DATA SPACE FOR SMART AND SUSTAINABLE CITIES AND COMMUNITIES

Deliverable D1.1

Strategy Report

WP 1 – Coordination

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Abbreviations

CSA	Coordination and Support Action		
DS4SSCC	Data Space for Smart and Sustainable Cities and Communities		
DSSC	Data Space Support Centre		
EDIHs	European Digital Innovation Hubs		
MIMs	Minimal Interoperability Mechanisms		
TEFs	Testing and Experimentation Facilities		

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Executive Summary

This document introduces the EU-funded project Data Space for Smart and Sustainable Cities and Communities (DS4SSCC). In doing so, it details its ambitions, commitments, its position in the European landscape and provides an overview of its upcoming tasks. The work creating the data space is the result of a close collaboration with the DS4SSCC's stakeholder forum which is composed of both the supply (e.g.: SMEs) and demand (cities and communities) side. As such, the work also emphasises the need to create a blueprint based on a framework that recognises the diversity of the European digital sphere.

The initiative gathered input from its stakeholders through workshops, interviews, and surveys the past six months (October 2022 - March 2023) which are fed into the different building blocks (multi-stakeholder governance scheme, catalogue of specifications, roadmap for deployment, and capacity building). The next phase of the initiative is to deliver and validate the blueprint to and by the stakeholders.

1. A data space by and for European cities & communities

Cities and communities are in a unique position as they can be both providers and consumers of data and services. Hence, they have the potential to bring together a wide range of information in a harmonised manner to provide intelligence, and ultimately improve the delivery of services and quality of life for citizens and communities. However, the silos of cities and communities, the lack of interoperability and ability to securely and efficiently share data together with the absence of effective business models burden such an effort. Data spaces, intended as an infrastructure that enables data transactions between different data ecosystem parties based on the governance framework of that data space, address these challenges, by bringing together a variety of data from different sources on local, regional, or national level and act as an enabler of data driven innovations like local digital twins[1]. Due to data spaces' ability of bringing together different information from all domains and sectors they offer the opportunity to enable cross-domain interactions. For instance, cross-domain data spaces could be used to combine hotel reservation data with airport passenger data to gain insights into travel patterns and demand for accommodations, or integrate airport passenger data with public transportation data to optimise transportation routes and schedules on days with high passenger volume.

The [Data Space for Smart and Sustainable Cities and Communities](#) (DS4SSCC) was launched in October 2022. This initiative is embedded in the [Living-in EU movement](#) which brings together the supply and demand side to foster collaboration and digital transformation of cities and communities. As such, we are focused on representing the diverse set of expertise and requirements for data spaces in Europe. In line with this ambition, the initiative was launched by six pan-European organisations representing governance, technical, civil society expertise that are also grounded at the local level via its members.

- [Open and Agile Smart Cities](#) (OASC)
- [Eurocities](#)
- [European Network of Living Labs](#) (ENoLL)
- [FIWARE Foundation](#)
- [Austrian Institute of Technology](#) (AIT)
- [Slovenian Chambers of Commerce](#) (CCIS)

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[1] https://dssc.eu/wp-content/uploads/2023/03/DSSC-Data-Spaces-Glossary-v1.0.pdf

The underlying tasks of creating the blueprint for the data space is to ensure that our work:
- responds to the needs of the diverse European stakeholders,
- presents the information created in an accessible manner to the diverse European stakeholders,
- recognizes and accumulates all relevant European expertise in the data ecosystem for smart and sustainable cities and communities,
- reaches a variety of European stakeholders,
- represents the diversity of smart and sustainable cities and communities in Europe.

For this reason, the work packages developing the governance, technical building blocks, and roadmap of the data space feed from interactions with stakeholder forum (see figure 1).
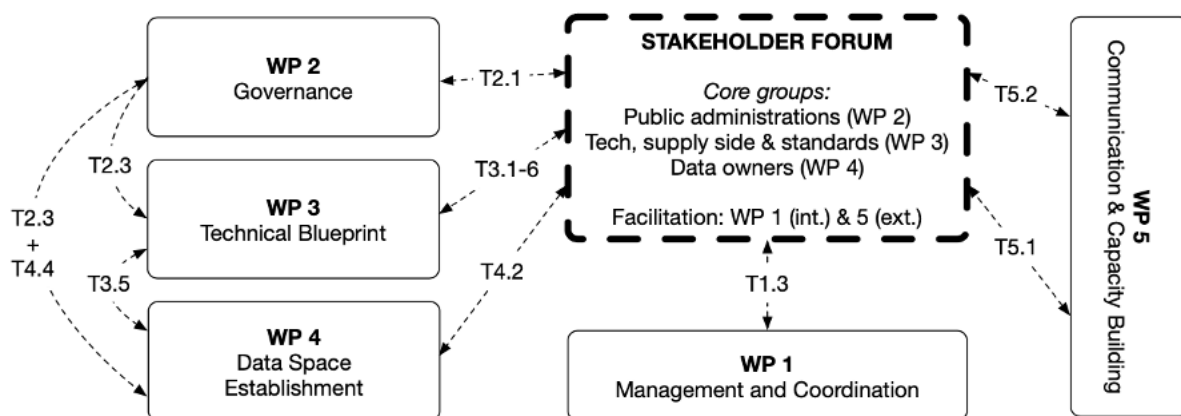

Figure 1: DS4SSCC Work plan

The contributing organisations representing the supply side are from the industry, academia, civil society, and research centres whilst the demand side is represented by cities and communities. As the launch of the initiative already comprised the support of such stakeholders, the initial list of stakeholders was the following:

Associated Partners :
- Municipalities: Ghent, Vienna, Eindhoven, Rennes, Athens, SKR (Swedish Municipalities and Regions), Tampere, Porto
- Other public entities: Luxemburg Institute of Science and Technology (Digital Twins), Computer Vision Centre (Visual Data), CERTH (IoT)
- Companies and private entities: Atos, Engineering, Kereval (Conformance),

Supporting Partners (Signed Letter of Support):

DATA SPACE FOR
SMART AND SUSTAINABLE
CITIES AND COMMUNITIES

- ○ Municipalities: VNG (Dutch Municipalities), Local Government Denmark/KL (Danish Municipali- ties), Helsinki, Amsterdam
- ○ Member State: Slovenian Government Office for Digital Transformation
- ○ Non-profits: imec (Digital Twins), Fraunhofer (Data Space Support), IrRADIARE (AURO- RAL/Smart Regions), MyData Global, GAIA-X AISBL, GAIA-X Working Group on Smart Cities, FairsFair (Mobility Data), EU AI Forum, K8 Institut für strategische Ästhetik (AI and citizens)

Companies: Ubiwhere, AnySolutionSL (Tourismdata), IDC (BDVA)

This initial list also served to leverage communication activities with the goal of n expanding the stakeholder forum. Hence, the coordinators created and participated in several activities to raise awareness and reach out to relevant stakeholders. Our activities allowed the partners to expand the stakeholder forum. Currently, the forum counts 143 stakeholders representing various sectors and from 26 countries (see figure 2 & 3).
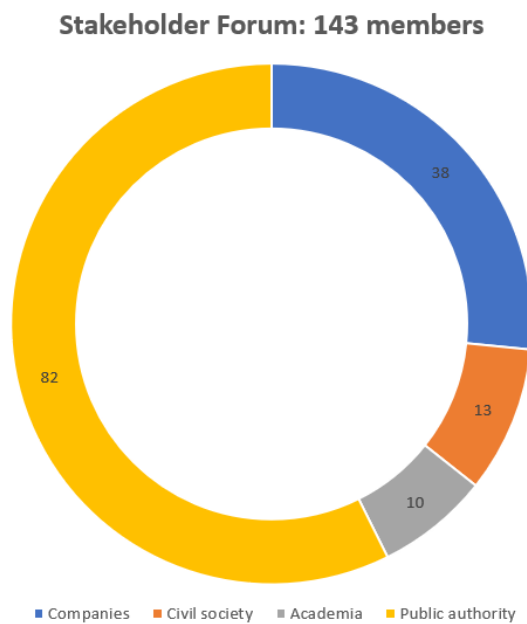

Stakeholder Forum: 143 members

- ■ Companies ■ Civil society ■ Academia ■ Public authority

Figure 2: Sectors represented by the DS4SSCC Stakeholders

DATA SPACE FOR
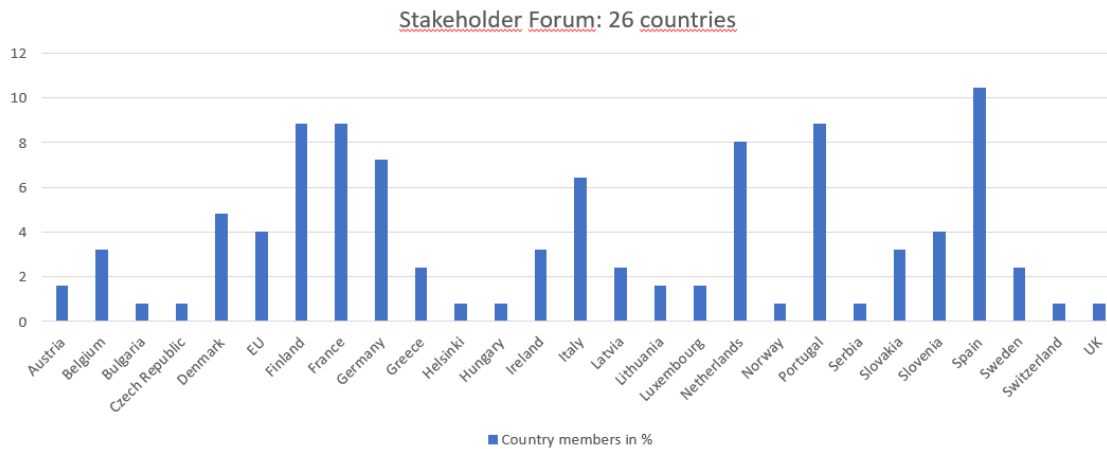SMART AND SUSTAINABLE
CITIES AND COMMUNITIES

Figure 3: Stakeholders geographical representation

Activities with Stakeholders

Expression of Interest Form in the data space for smart and sustainable cities and communities - deployment phase

Shortly after the launch of the initiative an Expression of Interest Form was published and promoted (repeatedly) on social media (LinkedIn, Twitter through @DS4SSCC), emails, newsletters, and at events by all contributing partners and the Living-in EU movement. The aim of this form was to map and engage all European stakeholders who are interested in the data space for smart and sustainable cities and communities. The form also clearly stated that it is not to be confused with the application to become a site of pilots that is to be announced in the deployment phase of the data space for smart communities. The results were published online[2]. The results also identified 36 stakeholders to be added to the stakeholder forum.

Living-in EU Technical Subgroup

DS4SSCC is a Coordination and Support Action (CSA) of the Living-in EU movement. As such, it also serves to realise and showcase the movement's power in terms of representing the diversity of Europe and its technical expertise. OASC, the coordinators of DS4SSCC, invited the Living-in.EU Technical Subgroup members[3] to also contribute to the data space by being members of its stakeholder forum.

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https://www.ds4sscc.eu/news/organisations-interested-in-the-deployment-phase-of-data-spaces-for-smart-and-sustainable-cities-and-communities
[3] https://living-in.eu/groups/commitments/technical

Survey

The consortium work packages developed a joint survey to be shared with the stakeholder forum to receive input regarding:

- governance
- technical building blocks
- high priority data sets
- capacity building

The survey received 85 responses from 22 European countries. The responses contribute to defining the priorities of data spaces in terms of:

- multi-stakeholder governance scheme
- technical building blocks (standards, specifications and implementations)
- data space roadmap
- capacity building workshop and training materials.

Interviews with Stakeholders

To follow up on the input received on the survey the partners developed three interview guides to receive relevant input:

- governance interview guide
- technical interview guide
- general interview guide

In total 22 interviews were conducted to substantiate the work for the multi-stakeholder governance scheme, the technical building blocks, the data space roadmap and capacity building.

Stakeholder Forum Meetings

The initiative organises seven workshops throughout its course to enable close collaboration with its stakeholders from both the supply and demand side. These occasions also serve to brief stakeholders about our work-in-progress, announce any relevant events, and receive feedback, questions and inputs from participants. During these meetings the partners create different exercises to either receive input for deliverables or to validate the results.

DS4SSCC Stakeholder Forum Meetings 2022-23		
Open to all members of the stakeholder forum + adhoc invitees		
Date	Time	Topic
16/01/2023	10am - 12pm (CET)	Workshop on the technical Building Blocks of the Data Space (Data Interoperability, Data Value Creation, Data Sovereignity and Trust, Data Space Governance)
02/03/2023	10am - 12pm (CET)	Workshop on evaluating the technical Building Blocks of the Data Space (Data Interoperability, Data Value Creation, Data Sovereignity and Trust, Data Space Governance)

12/04/2023	10am - 12pm (CET)	Workshop on high priority data sets and use cases
03/05/2023	10am - 12pm (CET)	Multi-stakeholder governance scheme feedback and validation
12/06/2023	10am - 12pm (CET)	TBC
05/07/2023	10am - 12pm (CET)	TBC
06/09/2023	10am - 12pm (CET)	Validation of the Blueprint

Table 1: Stakeholder Forum Schedule

2. The Landscape

DS4SSCC is part of a larger landscape which lays the foundation for a Digital Europe, as supported by The Digital Europe Programme (DIGITAL). The programme is an EU funding scheme focused on bringing digital technology to businesses, citizens and public administrations[4] to underscore Europe's digital transformation. The funding creates an ecosystem of digital solutions that will act as an enabler of a Europe that is fit for the digital age[5]. Firstly, it supports the building of data spaces across sectors as means to organise and collect data in a federated and governed manner. Then, it funds Testing and Experimentation Facilities (TEFs) across sectors to have Artificial Intelligence (AI)-driven solutions make use of the available data (see Figure 4). Finally, it established European Digital Innovation Hubs (EDIHs) across Europe that are one-stop shops supporting companies and public sector organisations to respond to digital challenges and become more competitive.
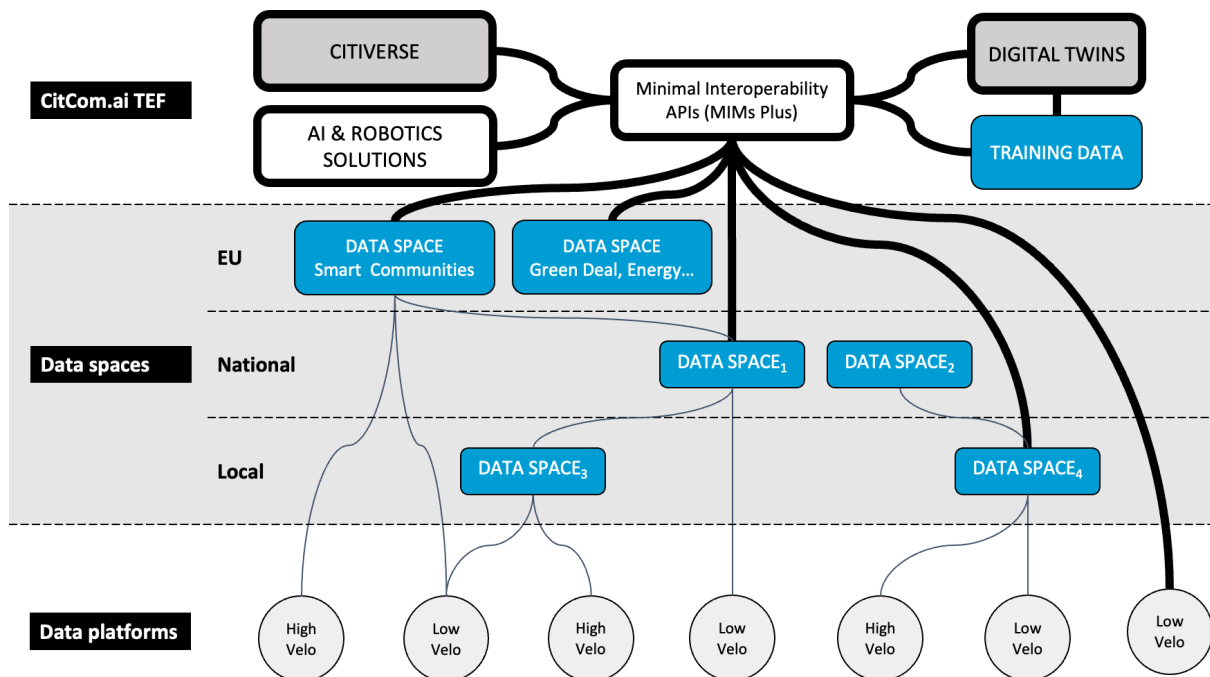

Figure 4: The anatomy of data spaces and their relationship to local digital twins, sandboxes, services and CitiVerse.

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[4]The Digital Europe Programme https://digital-strategy.ec.europa.eu/en/activities/digital-programme
[5]A Europe fit for the digital age
https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/europe-fit-digital-age_en

2.1 Data Space Support Centre (DSSC)

The Data Space Support Centre was launched in October 2022. The Centre is a central node in the network of data spaces. Their objective is to explore the needs of data space initiatives, define common requirements and establish best practices to accelerate the formation of sovereign data spaces as a crucial element of digital transformation in all areas. The Centre helps communications across data spaces and fosters the dialogue between providers and users of data spaces to ensure that they are accessible and useful to users. An example of this is the event held in the Hague 'Data Space Symposium' where participants could learn about the priorities of European data spaces and exchange ideas[6].

The centre has recently published the 'Starter Kit for Data Space Designers' together with a glossary for data spaces. The starter kit endorses the OpenDEI design principles for data spaces and as such the DS4SSCC adopts its building blocks:

- data interoperability
- data value creation
- data sovereignty & trust
- governance

All building blocks break down in further blocks as Figure 5 shows. The deliverable 3.1 'Catalogue of Specifications' expands upon these.
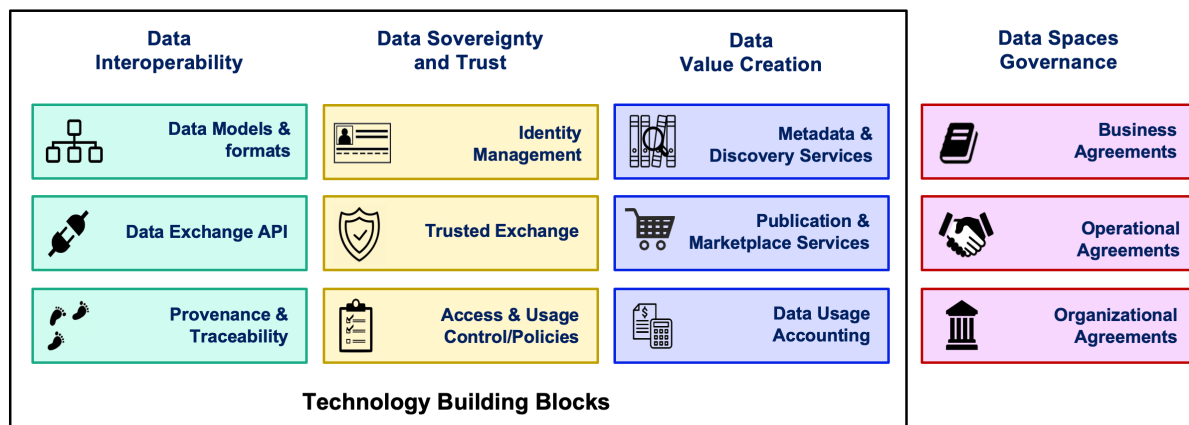

Figure 5: Building Blocks taxonomy recommended by OpenDEI and adapted by the DSBA Technical Convergence Discussion Document

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[6]

https://www.ds4sscc.eu/news/data-spaces-symposium-from-smart-cities-to-manufacturing-and-energythe-hague-21-23-march

2.2 Living-in.EU movement

The Living-in.EU movement is dedicated to building the European way of Digital Transformation for 300 million Europeans. Large-scale uptake and upscale of digital solutions are crucial to help our cities and communities meet their climate targets and reduce their environmental footprint, while fostering citizen participation and bringing prosperity to all types of business, including SMEs and start-ups.Through co-creation with citizens, the movements aims to bring the economic and social benefits of this transformation to all local communities and implement an inclusive digital Europe, with powerful digital services, technologies, infrastructures and skills.The movement calls upon cities, regions, and communities to sign its declaration[7] and thereby become a signatory. Other organisations are also welcome to join the movement by becoming supporters.

The movement promotes the minimal interoperability mechanisms (MIMs plus) as means to help all European cities and communities with different technological capabilities interact with each other and thereby onboard digital transformation collectively. Accordingly, the blueprint of data spaces for smart communities should be accessible to all stakeholders and as such the initiative employs and develops the MIMs plus further. Below we provide an overview of the relationship between MIMs,Y.MIM, and MIMs.

MIMs

Open & Agile Smart Cities (OASC) champions the Minimal Interoperability Mechanisms (MIMs), a set of practical capabilities based on open technical specifications that allow cities and communities to replicate and scale solutions globally. The MIMs are developed by the OASC Technology Council and governed by the Council of Cities and the Board of Directors. MIMs provide the technical foundation for procurement and deployment of data spaces, local digital twins and services in cities & communities worldwide.

Y.MIM

The United Nations International Telecommunications Union (ITU) is the world's oldest and largest standards-developing organisation, and it has a standardisation forum for "IoT and Smart Cities and Communities" called Study Group 20 (SG20). The MIMs have been part of the outcome of the Focus Group on Data Processing and Management for Smart Cities and Communities (FG-DPM), which focused on interoperability. This work led to a report called "Redefining smart city platforms: Setting the stage for Minimal Interoperability Mechanisms", a deliverable from the

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[7] https://living-in.eu/user/register/signatory

UN United for Smart and Sustainable Cities (U4SSC) initiative, supported by 18 UN agencies. Furthermore, a work item was initiated in SG20 called "y.MIM", which will formalise the format and description of Minimal Interoperability Mechanisms more generally as part of the ITU-T y-series of standards, with the aim of making it a global standard for all UN 193 member states.

MIMs Plus

The Living-in.EU Tech Subgroup has as its main focus and mandate to evolve the Minimal Interoperability Mechanisms (MIMs) in line with the Living-in.EU Declaration and its signatories as "MIMs Plus". The work follows the "school-year" from September to June, meeting every other month (even months except August/month 8), and delivering a new version by June.

Relevant MIMs plus for DS4SSCC

MIM1 – Context Management
MIM2 – Data Models
MIM3 – Contracts
MIM4 – Trust (Personal Data Management)
MIM6 – Security
MIM7 – Geospatial Data

As such, the DS4SSCC mapped the mentioned MIMS into the OpenDEI design principles for data spaces (see figure 6). The mentioned MIMs provide technical specifications/references/implementations to realise the building blocks as well as they provide legal, operational and organisation information to support the governance of a data space.
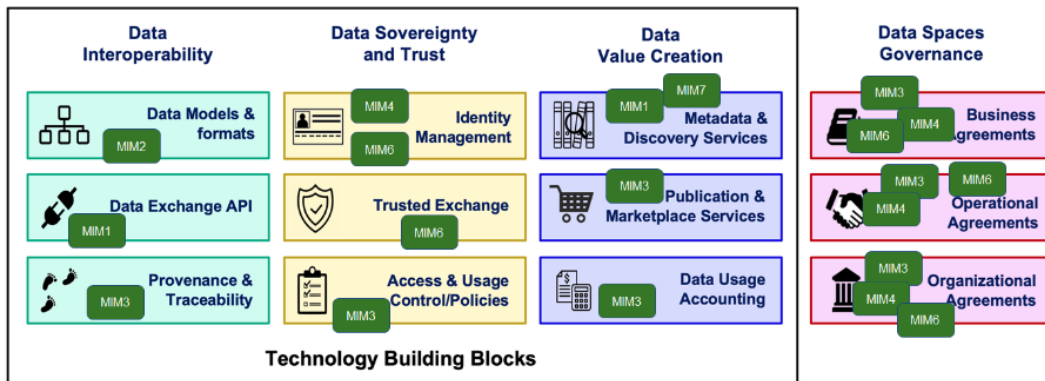
Figure 6. MIMs mapping into Data Spaces Building Blocks

MIMs Plus Development Roadmap

Many stakeholders (including Living-in.EU signatories, supporters and third parties) and actions (grants and tenders, including the Data Space for Smart Communities preparatory action/DS4SSCC) have been and are increasingly involved in and supported the work, however, the fact that the Living-in.EU movement has matured while anticipating the Digital Europe Programme launch, has led to a situation where some assumptions made in the DEP work programme about the outcomes of Living-in.EU, including the MIMs Plus, are up against the clock in order to be available in time for the subsequent actions like the creation of a Local Digital Twins Toolbox. In parallel, the y.MIM specification containing just the MIMs concept with some examples, from the United Nations standards development organisation (ITU) is becoming concrete, and is foreseen to be released as a global recommendation (standard) in September 2023, starting later on also the standardisation exercise of the whole MIMs Plus framework composed of the individual MIMs.

Responding to this situation, and to the needs of the Living-in.EU community, the Living-in.EU Steering Board has adopted the attached roadmap (figure7) for the evolution of the MIMs Plus following the y.MIM format, delivering to the Steering Board (1) a roadmap update by the end of March 2023, (2) MIMs Plus v5.5 with MIMs 1, 2, 4, 7 and Framework following the y.MIM format by the end of April 2023, (3) v6 by the end of June, (4) v6.5 by the end of 2023, and (5) v7 by June 2024.

MIMs Plus: Development Plan

D = Draft
X = Final Version

#	TASK	v5	v5.5			v6.0			v6.1			v6.5			RESOURCES
			JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
	Validation meetings							X						X	
	Living-in.EU			TSG	SB		TSG	TSG				TSG		TSG	
	OASC		CSSCC				TC	GA			TC		TC		
	ITU-T SG20			SG20		Q1			Q1		SG20		Q1		
	Documents														Go LI.EU, DS4SSCC, StandICT.eu
	MIMs Plus text (using Y.MIM)	X			X			X		X		X		X	
	mims.oascities.org	X			X			X		X		X		X	
	Y.MIM text	X		D		D			D		D				
	MIMs Framework	X				D		X						X	
	Deliverables														
1	**MIM1: Context**	X				D	X								DS4SSCC, Go Li.EU, CitCom.ai TEF, dRural
	Deliverables				☑		☑			☑	☑				
2	**MIM2: Data Models**	X				D	X								DS4SSCC, Go Li.EU, CitCom.ai TEF, dRural
	Deliverables				☑		☑			☑	☑				
3	**MIM3: Contracts**	X												X	DS4SSCC, Go Li.EU, Cit.Com.ai TEF
	Deliverables				☑		☑			☑	☑				
4	**MIM4: Trust**	X				D	X								DS4SSCC, Go Li.EU, Cit.Com.ai TEF
	Deliverables				☑		☑			☑	☑				
5	**MIM5: Transparency & Fair AI**	X										D		X	DS4SSCC, Go Li.EU, Cit.Com.ai TEF
	Deliverables				☑		☑			☑	☑				
6	**MIM6: Security**	X												X	DS4SSCC, CommuniCity, CitCom.ai TEF
	Deliverables				☑		☑			☑	☑				
7	**MIM7: Places**	X				D	X								DS4SSCC, Go Li.EU, Cit.Com.ai TEF
	Deliverables				☑		☑			☑	☑				
8	**MIM8: Indicators**	X													DS4SSCC, Go Li.EU, Cit.Com.ai TEF
	Deliverables				☑		☑				☑				
9	**MIM9: Analytics**	X												X	DS4SSCC, Go Li.EU, Cit.Com.ai TEF
	Deliverables				☑		☑			☑	☑				
10	**MIM10: Resources**	X													DS4SSCC, Go Li.EU, Cit.Com.ai TEF
	Deliverables						☑			☑					

Figure 7: MIMs plus Development Roadmap

2.3 Date Spaces

DS4SSCC was launched in parallel with a number of other sectoral data space preparatory actions. To help a harmonised development of the data space blueprints[8], the teams behind the sectoral data spaces are in constant dialogue facilitated by the Data Space Support Centre (DSSC). The objective is to align in terms of technological specifications and governance to ensure that future data spaces will be able to work together efficiently. The sectoral data spaces are built in a strategic and thematic manner to help breaking silos by bringing together different sectors and solutions. For this reason, the DS4SSCC and the Green Deal Data

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[8] A consistent, coherent and comprehensive set of guidelines to support the implementation, deployment and maintenance of data spaces. Source: https://dssc.eu/wp-content/uploads/2023/03/DSSC-Data-Spaces-Glossary-v1.0.pdf

Space build on data spaces focusing on energy, mobility, tourism and skills (see Figure 8).

Figure 8: Visual Representation of the Data Spaces Landscape

Green Deal Data Space (GREAT)

The GREAT project, funded by the Digital Europe program, aims to establish the Green Deal Data Space Foundation and its Community of Practice which builds on both the European Green Deal and the EU's Strategy for Data. The project will deliver a roadmap for implementing and deploying the Green Deal Data Space, an infrastructure that will allow data providers and initiatives to openly share their data to tackle climate change in a multidisciplinary manner. The initiative was launched in September, 2022 and focuses on three areas: biodiversity, zero pollution and climate change adaptation. DS4SSCC also participated in a workshop with GREAT to ensure that the development of both data spaces are aligned.

Data Space for Energy

Four actions are currently preparing for a European energy data space, including OMEGA-X and Int-Net. As an example, relying on European common standards, OMEGA-X provisions a federated infrastructure, data marketplace and service marketplace, involving data sharing between different stakeholders and demonstrating its value for concrete energy use cases while guaranteeing scalability and interoperability with other data space initiatives.

Data Space for Mobility

PrepDSpace4Mobility lays the foundation for a secured and controlled way of pooling and sharing mobility data across Europe. The 12-month Coordination and Support Action (CSA) contributes to the development of the common European mobility data space by mapping existing data ecosystems, identifying gaps and overlaps within, and proposing common building blocks and governance frameworks found in existing data space architectures. The actions are carried out by a project team comprised of leading experts from the private and public mobility sectors, with key competencies in mobility, economics, and digital technologies. Jointly, they are supporting a new European era of mobility data sharing, centred around the principles of trust, interoperability, and sovereignty, where data can be made available, accessed, and securely exchanged across Europe. PrepDSpace4Mobility represents a vital pillar for the future deployment of a single market for mobility data. DS4SSCC is in constant dialogue with data space for mobility to ensure that the data spaces are aligned.

Data Space for Skills

The Data Space for Skills (DS4Skills) is a 1-year project aiming to prepare the ground for the development of an open and trusted European Data Space for Skills that supports sharing and accessing skills data. It is funded by the European Commission under the Digital Europe Programme and involves 14 ambitious partners from the industry, education and data ecosystem sectors. Coordinated by DIGITALEUROPE, the DS4Skills consortium brings together 10 full Partners and 4 Associated Partners with solid experience in data ecosystem and community building, a wide network of stakeholders from diverse backgrounds, including researchers, training providers, companies as well as associations representing industry and data ecosystems.

Data Spaces for Tourism and DATES

The initiatives are EU projects that aim to explore approaches and options for the deployment of a secure and trusted tourism data space, ensuring transparent control of data access, use and re-use. The project focuses on the development of governance and business models, while providing a shared roadmap that will ensure the coordination of the tourism ecosystem stakeholders and the connection between data ecosystems at EU level and interconnected data spaces in other sectors. The projects promote the vision of a prosperous tourism data space and recommend clear strategies on how to inspire and motivate all key tourism stakeholders to collaboratively build a powerful interconnected tourism data space. Besides providing leadership and practical advice about how every stakeholder in the tourism value chain can contribute and utilise data streams, the added benefits

of a European Tourism Data Space will be highlighted from each stakeholder's perspective. In more general terms, they support the digital transformation of the sector, fostering competitiveness, resilience, and sustainability as key success factors to maintain Europe's leading role.

2.4 Testing and Experimentation Facilities (TEFs)

The large-scale reference TEFs will offer a combination of physical and virtual facilities, in which technology providers can get primarily technical support to test their latest AI-based software and hardware technologies (including AI-powered robotics) in real-world environments.

This will include support for full integration, testing and experimentation of latest AI-based technologies to solve issues/improve solutions in a given application sector, including validation and demonstration. They will focus on testing mature AI–based technologies and solutions that have already been tested in the labs, and have to be tested in real-world environments.

TEFs seek to support technology providers with the necessary expertise to integrate and validate their solutions in the TEFs, but the TEFs are also expected to involve end-users of the technologies to maximise its impact (in particular end-users can be involved in defining testing scenarios, protocols and metrics, most relevant and impactful to their sectors).

The Digital Europe Programme foresees four sectorial TEFs: agri-food, healthcare, manufacturing as well as smart cities and communities. All four are co-funded by Member States.[9]

2.5 European Digital Innovation Hubs (EDIHs)

With the [EDIH network](#) the European Commission wants to build a vibrant community of hubs and other stakeholders fostering networking, co-operation, and knowledge transfer activities between EDIH, SME and mid-caps, the public sector and the other relevant stakeholders and initiatives. The Digital Transformation Accelerator (DTA) is supporting the achievement of this goal, through managing the web presence of the network, and hosting appropriate software platform and tools, including the online [catalogue of EDIHs](#).The [EDIH network web portal](#) includes tools to assess the performance of the EDIH network, gauging the impact that EDIHs have on the digital maturity of the organisations they support. To this end, the Joint Research Centre of the European Commission has developed a [Digital Maturity Assessment](#) tool which can be used by all EDIHs to measure the progress of Digital

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[9] Testing and Experimentation Facilities (TEFs): Questions and answers https://digital-strategy.ec.europa.eu/en/faqs/testing-and-experimentation-facilities-tefs-questions-and-answers

Maturity of their customers. The Digital Maturity Assessment tool is available in the section of the web portal reserved for registered EDIHs.

European Digital Innovation Hubs and other initiatives

Many EDIHs include organisations that are part of Enterprise Europe Network (EEN) or European Industrial Clusters (EIC). EDIHs should develop a strong connection with other networks, including EEN, EIC and Start-up Europe, to provide a seamless service to SMEs within local and regional ecosystems. A guidance document is under development to provide good practices and further detail on this cooperation.[10]

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[10] European Digital Innovation Hubs https://digital-strategy.ec.europa.eu/en/activities/edihs

4 Conclusions and next steps

The deliverable detailed DS4SSCC's commitment to work together with its stakeholders whilst also highlighting its position in the network of data spaces and the wider European digitalisation efforts. The close collaboration with the stakeholders ensures that the blueprint caters to the needs and requirements of European users. As such, our work is not merely focused on defining the technical and governance aspects of a dataspace but also to initiate a dialogue with European stakeholders, understand the diverse set of capabilities and technological readiness, and to evaluate the kind of support needed to adapt data spaces.

Over the course of the next six months the initiative will continue meeting with its stakeholders to gather input for its work as well as to validate it. Concretely, it will deliver a) a multi-stakeholder governance scheme; b) provide a reference architecture in addition to the catalogue of specifications; c) a roadmap to deploy the dataspace for smart cities and communities and d) f provide capacity building to European cities and communities.

As the delivered blueprint is accompanied with a roadmap for its deployment the initiative is also mindful about the next phase for data spaces for smart communities: the deployment phase. This latter phase will start on the 1st of October, 2023 and it will call upon cities and communities to apply for becoming sites of piloting. Cities and communities can apply together with other cities and communities and industry players from different member states as mini consortia. The deployment phase will remain available for the community raised during the current preparatory action. Hence, the overall timeline of data spaces for smart communities is a total of 48 months separated into a preparatory and a deployment phase (see figure 9).
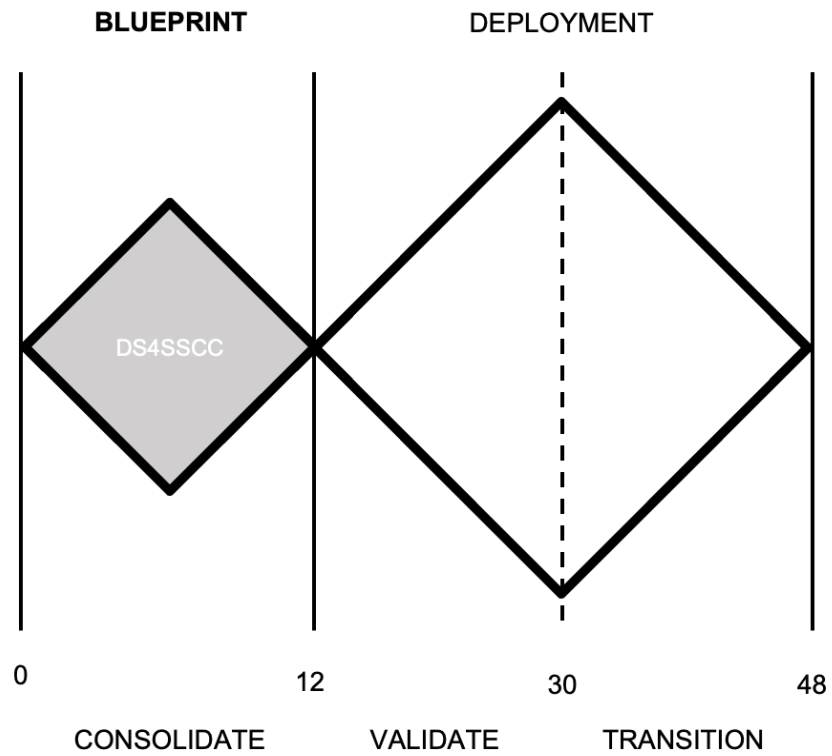
Figure 9: Overall Timeline of Data Spaces for Smart cities and Communities

About Data Space for Smart and Sustainable Cities and Communities (DS4SSCC)

Data is a central aspect of the twin green and digital transformation, and European cities, regions, towns, and rural areas play a vital role in safely leveraging its potential. This preparatory action for a Data Space for Sustainable and Smart Cities and Communities (DS4SCC) provides a coordinated starting point for public, private, and individual stakeholders to contribute and use data, aligned with European values and policies.

This preparatory action emphasises the sustainability aspect – green, social, and economic – and the diversity of communities, and aims to:

- Develop a multi-stakeholder data governance scheme by bringing together European cities and their local stakeholders ('quadruple helix') to collaborate on use cases relevant to Green Deal objectives through an operational local data governance core group".
- Create a blueprint for the European DS4SSCC by co-creating with stakeholders a methodology for setting it up, from the vision of a full-fledged pan-EU DS4SSCC, not only from a technical perspective but also giving operational guidance e.g., for procurement.
- Bring an agreed set of priority datasets into conformity with the new blueprint by delivering a catalogue of domains, use cases and related data sets for DS4SSCC.
- Develop a roadmap and action plan towards a mature, connected pan-EUDS4SSCC.
- Shape and implement the data space on the local, regional, national and EU levels, taking into account their different levels of maturity, will be an exercise in co-creation with the stakeholder forum.

Documentation will include recommended actions for standardisation, business models and strategies for running data spaces, and a vision for the federation of platforms. Building on core European networks of cities and communities that have championed the Living-in.EU movement, DS4SSCC is a timely, ambitious, and essential contribution towards the sustainability goals of European citizens.

Our consortium:

DATA SPACE FOR SMART AND SUSTAINABLE CITIES AND COMMUNITIES