

# Green Data Hub (GDH)

## International Green Data Spaces

**Project for the development of technical, legal, and economical solution approaches to enable international and cross-domain collaboration**



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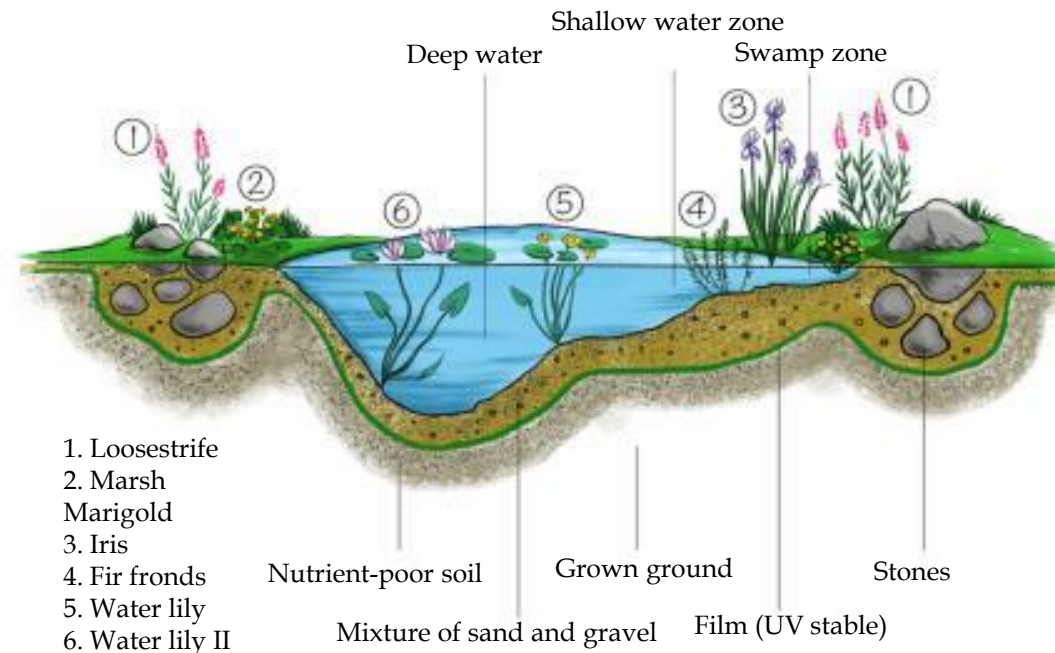
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The **Green Data Hub** is a Data Intelligence Initiative (DIO) project funded by the Austrian Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology (BMK) through two FFG R&D service contracts with focus on **Data Spaces for Sustainability**

# Green Data Hub - GDH

## Mission

To create a **sustainable data service ecosystem** to address **the critical climate and environmental challenges of our time**





# Green Data Hub = Data4Sustainability

What is the context, what are the goals? 1/2

- **Fundamental challenge:** Direct data transformation towards sustainability; shape and design it towards climate protection and resources conservation
- **Strong networking platform:** Bring together as many as possible Austrian and European stakeholders working on the challenge of data for sustainability
- **Four (4) key topics:**
  - **Energy transition** – gain independence from fossil fuels, radically reduce carbon footprint
  - **Mobility transition** – gain flexibility and save the environment by switching to smart systems
  - **Digital climate twin** – gain control of climate change and reduce catastrophic risks
  - **Circular economy** – gain value from reduction of waste and optimize production



# Green Data Hub = Data4Sustainability

## What is the context, what are the goals? 2/2

- **Base:** Collaborative, sovereign, and secure data usage in the Data Spaces
- **Goal:** Joint development of data-driven use cases with a socio-ecologically sustainable focus as a contribution to the implementation of the climate strategy
- **Invitation project:** Initiated by Data Intelligence Initiative (DIO), the GDH is an invitation project to all stakeholders who have chosen sustainability as the basis for their business and social activities



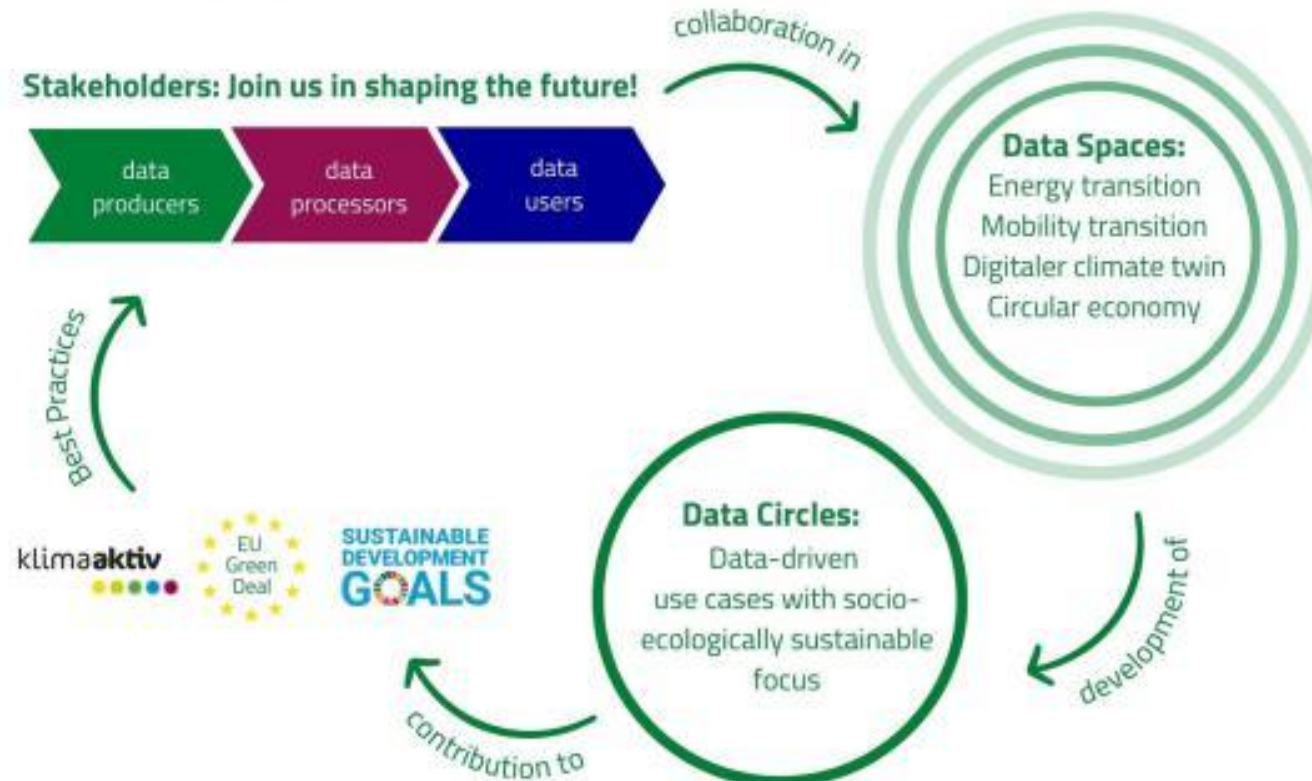
# How do Data Spaces contribute to the realization of the data transformation for sustainability?

The GDH seeks to contribute to the transformation for sustainability through the development of the data economy:

- ✓ European values and relevant EU regulations are the basis of design and operation
- ✓ International initiatives such as Gaia-X, IDSA, BDVA, FIWARE etc. form the foundation
- ✓ Using secure, non-proprietary technologies (cf. open source, open hardware)
- ✓ Stakeholders are clearly identifiable (Self-Description & Verifiable Credentials)
- ✓ Data Spaces and Use Cases are given a uniform basis, so they become interoperable

# Green Data Hub works as part of the ecosystems and focuses on Data Spaces

## How does the Green Data Hub work?





# How can the actors in a Data Space be engaged and enabled?

DIO experience recommends 3 steps:



**Step 1.**  
**Clarify real pain points**

**Step 2. Define**  
**roles and responsibilities**

**Step 3. Identify**  
**and implement values**

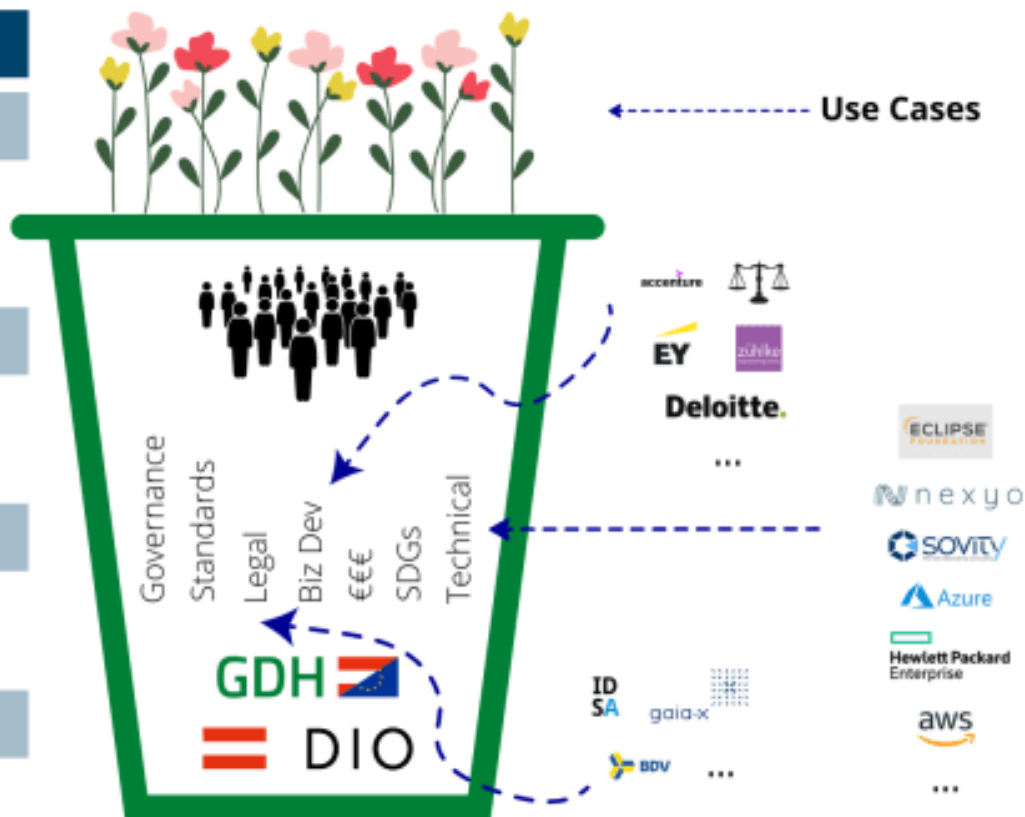


# Data Spaces are successful when actors work together on four role levels

## DIO Methodology

Data Spaces need actors on four role levels

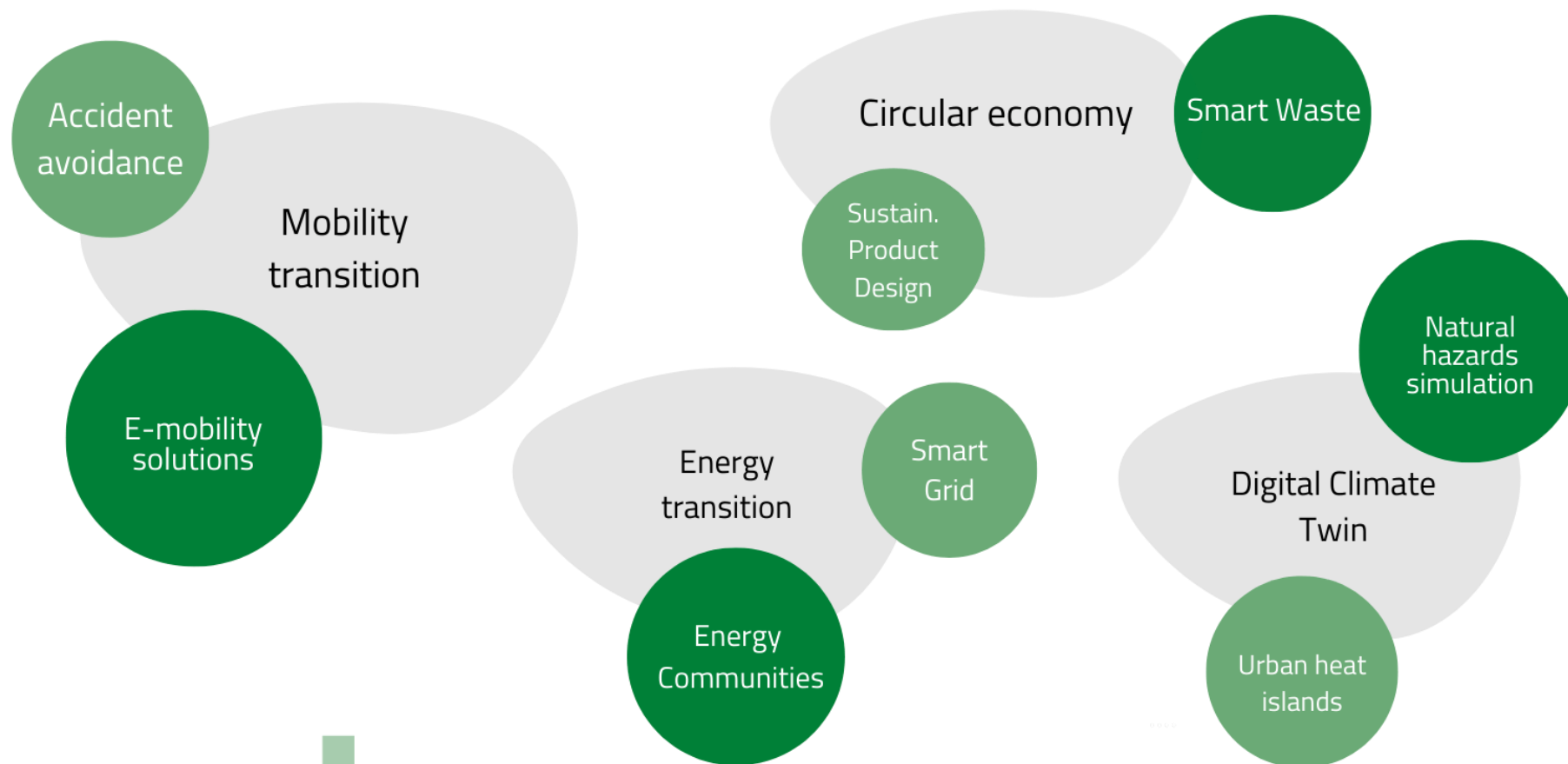
TASKS / FUNCTIONS	ROLES / ACTORS
4. GENERATING VALUE	USER
3. USING DATA	DATA PROVIDER / MARKET
2. ENABLING USES	TECH+KNOW-HOW PROVIDER
1. GATHERING STAKEHOLDERS	ACCUMULATOR / DIO





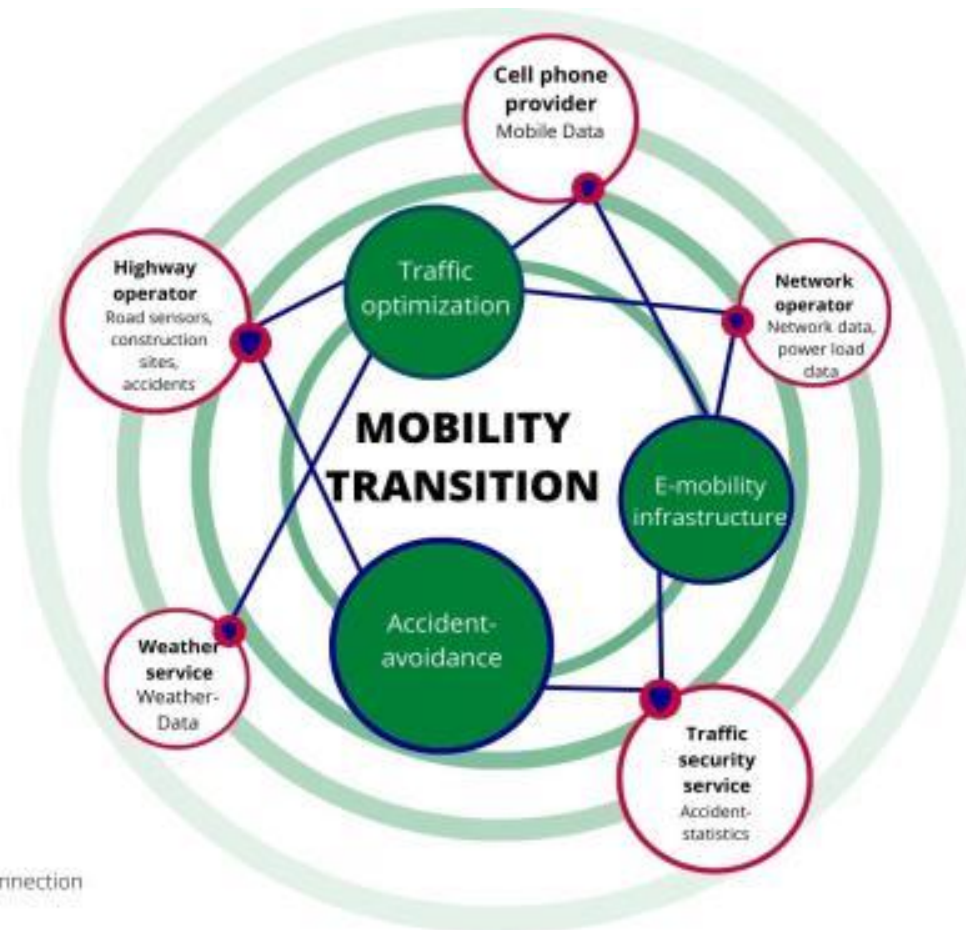


# Green Data Hub: Use cases are generated from Data Spaces



# Mobility Transition - Example

Who works together in which role in the Data Space?



Legende:

- Stakeholder
- Use Case
- Secure data connection

- Stakeholders from a wide variety of areas cooperate in a Data Space
- By combining the data from different actors, the full benefit and innovation potential of data is unleashed
- Sustainable Use Cases are created that can be processed in a closed circle within a Data Space



# Green Data Hub Business Model

Basis through BMK with 2 R&D service contracts through FFG.

- Duration
  - 01.08.2022 - 31.07.2024
- Contents
  - a. **Linking Green Data Spaces:**  
Build domain expertise for international connectivity and consolidate data use cases for sustainability
  - b. **Internationalizing Green Data Spaces:**  
Building international connectivity and consolidating use cases for a sustainable future
- 4 scientific partners → Learning from state of research / innovation
- 4 economic partners → Learning from state of application / implementation
- **INVITATION PROJECT: FURTHER PARTNERSHIPS**  
Goal: create more impact together



# Special thanks to national partners in the Data Spaces – they build the GDH

- **Data Space Energy Transition:**

- KELAG
- Forschung Burgenland



- **Data Space Mobility Transition**

- ÖAMTC
- AIT



- **Data Space Circular Economy**

- Digi-Cycle
- Fraunhofer Austria



- **Data Space Digital Climate Twin**

- Ubimet
- Spatial Services





# Co-creation workshops with Business Development Partners

- **Goal:**

- Jointly develop sustainable use cases
- Application of design thinking methodology
- Collaborative, sovereign, and secure implementation of Use Cases in a Data Space
- Simultaneous contribution to environmental protection AND business value for all participants

- **Partners:**

- **Energy Transition:** EY (etventure)
- **Mobility Transition:** Zühlke
- **Circular Economy:** UNITY





# InGDS – International Green Data Spaces

- Duration: 2022 - 2024
- The cross-country and cross-domain connection of Data Spaces and use cases leverages great innovation potential through a higher number of data and makes scalability possible.
- Stakeholders, (inter)national initiatives and existing Data Spaces and use cases are identified and actively integrated into InGDS through community building.





# R&D service: InGDS – International Green Data Spaces

- Mapping of the international status quo for **implementation-oriented creation of solution approaches**
  1. Enabling low-threshold international federation/connection
  2. Enabling cross-domain connection
- Consolidation and expansion of international partnerships for
  1. International federation/connection of Data Spaces
  2. Avoiding parallel structures
  3. Avoiding monolithic Data Spaces

# Step 1.1: Evaluation of the status quo: Stakeholders & initiatives

In line with the strategic fields of action of the BMK in Austria:

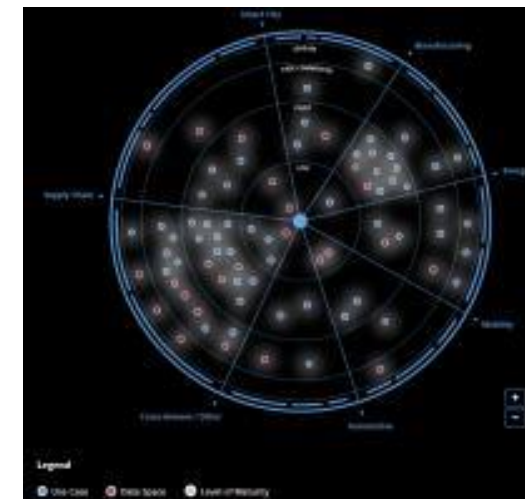
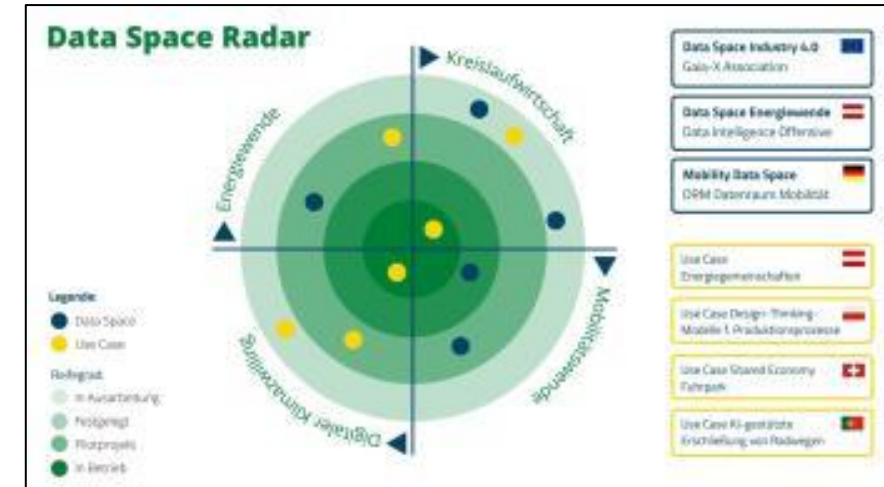
- Organisations, networks and relevant initiatives
- Data Spaces und Use Cases

Results:

- Stakeholder map in the Green Data Hub domains
- Data Space- / Use Case Radar with focus on sustainability
- International partnerships and collaboration

Synergies:

- With IDSA Data Spaces Radar, however with a focus on sustainability domains



## Step 1.2: **Evaluation of the status quo:** Research of current challenges

- Qualitative research of current challenges
  - Interviews with relevant actors
- Quantitative evaluation of the relevance of these challenges
  - Survey to prioritize the challenges explored
- Catalogue with challenges on:
  - **Technical requirements**
  - **Legal requirements**
  - **Market requirements**





## Step 2.1: **Solution Approaches, Blueprint and Roadmap:** Research of current challenges

- Development of building blocks in the form of implementation-focused solution approaches based on prior research

### **Outcomes:**

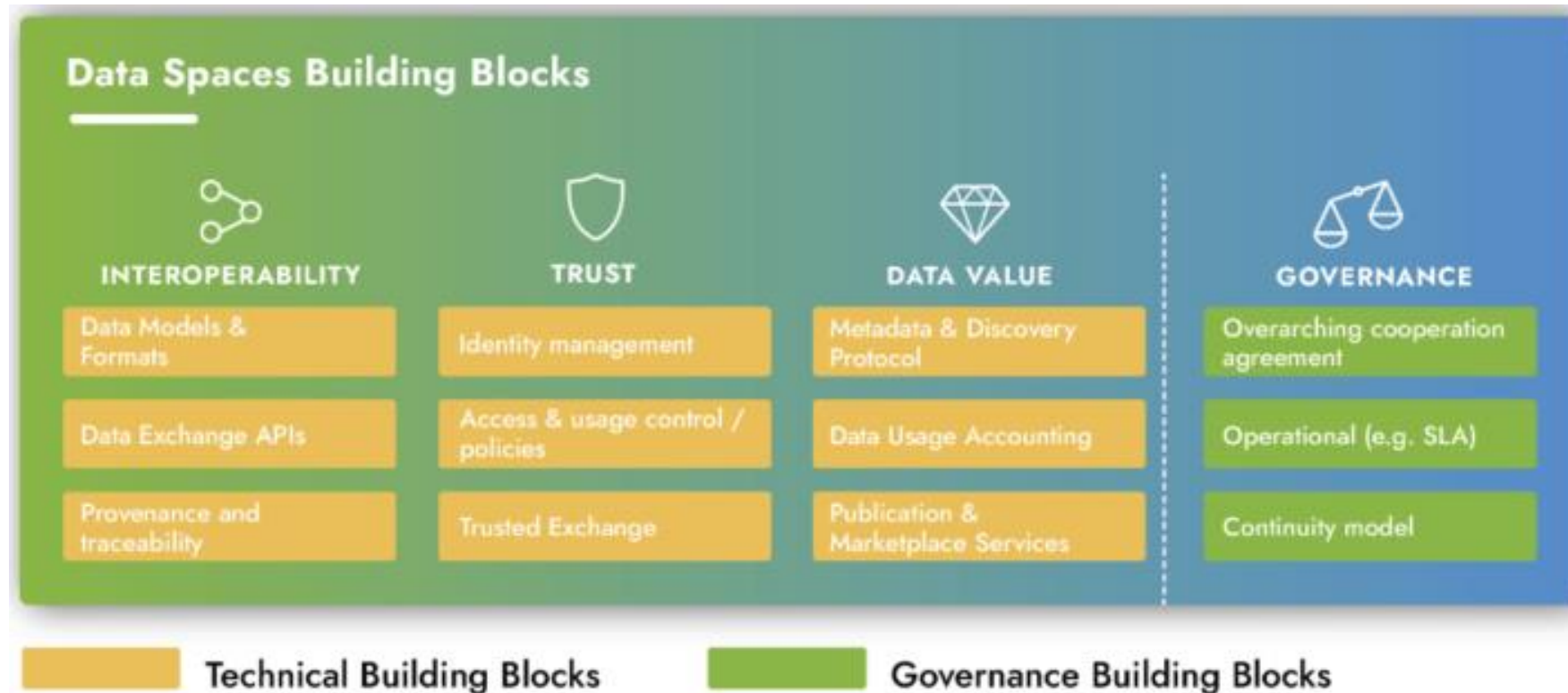
- Building block catalog: Solution approaches for international cross-domain connection for:
  - **Technical requirements**
  - **Legal requirements**
  - **Market requirements**
- **Blueprint:** For the application of the building block catalog according to individual requirements



## Step 2.2: Solution Approaches, Blueprint and Roadmap: Roadmap

- **Development of a Roadmap:** How to build and maintain a comprehensive European and cross-domain data service ecosystem by 2030
- **Assessment on 5 levels:**
  - 1. Collection and mapping of market requirements
  - 2. Documentation and consolidation of processes and know-how
  - 3. Testing and evaluating technologies, making new tools available on a low-threshold basis
  - 4. Development of legal guidelines
  - 5. Documentation of use case connections, development of blueprints

# Synergies: Open DEI and DSSC building blocks



Source: <https://dssc.eu/wp-content/uploads/2023/01/Starterkit-Interim-Version-Release-19-Dec-2022.pdf>



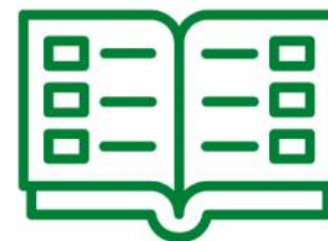


# Enabling international & cross domain connection

1. Development of **building blocks**  
(technical, legal, and market requirements)



2. Summary in a **building block catalogue** with blueprint



3. **Cross-domain and international connection** and scaling of use cases





# Invitation to: Join the Green Data Hub Community!

Let us jointly identify  
your needs and tackle  
them within the data  
service ecosystem!



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# DIO board responsible for the Green Data Hub



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**Prof. Dr. Peter A. Bruck PhD MA**  
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