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Keywords:	Data Space Governance, Governance framework, Compliance, Mobility Data Space.
Abstract (few lines):	This deliverable defines the governance framework for the DS4MOBMODELS Mobility Data Space, ensuring secure, interoperable and trustworthy data sharing in the European mobility ecosystem. It first reviews the state of the art on European Data Spaces and the relevant EU regulatory context (GDPR, Data Act, Data Governance Act, Interoperable Europe Act, eIDAS) and governance initiatives such as DSSC, IDSA, DS4SSCC, EHDS and GREAT. Building on this analysis and the UNE 0087:2025 specification, it proposes a distributed governance model with a Data Space Governance Authority and Governance Committee, and formalises the DS4MOBMODELS Rulebook and Rolebook. The document details key roles (governance authority, data providers, data consumers, service provider) and core processes for onboarding, data product publication, discovery, data exchange, conflict resolution and responsibility assignment through a RASCI matrix, providing a coherent operational model to guide the implementation and evolution of the DS4MOBMODELS data space.

Table of Contents

DEFINITIONS, ACRONYMS AND ABBREVIATIONS **8**

GLOSSARY **10**

1 EXECUTIVE SUMMARY **11**

2 INTRODUCTION **12**

3 STATE OF THE ART OF EUROPEAN DATA SPACES **13**

3.1 REGULATORY FRAMEWORK 13

3.1.1 GDPR *14*

3.1.2 Data Act *14*

3.1.3 Data Governance Act *15*

3.1.4 Interoperable Europe Act *16*

3.1.5 eIDAS *17*

3.2 GOVERNANCE FRAMEWORK 17

3.2.1 DSSC *18*

3.2.2 IDSA *19*

3.2.3 DSBA *21*

4 GOVERNANCE DESIGN DECISIONS IN DS4MOBMODELS **23**

4.1 ANALYSIS OF CURRENT EUROPEAN DATA SPACES 23

4.1.1 DeployEMDS *23*

4.1.2 DS4SSCC *24*

4.1.3 EHDS *25*

4.1.4 GREAT *26*

4.2 GOVERNANCE MODEL 27

4.3 ROLES AND RESPONSIBILITIES 27

4.4 GOVERNANCE PROCESSES 28

4.5 DATA SOVEREIGNTY AND FEDERATED ACCESS 28

4.6 INTEROPERABILITY AND TECHNICAL STANDARDISATION 28

4.7 COMPLIANCE, TRUST AND CONTINUOUS MONITORING 29

5 DS4MOBMODELS RULEBOOK **30**

5.1 ORGANISATIONAL MODEL 31

5.1.1 Governance Committee charter & decisions *32*

5.2 DS4MOBMODELS ROLEBOOK 33

5.2.1 Governance Authority *33*

5.2.2 *Data consumer* 34
5.2.3 *Data provider* 36
5.2.4 *Service provider* 39
5.3 DS4MOBMODELS PROCESSES 40
5.3.1 *Onboarding* 40
5.3.2 *Publishing a Data Product Offering (DPO)* 41
5.3.3 *Discovering a Data Product Offering (DPO)* 43
5.3.4 *Data exchange* 44
5.4 DS4MOBMODELS CONFLICT RESOLUTION 45
5.5 RASCI MATRIX 46
6 NEXT STEPS 49
7 CONCLUSION 50
8 REFERENCES 51
9 ANNEX 1. COMPARATIVE MATRIX OF DATA GOVERNANCE FRAMEWORKS IN EUROPEAN DATA SPACES 54
10 ANNEX 2. DECISION ON THE GOVERNANCE MODEL. 55
11 ANNEX 3. DS4MOBMODELS DATA CONSUMERS. 56
12 ANNEX 4. DS4MOBMODELS DATA PROVIDERS. 60
13 ANNEX 5. MAIN ROLES IN DATA SPACES. 65
14 ANNEX 6. PARTICIPATION MANAGEMENT PROCESSES 67
15 ANNEX 7. MAP OF INPUTS, ACTIVITIES, AND OUTPUTS OF DATA SPACE GOVERNANCE PROCESSES 69
16 ANNEX 8. DS4MM CONTRACT TEMPLATE 72
16.1 PARTIES 72
16.2 PURPOSE 72
16.3 DATASET DESCRIPTION 72
16.4 APPLICABLE USAGE POLICIES 73
16.5 RIGHTS AND OBLIGATIONS 73
16.5.1 *Data Provider Obligations* 73
16.5.2 *Data Consumer Obligations* 73
16.5.3 *Data Exchange Conditions* 73
16.6 DURATION AND TERMINATION 74

16.7 Compliance and Auditing 74
16.8 Governing Framework 74
16.9 Signatures 74

Table of Figures

Figure 1: DSSC's decision tree for data spaces organisational form. 19
Figure 2: IDS Data Space Model and architecture. 20
Figure 3: DeployEMDS framework. 24
Figure 4: Tentative DS4SSCC governance framework. 25
Figure 5: Governance dimensions. 30
Figure 6: Decision on the DS4MOBMODELS governance model. 32
Figure 7: Onboarding of participants' diagram. 41
Figure 8: Data Product publication diagram 42
Figure 9: Data Product discovery diagram. 44
Figure 10: Data exchange diagram. 45

Table of Tables

Table 1: RASCI matrix legend. 47
Table 2: DS4MOBMODELS RASCI matrix. 48
Table 3: European Data Spaces Governance Framework Comparative Matrix. 55
Table 4: Results on the governance model Microsoft Forms 55
Table 5: DS4MOBMODELS data consumers. 59
Table 6: DS4MOBMODELS data providers. 64
Table 7: Roles in data spaces. 66
Table 8: Governance Process. 68
Table 9: Map of inputs. 71

Definitions, Acronyms and Abbreviations

Acronym	Title
ATMV	Metropolitan Transport Authority of Valencia
ARSULIPO	Access, Rectification, Deletion, Objection, Restriction of Processing, and Portability
CCDRC	Commission for Coordination and Regional Development of Centro, Portugal
CRTM	Consorcio Regional de Transportes de Madrid
DA	Data Act
DGA	Data Governance Act
DGT	Dirección General de Tráfico
DPO	Data Product Offering
DS4MOBMODELS	Data Space for Mobility Models Integration
DSGA	Data Space Governance Authority
DSP	Data Space Protocol
DSSC	Data Space Support Centre
EGTC	European Grouping of Territorial Cooperation
EHDS	European Health Data Space
EHR	Electronic Health Records
eIDAS	Electronic identification and trust services for electronic transactions in the internal market and repealing Directive
eIDs	Electronic identification
EIF	European Interoperability Framework
EMDS	European mobility data space
EV	Electrical Vehicle
FAIR	Findability, Accessibility, Interoperability and Reuse
FCD	Floating Car Data
FPD	Floating Phone Data
GREAT	Green Deal Data Space Foundation and its Community of Practice
IDS-RAM	IDS Reference Architecture Mode
IEA	Interoperable Europe Act
IP	Intellectual Property
LEZ	Low Emission Zone
MITMS	Ministry of Transport and Sustainable Mobility

SCT	Servei Català de Trànsit
SEITT	State Company for Land Transport Infrastructures
TEN-T	Trans-European Transport Network
UC	Use Case

Glossary

Term	Description
Data Consumer	A participant of the data space who uses the Data Product Offering (DPO) for analysis, application development or decision-making purposes.
Data Product Offering (DPO)	A structured and curated collection of data assets, enriched with metadata, designed for publication and consumption within the data space.
Data Provider	A participant of the data space who creates, publishes and maintains a specific Data Product Offering (DPO), ensuring data quality, accuracy and timely updates.
Data Space Connector	A component in a data space that acts as a gateway between participants within the ecosystem.
Data Space Governance Authority (DSGA)	An entity that is responsible for maintaining and enforcing the governance framework on the data space.
Governance Committee	A governing body that is responsible for data space defining policies, ensuring compliance with ethical, legal, and operational standards, and overseeing strategic alignment of the data space with stakeholder objectives.
Policy Enforcement	A process that ensures that predefined rules, agreements, or conditions are applied and respected during the data exchange or operations.
Rolebook	A formal document that complements the Rulebook by defining roles and responsibilities for each actor involved.
Rulebook	A formal document that defines the rules, principles, and guidelines on how actors or participants interact in a data space.
Service Provider	An entity that manages the operational aspects of the data space, including infrastructure provisioning, system maintenance, performance monitoring, and user support.

1 Executive Summary

This deliverable outlines the governance framework for the DS4MOBMODELS project, aiming to enable secure, interoperable and trustworthy data sharing in the European mobility sector.

The present document is a research of the current state of the art on European Data Spaces, regulations and their relationship to the governance framework, which is predefined in deliverable 2.2[1].

Given the complexity of the governance framework, the structure will cover three interconnected domains:

- Overall Data Space Governance: Defining strategic oversight and legal compliance.
- Interoperability Governance: ensuring technical compatibility and seamless data exchange.
- Data Governance: Managing data quality, access, and usage.

However, at this stage of the project, it is more cautious to highlight the principles of the overall data space governance, for the reason being that we establish an attainable as well as sustainable governance framework that can be iterated when developing the technical aspects.

Oversight is trusted by a Data Space Governance Authority (DSGA), which handles the development, operation and enforcement of the governance model. This deliverable considers the formalisation of this authority as a legal entity and outlines the next steps for implementation.

[1] DS4MOBMODELS deliverable 2.2.

2 Introduction

This deliverable defines the governance structure for the DS4MOBMODELS data space, ensuring secure, interoperable and sovereign data exchange within the European mobility ecosystem. It builds upon the regulatory foundations established by EU legislation (Section 3.1) and aligns with governance blueprints from initiatives such as DSSC and IDSA (Section 3.2).

Key components include the Rulebook (Section 5) defining principles and policies, and the Rolebook (Section 5.2) detailing roles and responsibilities using frameworks like RASCI[2].

Governance processes such as onboarding, data product publication, discovery, and exchange are described in Section DS4MOBMODELS Processes, supported by diagrams and annexes for operational clarity.

The deliverable also introduces the Data Space Governance Authority (DSGA) as the entity responsible for policy enforcement, compliance monitoring, and conflict resolution. In the DS4MOBMODELS scenario, the DSGA is composed of a Governance Committee, since the governance model is a distributed model.

Future steps focus on consolidating governance templates and implementing mechanisms for continuous improvement (Section 6).

[2] RASCI stands for **R**esponsible, **A**ccountable, **S**upports, **C**onsulted, Informed.

3 State of the art of European Data Spaces

European Data Spaces represent a cornerstone of the EU's strategy to enable secure, interoperable, and trustworthy data sharing across sectors and borders. Their development is underpinned by a robust regulatory framework composed of key legislative instruments such as the GDPR, Data Act (DA), Data Governance Act (DGA), Interoperable Europe Act (IEA), and eIDAS2.

These regulations collectively ensure legal certainty, transparency, and accountability while safeguarding fundamental rights and promoting innovation. Complementing this legal foundation, initiatives like the Data Space Support Centre (DSSC) provide governance blueprints that define organisational and technical structures, compliance mechanisms, and operational processes for data spaces. Current governance models emphasise federated and multi-level approaches, balancing decentralisation with coordination at EU, national, and sectoral levels.

Core principles such as interoperability, data sovereignty, and ethical data use guide these frameworks, while operational mechanisms include onboarding, data discovery, publication, and compliance monitoring. Together, these elements position European Data Spaces as a scalable and value-driven infrastructure for the data economy, fostering cross-sector collaboration and alignment with EU strategic priorities.

3.1 Regulatory framework

The European Union has established a comprehensive legal and governance framework to facilitate the development of secure, interoperable, and trustworthy data spaces. Four key legislative instruments underpin this framework: the General Data Protection Regulation (GDPR), the Data Act (DA), the Data Governance Act (DGA), the Interoperable Europe Act (IEA) and the electronic identification and trust services for electronic transactions in the internal market and repealing Directive (eIDAS2).

Each of these regulations contributes to distinct yet complementary provisions that collectively support the creation of data spaces grounded in legal certainty,

transparency, and accountability. Together, they form a cohesive governance that enables the responsible and effective exchange of data across sectors and borders, while safeguarding fundamental rights and promoting innovation within the European data economy.

3.1.1 GDPR

The General Data Protection Regulation (GDPR) provides a foundational governance framework for data spaces, particularly when personal data is involved. It establishes key principles such as lawfulness, fairness, transparency, purpose limitation, data minimisation, accuracy, storage limitation, integrity and confidentiality, and accountability.

Impact on DS4MOBMODELS:

Beyond the regulatory principles, GDPR compliance is operationalised within the project through specific governance and technical mechanisms:

- Onboarding and Identity Management: use of verifiable credentials to ensure the legitimacy and authentication of participants accessing the data space.
- Contracts and Usage Policies: Definition of access rules, traceability, and auditability mechanisms embedded in data sharing agreements and enforced through the Data Space Connector.
- Platform Architecture: Application of privacy-by-design principles to ensure data minimisation, security, and controlled processing across all use cases.

These measures enable the secure and compliant sharing of sensitive mobility data, supporting project use cases (e.g. traffic analysis, emissions modelling) while preserving data protection requirements and building trust among participants.

3.1.2 Data Act

The Data Act (DA)[3], it establishes rules on who can access, use, and share data generated within the EU, ensuring data sovereignty and protecting participants against unfair contractual practices.

[3] DA: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:L_202302854

Impact on DS4MOBMODELS:

Within DS4MOBMODELS, the Data Act directly informs how data is shared and accessed across the ecosystem:

- Providing the basis for defining data sharing agreements and contractual conditions between data providers and consumers (Annex 8. DS4MM Contract template.
- Ensuring fair access to data among public authorities, research entities and private stakeholders.
- Supporting the implementation of usage policies and restrictions embedded in data product offerings (DPO).
- Reinforcing mechanisms to protect sensitive data and intellectual property.

As a result, the Data Act enables DS4MOBMODELS to establish a trusted and balanced data sharing environment, aligned with European requirements.

3.1.3 Data Governance Act

The Data Governance Act (DGA)[4], aims to facilitate the reuse of data, particularly public sector data and data subject to specific rights (e.g. personal or commercially sensitive data), while ensuring trust and regulatory compliance.

It introduces mechanisms such as data intermediation services and promotes structured data sharing, with a strong emphasis on neutrality, requiring intermediaries to act without exploiting the data they facilitate.

Impact on DS4MOBMODELS:

In the context of DS4MOBMODELS, the DGA influences the governance and operational model as follows:

- Aligning with the role of the platform as a trusted intermediary for data exchange.

[4] DGA: https://eur-lex.europa.eu/eli/reg/2022/868/oj/eng

- Supporting the implementation of neutral and transparent data sharing mechanisms.
- Reinforcing the need for clear governance rules on data access, reuse, and control.
- Contributing to building trust among participants, especially when sharing sensitive or regulated data.

Through these mechanisms, the DGA strengthens the foundation for a secure, transparent, and trustworthy data ecosystem, enabling collaboration across stakeholders in DS4MOBMODELS.

3.1.4 Interoperable Europe Act

The Interoperable Europe Act (IEA)[5], establishes a structured governance framework to enhance cross-border interoperability of digital public services across the EU. It introduces a co-owned cooperation model between Member States and EU institutions, steered by the Interoperable Europe Board, which defines strategic priorities, oversees implementation, and monitors progress.

Impact on DS4MOBMODELS:

Within DS4MOBMODELS, the Interoperable Europe Act supports interoperability across stakeholders and systems by:

- Enabling cross-border collaboration between public administrations and data providers.
- Promoting the use of common standards and data models for consistent data exchange.
- Ensuring compatibility between systems and services within the data space.
- Supporting the reuse of existing solutions and frameworks at European level.

[5] IEA: https://eur-lex.europa.eu/eli/reg/2024/903/oj/eng

The IEA guarantees that DS4MOBMODELS does not function as an isolated ecosystem, but as an integrated infrastructure that strengthens the digital cohesion of public mobility services throughout the European Union.

3.1.5 eIDAS

The eIDAS Regulation[6], establishes a common legal framework for electronic identification (eID) and trust services to enable secure and seamless electronic transactions across the EU internal market.

Impact on DS4MOBMODELS:

Within DS4MOBMODELS, eIDAS plays a fundamental role in enabling secure participation in the data space through the following points:

- Supporting identity management and authentication mechanisms used during onboarding.
- Enabling the use of verifiable credentials to identify and validate participants.
- Ensuring trust and security in interactions between data providers and consumers.
- Contributing to the implementation of secure access control mechanisms across the platform.

As a result, eIDAS is a critical enabler for establishing trust, security, and interoperability in the DS4MOBMODELS data space.

3.2 Governance framework

This framework is not adopted as a standalone state of the art, but as a toolbox from which DS4MOBMODELS extracts specific components for its practical implementation.

[6] eIDAS: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014R0910

3.2.1 DSSC

The Data Space Support Centre (DSSC) provides the modular Blueprint[7], that serves as the basis for the design of the DS4MOBMODELS governance framework, including the Rulebook and Rolebook.

In DS4MOBMODELS, DSSC guidelines are applied to define a structured and scalable governance model, including:

- The establishment of the Data Space Governance Authority (DSGA).
- The design of key governance processes such as onboarding, compliance monitoring, and conflict resolution.
- The alignment with European governance requirements to ensure regulatory compliance and interoperability.

The main governance requirements and digital capabilities proposed for data spaces are derived from DSSC's suggestions (Figure 1: DSSC's decision tree for data spaces organisational form.), which ensure the overall alignment with EU regulations, enforced data sovereignty and secured data transactions.

[7] Data Spaces Support Centre Blueprint v2.0: https://dssc.eu/space/BVE2/1071251457/Data+Spaces+Blueprint+v2.0+-+Home

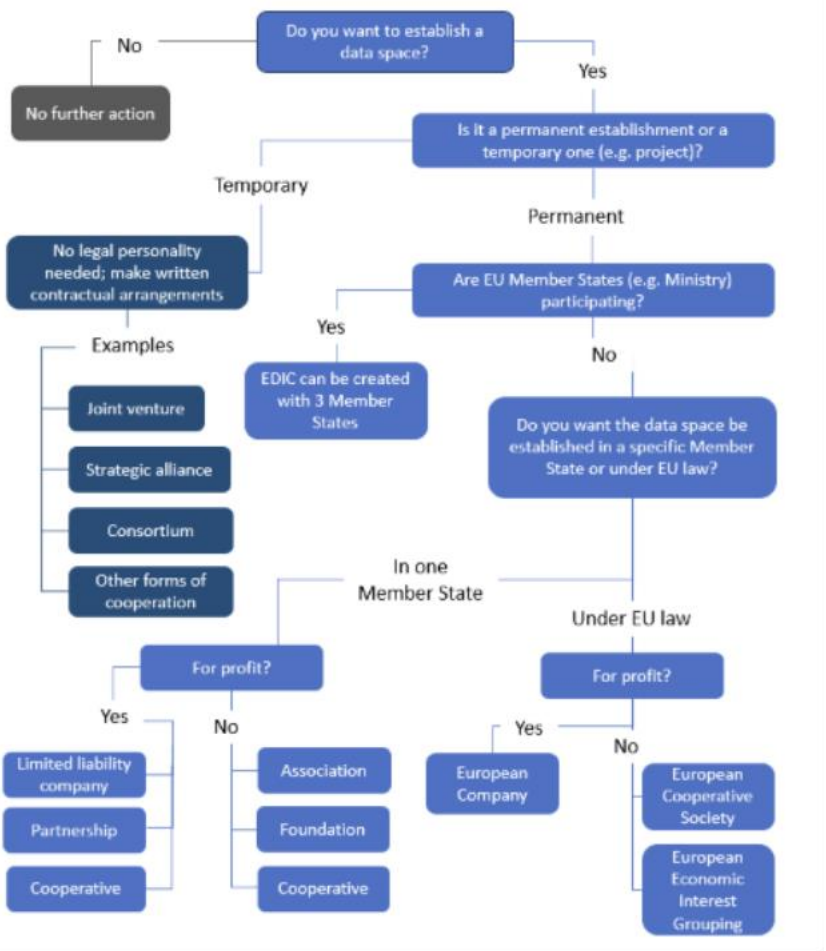


Figure 1: DSSC's decision tree for data spaces organisational form.

3.2.2 IDSA

The International Data Spaces Association (IDSA) reinforces this approach through its IDS Reference Architecture Model[8] (IDS-RAM V4), which introduces a federated governance perspective that distributes decision-making rights among ecosystem participants while ensuring accountability, transparency, and secure interoperability.

[8] IDS Architecture Model IDS RAM V4: https://docs.internationaldataspaces.org/ids-knowledgebase/idsa-rulebook/idsa-rulebook/4.-technical_agreements/4.1-ids_reference_architecture_model_-ram

Technical connectors, such as those derived from the Eclipse EDC, implement the IDSA protocol for critical functions such as contract negotiation and transfer control.

In DS4MOBMODELS, IDSA principles are applied through:

- The use of technical connectors (e.g. Eclipse EDC) to enable secure and controlled data exchange.
- The adoption of a contract-based (Annex 8. DS4MM Contract template) data sharing model, regulating access and usage conditions between providers and consumers.
- The enforcement of data sovereignty, allowing each participant to retain control over its data assets while sharing them within the ecosystem.

These elements enable a federated governance approach, ensuring transparency, accountability, and secure interoperability across the data space (Figure 2).

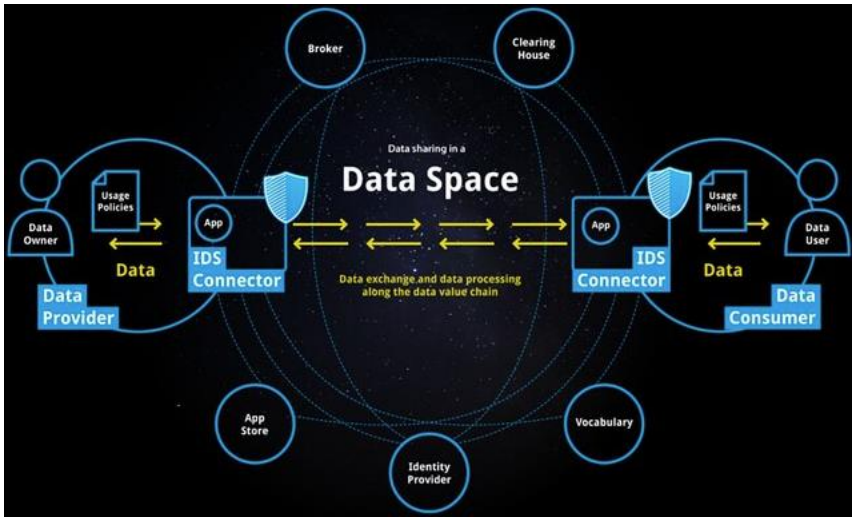


Figure 2: IDS Data Space Model and architecture.

3.2.2.1 Data Space Protocol

The Dataspace Protocol (DSP) is a technical standard that enables interoperable data exchange across data spaces by standardising data publication, contract negotiation, access control, and policy enforcement.

In DS4MOBMODELS, DSP is implemented through:

- Data Product Offerings (DPOs): Standardised publication and discovery of data in the catalogue.
- Automated Contract Negotiation: Agreements between providers and consumers are managed through connectors.
- Policy Enforcement: Access and usage rules are applied through machine-readable policies.
- Secure Data Exchange: Ensures controlled and trusted data transfer between participants.

DSP acts as the operational layer that enforces governance rules, ensuring that all data exchanges are secure, interoperable, and aligned with project policies.

3.2.3 DSBA

The Data Spaces Business Alliance[9] (DSBA) was created in 2021 by Gaia-X, BDVA, FIWARE Foundation, and IDSA to accelerate the adoption of interoperable and trustworthy data spaces, enabling organisations to unlock data value.

The alliance focused on common standards, technical frameworks, and awareness-building. Later, the partners decided to continue their efforts independently rather than under the DSBA umbrella, while still collaborating on data space standards through separate initiatives.

In DS4MOBMODELS, DSBA principles are applied through:

- The adoption of common governance roles and principles aligned with European data space initiatives.
- The alignment with interoperability standards, ensuring compatibility with other data spaces and ecosystems.

[9] Data Spaces Business Alliance Technical Convergence Version 2.0: https://data-spaces-business-alliance.eu/wp-content/uploads/dlm_uploads/Data-Spaces-Business-Alliance-Technical-Convergence-V2.pdf

- The facilitation of future integration and cross-domain collaboration, enabling scalability beyond the project scope.

These elements ensure that DS4MOBMODELS is aligned with broader European data space ecosystems, supporting interoperability and long-term sustainability.

4 Governance design decisions in DS4MOBMODELS

This section does not aim to describe existing data space initiatives, but to explain how their approaches have informed and justified the governance design decisions adopted in DS4MOBMODELS.

The analysis of selected European initiatives (DeployEMDS, DS4SSCC, EHDS, and GREAT) is used to extract key insights related to governance structures, roles, processes, and interoperability. These insights are directly translated into concrete design decisions that enable the operational implementation of the DS4MOBMODELS data space.

Furthermore, the results are presented in Table 3: European Data Spaces Governance Framework Comparative Matrix., which provides a comparative overview of the governance models, regulatory frameworks, and operational mechanisms considered.

4.1 Analysis of current European Data Spaces

4.1.1 DeployEMDS

The governance described in the D3.1[10] report on existing regulatory frameworks and governance mechanisms for mobility data sharing from the deployEMDS project provides a comprehensive analysis of how mobility data sharing can be governed effectively throughout Europe.

The analysis identifies key challenges, including fragmentation across legal and technical frameworks and unclear roles and responsibilities, which hinder interoperability, compliance, and efficient coordination.

[10] deployEMDS D3.1: https://deployemds.eu/wp-content/uploads/2025/09/D3.1-Report-on-existing-regulatory-frameworks-and-governance-mechanisms-for-mobility-data-sharing-1.pdf

It proposes a multi-level governance model aligned with EU regulations (e.g. Data Act, DGA), enabling coordination across local, national, and European levels (Figure 3).

Interoperability, transparency, and stakeholder inclusiveness are emphasised as key principles for trusted and scalable data sharing.

These insights directly inform the adoption of a distributed and multi-level governance model in DS4MOBMODELS.

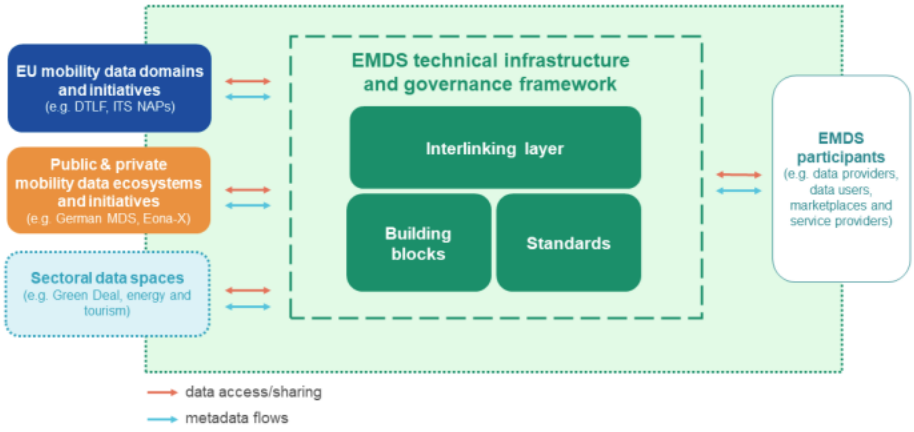


Figure 3: DeployEMDS framework.

4.1.2 DS4SSCC

The governance model presented in the DS4SSCC Code of Conduct[11] outlines a multi-stakeholder approach designed to ensure responsible, transparent, and inclusive data sharing within smart and sustainable communities. It defines a principle-based framework ensuring transparency, accountability, and inclusiveness, supported by governance functions such as decision-making, compliance monitoring, and conflict resolution. The model also introduces a layered

[11] DS4SSCC Code of Conduct: https://inventory.ds4sscc.eu/multi-stakeholder-governance/code-of-conduct

governance structure across local, regional, and European levels, as illustrated in Figure 4.

These principles inform the design of participatory governance and compliance mechanisms in DS4MOBMODELS.

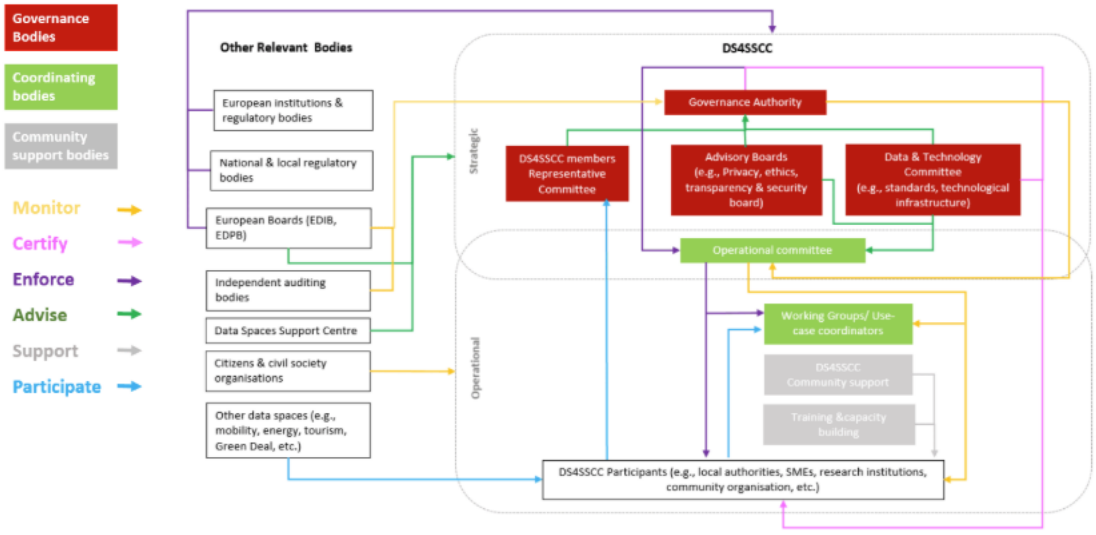


Figure 4: Tentative DS4SSCC governance framework.

4.1.3 EHDS

The governance framework outlined in the European Health Data Space (EHDS) regulation[12] establishes a structured, multi-level approach to managing health data across the EU.

It defines clear responsibilities for the European Commission, Member States, and designated Health Data Access Bodies, ensuring coordinated oversight, controlled access, and compliance with legal and ethical requirements.

[12] PE-CONS 76/24 regulation: https://data.consilium.europa.eu/doc/document/PE-76-2024-INIT/en/pdf

The regulation promotes the FAIR principles[13], while ensuring alignment with GDPR, DGA and DA.

Through these mechanisms, the ethical secondary use of data for research, innovation, and public health planning is enabled, while safeguarding individual rights and data protection.

These elements support the definition of clear roles and controlled access mechanisms in DS4MOBMODELS.

4.1.4 GREAT

The governance framework proposed in the 4.2 deliverable[14] for the Green Deal Data Space (GDDS) is designed to support the European Green Deal by enabling trusted, sovereign, and interoperable data sharing across sectors and borders. The framework is grounded in core European values such as data sovereignty, transparency, trust, and inclusiveness, promoting data reuse while ensuring compliance with EU regulations, including GDPR, Data Governance Act, Data Act, and AI Act.

It supports cross-sector collaboration and scalability, aligning with European and global standards.

These principles inform the adoption of a multi-dimensional and interoperable governance approach in DS4MOBMODELS.

[13] FAIR principles stand for **F**indability, **A**ccessibility, **I**nteroperability and **R**euse: https://www.go-fair.org/fair-principles/

[14] GREAT D4.2: https://www.greatproject.eu/wp-content/uploads/2024/04/D4.2-Final-Governance-Requirements-and-Endorsed-Governance-Scheme.pdf

4.2 Governance Model

- **Design decision:** Adoption of a distributed governance model, based on the UNE 0087:2025 specification, coordinated through a collegial Data Space Governance Authority (DSGA).
- **Justification:** Mobility data sharing environments require coordination across multiple administrative levels and heterogeneous stakeholders. Insights from DeployEMDS highlight challenges such as fragmentation across jurisdictions and unclear roles, which hinder interoperability and coordination. Similarly, DS4SSCC emphasises the need for multi-level governance structures to ensure inclusiveness and resilience.
- These insights support the adoption of a distributed and multi-level governance model, enabling coordination across local, national, and European levels while preserving participant autonomy.
- **Impact on DS4MOBMODELS:** Enables effective coordination of diverse actors, including national authorities and regional or cross-border entities, within a unified but decentralised framework.

4.3 Roles and Responsibilities

- **Design decision:** Implementing a formal Rolebook that defines specific rights and duties for the DSGA, Data Providers, Data Consumers, and the Service Provider.
- **Justification:** Clear role definition is essential in multi-actor ecosystems to ensure accountability and avoid operational ambiguity. The EHDS governance model demonstrates the importance of clearly defined entities and responsibilities, particularly through mechanisms such as designated access bodies.
- These insights support the formalisation of roles in DS4MOBMODELS, complemented by a RASCI matrix to structure responsibilities and decision-making processes.
- **Impact on DS4MOBMODELS:** Establishes a clear governance structure, with NTT DATA acting as Service Provider managing the technical infrastructure, while public authorities act as data providers and stewards of public interest.

4.4 Governance Processes

- **Design decision:** Defining standardised procedures for onboarding, publication, discovery, and exchange of Data Product Offerings (DPOs).
- **Justification:** Operational data spaces require repeatable and scalable processes to ensure consistency, traceability, and security. Insights from DSSC-aligned approaches and GREAT highlight the importance of structured governance processes across operational dimensions.
- These insights support the definition of standardised workflows in DS4MOBMODELS, incorporating mechanisms such as identity validation and policy enforcement.
- **Impact on DS4MOBMODELS:** Guaranteeing a traceable and secure data lifecycle, from the initial membership request to the automated enforcement of usage policies through the connector.

4.5 Data Sovereignty and Federated Access

- **Design decision:** Adoption of federated model where data sovereignty is enforced through contracts and technical policies.
- **Justification:** In distributed data ecosystems, participants must retain control over their data to ensure trust and participation. Insights from IDSA and GREAT highlight that federated governance models enable data sharing without transferring ownership, while enforcing usage conditions through technical mechanisms.
- These insights support the adoption of a contract-based and policy-driven model in DS4MOBMODELS.
- **Impact on DS4MOBMODELS:** Allows data providers to maintain full control over access and usage of their data, supported by connectors managing contract negotiation and policy enforcement.

4.6 Interoperability and Technical Standardisation

- **Design decision:** Integrating the Dataspace Protocol (DSP) and components aligned with European technical frameworks
- **Justification:** Alignment with the Interoperable Europe Act (IEA) and DSBA promotes cross-sectoral and cross-border compatibility through shared standards and tools

- **Impact on DS4MOBMODELS:** Facilitating the use of shared vocabularies and semantic standards (e.g., DCAT-AP) to support complex use cases, such as cross-border mobility coordination in the Spain–Portugal corridor.

4.7 Compliance, Trust and Continuous Monitoring

- **Design decision:** Incorporating formal conflict resolution mechanisms and periodic audits to monitor compliance with EU regulations (GDPR, Data Act, DGA).
- **Justification:** Trust and long-term sustainability require transparency, accountability, and continuous compliance verification. Insights from DS4SSCC (Code of Conduct) and EHDS highlight the importance of monitoring, reporting, and governance oversight mechanisms.
- These insights support the integration of continuous monitoring and governance control mechanisms in DS4MOBMODELS.
- **Impact on DS4MOBMODELS**: Empowers the Governance Committee to oversee policy enforcement, manage disputes, and ensure that the data space evolves in line with legal and ethical requirements.

5 DS4MOBMODELS Rulebook

The governance framework of DS4MOBMODELS establishes the foundational structure for ensuring that the data space operates in accordance with its strategic objectives, legal requirements, and technical standards.

It is composed of three interrelated domains: overall data space governance, interoperability governance, and data governance.

These domains collectively define the rules, responsibilities, and processes that guide participant interactions, safeguard data sovereignty, and promote trust. The Data Space Connector serves as the core technical component supporting governance execution, with its control plane managing authentication, authorisation, policy enforcement, and contract negotiation, and its transfer plane enabling secure data exchange.

Oversight of the governance system is entrusted to the Data Space Governance Authority (DSGA), which is responsible for its development, operation, and enforcement.

This includes conducting regular evaluations based on legal, technical, and quality metrics, and ensuring accountability across the data space. The formalisation of the governance authority as a legal entity is also considered, with implications for its internal organisation and operational capacity.

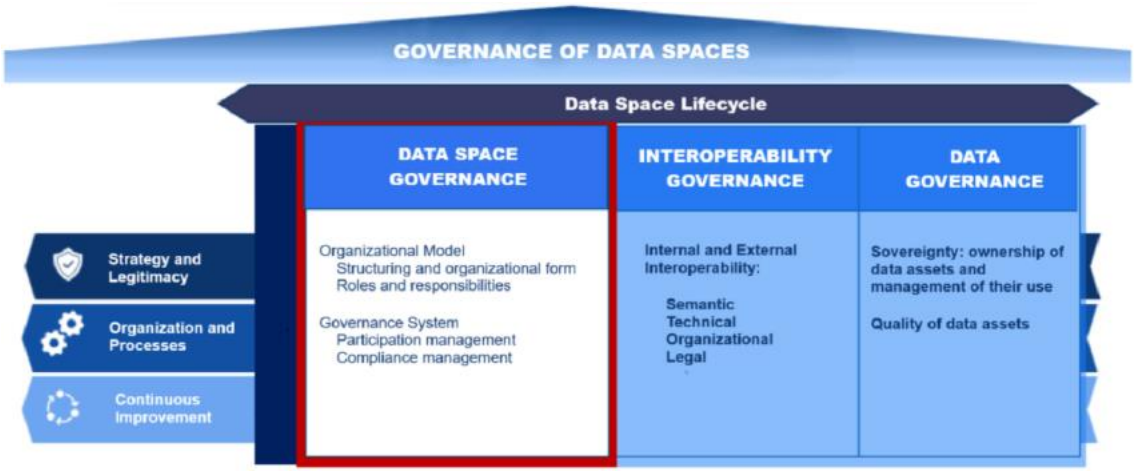


Figure 5: Governance dimensions.

5.1 Organisational model

In the particular case of DS4MOBMODELS, the consortium agreed to adopt the governance framework defined by the UNE 0087:2025[15] standard, as it provides strong alignment with national use cases and complies with applicable regulatory requirements.

The UNE framework outlines three possible governance models: centralised, distributed, and federated, each offering distinct advantages and challenges.

- **Centralised governance** concentrates decision-making and control within a single organisation. This model ensures simplicity, consistency, and strong oversight, but it limits flexibility and scalability, which can hinder adaptability in collaborative and evolving environments.
- **Distributed governance** delegates responsibilities across multiple entities within the consortium. This approach fosters autonomy, resilience, and agility, enabling participants to share control while maintaining trust. However, it requires robust coordination mechanisms and clear accountability structures to prevent fragmentation and ensure coherent policy implementation.
- **Federated governance** allows independent governance structures to interoperate under shared principles. This model guarantees sovereignty and interoperability across different data spaces, but introduces additional complexity in harmonising policies, processes, and compliance frameworks.

The organisational model establishes the institutional and operational architecture that sustains the data space, guaranteeing its coherent, transparent, and sustainable operation. This model is materialised through a series of collegiate and support bodies that are fundamental to ensuring decision-making, supervision, and communication among the participants.

Given that the project will focus on the Governance Committee (section 4.1.1.1 Key aspects of the Governance Committee), this body assumes the central role as the

[15] UNE 0087:2025: https://www.une.org/encuentra-tu-norma/busca-tu-norma/norma?c=N0074731

collegiate organ responsible for approving general policies, coordinating the evolution of the governance model, and supervising the application of the rules.

5.1.1 Governance Committee charter & decisions

After a thorough evaluation of project objectives, ecosystem characteristics, and stakeholder expectations, the consortium has decided to implement a distributed data governance model, given the 60% votes in favour (Figure 6: Decision on the DS4MOBMODELS governance model.). The decision has been taken through a Microsoft Forms, which distributed amongst the consortium partners for election. The results of the survey are summarised in Annex 2. Decision on the governance model.

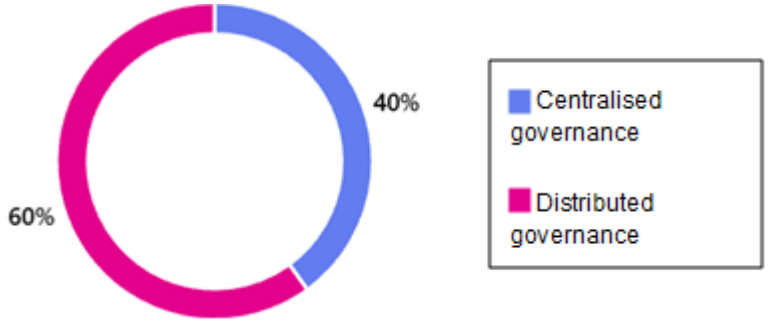


Figure 6: Decision on the DS4MOBMODELS governance model.

This choice reflects the need to balance trust, agility, and collaborative control, positioning the consortium as the governance authority for the data space. By adopting this model, the project aims to establish a common framework that enables shared decision-making, efficient role management, and a secure, transparent environment for data exchange.

This approach not only reinforces participant sovereignty but also supports scalability and the seamless onboarding of new actors, while remaining consistent with the principles set forth by the UNE standard and aligned with European data governance directives.

5.1.1.1 Key aspects of the Governance Committee

The Governance Committee is composed of representatives from every organisation conforming to DS4MOBMODELS appointed by the Governance Authority, as well as delegates from the various participants of the data space.

These participants – Described in 4– include data providers, data consumers and a service provider, ensuring a balanced and inclusive decision-making body.

The committee is responsible for several key activities that support the governance and strategic direction of the ecosystem. Its duties include approving new rules, resolving strategic disputes, validating audits, and coordinating the ongoing evolution of the governance model. These functions are essential for maintaining trust, compliance, and adaptability within the ecosystem.

To ensure effective oversight and timely decision-making, the Governance Committee should convene every quarter. However, additional meetings may be scheduled as needed to address strategic priorities or emerging issues.

5.2 DS4MOBMODELS Rolebook

This section defines the fundamental roles within a data space, outlining the rights and duties of the different actors involved[16]. Within those actors, a participant[17] may adopt more than one role under different circumstances.

5.2.1 Governance Authority

The Governance Authority is the entity responsible for developing, maintaining, operating, and enforcing the data space's governance system. Its main functions include global supervision, setting policies, defining standards, managing participant admission/exit, and dispute resolution. It also ensures consistency with European regulations and principles of transparency, neutrality, and security.

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[16] Roles have been identified from the DSSC: https://dssc.eu/space/BVE2/1071252161/Alphabetical+List+of+All+Defined+Terms+in+Blueprint+v2.0, and IDSA: https://docs.internationaldataspaces.org/ids-knowledgebase/ids-ram-4/layers-of-the-reference-architecture-model/3-layers-of-the-reference-architecture-model/3-1-business-layer/3_1_1_roles_in_the_ids

[17] A participant refers to an actor intervening in a data space, that can be achieved by being a data consumer or a data provider.

At its core, the governance authority is the body or entity responsible for designing, implementing, supervising, and updating the governance framework and ensuring its compliance.

This role ensures that the governance framework remains current and aligned with evolving standards and regulations. It is responsible for defining and enforcing policies that maintain fairness, accountability, and compliance across all operations. By leading governance processes, it fosters structured decision-making and mitigates risks associated with ambiguity or lack of oversight.

Promoting transparency and traceability strengthens stakeholder trust and enables clear audit trails for all critical actions. Acting as a guarantor of the common interest means balancing diverse stakeholder priorities while safeguarding the integrity and sustainability of the ecosystem.

5.2.2 Data consumer

The role of the Data Consumer is an essential component within the DS4MOBMODELS ecosystem, defined as the entity that accesses and uses the data and/or services offered in the data space for legitimate and authorised purposes.

The main function of the data consumer is to reuse the shared data for:

- Analysis and decision-making.
- Development of new products.
- Research or innovation.
- Fulfilment of specific business objectives.

A participant with this role must comply with usage policies and granted permissions, maintain confidentiality, and report any incident or unintended use. Furthermore, the Data Consumer is subject to the oversight and evaluation by the Governance Authority.

The main Data Consumers of the DS4MOBMODELS data space can be classified into three strategic categories: Authorities and public administrations, academic and research institutions and technology partners.

5.2.2.1 Authorities and Public Administrations (Planning, Operational Management, and Regulatory Compliance)

Public Administration are data consumer for all UCs, utilising integrated data and the results of advanced models for strategic decision-making, evaluation of mobility policies, and operational management of their networks.

- National and Regional Governments (MITMS, Junta de Extremadura, Basque Government, etc.): They consume data to evaluate transport emissions (UC16), plan Electric Vehicle (EV) infrastructure (UC19), and optimise transport at a national or regional scale.
- Metropolitan Transport Authorities (ATMV, CRTM): They use the results of the models for Low Emission Zone (LEZ) monitoring (UC21) and intermodal node demand analysis (UC3).

5.2.2.2 Academic and Research Institutions (UPC, UPM)

University entities play a role in technical support and research. Their consumption is centred on the analytical ecosystem base, utilising data to develop, calibrate, and validate complex models.

- Scope and Primary Use: They primarily consume raw input data (such as Floating Car Data/Floating Phone Data - FCD/FPD, or traffic intensity) for research, innovation, and model development, including the calibration of transport simulation models (such as VISSUM).

5.2.2.3 Technology Partners and Platform Providers (EYSA, CPS, NTT Data, AIMSUN):

These participants consume data for the continuous operation of the platform, quality control, and the improvement of their own commercial services linked to the ecosystem.

Scope and Primary Use: They act as internal consumers, utilising the aggregated information and indicators generated by the data space (e.g., parking occupancy rates, congestion indicators) to improve their own services, facilitate the integration of functionalities, and conduct tests on the implemented models (AI, data science, and simulation models).

This consumption of data is necessary for the quality control and future exploitation of the Data Space.

The detailed list of Data Consumers, their applicable Use Cases, and the main data consumed is found in the table presented in Annex 3. DS4MOBMODELS data consumers.

5.2.3 Data provider

The data provider is an entity, whether an organisation, institution or individual, that makes data available within a data space ecosystem, under the data space governance framework, participation agreements and applicable terms of use.

- Key responsibilities of a data provider
- Ensuring data quality: Delivering data that meets defined standards for accuracy, completeness, consistency, and timeliness, as established by the data space governance framework.
- Maintaining Traceability and Transparency: Implementing mechanisms to document and maintain the provenance, lineage, and transformation history of the data, thereby fostering trust and accountability.
- Managing Licensing and Usage Rights: Clearly specifying the applicable licenses, usage rights, and any restrictions associated with the data, in compliance with legal and contractual obligations.
- Complying with Regulations and Policies: Adhering to the rules governing data access, usage, and distribution as stipulated by the data space framework and relevant legislation.
- Supporting Interoperability and Accessibility: Providing data in formats and through protocols that support seamless integration and interoperability within the ecosystem, enabling efficient reuse and value creation.

In essence, the Data Provider is not merely a source of information but a steward of responsible data sharing, ensuring that all data-related activities align with principles of trust, security, and governance within the data space.

In DS4MOBMODELS, multiple stakeholders collaborate to enable secure, interoperable and value-driven data exchange across the transportation and mobility ecosystem.

These stakeholders typically include public authorities, transport operators, vehicle manufacturers, service providers, technology companies, and research institutions.

Among these, many act as Data Providers, supplying critical datasets that power innovative services and applications such as traffic optimisation, multimodal journey planning, fleet management, and sustainability analytics.

5.2.3.1 Public and Governmental Authorities

These entities provide the backbone of spatial data, as their assets are fundamental to the management of public interest and regulatory compliance. The purpose of their data provision focuses on transforming operational information into strategic intelligence for government and transport management:

- For Traffic Operational Management and Safety:
- DGT (Directorate-General for Traffic) supplies critical data such as traffic intensity, active incidents, and national road characteristics. The purpose is to directly support congestion monitoring (UC13) and real-time management of traffic events or emergencies, such as the use of variable message panels (VMPs) in snow alerts.
- Entities such as the Basque Government or the Regional Government of Extremadura provide data to optimise interurban and interprovincial transport planning and traffic management, feeding the Digital Twin for real-time monitoring.
- For Infrastructure Planning and Sustainability:
- Regional entities such as the ATMV (Valencian Mobility and Transport Agency) and the SCT (Catalan Land Transport Service) provide crucial information, including the delimitation of Low Emission Zones (LEZs) and data from air quality monitoring stations. The objective is to enable consumers to assess the effectiveness of sustainability policies (UC21) and the environmental impact of LEZs before and after their implementation.
- The Regional Government of Andalusia supplies data on the vehicle fleet and traffic intensity to enable detailed calculation of regional transport emissions (UC16).
- For Cross-Border Coordination:
- Entities such as the CCDRC (Commission for Coordination and Regional Development of Centro, Portugal) and the EGTC (European Grouping of Territorial Cooperation) facilitate data on cross-border freight flows or public transport supply. The purpose is to enable analysis of cross-border passenger

and freight mobility (UC5, UC10), thereby strengthening integration and coordination of mobility along the TEN-T corridors.

5.2.3.2 Transport Operators

Entities such as EMT Madrid and TMB are essential sources of operational data, supplying information on ticketing data, routes, and demand at interchanges for metropolitan models.

- **Purpose of Provision:** The purpose of having these Transport Operators provide data is fundamental for optimising infrastructure and public transport services in metropolitan areas. The data provided—mainly ticket data (boarding counts by mode, ID, origin, issuance), the availability of public transport routes and schedules, and demand at transfer stations—are essential operational inputs.

5.2.3.3 Private and Technological Sources

These providers (supplying FCD, FPD, etc.) are crucial because they provide disaggregated, real-time mobility information that is often unavailable from public sources.

- **Purpose of Provision:** The purpose is to enable the development of advanced prediction, simulation, and analysis models that require large volumes of flow data:
- Generation of O-D Matrixes: Floating Phone Data (FPD) is essential for generating Origin-Destination (O-D) matrices and estimating mobility flows. This is a critical input for regional planning (Extremadura, Andalusia) and cross-border analysis.
- Predictive Analysis: Floating Car Data (FCD), together with connected vehicle data, is supplied to obtain detailed information on average speeds and congestion indicators. This is vital for developing predictive models (such as those used by SEITT or the Basque Government) that anticipate bottlenecks and manage traffic in real time.
- Specific Sustainability Applications: Connected vehicle data (fuel/energy consumption, range) is fundamental for the electric vehicle charging infrastructure use case (UC19), where cluster analysis is required to identify optimal high-demand locations.

For a detailed reference of the specific entities, the Use Cases (UC) they enable, and the key datasets they supply, consult this deliverable.

5.2.4 Service provider

Since NTT DATA provides the technology platform and services, it assumes the following operational and infrastructure responsibilities:

- Data Space Operator: Ensure the proper functioning of the data space and coordinate the operational and technical aspects. As a data space operator, NTT DATA provides the fundamental capabilities and enabling services.
- Infrastructure Management: Performs infrastructure management tasks, including the administration of servers, network, security, and APIs (Application Programming Interface).
- Data Space Provider: NTT DATA is responsible for delivering and maintaining the core infrastructure and services that enable the operation of the data space.
- Technical Interoperability: NTT DATA contributes to the governance of interoperability since both the platform and infrastructure must ensure seamless data exchange within and between data spaces, emphasising automation, security, and privacy.

Furthermore, it provides second and third-level technical support to participants, assists in onboarding processes (section Onboarding5.3.1), ensures secure access control and data exchange (section 5.3.4) and manages software updates, maintenance and evolution of the platform.

This translates to NTT DATA operating and maintaining all technical components for operating in a data space (e.g.: Identity Service, Vocabulary Hub, Data Catalogue, Connector, Observability Service, Auditing, Monitoring and Data Visualisation). The specifications of each technological component will be further described in DS4MOBMODELS D5.3[18].

[18] DS4MOBMODLES, Deliverable 5.3: Technical specifications of the building blocks.

5.3 DS4MOBMODELS Processes

A data space operates through a set of structured processes designed to ensure secure, interoperable, and sovereign data exchange among participants. These processes define how organisations join the ecosystem, share their data products, discover available resources, and execute data transactions under agreed policies. Each step is supported by governance mechanisms that guarantee compliance, transparency, and trust.

The journey typically begins with participant onboarding, where entities are authenticated and authorised to access the data space though the Identity Service.

Once registered, providers can proceed to publish data product offerings, making their datasets available through standardised catalogues with clear usage rules and metadata trough the Data Catalogue, Vocabulary Hub and Connector.

Data consumers then engage in discovering data products, leveraging semantic and technical interoperability to identify resources that meet their needs trough the Data Catalogue.

Finally, the process culminates in data exchange, where secure transfer via the Connector occurs under negotiated contracts, ensuring that data sovereignty and policy enforcement remain intact throughout the lifecycle.

5.3.1 Onboarding

The onboarding process in the DS4MOBMODELS data space is managed through Participation Management, which is part of the data space's governance processes. This process is designed to regulate the relationship of organisations (such as public authorities or service providers) with the ecosystem, from the moment they request entry until operational credentials are granted to them. It contains a detailed description of each phase.

In a mobility data space such as DS4MOBMODELS, the lifecycle of data sharing begins with participant onboarding.

Organisations such as public transport operators, city authorities, or private mobility providers request access to the ecosystem. The governance authority evaluates eligibility based on predefined policies, and either approves or denies the request.

Given the approval, the Identity Service system issues a verifiable credential, ensuring secure authentication and authorisation. This step is critical for trust and compliance, as it establishes who can participate and under what conditions.

This process is supervised by the Governance Authority of the data space, whose mission is to guarantee transparency, traceability, and regulatory compliance through the implementation of these structured procedures. The issuance of verifiable credentials is a critical step for trust and compliance, establishing the conditions for participation. Furthermore, each transaction is registered in the Observability Service, documenting statistics, registrations and data consumers.

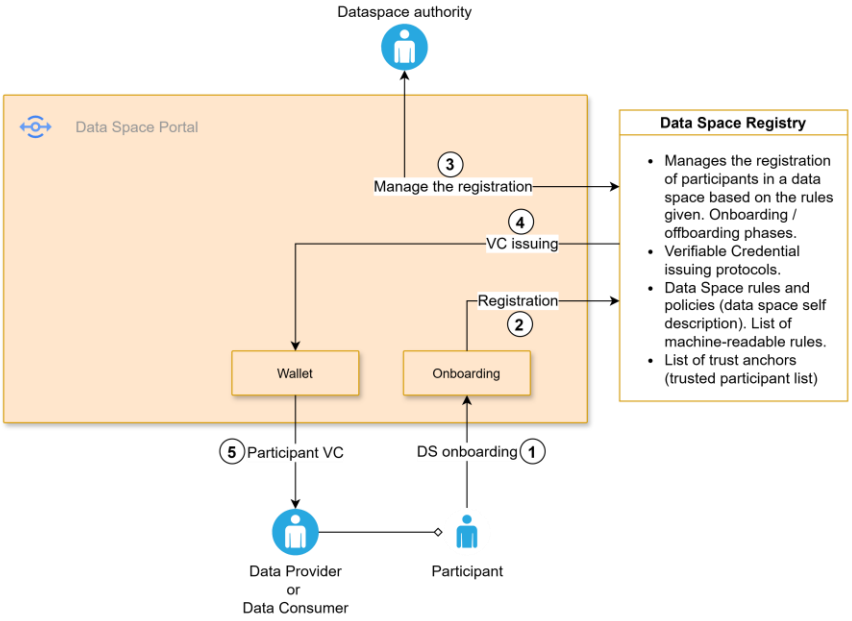


Figure 7: Onboarding of participants' diagram.

5.3.2 Publishing a Data Product Offering (DPO)

After successfully onboarding, a data provider can publish a data product in the data space catalogue.

This process begins with preparing the offer, which includes a comprehensive description of the dataset (e.g., real-time traffic flow, bus schedules, EV charging

station availability), the applicable usage policies, and the data model aligned with the shared vocabulary service to ensure semantic interoperability. The provider then submits this information through the connector to the catalogue.

Each offer includes a detailed description of the dataset (e.g., traffic flow, parking availability, or public transport schedules) along with usage rules, access policies, and the data model aligned with shared vocabularies.

The catalogue validates the metadata and persists it in a standardised format, making the offer discoverable. This process enforces interoperability and transparency, ensuring that all participants understand the terms of use and the structure of the data.

Governance plays a critical role by enforcing transparency, ensuring that usage rules are clearly defined and maintaining fairness so that all participants can access offers under equal conditions.

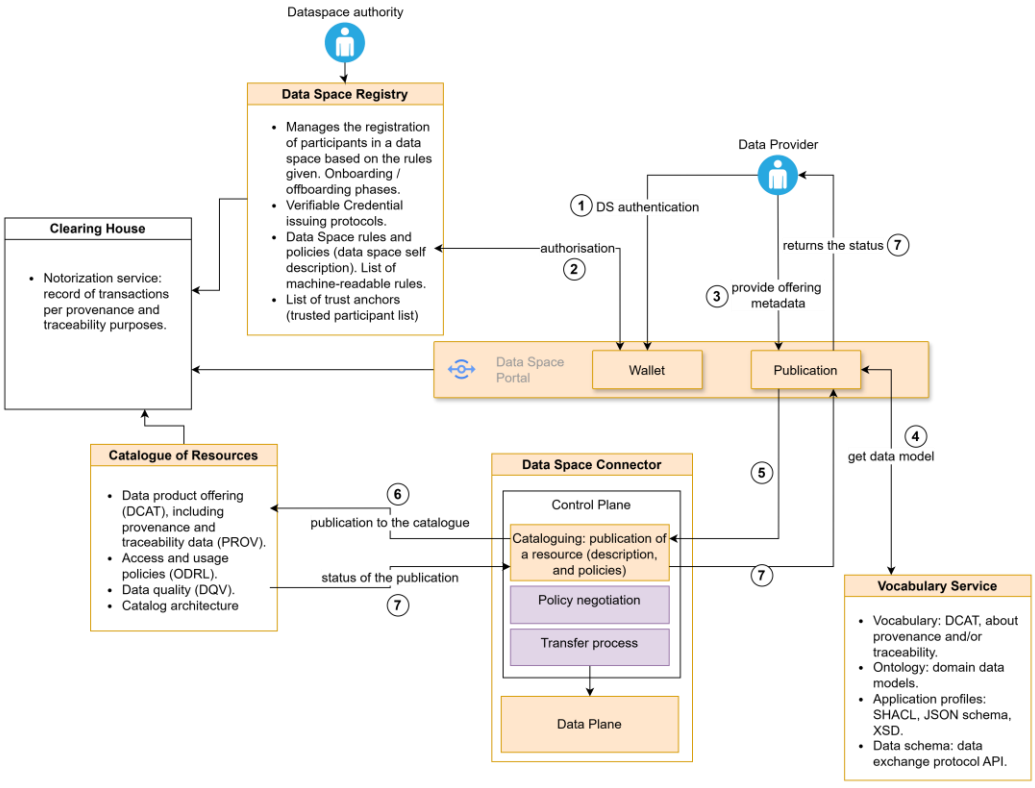


Figure 8: Data Product publication diagram

5.3.3 Discovering a Data Product Offering (DPO)

Once data providers have published their offers in the catalogue, the next step is enabling consumers to find and evaluate these resources. This process begins when a registered and authenticated consumer.

The consumer specifies parameters like geographic scope, data type (e.g., traffic flow, public transport schedules), or temporal coverage.

The catalogue receives these queries and processes them using semantic interoperability standards (e.g., DCAT-AP[19]), ensuring that results are consistent and meaningful across different data models.

The catalogue then returns a curated list of available offers, each accompanied by metadata detailing the dataset's description, quality indicators, usage policies, and pricing or licensing terms if applicable.

At this stage, governance plays a critical role: ensuring fair access, preventing discriminatory practices, and maintaining traceability of searches and selections.

By providing a standardised discovery mechanism, DS4MOBMODELS fosters efficiency, trust, and innovation, enabling participants to build applications such as route optimisation, traffic prediction, and environmental impact analysis.

[19] DCAT Application profile for data portals in Europe: https://op.europa.eu/es/web/eu-vocabularies/dcat-ap

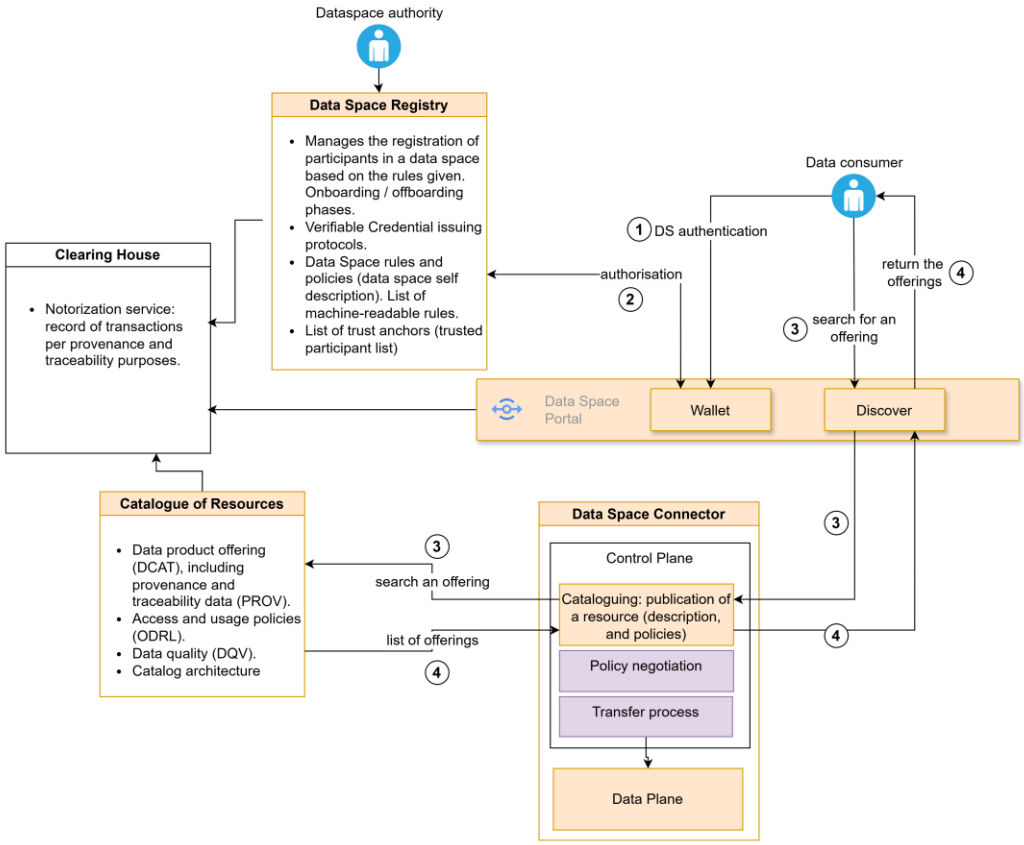


Figure 9: Data Product discovery diagram.

5.3.4 Data exchange

The ultimate aim of a data space is to promote sovereign data exchange, where each participant retains full control over its own data, deciding how, when and with whom it is shared. This principle ensures that organisations can collaborate without compromising privacy, security, or compliance, while fostering interoperability and trust across the ecosystem.

On DS4MOBMODELS, data exchange occurs once a data consumer selects an offer and accepts its usage policies. The data space connector initiates a contract negotiation between the provider and consumer, ensuring compliance with agreed terms.

Providers retain sovereignty and can revoke access at any time, reinforcing trust and control. This phase requires robust monitoring and auditing mechanisms to guarantee adherence to contractual and regulatory obligations.

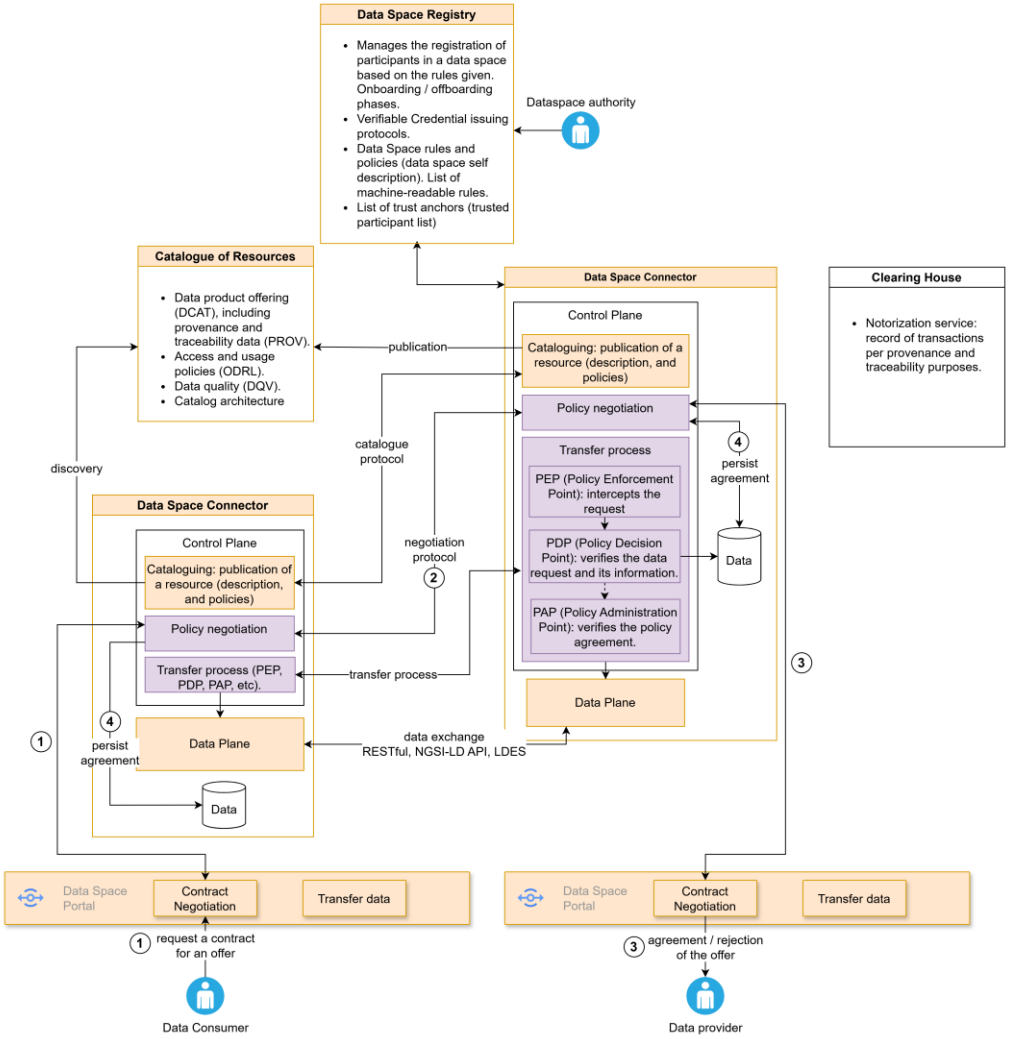


Figure 10: Data exchange diagram.

5.4 DS4MOBMODELS conflict resolution

Ensure a clear, impartial, and transparent system to manage incidents, disputes, or claims between participants or with the government authority.

Through these procedures, it is specified in a detailed and operational manner how incident management and corrective action processes should be carried out.

While processes define what should be done and for what purpose, procedures specify how, who, and in what sequence these actions are carried out.

The existence of these procedures not only ensures a consistent and traceable application of the processes but also reinforces the credibility, transparency, and institutional stability of the data space.

- **Minimum structure of the procedure:**
  - Reception and registration of the dispute or claim.
  - Preliminary evaluation by the governance authority.
  - Internal mediation phase (preferably before arbitration or sanction).
  - Reasoned decision by the competent body (governance committee or arbitration).
  - Communication and filing of the resolution, with deadlines and compliance follow-up.
- **Application:**
  - It must be recorded in the Rulebook and published on the transparency portal.
  - Resolutions must be documented and traceable.
  - It can coexist with external mechanisms (institutional arbitration, public or judicial mediation).
- **Verifiable evidence:**
  - Incident management protocol, claims register, resolution minutes, corrective measures adopted, etc.

5.5 RASCI matrix

The RASCI matrix has become the widely accepted standard method for assigning responsibilities[20] within governance models. It provides a clear framework for defining responsibilities in any project.

Each responsibility is represented with one letter, as shown in the table below:

Letter	Responsibility
R	Responsible
A	Accountable
S	Supportive
C	Consulted
I	Informed

[20] OpenPM² (2018). *The Governance Model*: https://interoperable-europe.ec.europa.eu/sites/default/files/inline-files/2.OpenPM2-2018Conference%5BGovernance-Model%5D.%5BPierre-Leclercq%5Dfinal.pdf

NA	Not Applicable

Table 1: RASCI matrix legend.

This model has also been incorporated into deliverable 3.1 of DEPLOYTOUR[21], where the Rolebook is the centre of discussion.

In the specific case of DS4MOBMODELS, each of the processes described in section *4.3* DS4MOBMODELS Processes is addressed with its sub-processes and their corresponding assignment. Furthermore, to ensure clarity, consistency and transparency throughout the data space, processes from 5.4 and 5.5 have been integrated into the Table 2: DS4MOBMODELS RASCI matrix.

By mapping within the RASCI framework, DS4MOBMODELS governance processes ensure that the project has clear ownership and communication pathways.

Process	Sub-process	Governance Authority	Data Consumer	Data Provider	Service Provider
Onboarding	Request participation	I	R	R	I
Onboarding	Identity verification	A	C	C	R
Onboarding	Approval or denying the request	R	I	I	A
Onboarding	Credentials issued	S	I	I	R
Publishing a DPO	Comprehensive description of a DPO	I	NA	R	I
Publishing a DPO	Status of the catalogue	I	NA	I	R
Publishing a DPO	Provide metadata description	I	NA	R	S

[21] D3.1: Rolebook and prioritised responsibility assignments: https://deploytour.eu/?rw_pdf=3249

Publishing a DPO	Updating or modifying the DPO	I	I	R	I
Discovering a DPO	Validate credentials	C	A	A	R
Discovering a DPO	Search for an offering	I	R	I	S
Discovering a DPO	Return of the offering	I	I	C	R
Data exchange	Request of a contract	S	R	I	S
Data exchange	Negotiation between parties	S	R	R	S
Data exchange	Agreement or rejection of the negotiation	S	I	R	S
Data exchange	Contract validation	S	R	R	S
Conflict resolution	Opening incident or claim	I	R	R	S
Conflict resolution	Analysis of the dispute	R	C	C	S
Conflict resolution	Proposed corrective measures	R	C	C	S
Rulebook maintenance	Regulatory alignment	R	I	I	S
Rulebook maintenance	Periodic review	R	I	I	S

Table 2: DS4MOBMODELS RASCI matrix.

6 Next steps

The DS4MOBMODELS consortium will now focus on consolidating the Data Space Governance Authority (DSGA) and formalising its structure through the Governance Committee (section 5.*1.1 Governance Committee charter & decisions*) to ensure transparent decision-making and accountability.

Following this, governance templates for contract management, conflict resolution, rulebook maintenance and auditing will be delivered, providing operational guidance for processes such as onboarding and data publication. However, it would need approval and collaboration from the governance committee.

The next phase involves completing and validating governance workflows with consortium partners, aligning them with UNE 0087:2025 and European standards. In parallel, technical governance mechanisms will be integrated in collaboration with WP3 to guarantee interoperable governance and policy enforcement.

Finally, a roadmap for continuous improvement will be established, including periodic rulebook reviews and compliance audits to maintain transparency, scalability, and alignment with evolving EU regulations.

7 Conclusion

The work presented consolidates state of the art governance for European data spaces (sections and) into a coherent operating model for mobility, anchored in a distributed approach endorsed by the consortium (Annex 2. Decision on the governance model.)

The Rulebook (Section 5) and Rolebook (Section 5.2) clarify responsibilities for the Governance Authority, Data Providers, Data Consumers and the Service Provider. These roles are supported by processes for onboarding (Section 5.3.1), Data Product Offering publication (Section 5.3.2), Data Product Offering discovery (Section 5.3.3) and data exchange (Section 5.3.4), as illustrated in Figures 7–10 and operationalised via the workflows and lifecycle map in Annexes 6 and 7.

Complementation is required for sections 5.4 and 5.5 hence both of which already have minimum structures and evidence requirements defined in their sections.

8 References

Asociación Española de Normalización. (2025). *Especificación UNE 0087:2025. Definición y caracterización de los espacios de datos*. https://www.une.org/encuentra-tu-norma/busca-tu-norma/norma?c=N0074731

Beyond Civic AG. (2025). *Data Space Playbook: Governance Guideline* (Version v0.95). Beyond Civic AG. https://www.beyondcivic.com

Centro de Referencia de Espacios de Datos. (2025). *Guía de gobernanza de espacios de datos* (Versión 1, 24 de noviembre de 2025). https://cred.digital.gob.es/content/dam/cred/img/docs/Gu%C3%ADa%20de%20Gobernanza%20de%20Espacios%20de%20Datos.pdf

Council of the European Union. (2025). Regulation of the European Parliament and of the Council on the European Health Data Space and amending Directive 2011/24/EU and Regulation (EU) 2024/2847 (PE-CONS 76/24). https://data.consilium.europa.eu/doc/document/PE-76-2024-INIT/EN/pdf

Data Space for Smart and Sustainable Cities and Communities (DS4SSCC). (n.d.). *Code of conduct – Multi-stakeholder governance.* DS4SSCC Inventory. https://inventory.ds4sscc.eu/multi-stakeholder-governance/code-of-conduct

Data Space Support Centre. (2023). *DSSC Blueprint v2.0: Governance building blocks for European data spaces*. Retrieved from https://dssc.eu/space/BVE2/1071251457/Data+Spaces+Blueprint+v2.0+-+Home

Data Spaces Business Alliance. (2023). *Governance approach and harmonization for data spaces*. Retrieved from https://data-spaces-business-alliance.eu/wp-content/uploads/dlm_uploads/Data-Spaces-Business-Alliance-Technical-Convergence-V2.pdf

Dietrich, M., Gutiérrez David, M., Cacciari, C., Barker, L., Borejko, W., Raczko, N., Chatzikyriakou, C., Tenhunen, V., Ferrari, T., Sitera, J., Sustr, Z., Pourabdollahian, G., & Vera, J. (2024). *D4.2 Final governance requirements and endorsed governance scheme* (Version 1.0). GREAT Consortium. https://www.greatproject.eu/wp-content/uploads/2024/04/D4.2-Final-Governance-Requirements-and-Endorsed-Governance-Scheme.pdf

Eisenrauch, A. (2025). *D3.1 Rolebook and prioritised responsibility assignments* (Version 1.0). DEPLOYTOUR Project. https://deploytour.eu/?rw_pdf=3249

European Commission. (2023). *Creating a common European mobility data space*. Mobility and Transport. https://transport.ec.europa.eu/transport-themes/smart-mobility/creating-common-european-mobility-data-space_en

Ige, A., Chukwurah, N., Adebayo, V., & Idemudia, C. (2024). Managing data lifecycle effectively: Best practices for data retention and archival processes. *International Journal of Engineering Research and Development.* 20. 453–461. https://www.researchgate.net/publication/388387603_Managing_Data_Lifecycle_Effectively_Best_Practices_for_Data_Retention_and_Archival_Processes

International Data Spaces Association. (2023). *IDS Reference Architecture Model (IDS-RAM) and Rulebook.* Retrieved from https://docs.internationaldataspaces.org/ids-knowledgebase/idsa-rulebook/idsa-rulebook/4.-technical_agreements/4.1-ids_reference_architecture_model_-ram

Leclercq, P. (2018). *The PM² governance model* [PDF]. European Commission. Retrieved from https://interoperable-europe.ec.europa.eu/sites/default/files/inline-files/2.OpenPM2-2018Conference%5BGovernance-Model%5D.%5BPierre-Leclercq%5Dfinal.pdf

Lundahl, J., Benmayor, A., Linåker, J., Östling, A., Nordell, E., Wernicke, P., Burden, H., & Stenberg, S. (2025). *Report on existing regulatory frameworks and governance mechanisms for mobility data sharing* (Deliverable D3.1). deployEMDS Consortium. https://deployemds.eu/wp-content/uploads/2025/09/D3.1-Report-on-existing-regulatory-frameworks-and-governance-mechanisms-for-mobility-data-sharing-1.pdf

Pol, E., Dion, O., Poikola, A., Lehtonen, K., Komulainen, A., Halenius, L., & Aarnio, R. (2023). *Towards a holistic EU data governance: Taking stock of the progress of the EU data strategy and proposals* (Sitra Working Paper, 27 September 2023). Sitra. https://www.sitra.fi/en/publications/towards-a-holistic-eu-data-governance/

9 Annex 1. Comparative matrix of data governance frameworks in European Data Spaces

Aspect	DeployEMDS	DS4SSCC	EHDS	GREAT
Purpose	Effective governance for mobility data sharing across Europe	Responsible, transparent, inclusive data sharing in smart communities	Structured governance for health data across EU	Governance for Green Deal Data Space enabling trusted, sovereign sharing
Regulatory framework	GDPR, DGA, DA; national legislations aligned with EU standards	GDPR, DGA, DA; national legislations aligned with EU standards	GDPR, DGA, DA, EIDAs; national aligned with EU standards	GDPR, DA, DGA, AI Act; aligned with DSSC blueprint and global standards
Governance model	Decentralised	Decentralised	Centralised	Decentralised
Core governance principles	Interoperability, transparency, inclusiveness, stakeholder trust, ethics	Trust, accountability, transparency, fairness, participatory governance	FAIR principles, GDPR compliance, transparency, accountability	Data sovereignty, transparency, trust, inclusiveness, legal compliance
Governance processes	Onboarding, compliance alignment, stakeholder engagement, monitoring	Onboarding, data discovery, data publication, decision-making, conflict resolution, compliance monitoring	Onboarding, data access, audits, reporting, enforcement, secondary use control	Onboarding, data discovery, data publication, access control, compliance, performance monitoring
Main roles and responsibilities	• Governance Authority	• Governance Bodies	• European Commission • EHDS Board (consultativ	• Governance Authority (GDDS

	(project-level) • Local/National Coordinators • Stakeholder Advisory Board	• Stakeholder Forum (quadruple helix: public, private, academia, civil society) • Community Support Mechanisms	e, multi-country) • Health Data Access Bodies (HDABs) • Stakeholder Forum	Foundation) • Community of Practice • Working Groups (legal, technical, operational)

Table 3: European Data Spaces Governance Framework Comparative Matrix.

10 Annex 2. Decision on the governance model.

ID	According to the first session on governance models, which would be the most suitable for DS4MOBMODELS?
1	Centralised governance
2	Centralised governance
3	Distributed governance
4	Centralised governance
5	Centralised governance
6	Distributed governance
7	Distributed governance
8	Distributed governance
9	Distributed governance
10	Distributed governance

Table 4: Results on the governance model Microsoft Forms

11 Annex 3. DS4MOBMODELS data consumers.

Entity	Applicable Use Case (UC) (D2.3)	Specific Objective for the Use of the Data	Key Data/Information Transacted (Consumption)
MITMS (Ministry of Transport and Sustainable Mobility)	UC16: Transport emissions evaluation	Facilitate multimodal planning and the development of sustainable mobility indicators at the national level.	Facilitate multimodal planning and the development of sustainable mobility indicators at the national level. key data: Integrated data on Traffic, Public Transport and Shared Mobility Services, as well as the results of the models developed in the Data Space.
MITMS (Ministry of Transport and Sustainable Mobility)	UC19: Electric vehicle charging infrastructure)	strategic planning of the national freight network.	MITMS uses the results of cluster analysis to identify the optimal, high-demand location for electric vehicle (EV) charging infrastructure.
ATMV (Metropolitan Transport Authority of Valencia)	UC21: Low Emission Z one monitoring	To obtain air quality and sustainable mobility indicators for monitoring the effectiveness of Low Emission Zones (LEZ).	ATMV consumes air quality and sustainable mobility indicators and compliance reports generated by the models (GIS/VISSUM). key data: LEZ Delimitation, Air quality monitoring stations data, Traffic counts (various modes), Vehicle Fleet data,

			and public transport passenger data
CRTM (Regional Transport Consortium of Madrid)	UC3: Intermodal node demand analysis	To identify optimal locations for new intermodal nodes and optimise the network of public transport ticket sales and top-up points.	CRTM uses the results of location optimisation models (e.g., multi-criteria Analysis, p-median, or LSCP) to make decisions about the optimal location of new intermodal nodes. key data: Ticketing data (boarding counts by mode), Public transport supply (routes, schedules), Socioeconomic data (population, employment) and Land use data.
UPC / UPM (Universidades Politécnicas)	UC16: Transport emissions evaluation)	To use data for research, innovation, and model development.	These academic entities consume raw input data (e.g., FCD/FPD, traffic intensity) to develop, calibrate, and validate the required VISSUM models.
UPC (Universitat Politècnica de Catalunya)	UC22: Active mobility monitoring)	To use data for research, innovation, and model development.	UPC uses data such as Floating Phone Data (FPD) and the cycling network to develop indicators and models (GIS/VISSUM) that characterize

			active mobility patterns.
Basque Gov. (Gobierno Vasco)	Multiple UCs	To optimise transport planning and traffic management at interurban and interprovincial scales, utilising the Digital Twin and advanced models.	The Basque Government uses the operational outputs of the real-time monitoring model, including snow alerts, road conditions, and emergency routes. This consumption of predictive and operational results is used for real-time traffic management, a direct use of services for management and safety objectives.
Navarra Gov.	UC5: Cross-Border Passenger Transport	To assist in real-time traffic management and proactive management of emergency areas for heavy vehicles during winter episodes	The Government of Navarre is a stakeholder in the NAEN cross-border pilot project and is interested in using the analytical results of the cross-border model, such as passenger volume and service frequency. This data is used to strengthen the integration and coordination of cross-border mobility.
J. Extremadura (Extremadura	UC18: Freight emissions analysis)	improve regional public transport systems and	The Regional Government of Extremadura uses the

Regional Government)		cross-border mobility.	results of the VISSUM model (such as gCO_2 per ton-km) to support regional planning. This use of specialized emissions data is essential for formulating policies to adapt to the ecological transition, fulfilling the role of data use for planning.
EYSA (Service/Platform Provider)	UC2.3 (LEZ Monitoring) & UC13: Congestion monitoring)	Data necessary for the operation and functionality of the Data Space platform.	EYSA, as a platform provider, consumes aggregated data and indicators from the Data Space (e.g., parking occupancy rates, congestion indicators) to improve its own services, facilitating th e integration of parking and traffic for business objectives.
CPS / NTT Data (Technology Partners)	All UC (Model validation)	To develop, implement, and test the Mobility Data Space platform and its AI, data science, and simulation models.	They consume data for quality control and future exploitation of the Data Space.

Table 5: DS4MOBMODELS data consumers.

12 Annex 4. DS4MOBMODELS data providers.

Entity	Applicable Use Case (UC) (D2.3)	Key Data/Information Transacted (Consumption)
DGT (Dirección General de Tráfico)	UC13	DGT is the national authority responsible for traffic management and road safety. Its data availability is essential for national-scale operation of the use cases. Key Data: Traffic intensity (light and heavy vehicles, historical); Characteristics of roads of interest (length, number of lanes, speed limits); Active incidents (accidents, roadworks, restrictions); Meteorological data (snowfall alerts); Real-time operation of Variable Message Panels (VMPs); Location of detectors on roads of interest; and Vehicle data at border crossings (traffic counts, vehicle registration/nationality).
SEITT (State Company for Land Transport Infrastructures)	UC13: Highway Congestion Monitoring	SEITT is responsible for the design and promotion of transport infrastructures and manages the toll road network, seeking to position it as an efficient alternative. Key Data: Characteristics of roads of interest (length, number of lanes, speed limits) and the Location of toll sections of interest.
SCT (Servei Català de Trànsit)	(UC22): Active mobility monitoring	SCT leads the Catalonia regional pilot focused on monitoring active mobility (walking, cycling, PMVs) and understanding urban-interurban interactions.

		Key Data: Kilometres of cycling network; Kilometres of road network; Traffic intensity (light and heavy vehicles); Inventory and typology of vehicle fleet; Average speeds by section.
ATMV (Metropolitan Transport Authority of Valencia)	(UC21): Low Emission Z one monitoring	ATMV is key to the Valencia pilot project, focused on the efficient management of Low Emission Zones (LEZs) and sustainability. Its objective is to obtain air quality and sustainable mobility indicators for monitoring the LEZs. Applied in the cities of Valencia, Castellón, Benidorm, Alicante, and Elche, these municipalities will share data to evaluate the impact of LEZ implementation, both before and after. Data to be provided includes LEZ boundaries, data from air quality monitoring stations, traffic counts (including personal mobility vehicles, bicycles, and buses), environmental labelling/age of the municipal vehicle fleet, and public transport passenger data and routes.
CRTM (Regional Transport Consortium of Madrid)	(UC3): Intermodal node demand analysis	CRTM leads the Madrid Metropolitan pilot, focusing on optimising public transport infrastructure and analysing demand at intermodal nodes. Key Data: Public transport supply (Routes, stops, and schedules); Ticketing data (Boarding counts per

		mode); Socioeconomic data (population and employment); Land use (urban development and zoning data); Household Mobility Survey (EDM 2018); Traffic volumes.
Junta de Andalucía (Andalusia Regional Government)	(UC16): Transport emissions evaluation	Leads the Andalusia regional pilot, focusing on obtaining detailed data to calculate regional transport emissions and evaluate policy impact. Key Data: Vehicle fleet data (PT vehicles by fuel type/age, private/commercial composition); Traffic intensity on roads of interest (light/heavy, historical); Household Mobility Surveys (EDM) (Trip origins/destinations, modal split, frequency); Public transport supply data; Emission factors (COPERT, HBEFA).
Junta de Extremadura (Extremadura Regional Government)	(UC5) Cross-Border Passenger Transport (UC10)Cross-Border Freight Transit	Key stakeholder for cross-border connections with Portugal, requiring integration of regional and transboundary mobility data. Key Data: Big Data study (2023) (mobility flows Extremadura-Portugal based on Spanish users), Traffic counts at cross-border roads, Vehicle fleet composition data, Cross-border PT supply (from operator authorizations).
CCDRC (Central Commission for Regional Coordination and Development, Portugal)	UC18: Freight emissions	Key Portuguese administration in the Iberia Central West cross-border pilot, providing data necessary for calculating freight transport emissions on key corridors.

		Key Data: Freight flow data (volume, routes, O-D); Traffic intensity on roads of interest (light/heavy, historical heavy vehicles); Vehicle fleet data (composition); Emission factors databases; Vehicle nationality at border points.
EGTC (European Grouping of Territorial Cooperation).	UC5 – Cross-Border Passenger Transport	Leads the Nouvelle-Aquitaine-Euskadi-Navarre Euroregion pilot, focused on reinforcing cross-border mobility integration. Key Data: Cross-border public transport supply (routes, stops, schedules extracted from operator authorisations); Cross-border road infrastructure (typology, speed limits); Traffic counts at cross-border roads (ADI); Vehicle registration/nationality data
EMT Madrid / TMB (Transport Operators)		As key transport operators (EMT for Madrid, TMB for Barcelona), they are the source of operational data required for the CRTM and ATMV/SCT models. Key Data (Implicit/Contextual): Ticketing data (Boarding counts per mode, ID, date, origin, expedition); Public transport supply (routes, stops, schedules); and Demand at transport interchanges.
Private Sources (FCD, FPD, Connected Vehicles)	All UCs (Traffic, Sustainability, Demand)	Provides supplementary commercial/private data required for advanced models (prediction, congestion monitoring, emissions calculation).

		Key Data: Floating Car Data (FCD) (average speed, congestion indicators), Floating Phone Data (FPD) (O-D matrices, mobility flow estimation), Connected vehicle data (consumption, range, charging time).
Valencia City Council (V.C.C.)	(UC21) Low Emission Z one Monitoring	Collaborates with ATMV in the implementation and monitoring of LEZs in Valencia. Key Data: LEZ delimitation, Municipality surface area, Population, Traffic counts (collaboration with ATMV)
ATMB (Metropolitan Transport Authority of the Barcelona Area)		Leads a new use case focused on analysing digital validation behaviour to optimise publ ic transport service planning. Key Data: Mobile validation data (timestamps, user ID, journey origin, vehicle number, line used), Transport service data (real-time rail and bus services), Network topology data (GTFS)

Table 6: DS4MOBMODELS data providers.

13 Annex 5. Main roles in data spaces.

Role	Definition	Main responsibilities	Relationship with other actors
Data space governing authority	Body or entity responsible for designing, implementing, supervising, and updating the governance framework, and ensuring compliance with it.	Safeguard and update the rulebook, direct governance processes, promote transparency and traceability in decisions, and act as guarantor of the common interest.	Supervise the Operator and report to the governance committee.
Service provider	Entity responsible for the technical and operational management of the environment (infrastructure, services, catalogues, security).	Integrates, operates, and maintains the technical infrastructure; ensures the availability and security of services; applies governance policies.	Implements the guidelines of the governing authority.
Data/service provider	Entity that makes data available to the ecosystem, under the rules of the data space and the conditions of use of the participation agreements.	Ensure the quality, traceability, and licenses of your data; comply with access and usage regulations.	Interact with the Data Operator and the Data Consumer.
Data/Service Consumer	Entity that accesses and uses space data for legitimate and	Comply with usage policies and granted permissions, maintain confide	It is subject to control and evaluation by the

	authorized purposes.	ntiality, and report incidents or unintended uses.	government authority.

Table 7: Roles in data spaces.

14 Annex 6. Participation Management Processes.

Governance Process	Inputs	Main Activities	Outputs / Expected Result
1. Pre-admission Process	Request for participation submitted by the interested party. Identity and accreditations verified (using certificates or digital identity systems). Candidate's technical and legal requirements (including legal capacity and technical solvency).	Initial review of documentation and Identity verification. Checking eligibility criteria (such as legal capacity, technical solvency, suitability for the requested role/s, minimum regulatory compliance). Preliminary risk assessment (e.g., conflicts of interest or prior non-compliance).	Pre-admission report. Preliminary validation or rejection of the request. Authorization to proceed to the Formal Adhesion phase.
2. Formal Adhesion Process	Pre-admission approval. Current Rulebook and policies (which the participant must accept). Data for the new participant's digital identity.	Signing of the adhesion agreement (framework agreement) or acceptance of the Rulebook. Formal assignment of roles (as determined in pre-admission). Registration in the participant catalogue (identity, roles, and capabilities).	Admitted Participant (Official Data Space Participant). Role assigned (e.g., Data Consumer, Data Provider). Operational credentials issued, which allows for secure

		Generation and delivery of access credentials (digital, technical, or organizational). Activation in the enabling systems (e.g., authentication and authorization systems).	authentication and authorization.
3. Mediation and Dispute Resolution Process	Incident or claim. Available evidence (activity logs, applicable rules). Contractual documentation.	Analysis of the dispute (nature of the conflict: technical, legal, ethical, contractual). Mediation sessions between the parties to seek an agreement. Issuance of resolution (by the mediating body).	Motivated resolution. Proposed corrective measures. Dispute registration and closure.
4. Withdrawal or Suspension Process	Request or opening of the procedure (voluntary or initiated by the Governance Authority). Adhesion Agreement or contractual framework. Rulebook detailing termination procedures.	Impact assessment on contracts, access, and services. Revocation of credentials and deactivation in the systems. Management of pending obligations (e.g., data return or deletion, termination of existing contracts). Documentary registration of the process, date, and conditions of withdrawal.	Orderly and protected disengagement. Documentary registration of the withdrawal process. Inactive or suspended participant.

Table 8: Governance Process.

15 Annex 7. Map of inputs, activities, and outputs of data space governance processes

Governance Process	Inputs	Main Activities	Outputs
Onboarding	• Participation request • Identity and credentials • Technical and legal requirements	• Initial document review • Identity verification • Eligibility criteria check	• Pre-admission report • Preliminary validation or rejection • Authorization to proceed to membership
Onboarding (pre-submission)	• Role request • Evidence of capability • Organizational information	• Responsibility assessment • Role-specific requirements review • Registration in the role system	• Validated and registered role • Role restrictions or limitations • Catalogue entry
Onboarding (approval)	• Pre-admission approval • Current rulebook and policies • Data for digital identity	• Signing of membership agreement • Registration in participant catalogue • Credential generation	• Admitted participant • Assigned role • Operational credentials issued
Mediation and Dispute Resolution	• Incident or claim • Available evidence • Contractual documentation	• Dispute analysis • Mediation sessions • Issuance of resolution	• Reasoned resolution • Proposed corrective measures • Dispute record and closure

Internal Compliance Monitoring	• Activity reports • Submitted evidence • Operational logs	• Periodic compliance review • Comparison with internal rules • Behaviour validation	• Compliance monitoring report • Alerts or recommendations • Communication to participants
Internal Audit	• Evidence and documentation • Records and access logs • Contracts and agreements	• Audit planning • Technical and legal evaluation • Comparison with rulebook	• Audit report • Improvement recommendations • Remediation actions
Incident Management	• Non-compliance notifications • Operator reports • Logs and evidence	• Impact analysis • Action prioritization • Remediation confirmation	• Defined corrective plan • Measures applied • Documented incident closure
Ethical and Impact Assessment	• New service proposals • Sensitive use cases • Technical evidence	• Preliminary ethical evaluation • Risk identification • Mitigation recommendations	• Assessment report • Activation conditions • Authorization or case adjustment
Rulebook Review	• Regulatory changes • Participant proposals • Audit results	• Consultation with governance bodies • Drafting of new version • Updated publication	• New rulebook version • Updated policies • Version registry
GDPR Compliance	• Personal data inventory	• Review of legal bases	• Legitimacy validation

	• Risk analysis • Rights requests	• Application of protection measures • ARSULIPO management	• Updated GDPR records • Documented response
DGA Compliance	• Intermediation service documentation • Altruism information • Sharing practices	• Neutrality verification • Comparison with DGA requirements • Functional separation assessment	• Compliance confirmed • Transparency records • DGA report
DA Compliance	• Device-generated data • Access conditions • Sharing agreements	• Obligation review • Non-discrimination validation • Comparison with Data Act	• Guaranteed fair access • Record of applied conditions • Verification report
Sector-Specific Compliance	• Identified sector regulations • Regulatory documents • Sector technical requirements	• Translation of regulations into controls • Coordination with regulators • Implementation of safeguards	• Implemented sector controls • Sector audit • Compliance evidence

Table 9: Map of inputs.

16 Annex 8. DS4MM Contract template

16.1 Parties

This Agreement is entered into between:

Data Provider

Organisation name: _____

Legal representative: _____

Dataspace participant identifier: _____

Data Consumer

Organisation name: _____

Legal representative: _____

Dataspace participant identifier: _____

Together referred to as “the Parties”.

16.2 Purpose

The purpose of this Agreement is to define the technical and legal terms under which the Data Provider grants the Data Consumer access to the dataset(s) selected within the DS4MOBMODELS Data Space.

16.3 Dataset Description

Dataset name: _____

Dataset identifier: _____

Version: _____

Summary description: _____

16.4 Applicable Usage Policies

This Agreement is bound to the usage policies defined by the Data Provider and registered in the Connector.

Policy ID(s): _____

Policy type(s): (permission / prohibition / obligation)

Constraints and values: _____

By signing this Agreement, the Data Consumer accepts full compliance with all applicable usage constraints.

16.5 Rights and Obligations

16.5.1 Data Provider Obligations

- Provide access to the dataset via a compliant Connector.
- Ensure correctness of metadata and associated documentation.
- Inform the Data Consumer of significant changes, updates, or withdrawal.

16.5.2 Data Consumer Obligations

- Use the dataset solely as permitted by the usage policies and this Agreement.
- Avoid redistribution, misuse, or secondary use not explicitly authorised.
- Report anomalies, incidents, or suspected violations.

16.5.3 Data Exchange Conditions

- Exchange mechanism: Connector-to-Connector
- Protocol: Data Space Protocol (DSP)
- Transfer type: [PULL / PUSH]

- Authentication: Keycloak token (Identity Service)

16.6 Duration and Termination

Validity period: _____

Conditions for termination:

- Policy or contractual breach
- Legal or regulatory non-compliance
- Dataset withdrawal or supersession

All termination events must be logged in the Observability Service.

16.7 Compliance and Auditing

All data exchanges and contract-related actions may be verified using auditing and monitoring mechanisms, including:

- Contract records (OS02)
- Exchange records (OS01)
- Policy enforcement logs

16.8 Governing Framework

This Agreement adheres to:

- DS4MOBMODELS Governance Framework
- Data Governance Act (DGA)
- Data Act
- Applicable European and national legislation

16.9 Signatures

Data Provider

Signature: _____

Name: _____

Date: _____

Data Consumer

Signature: _____

Name: _____

Date: _____