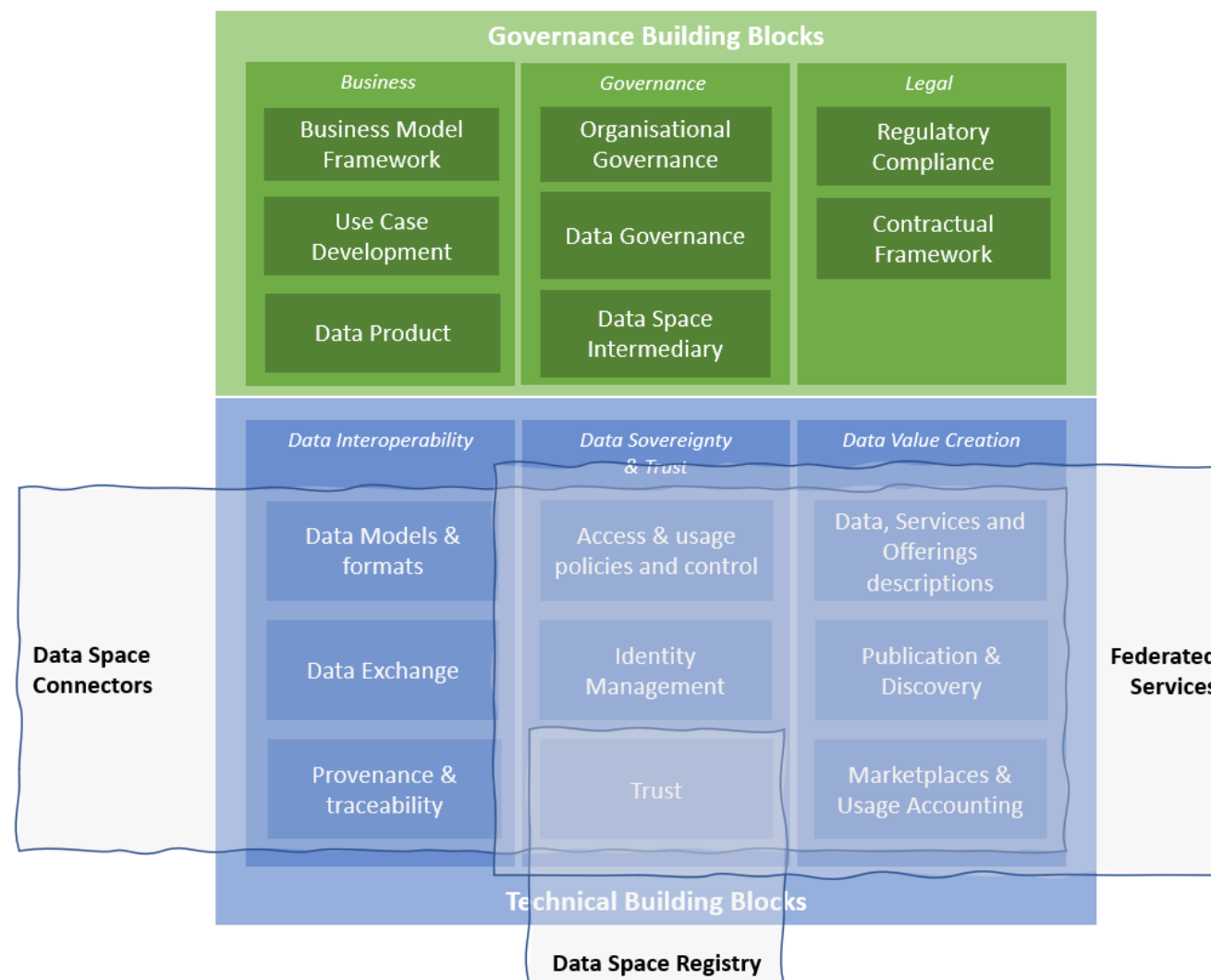


Technical BBs – Data Interoperability

	Description	Key capabilities	Link to specifications
Data Models	Capabilities to define and use shared semantics in a data space	<ul style="list-style-type: none"> Vocabularies Vocabulary management process Vocabulary hub 	Data Models
Data Exchange	Capabilities relating to the actual exchange and sharing of data	<ul style="list-style-type: none"> Meta specifications and best practices for the adoption of existing data exchange APIs Generic purpose data exchange API, including methods to query, update and delete data Tooling to use and maintain data exchange APIs 	Data Exchange
Provenance & Traceability	Capabilities for tracking the process of data sharing, so it becomes traceable and compliant	<ul style="list-style-type: none"> Framework for requirements for observability Third parties to provision or use evidence Mechanisms to provide and use evidence of the activities of a transaction 	Provenance & Traceability

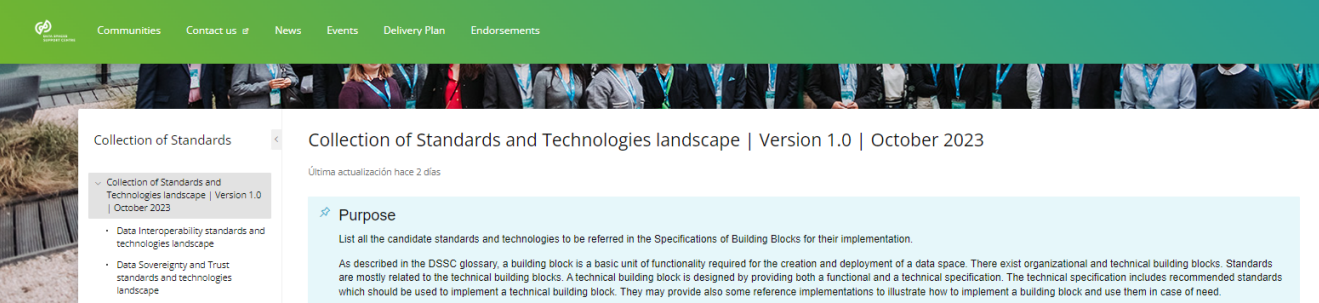
Systems architecture view (under development)

- Technology is needed to implement the capabilities of Technical BBs
- Certain services are implementing the BBs
- To facilitate the onboarding of data space participants



Collection of standards to build the Building Blocks

- A map of existing de-facto/de-jure standards and reference implementations candidates for the technical descriptions of the Building Blocks
- In co-creation with the data spaces initiatives (10 out of 12) and stakeholders
- 128 collected standards (Sep 2023)
- Available through [DSSC web site](https://dssc.europa.eu)
- Open for contributions – create a request with label [STANDARD_CONT]



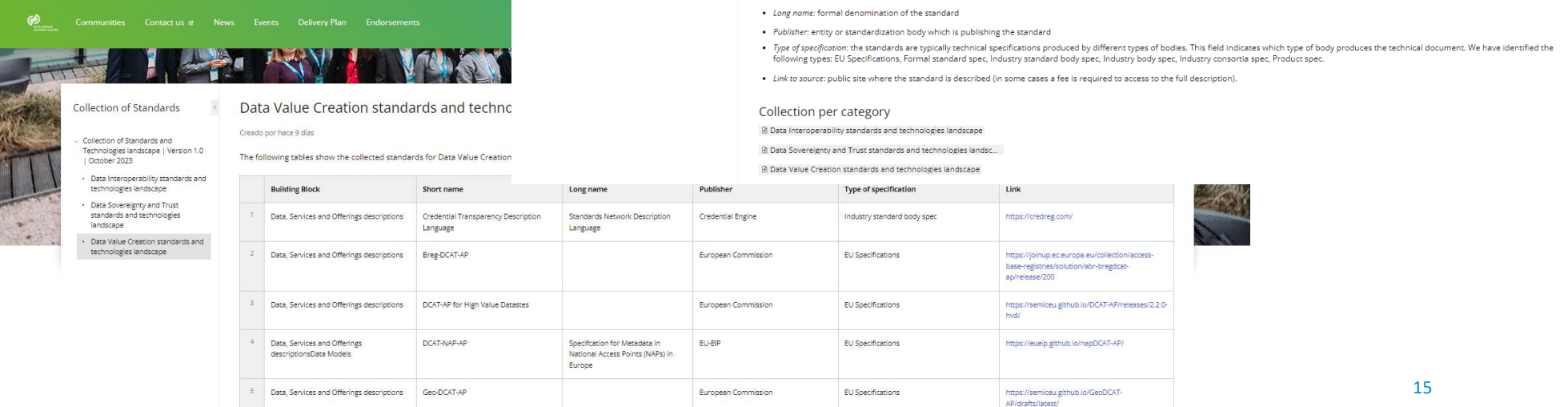
Collection of Standards and Technologies landscape | Version 1.0 | October 2023

Última actualización hace 2 días

Purpose

List all the candidate standards and technologies to be referred in the Specifications of Building Blocks for their implementation.

As described in the DSSC glossary, a building block is a basic unit of functionality required for the creation and deployment of a data space. There exist organizational and technical building blocks. Standards are mostly related to the technical building blocks. A technical building block is designed by providing both a functional and a technical specification. The technical specification includes recommended standards which should be used to implement a technical building block. They may provide also some reference implementations to illustrate how to implement a building block and use them in case of need.



Collection of Standards and Technologies landscape | Version 1.0 | October 2023

Creado por hace 9 días

The following tables show the collected standards for Data Value Creation

Building Block	Short name	Long name	Publisher	Type of specification	Link
1 Data_Services and Offerings descriptions	Credential Transparency Description Language	Standards Network Description Language	Credential Engine	Industry standard body spec	https://credreg.com/
2 Data_Services and Offerings descriptions	Breg-DCAT-AP		European Commission	EU Specifications	https://joinup.ec.europa.eu/collection/access-base-registries/solution/abr-bregdcat-ap/release/200
3 Data_Services and Offerings descriptions	DCAT-AP for High Value Datasets		European Commission	EU Specifications	https://semiceu.github.io/DCAT-AP/releases/2.2.0-hvd/
4 Data_Services and Offerings descriptions Data Models	DCAT-NAP-AP	Specification for Metadata in National Access Points (NAPs) in Europe	EU-EIP	EU Specifications	https://eueip.github.io/napDCAT-AP/
5 Data_Services and Offerings descriptions	Geo-DCAT-AP		European Commission	EU Specifications	https://semiceu.github.io/GeoDCAT-AP/drafts/latest/

Collection structure

The collection is organized according to the categories and building blocks stated in the Building Blocks Taxonomy paper. It is clearly divided into "Cross-domain standards" and "Reference Implementations". The "Cross-domain standards" section includes for each standard the following fields:

- **Building Block:** Indicates which building block the standard is related to. According to the proposed BBs taxonomy by DSSC, the technical building blocks are: Data Models; Data Exchange; Provenance and Traceability; Identity Management; Trust; Access and Usage policies and control; Data, Services and Offerings descriptions; Marketplaces; Publication and Discovery.
- **Short name:** typically, the used name to refer to the standard, the acronym in many cases; in other cases, this short name does not exist.
- **Long name:** formal denomination of the standard
- **Publisher:** entity or standardization body which is publishing the standard
- **Type of specification:** the standards are typically technical specifications produced by different types of bodies. This field indicates which type of body produces the technical document. We have identified the following types: EU Specifications, Formal standard spec, Industry standard body spec, Industry body spec, Industry consortia spec, Product spec.
- **Link to source:** public site where the standard is described (in some cases a fee is required to access to the full description).

Collection per category

- ▣ Data Interoperability standards and technologies landscape
- ▣ Data Sovereignty and Trust standards and technologies landscape
- ▣ Data Value Creation standards and technologies landscape

EU specifications in the Collection




**DATA SPACES
SUPPORT CENTRE**

Data Models	CMD	Coordinated Metadata Catalogue Model (EU EIP SA46)	European Commission	https://www.its-platform.eu/wp-content/u	EU Specifications
Data, Services and Offerings descriptions	DCAT-NAP-AP	Specification for Metadata in National Access Points (NAPs) in Europe	European Commission	https://eueip.github.io/napDCAT-AP/	EU Specifications
Data Exchange	ADMS		European Commission	https://semiceu.github.io/ADMS/releases/	EU Specifications
Data, Services and Offerings descriptions	Breg-DCAT-AP		European Commission	https://joinup.ec.europa.eu/collection/acc	EU Specifications
Data Models	Core Vocabularies		European Commission	Core Vocabularies Joinup (europa.eu)	EU Specifications
Data, Services and Offerings descriptions	DCAT-AP for High Value Datasets		European Commission	https://semiceu.github.io/DCAT-AP/release	EU Specifications
Trust	EBSI Trust Model	EBSI Trust Model to onboard trust frameworks	European Commission	Home - EBSI - (europa.eu)	EU Specifications
Identity Management	EBSI-DID	EBSI Decentralized Identifiers Profile	European Commission	Home - EBSI - (europa.eu)	EU Specifications
Data Exchange	EBSI-OpenID4VC	EBSI profile for OpenID for verifiable Credentials	European Commission	Home - EBSI - (europa.eu)	EU Specifications
Identity Management	EBSI-VC	EBSI Verifiable Credentials Profile	European Commission	Home - EBSI - (europa.eu)	EU Specifications
Trust	EBSI-VC SF	EBSI Verifiable Credential Status framework	European Commission	Home - EBSI - (europa.eu)	EU Specifications
Data Exchange	eDelivery building block		European Commission	https://ec.europa.eu/digital-building-blocks	EU Specifications
Identity Management	eID	eID building block	European Commission	https://ec.europa.eu/digital-building-blocks	EU Specifications
Identity Management	eIDAS	eIDAS	European Commission	eIDAS regulation	EU Specifications
Identity Management	eIDAS2	eIDAS2	European Commission	EU post on eIDAS2	EU Specifications
Trust	eSignature-DSS	eSignature building block	European Commission	https://ec.europa.eu/digital-building-blocks	EU Specifications
Trust	eSignature-EU LOTL	eSignature building block	European Commission	https://ec.europa.eu/digital-building-blocks	EU Specifications
Trust	eSignature-MRA	eSignature building block	European Commission	https://ec.europa.eu/digital-building-blocks	EU Specifications
Trust	eSignature-TCTL	eSignature building block	European Commission	https://ec.europa.eu/digital-building-blocks	EU Specifications
Identity Management	EUDI RAF	EUDI Wallet Architecture & Reference Framework	European Commission	EUDI Wallet Architecture & Reference Fram	EU Specifications
Data, Services and Offerings descriptions	Geo-DCAT-AP		European Commission	https://semiceu.github.io/GeoDCAT-AP/dra	EU Specifications
Data Models	INSPIRE	Infrastructure for Spatial Information in the European Community	European Commission	https://inspire.ec.europa.eu/data-specifica	EU Specifications
Access and usage policies and control	Interoperability Testbed	Interoperability Testbed	European Commission	https://joinup.ec.europa.eu/interoperable	EU Specifications
Publication and Discovery	LDES	Linked Data Event Streams	European Commission	Linked Data Event Streams (LDES) Joinup	EU Specifications
Data, Services and Offerings descriptions	STAT-DCAT-AP		European Commission	https://joinup.ec.europa.eu/collection/ser	EU Specifications

How to keep posted

- News and publications at dssc.eu
- Get DSSC experts support
 - [Get support](#)
- Join the Thematic Groups
 - Knowledge base and periodic meetings
 - [Get involved](#)
- Monthly DSSC Insights Series
 - Next one on 16th November at 16:00 – How to build Data Spaces
- Data Spaces Symposium in March 2024





Help Center / DSSC Support






DSSC Support

Welcome! You can raise a request among the following options.

What can we help you with?

-  **Get Information**
Looking for a document, not sure about a definition, missing an information about the DSSC?
-  **Get Support**
Looking for practical support while setting up your data space project?
-  **Get Involved**
Looking to collaborate with the DSSC on the co-creation of assets?
-  **Subscribe to the Newsletter**
Get monthly highlights about DSSC activities, events and important publications.

Related resources

-  **FAQ**
Take a look at our Frequently Asked Questions
-  **Knowledge Base**
Learn more about DSSC assets in our documentation
-  **DSSC Youtube Channel**
Explore best practices on DSSC platform as well as get started videos for data spaces

Thanks!

More info at contact@dssc.eu

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