

EXPERT ASSESSMENT OF THE MATURITY MODEL FOR DATA SPACES

SUBMITTED IN PARTIAL FULFILLMENT FOR THE DEGREE OF MASTER OF SCIENCE

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1 MATURITY MODEL ASSESSMENT

Table 1: Guidelines for Completing Maturity Model

No.	Guideline	Description	Helpful Documentation
1	Understanding the Purpose	This questionnaire helps assess the organizational, legal, and governance maturity of a data space. Your responses will help identify strengths and areas for improvement.	n/a
2	Anonymity	You may choose to remain anonymous. If so, use a pseudonym or abbreviation that is recognizable to the researcher but unidentifiable to others.	n/a
3	Model Structure Overview	The model contains 8 building blocks, each made up of several concepts and dimensions. Each is assessed using scaled questions (1–5) that reflect maturity levels from Initial to Optimized.	Model Overview, Assessment Sheet
4	Maturity Levels	The model uses a 5-level scale: Initial (1), Repeatable (2), Defined (3), Managed (4), and Optimized (5). Rate each question based on the current state of your data space, choosing the score that best describes the least mature applicable aspect.	Maturity Level Descriptions, Assessment Sheet
5	Scope Clarification	Answer questions for all dimensions that are relevant to your data space. If a question does not apply to your context, leave it blank and note "Not Applicable" where possible. Please avoid skipping questions solely due to perceived low maturity.	Scope Form, Concept Description: Tables 11, 12, 13, 14, 15, 16, 17, and 18, Maturity Model: Tables ??, ??, ??, ??, ??, ??, ??, and ??
6	Completing the Questionnaire	For each question, read the description carefully and select the score that best fits your data space. Aim for an honest and accurate reflection rather than an idealized state. Use the accompanying documentation if clarification is needed.	Questionnaire Form, Traceability Table
7	Reviewing Your Input	After completing the questionnaire, review your responses to ensure consistency and accuracy. You may revise any answers before submission.	Assessment Summary Sheet
8	Submitting Responses	Submit your completed questionnaire through the provided digital form or as instructed. You may retain a copy of your responses for your records.	Assessment Tool
9	Result Interpretation	The results will be analyzed by the researcher to identify maturity gaps and strengths across the eight building blocks. You will receive a visual summary and personalized feedback (if applicable).	n/a
10	Feedback	You are encouraged to provide feedback on the questionnaire's clarity, usability, and completeness. Use the comment section at the end or the formal Expert Evaluation Form.	Expert Evaluation Form

Table 2: Generic Maturity Level Descriptions for the Maturity Model

Level	Title	Description
Level 1	Initial	This dimension is in creation and/or in an undeveloped state. The processes described by this dimension are ad hoc or non-existent, responsibilities are unclear, and compliance or governance mechanisms are either missing or ineffective. There is no formal structure, documentation, or oversight existent/documented. This dimension is not prioritized within the data space.
Level 2	Repeatable	This level indicates that some basic structures and responsibilities are in place, mostly informal or inconsistently applied. The processes may be partially documented but lack standardization. Legal, organizational, or governance efforts are reactive and driven by immediate operational needs. The priority of this dimension is low and there is no regularly pursued improvement.
Level 3	Defined	The dimension is formalized and aligned with accepted industry practices. Policies, roles, and responsibilities are clearly defined and documented. Legal and governance frameworks are systematically implemented. The dimension is treated as a functional part of the data space and periodic reviews may occur.
Level 4	Managed	The dimension is strategically embedded into data space operations. There is evidence of active monitoring, structured reviews, and targeted improvements. Legal and governance mechanisms are proactively enforced. Performance is measured, and there is cross-stakeholder coordination. The dimension is a recognized priority.
Level 5	Optimized	The dimension is continuously improved based on data-driven insights, KPIs, and best practices. Processes are automated where feasible, aligned with advanced standards, and demonstrate leadership within the data ecosystem. Governance, legal compliance, and organizational readiness are highly mature, adaptive, and future-focused.

Q	Concept	Dimension	Assessment Question	Scale/Scoring	Source Text
Q1	Value Propositions	Clarity and Specificity	How clearly are the value propositions defined for data providers, recipients, and service providers?	1 (Vague or undefined) to 5 (Clearly documented, tailored, and regularly refined)	"A value proposition describes how an offering creates value for a user"
Q2			How frequently are value propositions reviewed and updated based on participant feedback?	1 (Never) to 5 (Continuously, with data-driven adjustments)	"The business model should consider the various pains, gains, incentives..."
Q3		Stakeholder Coverage	To what extent do value propositions address the needs of all participant segments (data providers, recipients, service providers, governance)?	1 (Focus on one segment) to 5 (Proactively includes all and emerging segments)	"A data space also has value propositions to federation service providers..."
Q4		Implementation Effectiveness	How effectively are value propositions delivered through standardized interfaces or services?	1 (No consistent delivery) to 5 (Fully integrated, continuously improved delivery)	"An important part of a data space's offering... is a high level of standardisation of interfaces"
Q5	Multi-sidedness	Segment Engagement	How actively do data providers, recipients, and service providers participate in the data space?	1 (Minimal participation) to 5 (Balanced, high engagement across all segments)	"Multi-sidedness means that a business model serves interaction between different types of users..."
Q6			How balanced is the representation of segments in the data space's activities and decision-making?	1 (Dominated by one segment) to 5 (Equitable representation across all segments)	"The business model should clearly outline the benefits it offers..."
Q7		Network Effect Realization	To what extent are network effects observed in the data space?	1 (No network effects) to 5 (Strong same-side and cross-side effects drive growth)	"Increased attraction from an established user base is referred to as network effects"
Q8		Incentive Alignment	How well are incentives structured in the value proposition to encourage participation from all segments?	1 (No incentives) to 5 (Optimized incentives tailored to each segment)	"These actors must align their efforts and require appropriate incentives..."
Q9	Collaborative Business Model	Co-creation Process	How formalized is the process for co-creating the business model with participants?	1 (Ad-hoc) to 5 (Structured, documented, and continuously improved)	"The development of the data space's business model... guided by the co-creation method"
Q10		Stakeholder Alignment	To what extent do participants agree on objectives and incentives for the data space?	1 (No agreement) to 5 (Full alignment, regularly reinforced)	"The business model should consider... objectives and business models of the participants"
Q11		Ecosystem Integration	How well does the data space's business model integrate with participants' individual business models?	1 (No integration) to 5 (Seamless integration, mutually beneficial)	"The data space business model depends on the viability of individual business models"
Q12	Governance Authority Responsibilities	Role Formalization	How clearly are the governance authority's responsibilities for business model oversight documented?	1 (Undefined) to 5 (Fully documented, widely communicated)	"The governance authority is responsible for overseeing its operation..."
Q13		Decision-Making Process	How structured is the governance authority's process for making business model decisions?	1 (Ad-hoc) to 5 (Formalized, inclusive, and monitored)	"The governance authority is responsible for ensuring... rules are clear"
Q14		Monitoring and Adaptation	How effectively does the governance authority monitor and adapt the business model?	1 (No monitoring) to 5 (Continuous monitoring with proactive adaptations)	"Its business model should be continuously aligned with developments within its ecosystem"
Q15	Dynamic Capabilities	Environmental Monitoring	How systematically does the data space monitor internal and external developments affecting the business model?	1 (No monitoring) to 5 (Systematic, data-driven monitoring)	"This includes monitoring developments in both its external environment and internal performance"
Q16		Adaptation Process	How formalized is the process for redesigning and implementing business model changes?	1 (Ad-hoc) to 5 (Structured, tested, and scalable process)	"Developing changes to the business model and governance to guide... implementation"
Q17		Scalability	How capable is the data space of scaling its business model to support growth?	1 (No scalability) to 5 (Highly scalable, supporting diverse use cases)	"How will growth ambitions be realized?"
Q18	Revenue and Cost Management	Revenue Model Diversity	How diverse and stable are the data space's revenue streams (e.g., fees, subsidies)?	1 (Single, unstable source) to 5 (Multiple, stable, and diversified sources)	"Income may originate from multiple sources, including public funding and participant fees"
Q19		Cost Transparency	How transparent and controlled are the data space's operational and governance costs?	1 (Unclear, uncontrolled) to 5 (Fully transparent, optimized)	"What costs are associated with data space operations, and how are they managed?"
Q20		Financial Sustainability	To what extent do revenues cover costs to ensure long-term financial sustainability?	1 (Significant deficit) to 5 (Surplus, supporting growth)	"The revenues and costs must align with the data space's profit and growth strategies"

Table 3: Assessment Framework Business Model

Q	Concept	Dimension	Assessment Question	Scale/Scoring	Source Text
Q1	Use Case Identification and Monitoring	Process Formalization	How formalized is the process for identifying and screening use case scenarios?	1 (Ad-hoc, no process) to 5 (Automated, data-driven process)	"Identifying and monitoring use case scenarios... Collecting ideas... initial stage-gate screening"
Q2		Stakeholder Engagement	To what extent are stakeholders (e.g., participants, other data spaces) engaged in generating use case ideas?	1 (Limited to internal team) to 5 (Ecosystem-wide collaboration)	"Potential sources for ideas... needs of participants... other data spaces"
Q3		Monitoring Capability	How sophisticated are the tools used to monitor the progress and outcomes of use case scenarios?	1 (No tracking) to 5 (Predictive analytics)	"Monitoring the progress... keep a list of identified use case scenarios"
Q4		Process Formalization	How consistently are use case scenarios screened for market potential and alignment with data space objectives?	1 (No screening) to 5 (Automated, strategic screening)	"Screening the best ideas... market potential"
Q5	Use Case Scenario Refinement	Process Structure	How standardized is the process for refining use case scenarios, including the use of templates?	1 (No templates, ad-hoc) to 5 (Fully integrated, automated tools)	"Refining... using templates like the Data Cooperation Canvas"
Q6		Collaboration Effectiveness	How effectively do participants collaborate during the co-creation of use case scenarios?	1 (No co-creation) to 5 (Dynamic, scalable co-creation)	"Orchestrates the co-creation efforts across participants"
Q7		Compliance Integration	To what extent are regulatory, business, and security requirements integrated into the refinement process?	1 (No consideration) to 5 (Proactive compliance with automated audits)	"Business case, regulation, contractual issues, interoperability, and security"
Q8		Process Structure	How modular are the data products and services designed during use case refinement to support multiple use cases?	1 (No modularity) to 5 (Fully modular, reusable across data spaces)	"Data products and value creation services... modular"
Q9	Use Case Implementation	Infrastructure Readiness	How ready is the data space infrastructure to support the implementation of use cases?	1 (No infrastructure) to 5 (Interoperable across data spaces)	"Data space infrastructure sets the boundaries"
8		Participant Commitment	How formalized are the agreements and commitments from participants for use case implementation?	Q10 (No agreements) to 5 (Dynamic, real-time contracts)	"Necessary contracts for the use case need to have been made"
Q11		Implementation Strategy	How structured is the strategy for implementing use cases (e.g., stepwise, agile)?	1 (Ad-hoc) to 5 (Optimized, scalable framework)	"Stepwise implementation... minimum viable use case"
Q12		Implementation Strategy	How effectively does the data space support the development of minimum viable use cases during implementation?	1 (No support) to 5 (Optimized, agile support for MVUs)	"Minimum viable use case... partial implementation"
Q13	Continuous Improvement	Performance Analysis	How robust are the methods for analyzing the performance of operational use cases?	1 (No measurement) to 5 (Predictive analytics)	"Continuously analyzing the performance of use cases"
Q14		Change Management	How structured is the process for managing changes to operational use cases?	1 (No process) to 5 (Automated, prioritized roadmap)	"Manage carefully the changes made... roadmap made"
Q15		Participant Involvement	To what extent are participants involved in planning and implementing improvements to use cases?	1 (No input) to 5 (Ecosystem-wide co-creation)	"Done in collaboration with all the essential participants"
Q16		Performance Analysis	How systematically are lessons from abandoned use cases documented and used to inform future development?	1 (No documentation) to 5 (Automated knowledge base)	"Which ones were abandoned and for which reason"
Q17	Use Case Orchestration	Role Definition	How clearly defined are the responsibilities of the use case orchestrator?	1 (No defined role) to 5 (Optimized, cross-data-space role)	"Use case orchestrator... accountable for a specific use case"
Q18		Support Mechanisms	What level of support (e.g., tools, templates, training) is provided to use case orchestrators?	1 (No support) to 5 (Automated, integrated systems)	"Data space should offer tools and support to the orchestrator"
Q19		Scalability	How capable is the orchestrator in managing multiple or complex use cases?	1 (Single, simple use case) to 5 (Cross-data-space use cases)	"Need for orchestration is increased... complex use cases"
Q20		Scalability	To what extent are cross-data-space collaborations for use case development facilitated?	1 (No collaboration) to 5 (Seamless cross-data-space orchestration)	"Collaboration possibilities in other data spaces"

Table 4: Assessment Framework Use Case Development

Q	Concept	Dimension	Assessment Question	Scale/Scoring	Source Text (Page, Phrase)
Q1	Data Products	Formalization	To what extent are data products documented with standardized metadata (e.g., FAIR principles, Data Act requirements)?	1 (Not documented) to 5 (Fully standardized, machine-readable, leading standards)	"Data products comply with a data product specification... described using metadata"; "FAIR principles."
Q2		Quality Assurance	How consistently are quality assurance processes applied to data products?	1 (No processes) to 5 (Metrics-driven, continuous improvement)	"Quality assurance, evaluation and validation of the data product."
Q3		Quality Assurance	How frequently are data products evaluated for consumer satisfaction and purpose fulfillment?	1 (Never) to 5 (Continuous, feedback-driven evaluation)	"Validation that it fulfills its requirements and intended purposes."
Q4		Accessibility	How accessible are data products to participants via catalogues and delivery options (e.g., APIs, web interfaces)?	1 (Not accessible) to 5 (Seamless, adaptive access)	"Offered to participants in a consumable form... via catalogue"; "Delivery options (e.g., APIs)."
Q5			How effectively do data products support reuse across multiple use cases?	1 (No reuse) to 5 (Optimized for cross-use-case value)	"Data products containing the same data can be delivered to multiple use cases."
Q6	Services	Formalization	To what extent are services documented with metadata and published in a catalogue?	1 (No documentation) to 5 (Fully standardized, discoverable)	"Services... described properly using metadata and offered through a catalogue."
Q7		Diversity	How diverse are the value-creation services offered to participants?	1 (No services) to 5 (Innovative, diverse services)	"Value-creation services, e.g., data visualization, anonymization."
Q8		Integration	How well are services integrated into participant workflows and use cases?	1 (No integration) to 5 (Fully embedded, tailored)	"Services... offered to participants"; "Drive value creation."
Q9	Offering Strategy	Planning	Is there a documented strategy for identifying and prioritizing data products and services?	1 (No strategy) to 5 (Dynamic, goal-aligned strategy)	"Develop and maintain a strategy... Identification and onboarding."
Q10			Are there mechanisms to prioritize onboarding of high-demand data products and services?	1 (No prioritization) to 5 (Proactive, data-driven prioritization)	"Priority onboarding of relevant data products and services."
Q11		Use Case Alignment	To what extent do offerings align with existing and potential use cases?	1 (No alignment) to 5 (Drives cross-use-case synergies)	"Serve existing and future use cases."
Q12		Network Effect Enablement	How effectively do offerings foster network effects by attracting new participants?	1 (No effect) to 5 (Significant growth and synergies)	"Foster the network effect of the data space."
Q13	Governance Rules	Rule Development	Are governance rules for data products and services formally defined (e.g., quality, licensing)?	1 (No rules) to 5 (Comprehensive, benchmark-setting rules)	"Responsibility of the governance authority to set rules."
Q14			How well do governance rules ensure data product compliance with ethical and privacy standards?	1 (No consideration) to 5 (Leading ethical/privacy compliance)	"Ensure... security, privacy, interoperability, and ethical considerations."
Q15		Enforcement	How consistently are governance rules enforced across offerings?	1 (No enforcement) to 5 (Automated, transparent enforcement)	"Enforcement of the governance rules."
Q16		Adaptability	How adaptable are governance rules to changing needs or regulations?	1 (Static) to 5 (Proactively updated)	"Maintaining... these rules."
Q17	Participant Support	Tooling and Guidance	What tools or processes are provided to support participants in creating data products?	1 (No tools) to 5 (Innovative, comprehensive tools)	"Provide tools and processes to lower the barrier."
Q18		Engagement	How engaged are participants in developing and offering data products?	1 (No engagement) to 5 (Active, collaborative community)	"Support its participants in creating data products."
Q19			Are there incentives to encourage participants to offer high-quality data products?	1 (No incentives) to 5 (Effective, scalable incentives)	"Incentivizing... participants to invest in developing... data products."
Q20		Capacity Building	To what extent does support enhance participants' ability to produce high-quality data products?	1 (No support) to 5 (Scalable capacity-building programs)	"Improve the utility of the data... foster synergies."

Table 5: Assessment Framework Data Space Offering

Q	Concept	Dimension	Assessment Question	Scale/Scoring	Source Text
Q1	Service Provision	Formalization	To what extent are the types of enabling services (e.g., federation, participant agent) provided by intermediaries/operators formally defined in the data space rulebook?	1 (Ad-hoc, undefined) to 5 (Fully standardized, dynamically optimized)	"Intermediaries and operators can offer technical federation services, participant agent services... The governance framework... should include information regarding all service providers"
Q2		Accessibility	How accessible are intermediary/-operator services to diverse participants in terms of onboarding support and usability?	1 (High barriers, limited access) to 5 (Universal access, automated onboarding)	"Improve data space accessibility and usability for different participants"
Q3		Scalability	How well do intermediary/operator services support scalability in terms of handling increased participants and transactions?	1 (No scalability) to 5 (Automated, exponential scaling)	"Contribute to their scalability"
Q4	Governance Framework Integration	Formalization	To what extent does the governance framework (rulebook) clearly define the rights and responsibilities of intermediaries/operators?	1 (No defined rules) to 5 (Comprehensive, dynamically updated rules)	"The governance framework... may define different kinds of rights and responsibilities for the providers"
Q5		Compliance Enforcement	How effectively does the DSGA enforce compliance of intermediaries/operators with the governance framework (e.g., through audits, certifications)?	1 (No enforcement) to 5 (Proactive, automated compliance monitoring)	"Auditing requirement or possibility: e.g., DSGA may have right to audit service providers"
Q6		Neutrality	To what degree do intermediaries/-operators maintain neutrality by avoiding conflicts of interest (e.g., bundling enabling and value creation services)?	1 (Frequent conflicts) to 5 (Strict neutrality enforced)	"Bundling allowance: e.g., whether the service provider must provide exclusively some specific service in order to maintain its neutrality"
Q7	Business and Revenue Models	Formalization	How clearly are the revenue models (e.g., fees, revenue sharing) of intermediaries/operators documented in the data space?	1 (Undocumented) to 5 (Fully transparent, optimized models)	"Business model characteristics describe how service providers contribute to the overall economics... multiple options for revenue models"
Q8		Economic Contribution	To what extent do intermediary/-operator business models contribute to the economic growth of the data space (e.g., attracting new participants)?	1 (No contribution) to 5 (Significant, measurable growth)	"Agency intermediaries are directly incentivised to acquire new customers... inviting new participants"
Q9	Interoperability and Collaboration	Technical Integration	How well do intermediaries/operators adhere to technical standards for interoperability within the data space?	1 (No standards) to 5 (Full compliance, leadership in standards)	"Collaboration between intermediaries... requires technical integration planning and governance"
Q10		Collaboration Scope	To what extent do intermediaries/-operators collaborate (or compete fungibly) to enable seamless service provision within the data space?	1 (No collaboration/competition) to 5 (Optimized, interoperable collaboration)	"Collaboration between intermediaries providing the same enabling services... providers can compete... but must always be fungible"
Q11		Collaboration Scope	How effectively do intermediaries/-operators support cross-data space interoperability?	1 (No cross-space support) to 5 (Seamless cross-space integration)	"Collaboration between operators to facilitate interoperability between data spaces"
Q12	Risk Management	Process Definition	To what degree are risk management processes (e.g., for vendor lock-in, sovereignty) formally defined for intermediaries/operators?	1 (No processes) to 5 (Comprehensive, proactive processes)	"Risks... such as vendor lock-in... section 3.3.6. explains how to address the common challenges" (Page 2, Purpose).
Q13		Diversification	How diversified is the data space's reliance on intermediaries/operators to mitigate dependency risks?	1 (Single provider dependency) to 5 (Fully diversified, resilient model)	"Designing data spaces with multiple operators and intermediaries to distribute vendor dependency risks"
Q14	Regulatory Compliance	Alignment	To what extent do intermediaries/-operators comply with applicable regulatory frameworks (e.g., GDPR, DGA)?	1 (Non-compliant) to 5 (Full compliance, proactive alignment)	"Intermediaries and operators are subject to broader legal frameworks... GDPR, DGA"
Q15		Support Mechanisms	How effectively do intermediaries/-operators provide tools or services to support the data space's regulatory compliance?	1 (No support) to 5 (Comprehensive, automated compliance tools)	"Service providers may help achieve regulatory compliance... by providing services that support"
Q16	Service Provider Responsibilities	Process Formalization	To what degree are service provider responsibilities formally defined in contracts or the rulebook?	1 (Undefined) to 5 (Fully defined, dynamically updated)	"Service level agreements and performance metrics... provide clear mappings"
Q17		Transparency	How transparent are intermediary/-operator monitoring and reporting systems for responsibilities?	1 (No transparency) to 5 (Fully transparent, automated reporting)	"Implement monitoring and reporting systems that can track and demonstrate compliance"
Q18		Process Formalization	To what extent are incident response and business continuity plans for intermediaries/operators integrated across the data space?	1 (No plans) to 5 (Fully integrated, multi-framework plans)	"Develop integrated incident response procedures that account for multi-framework obligations"
Q19		Process Formalization	How well-defined are exit strategies and data portability provisions for intermediaries/operators in the data space?	1 (No provisions) to 5 (Standardized, seamless portability)	"Establish clear guidelines for managing exits... standard procedures for data portability"
Q20		Transparency	To what degree do intermediaries/-operators undergo regular audits to ensure compliance with data space requirements?	1 (No audits) to 5 (Proactive, cross-framework audits)	"Define transparency and audit requirements... provide standardised reporting templates"

Table 6: Assessment Framework Intermediaries and Operators

Q	Concept	Dimension	Assessment Question	Scale/Scoring	Source Text
Q1	Organizational Form Decision	Decision Process Formalization	Is there a documented process for deciding the Data Space's organizational form, involving all relevant stakeholders?	1 (No process) – 5 (Fully documented, inclusive process)	"While developing the business model, they also consider the following non-exhaustive list of questions..."
Q2		Alignment with Business Model	Does the chosen organizational form (e.g., unincorporated, incorporated) align with the Data Space's business model and scalability needs?	1 (No alignment) – 5 (Optimal alignment)	"Each of those legal forms... needs to be considered in detail depending on the data space business model..."
Q3		Adaptability	Is there a defined mechanism to evaluate and change the organizational form if needed?	1 (No mechanism) – 5 (Proactive adaptation strategy)	"While the choice of legal form... can be changed later on."
Q4	Governance Authority Establishment	Structural Definition	Are the governance authority's structure and roles (e.g., general assembly, management board) clearly defined and documented?	1 (Undefined) – 5 (Fully formalized)	"A body is a differentiated structure... e.g., general assembly of members and a management board."
Q5			Are governance authority roles regularly reviewed to meet evolving Data Space needs?	1 (No review) – 5 (Optimized adjustments)	"The members... can decide on the size and composition... depending on the size and needs..."
Q6			Does the governance authority include specialized bodies (e.g., committees) for complex tasks as needed?	1 (No specialization) – 5 (Optimized structure)	"They are also more likely to need additional specialised bodies (e.g., working groups or committees)..."
Q7		Functional Scope	Does the governance authority consistently perform functions like rule-setting, compliance, and conflict resolution?	1 (Minimal functions) – 5 (Comprehensive functions)	"The role of a governance authority may entail... setting internal rules... ensuring compliance... resolving conflicts..."
Q8			Does the governance authority use performance metrics to manage its functions?	1 (No metrics) – 5 (Proactive metrics)	"A governance authority also creates mechanisms for continuous improvement..."
Q9		Stakeholder Representation	Is there a formal process to ensure balanced representation of all members in the governance authority?	1 (No process) – 5 (Equitable representation)	"There are no legal requirements for equal... representation... which may lead to power imbalances..."
Q10			Are mechanisms in place to address power imbalances in governance authority decision-making?	1 (No mechanisms) – 5 (Inclusive mechanisms)	"It would be important to follow the best practices of corporate governance."
Q11	Governance Framework Development	Rule Completeness	Does the governance framework include comprehensive internal rules (e.g., founding agreements, policies, technical specifications)?	1 (No rules) – 5 (Exhaustive rules)	"These internal rules can consist of founding agreements... internal policies... technical specifications..."
Q12			Are internal rules regularly updated to address new Data Space requirements?	1 (No updates) – 5 (Anticipatory updates)	"Each data space tailors the contents of the rulebook to its own needs..."
Q13			Are technical specifications fully integrated into the governance framework?	1 (Not integrated) – 5 (Fully integrated)	"Technical specifications for the data space... constitutes part of internal rules..."
Q14			Are governance procedures clearly defined within the framework?	1 (Undefined) – 5 (Comprehensive procedures)	"Each data space can... draw up... governance procedures (e.g., dispute resolution...)..."
Q15		Process Integration	Is there a structured process for developing and updating internal rules, involving governance bodies?	1 (Ad-hoc) – 5 (Proactive process)	"All of the mentioned documents should be prepared and discussed by the executive body... or... working groups..."
Q16			Is the rule development process monitored and improved based on feedback?	1 (No monitoring) – 5 (Continuous improvement)	"Such an approach... allows for more flexibility in the operation..."
Q17			Does the rule development process involve input from all relevant stakeholders?	1 (No involvement) – 5 (Collaborative process)	"Documents of a more general nature... should be approved or voted on by the decision-making body..."
Q18		Accessibility and Usability	Are internal rules documented in a rulebook accessible to all Data Space participants?	1 (Inaccessible) – 5 (Highly accessible)	"Once adopted, all data space internal rules are documented in a data space rulebook for operational use."
Q19			Does the governance framework include tools to enhance rule usability for participants?	1 (No tools) – 5 (Advanced tools)	"For operational use"
Q20			Is the rulebook maintained in both human- and machine-readable formats?	1 (No formats) – 5 (Dual formats)	"The rulebook must be expressed in a human-readable format and, if possible, a machine-readable format."

Table 7: Assessment Framework Organizational Form and Governance Authority

Q	Concept	Dimension	Assessment Question	Scale/Scoring	Source Text
Q1	Participant Roles and Responsibilities	Formalization	Are the roles and responsibilities of participants clearly documented in the Data Space rulebook?	1 = Not documented to 5 = Documented and dynamically refined	"Participants in a data space comprise different entities... documented in the data space's rulebook"
Q2		Enforcement	Are there mechanisms to enforce participant adherence to their responsibilities?	1 = No mechanisms to 5 = Automated enforcement	"participation management needs to ensure the management of permissions"
Q3	Onboarding Process	Standardization	Is the onboarding process standardized and documented for all participant types?	1 = Not standardized to 5 = Automated and optimized	"Efficient onboarding of participants is critical... involves defining General Terms and Conditions"
Q4		Efficiency	How efficiently can new participants integrate into the Data Space?	1 = Very slow to 5 = Immediate (automated)	"ensures that participants can quickly integrate into the data space"
Q5		Compliance Integration	Are legal and technical compliance checks integrated into the onboarding process?	1 = Not integrated to 5 = Automated compliance checks	"reviews the applicant's compliance with legal, technical, and operational standards"
Q6	Offboarding Process	Documentation	Are offboarding procedures clearly documented and accessible to participants?	1 = Not documented to 5 = Documented and regularly updated	"Documentation of exit procedures... detailed steps for data transfer, access termination"
Q7		Data Handling	Are there robust protocols for secure data transfer or deletion during offboarding?	1 = No protocols to 5 = Automated and secure protocols	"Implementing clear protocols for the secure transfer or deletion of data"
Q8		Compliance Verification	Does the offboarding process include thorough verification of contractual and compliance obligations?	1 = No verification to 5 = Automated verification	"verify that all contractual and compliance obligations have been met"
Q9	Compliance and Governance Alignment	Policy Alignment	Do participants align their internal data governance with the Data Space's governance framework?	1 = No alignment to 5 = Proactively refined	"internal Data Governance processes need to be implemented and aligned with the overarching Data Governance framework"
Q10		Monitoring	How frequently are participants monitored for compliance with Data Space policies?	1 = Never to 5 = Continuous	"Active monitoring extends beyond initial onboarding, with continuous oversight"
Q11		Data Quality	Are there mechanisms to ensure data quality and provenance for shared data?	1 = No mechanisms to 5 = Automated quality assurance	"management of data quality, observability of data transactions, data provenance"
Q12	Data Transaction Facilitation	Interoperability	Do intermediaries and operators support standardized, interoperable data exchange?	1 = No support to 5 = Automated and scalable	"facilitate data intermediaries and operators to ensure adherence of interoperability standards"
Q13		Security	Are data transactions secured against unauthorized access or misuse?	1 = No security measures to 5 = Advanced, automated security	"facilitating secure and compliant data transactions"
Q14	Stakeholder Engagement and Monitoring	Inclusivity	Are external stakeholders' concerns considered in governance processes?	1 = Not considered to 5 = Integrated into decision-making	"understand concerns and needs of external stakeholders"
Q15		Feedback Integration	Is participant feedback systematically collected to improve participation processes?	1 = No feedback collected to 5 = Data-driven optimization	"Feedback from participants is crucial... enabling data-driven adjustments"

Table 8: Assessment Framework Participant Management

Q	Concept	Dimension	Assessment Question	Scale/Scoring	Source Text
Q1	Triggers	Identification Process	How systematically are triggers identified to determine applicable legal frameworks?	1 = No process to identify triggers; done ad-hoc. 5 = Automated, systematic trigger identification across all contexts.	"This process starts with identifying elements, criteria, and/or events in the data space that flag the need... to apply or comply with a particular framework."
Q2		Scope Coverage	To what extent are all relevant legal frameworks (EU, national, sectoral) covered by the trigger identification process?	1 = Only a few frameworks considered, inconsistently. 5 = Comprehensive coverage of all relevant frameworks, proactively updated.	"The triggers may be classified into different categories, such as: Types of data... Types of data space participants... Types of use cases."
Q3	Data Space Requirements	Formalization	How formalized are the processes to comply with data space-specific legal requirements?	1 = No formal compliance processes exist. 5 = Fully documented and enforced compliance processes, regularly updated.	"The category of data space requirements encompasses legislation that directly regulates data spaces."
Q4		Interoperability Integration	To what extent are interoperability standards (e.g., Data Act Article 33) integrated into data space operations?	1 = No interoperability standards integrated. 5 = Interoperability standards fully embedded and harmonized across operations.	"A key piece of legislation that directly regulates data spaces is the Data Act... to ensure data interoperability."
Q5			How well are interoperability requirements from sectoral regulations incorporated into the data space?	1 = No sectoral interoperability requirements incorporated. to 5 = Sectoral interoperability requirements fully integrated and harmonized.	"According to art. 52 (12) EHDS, Member States and the Commission shall seek to ensure interoperability..."
Q6	Additional Legal Considerations	Awareness	How well are additional legal considerations (e.g., cybersecurity, IP) documented within the data space?	1 = No documentation of additional legal considerations. 5 = Comprehensive, accessible documentation with stakeholder training.	"In addition to the legal frameworks outlined above... it's crucial to consider additional legal aspects stemming from, for instance, cybersecurity legislative frameworks."
Q7		Process Integration	To what extent are additional legal considerations integrated into data space workflows and processes?	1 = No integration into workflows. 5 = Seamless integration into all workflows, continuously improved.	"Ensuring robust cybersecurity measures is essential to protect data integrity and privacy..."
Q8			To what extent are cybersecurity legal requirements integrated into data space operations?	1 = No cybersecurity requirements integrated. to 5 = Cybersecurity requirements fully integrated, continuously enhanced.	"Ensuring robust cybersecurity measures is essential to protect data integrity and privacy..."
Q9	Tools for Compliance	Adoption	How extensively are technical tools (e.g., privacy-enhancing technologies) used to address legal requirements?	1 = No tools used for compliance. 5 = Comprehensive use of advanced tools across all compliance areas.	"Such technical tools could vary from tools that assist in identifying relevant requirement to (partially) automating compliance."
Q10		Automation	To what extent are tools for automated compliance monitoring deployed in the data space?	1 = No automated monitoring tools. to 5 = Advanced automated monitoring tools fully deployed.	"...continuous compliance monitoring, as well as accountability and transparency in reporting."
Q11		Automation	To what degree are compliance processes automated within the data space?	1 = Fully manual compliance processes. 5 = Fully automated compliance processes, scalable and efficient.	"Yet, there is a growing need for automated compliance solutions, which offer greater scalability, efficiency..."
Q12	Regulatory Compliance Flowcharts	Utilization	To what extent are regulatory compliance flowcharts actively used by governance authorities and participants?	1 = Flowcharts not used. to 5 = Flowcharts actively used by all stakeholders, embedded in operations.	"Once the applicability of a given framework or requirement is identified, the flowcharts refer the entity to potential 'check list'..."
Q13	Governance Authority Role	Policy Establishment	How formalized are the internal policies established by the governance authority for regulatory compliance?	1 = No formal policies exist. to 5 = Fully formalized policies, consistently enforced and updated.	"It helps to properly define some participant roles and responsibilities, establish internal policies..."
Q14		Monitoring	How rigorous and frequent is the monitoring of regulatory compliance within the data space?	1 = No monitoring occurs. to 5 = Continuous, rigorous monitoring with automated reporting.	"...and continuously monitor the regulatory compliance of a data space."
Q15		Policy Establishment	How proactive is the governance authority in updating compliance processes based on new legal frameworks?	1 = Reactive or no updates to compliance processes. to 5 = Proactive, dynamic updates to processes for new frameworks.	"Guiding data space initiatives on organising compliance with relevant legislation and ensuring that regulatory compliance is maintained throughout the lifecycle..."
Q16	Participant Rights and Obligations	Communication	How clearly are participants informed about their legal rights and obligations within the data space?	1 = No communication to participants. to 5 = Clear, accessible communication tailored to all participants.	"It also assists data space participants in understanding their rights and obligations under regulatory frameworks..."
Q17		Support Mechanisms	To what extent are resources or guidance provided to support participants in meeting their legal obligations?	1 = No support resources provided. to 5 = Comprehensive, tailored guidance and resources available.	"It also provides guidance on relevant legislation to those interested in setting up or joining a data space..."

Table 9: Assessment Framework Regulatory Compliance

Q	Concept	Dimension	Assessment Question	Scale/Scoring	Source Text
Q1	Institutional Agreements	Formalization	To what extent is the Founding Agreement documented and legally enforceable?	1 = Not documented, 5 = Fully formalized, optimized	"Founding agreement establishes the data space and its governance authority"
Q2			How well do Institutional Agreements define policies for IP rights and data protection?	1 = None, 5 = Comprehensive	"Intellectual property policy... data protection policy"
Q3		Formalization	How consistently are General Terms and Conditions applied across all data space participants?	1 = Ad hoc, 5 = Universally applied, updated	"General terms and conditions... make it binding on all data space participants"
Q4		Process Integration	How well are Institutional Agreements integrated into onboarding and governance processes?	1 = Not integrated, 5 = Seamlessly integrated	"Admission policy for data space participants... by accepting the terms and conditions"
Q5	Data-Sharing Agreements	Standardization	To what extent are standardized templates used for data product contracts?	1 = None, 5 = Highly interoperable, adopted	"Data product contract... sets out the terms and conditions"
Q6			How standardized are licenses for data usage in data-sharing agreements?	1 = None, 5 = Highly standardized	"Standardised licences model for data usage rights"
Q7		Flexibility	How flexible are data-sharing agreements in balancing data sovereignty and interoperability?	1 = None, 5 = Optimal balance	"Terms and conditions under which a data product is made available... reflecting data sovereignty"
Q8		Technical Enforcement	To what extent are smart contracts used to enforce data-sharing agreements?	1 = None, 5 = Fully automated, compliant	"Smart contracts can help establish trust... automatically enforcing legal obligations"
Q9	Services Agreements	Service Coverage	How comprehensively do services agreements cover data-related services?	1 = None, 5 = Comprehensive, scalable	"Service agreements relate to the provision of services... data-related services"
Q10			How effectively do services agreements support enabling services (e.g., identity management)?	1 = None, 5 = Comprehensive	"Agreements for the provision of trust framework services, and management of identities"
Q11		Clarity of Roles	How clearly are roles and obligations defined in services agreements?	1 = Unclear, 5 = Explicitly defined	"Agreements for services related to data... define roles and obligations"
Q12		Scalability	How scalable are services agreements to support growing data space operations?	1 = Not scalable, 5 = Highly scalable	"Enabling services to data spaces... aimed at enabling functionalities"
Q13	Legal Interoperability and Scalability	Harmonization	To what extent are legal terms (e.g., jurisdiction, applicable law) harmonized across agreements?	1 = None, 5 = Fully harmonized	"Harmonise matters of jurisdiction and applicable law across all agreements"
Q14		Automation	How extensively are automated tools (e.g., smart contracts) used to execute agreements?	1 = None, 5 = Fully automated	"Smart contracts... increase efficiency, and reduce costs"
Q15		Interoperability	How well do agreements align with other data spaces or ecosystems?	1 = None, 5 = Fully interoperable	"Promotes awareness... to enable interoperable, automated, and scalable agreements"
Q16	Regulatory Compliance Integration	Compliance Coverage	How comprehensively do agreements address mandatory regulatory requirements (e.g., GDPR, Data Act)?	1 = None, 5 = Fully compliant	"Agreements must comply with the existing legislation to ensure validity"
Q17			How proactively are agreements updated to reflect new regulatory or operational needs?	1 = None, 5 = Proactively updated	"Regulatory framework defines which agreements and clauses are mandatory"
Q18		Risk Management	To what extent do agreements include mechanisms to mitigate legal risks?	1 = None, 5 = Comprehensive	"Contractual clauses address risks associated with liability: warranties, allocation of liability"
Q19		Intelligibility	How clear and intelligible are agreement clauses for non-legal participants?	1 = Highly technical, 5 = Clear, accessible	"Balance the accurate incorporation of legal concepts with intelligibility"

Table 10: Assessment Framework Contractual Agreement

Table 11: Business Building Block Concept Description

Concept	Description	Section from the Blueprint
Value Proposition	Describes and defines the delivery of the value the data space offers to participants, including clarity, tailoring to needs, and effectiveness of delivery mechanisms.	"A value proposition describes how an offering creates value for a user."; "[...] value propositions to federation service providers [...]" "An important part of a data space's offering [...] is a high level of standardisation of interfaces."
Multi-sidedness	Multi-sidedness describes the degree to which a data space enables interaction between distinct participant types, including network network effects and incentive alignment across sides.	"Multisidedness means that a business model serves interaction between different types of users [...]" "[...] network effects [...]" "[...] appropriate incentives."
Collaborative Business Model	A collaborative business model is co-developed with participants and integrates their diverse objectives, pains, gains, and individual business models to enable value creation in a coordinated way.	"The business model of a data space applies to a set of organisations [...] known as a collaborative business model."; "[...] value is only created together in coherence [...]" "[...] depends on the viability of individual business models [...]"
Governance Authority Responsibilities	The governance authority takes the role of overseeing formalizing, monitoring, and adapting the business model to ensure alignment with objectives and attractiveness to participants.	"The data space governance authority is responsible for overseeing its operation and ensuring that appropriate measures are taken."; "[...] responsible for monitoring [...] and implementing changes [...]"
Dynamic Capabilities	Dynamic capabilities describe the ability of a data space to monitor internal and external developments and redesign its business model accordingly, ensuring agility, scalability, and long-term relevance.	"A digital multi-sided business model requires a quick response to change in order to thrive."; "[...] referred to as 'dynamic capability', meaning the ability to shape and realise desired change."; "[...] includes monitoring developments [...] internal performance and external environment [...]" "[...] developing changes to the business model and governance [...]"
Revenue and Cost Management	Revenue and Cost Management describes the structure, diversity, and transparency of how the data space generates revenue and manages operational and governance costs to ensure long-term financial viability.	"The income from the data space may originate from multiple sources, [...]" "[...] costs are associated with data space operations [...]" "[...] revenues and costs must align with profit and growth strategies."

Table 12: Use Case Development Block Concept Description

Concept	Description	Section from the Blueprint
Use Case Identification and Monitoring	This concept describes the process in which ideas for use cases are collected, evaluated, and screened based on alignment with the data space's goals and market potential.	"Collecting ideas for use case scenarios through activities such as observing potential customers' needs and analysing other data spaces and platforms."; "Gathering a library of use case scenarios, monitoring their progress, and screening the best ideas for the refining stage should be carried out centrally."
Use Case Scenario and Refinement	This concept describes that use cases are further detailed and validated with participants using structured approaches, including compliance and co-creation methods.	"When further refining use case scenarios, the different approaches and templates guide the focus to additional issues such as the business case, regulation, contractual issues, interoperability, and security."; "Refining use case scenarios is where you spend more of your time, giving detail to the use case so that you can test its viability. This includes, at the minimum, the purpose and value of the use case, the use case participants, and the necessary data flows."
Use Case Implementation	This concept describes the phase in which the designated use case is put into operation, supported by the necessary infrastructure, contracts, and participant engagement.	"• Implementing use cases is where you take the best ideas and move from the drawing board to putting the ideas into reality."; "Implementing use cases both from organisational and business perspectives (e.g., agreements) and from technical perspectives (e.g., vocabularies, APIs, connectors)."; "[...] implementing stage is whether the overall design and the network are strong enough so that it is justified for the necessary partners to commit to and invest in the implementation work."
Continuous Improvement	This concept describes the ongoing process of monitoring and improving the performance of use cases, managing changes, and learning from successful and abandoned scenarios.	"Continuous improvement process is the overarching process throughout the life cycle of a use case where you analyze its performance, identify improvement opportunities, plan and implement changes."; "Continuous improvement is needed throughout the life cycle of a use case, starting from the first phases of identifying use case scenarios and continuing throughout the operational stage until the use case reaches the end of its life."
Use Case Orchestration	This concept describes the coordination and support mechanism to facilitate and scale use case development, ensuring roles are clear, tools are provided, and cross-space collaboration is enabled.	"In the case of use case orchestration, the joint goal is developing the use case, and the network is the different participants of the use case. The need for orchestration is increased in situations with a high number of parties and the use cases are complex, as well as in situations where the data space needs to develop more use cases to reach a sufficient size."

Table 13: Data Space Offering Building Block Concept Description

Concept	Description	Section from the Blueprint
Data Products	This concept describes the consumable, marketable assets composed of data, metadata, licenses, quality information, delivery mechanisms, and legal usage constraints.	"Data products are assets that provide monetary and/or non-monetary value from data. They should meet consumers' needs and have a clear purpose. Data products are offered to participants in a consumable form to be discovered and consumed by consumers on a self-serve basis. Data products comply with a data product specification. Productising data means transforming data into consumable and marketable data products."
Data Services	Data Services are value-creation tools offered by participants and governance authorities that should be cataloged and described using metadata.	"The participants or the governance authority can also offer services to their participants. Most of these services are likely to be value-creation services, e.g., data visualization, anonymization, data quality assessment and assurance, data processing, and connection-enabling services to external infrastructures or applications."; "The services, similarly to data products, are recommended to be described properly using metadata and offered through a catalogue to the data space participants."
Offering Strategy	This concepts describes prioritizing and onboarding of data products/services, enforcing governance rules, and supporting participants to create quality offerings.	"This building block provides the data space initiatives with an understanding of the offerings from a business perspective. It proposes to develop and maintain a strategy for the data space offering. The elements of a data space offering strategy are the following: [...]."
Governance Rules	This concepts defines standards and responsibilities for data products/service offering, managed by a governance authority to ensure trust, sustainability and compliance.	"These rules ensure the sustainability of the data space by attracting data products with potential business or social value, and ensure that the data products adhere to several principles, such as quality, trustworthiness, security, privacy, interoperability, and ethical considerations. Thus, setting, maintaining and enforcing these rules ultimately lead to increasing the data space participants' trust towards to the data space."
Participant Support	This concept describes the process of assisting participants in creating and maintaining high-quality data products, such as offering tools, templates, and lifecycle governance aligned with reuse and multiple use cases.	"The governance authority of a data space should support its participants in creating data products for a variety of reasons. [...]."

Table 14: Intermediaries and Operators Building Block Concept Description

Concept	Description	Section from the Blueprint
Service Provision	This concept describes the technical and business services provided by intermediaries and operators to enable trusted data sharing within the data space.	"[...] intermediaries and operators enable data sharing and trusted data transactions to take place. These can be technical services (federation, participant agent, or occasionally value creation services) or business and organisational services."
Governance Framework Integration	This concept describes how intermediaries and operators align with and are regulated by the data space's governance framework.	"The governance framework of a data space is an essential way to manage how intermediaries provide value and how risks are managed. Intermediaries and operators are participants of a data space and as such subject to the governance framework (rulebook) of that data space."
Business and Revenue Models	This concept refers to the financial structures through which intermediaries and operators sustain operations and generate value.	"Business model characteristics describe how service providers contribute to the overall economics of the data space, enable business model or enable business viability of the data space."
Interoperability and Collaboration	This concept describes how intermediaries work with other providers within and across data spaces to enable technical and operational interoperability.	"Intermediary interoperability and collaboration within a data space is an important design aspect when creating and governing resilient and scalable data spaces. The collaboration between intermediaries and operators can be divided into: [...]."
Service Provider Responsibilities	This concept describes the expectations for service providers regarding performance, compliance, transparency, privacy, security, auditing, and support of federation.	"Provide clear mappings between their own service level requirements and common industry standards, and establish mechanisms for recognising compliance certifications from other data spaces to reduce redundant assessments."
Risk Management	This concept describes the addressing of risks and strategies for mitigation.	"4) Finally, using service providers, such as operators and intermediaries, in data spaces necessarily involves challenges and risks. Most risks are similar to those companies face when acquiring services from external providers, such as vendor lock-in, challenges in switching providers, provider sustainability, and compliance. This building block's section 3.3.6. explains how to address the common challenges and risks to be addressed and managed when design decisions are made for data spaces."

Table 15: Organizational Form and Governance Authority Building Block Concept Description

Concept	Description	Section from the Blueprint
Organizational Form Decision	This concept describes the choice of the organizational form that effects how a data space manages assets, contracts, liabilities, governance, and long-term sustainability.	"[...] namely the determination of an organisation's form and the establishment of a data space, the creation of a governance authority and the creation of a data space governance framework."
Governance Authority Establishment	This concept describes the process of creating the body or bodies responsible for developing, implementing, and enforcing the internal rules of the data space.	"The role of a governance authority may entail various functions, such as setting internal rules and policies, ensuring compliance with internal and external rules, and resolving conflicts that may arise. A governance authority also creates mechanisms for continuous improvement of the data space, identity management, access controls and risk mitigation to build trust and quality within the data space. Overall, the governance authority maintains and operationalises the internal rules for the successful operation of the data space."
Governance Framework Development	This concept describes the formulation of a governance framework that entails internal rules, policies, and technical specifications.	"Within the framework of the founding agreement and applicable laws, each data space can and should draw up terms and conditions of use of the data space, internal regulations and policies that govern its day-to-day affairs and operations, and various governance procedures (e.g. dispute resolution, adding or changing technical specifications and others). All of them should be part of the agreement that every data space participant must sign before joining the data space and starting conducting data transactions."

Table 16: Participant Management Building Block Concept Description

Concept	Description	Section from the Blueprint
Participant Roles and Responsibilities	This concept describes types of participants along with their distinct responsibilities.	"The Participation Management building block outlines governance processes for managing participant engagement in data spaces. This includes identifying participants, onboarding, offboarding, and setting rules for data transactions and service provision."
Onboarding Process	This concept describes the structured process through which candidate participants can join the data space, ensuring alignment with data space policies, legal compliance, and technical standards.	"Efficient onboarding of participants is critical for a seamless functioning data space. It ensures that participants can quickly integrate into the data space while adhering to necessary compliance and technical standards."
Offboarding Process	This concept describes the process of structured exits from the data space, ensuring integrity and legal security during participant withdrawal.	"The offboarding process is designed to uphold the integrity and continuity of the data space by addressing issues such as data rights/holdings, data transfer, and termination of access. Exiting the data space requires proof that all contracts made with other participants have been fulfilled and no contractual obligations remain open."
Compliance and Governance Alignment	This concept describes the conformity of participants to internal rules, regulatory frameworks, and the overarching governance framework of the data space.	"Participation management stresses the importance of Regulatory Compliance both at the data space and participant level. This involves complying with legal frameworks such as data protection, privacy, and other relevant legislation outlined in the regulatory compliance building block."
Data Transaction Facilitation	This concept describes the seamless, secure, and policy-compliant data sharing and exchange between participants.	"Data Space Governance Authority is to enable seamless interaction among the participants."
Stakeholder Engagement and Monitoring	This concept describes the active tracking, feedback collection, and transparency efforts for both internal and external stakeholders to ensure that participation remains aligned with evolving expectations and maintains trust within the ecosystem.	"Active monitoring extends beyond initial onboarding, with continuous oversight to ensure participants adhere to data space policies and standards. This ongoing monitoring helps identify areas where the onboarding process can be improved, ensuring that the data space evolves to meet participant needs and emerging challenges. Feedback from participants is crucial in this process, enabling the Data Space Governance Authority to make data-driven adjustments to onboarding procedures, enhancing both security and participant satisfaction."

Table 17: Regulatory Compliance Building Block Concept Description

Concept	Description	Section from the Blueprint
Triggers	This concept describes in the context of data spaces that indicate the applicability of certain legal frameworks.	"Triggers: Elements, criteria or events (e.g. data type, nature of participant or domain) that have occurred in a particular context of a data space and signals that a specific legal framework must or should be applied."
Data Space Requirements	This concept refers to the legal requirements that directly regulate the data space.	"The Regulatory Compliance building block encompasses a range of activities designed to ensure compliance with relevant regulatory frameworks. These activities involve understanding the legal requirements for data spaces and ensuring that all elements and functions of the data space comply with the regulatory framework. Regulatory compliance is an ongoing practice throughout the data space lifecycle."
Additional Legal Considerations	This concept includes other relevant legal frameworks that affect data space operations.	"[...] it's crucial to consider additional legal aspects stemming from, for instance, cybersecurity legislative frameworks."
Tools for Compliance	This concept describes technical tools and automated solutions that assist the data space and participants in fulfilling legal obligations.	"Given this complexity and the numerous interconnected decisions within a data space, efficiently addressing certain requirements may warrant using technical tools, aside from the commonly deployed organisational and contractual measures. Such technical tools could vary from tools that assist in identifying relevant requirement to (partially) automating compliance."
Governance Authority Role	This concept describes the governance authorities role in implementing and enforcing legal compliance across the data space.	"Implementing the Regulatory Compliance building block requires the data space governance authority to identify the legal rules relevant to its operation."
Participant Rights and Obligations	This concept emphasizes that participants must understand and comply with rights and obligations arising from applicable regulations.	"Within a data space ecosystem, participants assume distinct roles which may come with a number of general or specific legal requirements."

Table 18: Contractual Framework Building Block Concept Description

Concept	Description	Section from the Blueprint
Institutional Agreements	This concept describes the institutional agreements necessary to lay the legal foundation for a data space.	"Institutional agreements implement the governance of a data space and are an essential component of the Rulebook. They not only provide the general terms and conditions for participation in a data space but also underpin its existence and provide a legal basis for its operations."
Data-Sharing Agreements	This concept describes the agreements that regulate the exchange and use of data among participants.	"Data-sharing agreements provide the legal basis for the data transactions happening in a data space among data space participants."
Service Agreements	This concept governs the provision of data-related services.	"Services agreements refer to all agreements for the provision of services to data spaces."
Legal Interoperability and Scalability	This concept ensures that agreements across different use cases and participants maintain consistency and compatibility.	"Standardised terms and conditions for data products - the agreement establishes mandatory terms and conditions to be included in the data product contract. It ensures that transactions between data provider and user take place on the basis of common terms and conditions, reducing transaction costs and increasing legal interoperability between transactions."
Regulatory Compliance Integration	This concept describes mandatory legal requirements in the contractual framework.	"There is an interlinkage with Regulatory Compliance. Unless the relevant legislation is respected and reflected in the contractual framework, the agreement's enforceability and validity may be undermined."