



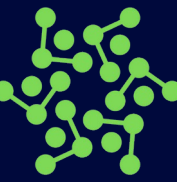
DATA SPACE FOR
SMART AND SUSTAINABLE
CITIES AND COMMUNITIES

Maturity & Actions

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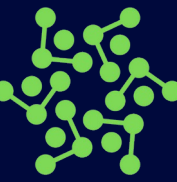


Recap: Data Cooperation Canvas

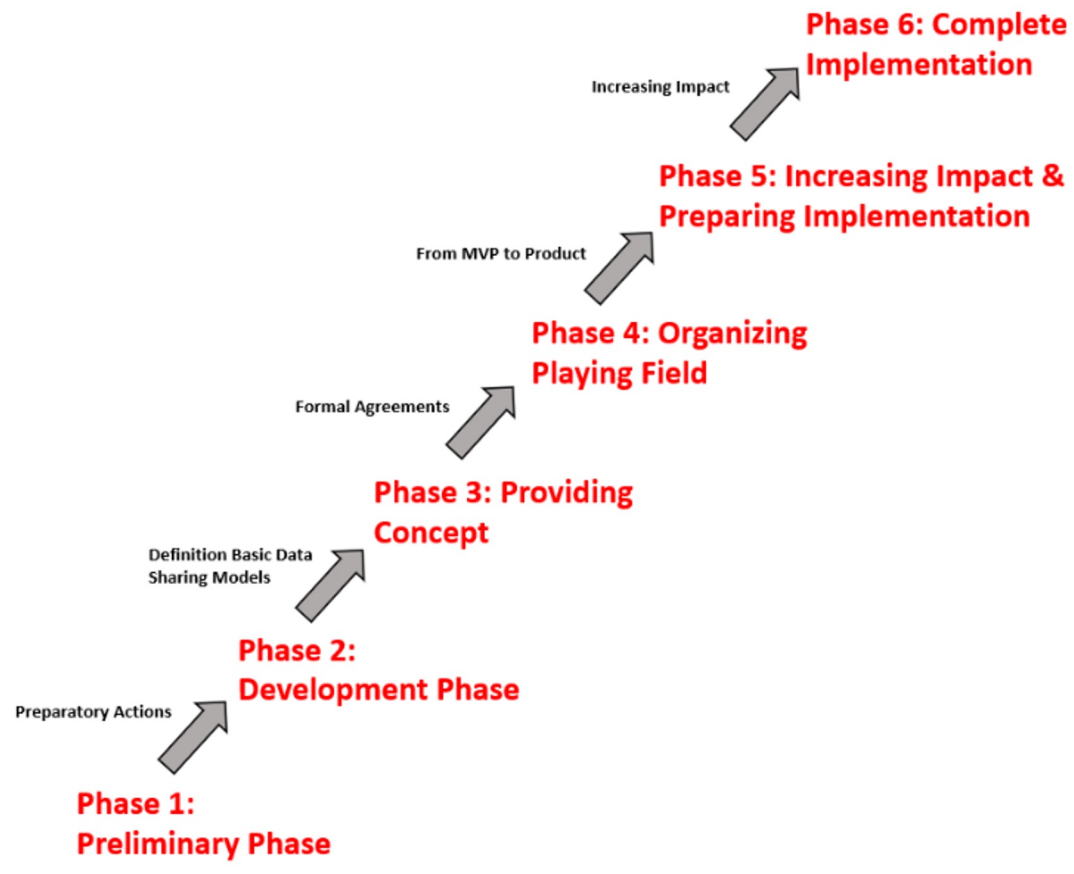
Data Cooperation Canvas

Organisational		WHY	Data & Technical																																										
Key partners Who are the partners involved in the data exchange? What are their roles?	Shared data flow What steps are performed as a shared process in the data exchange? What steps are done individually? <table border="0"><tr><td></td><td>Individual</td><td>shared</td></tr><tr><td>Use</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>↑</td><td></td><td></td></tr><tr><td>Visualise</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>↑</td><td></td><td></td></tr><tr><td>Interpret</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>↑</td><td></td><td></td></tr><tr><td>Combine</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>↑</td><td></td><td></td></tr><tr><td>Transform</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>↑</td><td></td><td></td></tr><tr><td>Store</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>↑</td><td></td><td></td></tr><tr><td>Create</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr></table>		Individual	shared	Use	<input type="checkbox"/>	<input type="checkbox"/>	↑			Visualise	<input type="checkbox"/>	<input type="checkbox"/>	↑			Interpret	<input type="checkbox"/>	<input type="checkbox"/>	↑			Combine	<input type="checkbox"/>	<input type="checkbox"/>	↑			Transform	<input type="checkbox"/>	<input type="checkbox"/>	↑			Store	<input type="checkbox"/>	<input type="checkbox"/>	↑			Create	<input type="checkbox"/>	<input type="checkbox"/>	Context What is the business context that creates the opportunity/necessity for data exchange?	Data & data source What data is exchanged? What are the data sources used?
		Individual	shared																																										
Use		<input type="checkbox"/>	<input type="checkbox"/>																																										
↑																																													
Visualise	<input type="checkbox"/>	<input type="checkbox"/>																																											
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Transform	<input type="checkbox"/>	<input type="checkbox"/>																																											
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Store	<input type="checkbox"/>	<input type="checkbox"/>																																											
↑																																													
Create	<input type="checkbox"/>	<input type="checkbox"/>																																											
Resources What organizational resources are required for this data cooperation? What resources are available already? What needs to be done to get all required resources?	Added value data exchange Why will this data exchange succeed? What is the added value for participants?	Motivation & objectives What is the motivation for the key partners to join the data exchange? What are their main objectives of participating?	Interoperability How can the data be uniformed/standardized/combined? What shared concepts, languages, formats, or methods can be used? Is it hard to combine all the data? Or are standard definitions available? What data standards & formats are used or need to be used?																																										
Business case What are the costs of the data exchange? Who is paying? What are the revenues? Who is profiting? What compensation, fees or other financials are needed?	Governance model How are rules, norms and actions structured/sustained/regulated to control the data exchange?	Implementation model What approach will be used for realizing and implementing the data exchange.	Technical concepts/models What technical concepts or models need to be in place for the data exchange. What <u>MIMs</u> are implemented and how are they implemented?	Technical infrastructure characteristics What kind of technical infrastructure is needed for the data exchange?																																									
Current status What is the current status of the cooperation																																													
<table border="0"><tr><td style="width: 20%;"></td><td style="width: 15%; background-color: yellow;">Exploratory stage</td><td style="width: 15%; background-color: lightgreen;">Preparatory stage</td><td style="width: 15%; background-color: green;">Implementation stage</td><td style="width: 15%; background-color: blue;">Operational stage</td><td style="width: 20%; background-color: lightgrey;">Scaling stage</td></tr></table>						Exploratory stage	Preparatory stage	Implementation stage	Operational stage	Scaling stage																																			
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Maturity Model

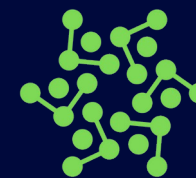


Phases & Actions

1. Preliminary Phase
 - a. Pre-Selection
 - b. Ground work / Preparations
2. Development Phase
 - a. MVP
 - b. Basic parameters for pilots defined (data sharing)
3. Proving Concept
 - a. Concept has been tested & proven
 - b. API for data sharing developed
 - c. DS4SSCC components are in place (tech, gov, data)
4. Organizing Playing Field
 - a. MVP -> product
 - b. Outreach business partners
 - c. More testing
5. Increased Impact & Preparing Implementation
 - a. More use cases developed to increase impact
 - b. Preparation towards full deployment
6. Complete Implementation
 - a. Full deployment
 - b. Innovation agenda for upcoming years in place
 - c. More cities / partners added to the network

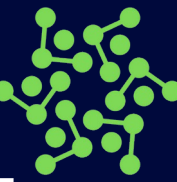


Actions



	1	→	2	→	3	→	4	→	5	→	6
	Preliminary Phase	ACTIONS	Development Phase	ACTIONS	Proving Concept	ACTIONS	Organizing Playing Field	ACTIONS	Increasing Impact and Preparing Implementation	ACTIONS	Complete Implementation
Governance	Scope and purpose of data sharing defined	Completing Governance part of Data Cooperation Canvas	Minimum pilot network defined	Define simple and representable use case for MVP testing	Necessary components are working	Expansion of team by interested parties through activating networks, PR work.	Data cooperation canvas reviews and updated	first legal and formal preparations should be initialised	Additional use cases added	Definition of formal products, pricing and fixed terms	Transition to nonprofit organization complete
	Data sharing model defined	Analysis of current governance situation	Legal agreements arranged		Possible adjustments fully implemented	Update of governance part in Data Cooperation Canvas, specifically on standards and larger partner management.	Onboarding standards defined	networks should be activated and interested stakeholders contacted to add further use cases to the exchange in the next phase	Decision/governance mechanisms are scaled up (e.g. user representation, citizen participation)	Installation of professional helpdesk and support	
	Preliminary business model defined including added value proposition for each partner and scaling up model					Define principles of onboarding, standards, product pricing and procedures.			Diversity of partners (across sector and multi-level)	Standard procedures for onboarding and leaving should be finalized	
	Identification initial partners and broader stakeholders								Less data mature partners can join (e.g. smaller cities with less data capabilities)	Representation of nonprofit should be professionalized	
	Initial budget agreed								Connect with other data spaces / have other data spaces as participants		
	Initial resources required identified and allocated to partners										
Datasets	Data Plan established	Refinement of data related parts of Data Cooperation Canvas	Number of data points exchanged as a percentage of goal	Update of data related parts of Data Cooperation Canvas	Data exchange is up and running for defined use case	Review developed data exchange properties and its capabilities towards a fully functional data infrastructure	Number of organisation, cities and use cases running	Start to develop performance measurements (KPIs) that can be measured and evaluated	Agreement on performance measures	High-level planning towards the fully-fledged roll-out	Service-level Agreement (SLA) fully established
		Further refinement of data plan towards PoC	All (city) partners are able to access the data	Preparation of exchange between partners and cities		Have a fully functional data infrastructure that is able to onboard new unknown parties			Service-level Agreement (SLA)		
Architecture	Framework defined	Completing Technical part of Data Cooperation Canvas	MVP architecture depicted	Work on evolved architecture, following DS4SSCC guidelines	MVP validation outcome approved	Injection of relevant datasets to the MVP	MVP successfully tested for full deployment	Review of standard and technology choices for final selection, based on test results	Architecture successfully tested with more use cases	Increment adding of new use cases for data sharing and value creating in the ecosystem	Architecture fully working as operational system
	Requirements defined	Analysis of current technical architecture in use		Establishment of connection between MVP and Universal Trust Data Registry and Data Space connector components		Configuration of required APIs		Continue testing, validating and extending		Testing of technical solution for each use case, if needed	
		Set up technical deployment plan		Possible upgrade of technical components		Creation of Access credentials and registration at Universal Trust Data Registry				Possible adaptation in the technical architecture, depending on use case	
				Decide on standards and technologies		In depth testing after deployment					
						Test result collection					





Online

Project Results & Online Training:

- Governance
- Technical Blueprint
- Data Space Establishment

<https://www.ds4sscc.eu/>



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Online

Interactive portal

...to be finalized.

Interactive Catalogue of Specifications for building data spaces in Smart and Sustainable Cities and Communities

This interactive Catalogue of Specifications aims at providing an overview of the identified building blocks (technical and non-technical) required to set up and operate the data space for smart and sustainable cities and communities. The listed eleven BBs describe functionality required by data spaces in regard to data interoperability, data trust and sovereignty, data value creation and data spaces governance. For each BB, this Catalogue shows the related and commonly used standards, industry body specifications and reference implementations. The Catalogue is open for contributions, so interested people may provide suggestions about additional inputs. For general comments about the Catalogue, please write us in our Contact form.



Multi-stakeholder Governance Scheme

Discover



Catalogue of Specifications

Discover



Reference Architecture

Discover



Priority Datasets

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Collected Use Cases

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Roadmap for implementing DS4SSCC

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