CAMSS Assessment EIF Scenario v6.0.0

Fields marked with * are mandatory.

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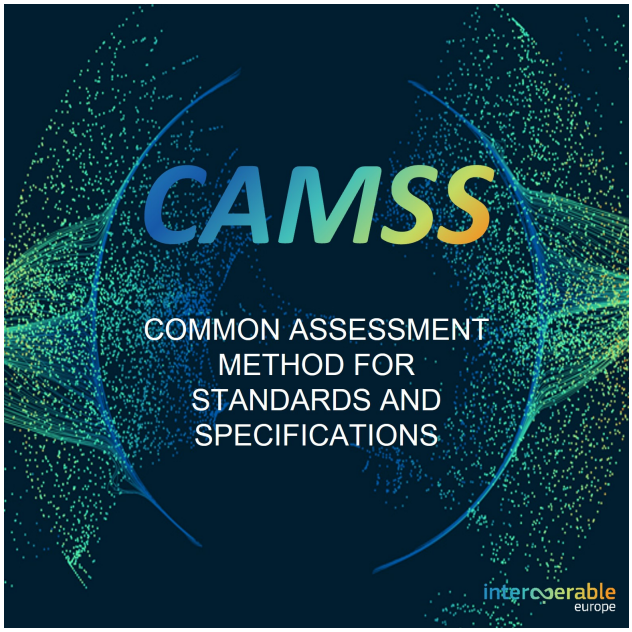
Release Date: 14/04/2023

Scenario Version: 6.0.0

INTRODUCTION



EIF Scenario

The European Interoperability Framework (EIF) provides guidance to public administrations on how to improve governance of their interoperability activities, establish cross-organisational relationships, streamline processes supporting end-to-end digital services, and ensure that existing and new legislation do not compromise interoperability efforts.

This CAMSS Scenario allows to assess the compliance of **interoperability specifications** with the EIF. The objective of the obtained assessment is to determine the suitability of the assessed interoperability specification for the delivery of interoperable European public services.

Background

CAMSS is the European guide for assessing and selecting standards and specifications for an eGovernment project, a reference when building an architecture, and an enabler for justifying the choice of standards and specifications in terms of interoperability needs and requirements. It is fully aligned with the European Standardisation Regulation 1025/2012.
The main objective of CAMSS is achieving interoperability and avoiding vendor lock-in by establishing a neutral and unbiased method for the assessment of technical specifications and standards in the field of ICT. This method will be compliant with Regulation 1025/2012 on European Standardisation.
While ICT solutions have specific characteristics at the political, legal, and organisational levels; semantic and technical interoperability are based mostly on technical specifications or standards. Within the context of the elaboration of their National Interoperability Frameworks, Member States organise the assessment of technical specifications or standards, in order to establish their national recommendations. Deciding on the recommended technical specifications or standards often calls for a resource-intensive and time-consuming assessment. In order to tackle this, the Digital Europe Programme (DEP) defines an action focused on the development of a common assessment method for standards and specifications (CAMSS).

The purpose of CAMSS is:

- to ensure that assessments of technical ICT specifications or standards and interoperability profiles are performed according to high and consistent standards;
- to ensure that assessments will contribute significantly to the confidence in the interoperability of systems implementing these specifications and profiles;
- to enable the reuse, in whole or in part, of such assessments;
- to continuously improve the efficiency and effectiveness of the assessment process for ICT technical specifications, standards, and interoperability profiles.

The expected benefits of the CAMSS are:

- Ensuring greater transparency throughout the selection of standards in the context of ICT strategies, architectures, and interoperability frameworks. This will be achieved through the establishment of a commonly agreed assessment method, assessment process, and a list of assessment attributes.
- Reducing resource and time requirements and avoiding duplication of efforts. (Partial) sharing of finalised assessments of standards and specifications.
- Allowing easier and faster assessments, and reusing the ones already performed through the creation and maintenance of a library of standards.

Your compliance level of the specification assessed depends on the scores you achieved in each section of the survey. Please see below the survey score conversion table below for guidance.

			Compliance Level		
Section	**Ad-hoc**	**Opportunistic**	**Essential**	**Sustainable**	**Seamless**
Principles setting the context for EU Actions on Interoperability	20	40	60	80	100
EIF Core Interoperability Principles	0 to 340	341 to 680	681 to 1020	1021 to 1360	1361 to 1700
EIF Principles Related to generic user needs and expectations	0 to 240	241 to 480	481 to 720	721 to 960	961 to 1200

EIF Foundation principles for cooperation among public administrations	0 to 100	101 to 200	201 to 300	301 to 400	401 to 500
EIF Interoperability Layers	0 to 200	201 to 400	401 to 600	601 to 800	801 to 1000

The following table shows the 'compliance levels' that a specification can reach depending on the assessment score.

Compliance Level	Description
Ad-hoc	Poor level of conformance with the EIF - The specification does not cover the requirements and recommendations set out by the EIF in this area.
Opportunistic	Fair level of conformance with the EIF - The specification barely covers the requirements and recommendations set out by the European Interoperability Framework in this area.
Essential	Essential level of conformance with the EIF - The specification covers the basic aspects set out in the requirements and recommendations from the European Interoperability Framework.
Sustainable	Good level of conformance with the EIF scenario - The specification covers all the requirements and recommendations set out by the European Interoperability Framework in this area.
Seamless	Leading practice of conformance level with the EIF - The specification fully covers the requirements and recommendations set out by the European Interoperability Framework in this area.

Contact: For any general or technical questions, please send an email to DIGIT-CAMSS@ec.europa.eu. Follow all activities related to the CAMSS on our CAMSS community page.

USER CONSENT

Disclaimer:
By no means will the Interoperability Specification assessment imply any endorsement of the EC to the assessed specification. Likewise, the use of CAMSS Assessment EIF Scenario implies that the user accepts that the EC is not liable on the assessment nor on any direct or indirect consequence/decision of such assesment.

The CAMSS Assessment EIF Scenario is based on EU Survey, by accepting the CAMSS Privacy Statement the user also accepts EU Survey Privacy Statement and the Terms of use.

* Please, fill in the mandatory* information to start the assessment

- [x] *I have read and agreed to the following CAMSS Privacy Statement: here
- [ ] I agree to be contacted for evaluation purposes, namely to share my feedback on specific DEP solutions and actions and on the DEP programme and the European Interoperability Framework in general.

IDENTIFICATION

Information on the information provider

Your Last name

Your First Name

CAMSS Team

Your Position / Role

* Your Organisation

European Commission DG - DIGIT

Your Contact phone number

* Would you like to be contacted for evaluation purposes in the context of your assessment? To see how your data is handled, please check again the Privacy statement here

In case you would like to be contacted, please select "yes" and provide your email.

- ( ) Yes
- (•) No

* Where did you learn about CAMSS?

- ( ) DEP Programme (DEP website, DEP social media)
- ( ) Joinup (e.g., CAMSS Collection, Joinup social media)
- (•) European Commission
- ( ) Public Administrations at national, regional or local level
- ( ) Standards Developing Organizations (SDOs)
- ( ) Other

If you answered "Other" in the previous question, please specify how:

Information on the specification

* Specification type

Specification: Set of agreed, descriptive, and normative statements about how a specification should be designed or made.
Standard: Specification that is largely adopted and possibly endorsed.
Application Profile: An application profile “customises one or more existing specifications potentially for a given use case or a policy domain adding an end to end narrative describing and ensuring the interoperability of its underlying specification(s)”.
Family: A family is a collection of interrelated and/or complementary specifications, standards, or application profiles and the explanation of how they are combined, used, or both.

- (●) Specification
- ( ) Standard
- ( ) Application Profile
- ( ) Family of Specification

* Title of the specification

IDSA Dataspace Protocol

* Version of the specification

1.0.0

* Description of the specification

The Dataspace Protocol is a set of specifications designed to facilitate interoperable data sharing between entities governed by usage control and based on Web technologies. These specifications define the schemas and protocols required for entities to publish data, negotiate "Agreements", and access data as part of a federation of technical systems termed a "Dataspace".

* URL from where the specification is distributed

https://docs.internationaldataspaces.org/ids-knowledgebase/v/dataspace-protocol/overview/readme

* Name and website of the standard developing/setting organisation (SDO/SSO) of the specification

- ( ) W3C (https://www.w3.org)
- ( ) OASIS (https://www.oasis-open.org/)
- ( ) IEEE (https://standards.ieee.org/)
- ( ) ETSI (https://www.etsi.org/)
- ( ) GS1 (https://www.gs1.fr/)
- ( ) openEHR (https://www.openehr.org/)

- ○ IETF (https://www.ietf.org/)
- ◉ Other (SDO/SSO)

* In case of Other SDO, please, provide its name:

International Data Spaces Association (IDSA)

* and, provide its URL:

https://internationaldataspaces.org/

Contact information/contact person of the SDO
a) for the organisation
b) for the specification submitted

Information on the assessment of the specification

Reason for the submission, the need and intended use for the specification.

If any other evaluation of this specification is known, e.g. by Member States or European Commission projects, provide a link to this evaluation.

Considerations

Is the functional area of application for the formal specification addressing interoperability and eGovernment?

- ◉ YES
- ○ NO

Additional Information

The Dataspace Protocol is used in the context of Dataspaces as described and defined in the subsequent sections with the purpose to support interoperability. In this context, the specification provides fundamental technical interoperability for Participants in Dataspaces. Beyond the technical interoperability measures described in this specification, semantic interoperability should also be addressed by the Participants. On the perspective of the Dataspace, interoperability needs to be addressed also on the level of trust, on organizational levels, and on legal levels.

EIF PRINCIPLES SETTING THE CONTEXT FOR EU ACTIONS ON INTEROPERABILITY

This category is related to the first underlying principle (UP) of the EIF Subsidiarity and Proportionality (UP1). The basis of this principle is to ensure that the EU Actions are taken or stated to improve national actions or decisions. Specifically, it aims to know if National Interoperability Frameworks are aligned with the EIF.

Please note that some of the questions have a prefilled answer depending on the SDO. To ensure it, please see that these questions include a help message that remarks it.

Subsidiarity and Proportionality

* **A1 - To what extent has the specification been included in a national catalogue from a Member State whose National Interoperability Framework has a high performance on interoperability according to National Interoperability Framework Observatory factsheets?**

EIF Recommendation 1: Ensure that national interoperability frameworks and interoperability strategies are aligned with the EIF and, if needed, tailor and extend them to address the national context and needs.

This criterion assesses if the specifications have been included within the National Catalogues of Specifications of the Member States that are highly aligned with the higher level of performance in terms of interoperability.

The Digital Public Administration Factsheets use three categories to evaluate the level of National Interoperability frameworks in accordance with the EIF. The three categories are 1. CONCEPTUAL MODEL FOR INTEGRATED PUBLIC SERVICES PROVISION; 2 INTEROPERABILITY LAYERS, and 3. INTEROPERABILITY PRINCIPLES. National Interoperability Frameworks reports can be found here: https://joinup.ec.europa.eu/collection/nifo-national-interoperability-framework-observatory/digital-public-administration-factsheets-2021

- ( ) Not Answered
- ( ) Not Applicable
- (•) The specification has not been included within the catalogue of any Member State.
- ( ) The specification has been included within the catalogue of a Member State with a lower performance than stated in the Digital Public Administration Factsheets from the NIFO.
- ( ) The specification has been included within the catalogue of a Member State with a middle-lower performance than stated in the Digital Public Administration Factsheets from the NIFO.
- ( ) The specification has been included within the catalogue of a Member State with a middle-upper performance than stated in the Digital Public Administration Factsheets from the NIFO.

- ○ The specification has been included within the catalogue of a Member State with a higher performance than stated in the Digital Public Administration Factsheets from the NIFO.

* Justification

The Dataspace Protocol is not included in any national catalogue of recommended specifications whose Member State NIF has a high performance on interoperability according to the NIFO factsheets.

CAMSS List of Standards: https://joinup.ec.europa.eu/collection/common-assessment-method-standards-and-specifications-camss/camss-list-standards

2023 NIFO factsheets: https://joinup.ec.europa.eu/collection/nifo-national-interoperability-framework-observatory/digital-public-administration-factsheets-2023

EIF CORE INTEROPERABILITY PRINCIPLES

In this category, elements related to the core interoperability principles (UP) are encompassed, which are: openness (UP 2), transparency (UP3), reusability (UP4), technological neutrality and data portability (UP5).

Openness

* **A2 - Does the specification facilitate the publication of data on the web?**

EIF Recommendation 2: Publish the data you own as open data unless certain restrictions apply.

Relates to the ability of the specification to publish data as open data or not.

- ○ Not Answered
- ○ Not Applicable
- ○ The specification does not support the publication of data on the web.
- ○ The specification supports the publication of data on the web but under a non-open license.
- ○ The specification supports the publication of data on the web with an open license, but in an unstructured format.
- ○ The specification supports publication of data on the web with an open license and in a structured, machine-readable format.
- ○ In addition to the previous question, the specification does not require proprietary software for the processing of its related data.
- ◉ In addition to the previous question, the specification is or incorporates open standards (e.g. W3C).

* Justification

The Dataspace Protocol supports the publication of data on the web by providing a framework that balances the need for open data access and collaboration with the requirements for security, compliance, and data sovereignty. It enables organizations to share data in a controlled manner, fostering innovation within secure and trusted data ecosystems. Some of the most relevant standards reused in this protocol include: DCAT for dataset deployment, ODRL for usage control and HTTPS for secure transfering.

IDSA Dataspace Protocol: https://docs.internationaldataspaces.org/ids-knowledgebase/v/dataspace-protocol/overview/readme

* **A3 - To what extent do stakeholders have the opportunity to contribute to the development of the specification?**

EIF Recommendation 3: Ensure a level playing field for open-source software and demonstrate active and fair consideration of using open source software, taking into account the total cost of ownership of the solution.

Relates to in which measure the different stakeholders that a specification can benefit have the opportunity to participate in the working groups focused on the development of certain specifications.

- ○ Not Answered
- ○ Not Applicable
- ○ There is no information on the working group of the specification.
- ○ The working group is open to participation by any stakeholder but requires registration, fees, and membership approval.
- ○ The working group is open to participation by any stakeholder but requires fees and membership approval.
- ○ The working group is open to participation following a registration process.
- ◉ The working group is open to all without specific fees, registration, or other conditions.

* Justification

The Dataspace Protocol uses Apache License 2.0 therefore, software developers area allowed to alter the source code of existing software's source code, copy the original source code or update the source code. Furthermore, developers can then distribute any copy or modification that they make of the software's source code. The specification is maintained by International Data Spaces Global (IDS-G) and any user can modify it on GitHub.

IDSA Dataspace Protocol Specification: https://docs.internationaldataspaces.org/ids-knowledgebase/v/dataspace-protocol/overview/readme

Apache License 2.0: https://www.apache.org/licenses/LICENSE-2.0

* **A4 - To what extent is a public review part of the release lifecycle?**

EIF Recommendation 3: Ensure a level playing field for open-source software and demonstrate active and fair consideration of using open source software, taking into account the total cost of ownership of the solution.

A public review consists of the public availability of the specification's draft for stakeholders to provide inputs for the improvement and fix of possible bugs.

- ○ Not Answered
- ○ Not Applicable
- ○ Specification releases do not foresee public reviews.

- Public review is applied to certain releases depending on the involved changes.
- All major releases foresee a public review.
- All major and minor releases foresee a public review but, during which, collected feedback is not publicly visible.
- (●) All major and minor releases foresee a public review during which collected feedback is publicly visible.

* Justification

All major and minor releases foresee a public review during which collected feedback is publicly visible through Dataspace Protocol's GitHub, accesible to any user. The current version of the specification (2024-1) is the release candidate and considered to be stable. Further changes shall not affect conformity. The Dataspace Protocol is being constantly reviewed and improved thanks to the input of its users, who are invited to provide feedback as Issue in their GitHub repository.

IDSA Dataspace Protocol Specification: https://docs.internationaldataspaces.org/ids-knowledgebase/v /dataspace-protocol/overview/readme

IDSA Open Source: https://internationaldataspaces.org/make/open-source/

Dataspace Protocol GitHub Issues: https://github.com/International-Data-Spaces-Association/ids-specification/issues

* **A5 - To what extent do restrictions and royalties apply to the specification's use?**

EIF Recommendation 3: Ensure a level playing field for open-source software and demonstrate active and fair consideration of using open source software, taking into account the total cost of ownership of the solution.

Additionally to the EIF's recommendation that refers to open-source software it applies to a specification in itself at any interoperability level (legal, organisational, semantic, or technical)

- Not Answered
- Not Applicable
- The specification has no public definition of its Intellectual Property Right (IPR) policy or licence.
- Use of the specification is restricted and requires the payment of royalty fees.
- Use of the specification is royalty-free but imposes an Intellectual Property Right (IPR) policy or licence that goes against Fair, Reasonable and Non-Discriminatory (F/RAND) principles.
- (●) Use of the specification is royalty-free and its Intellectual Property Right (IPR) policy or licence is aligned with Fair, Reasonable and Non-Discriminatory (F/RAND) principles.

* Justification

The Apache License 2.0 is known for being permissive and allowing users to freely use, modify, and distribute the software. It does not impose restrictions on how the software can be used in proprietary or open-source projects.

IDSA License: https://github.com/International-Data-Spaces-Association/ids-specification/blob/main /LICENSE

Apache 2.0: https://www.apache.org/licenses/LICENSE-2.0

* **A6 - To what extent is the specification sufficiently mature for its use in the development of digital solutions/services?**

EIF Recommendation 4: Give preference to open specifications, taking due account of the coverage of functional needs, maturity and market support, and innovation.

Maturity related to the stability of the specification, meaning that it has been evolved enough and mechanisms for its development have been put in place (Change Management processes, monitoring, etc.)

- ( ) Not Answered
- ( ) Not Applicable
- ( ) The specification has no published releases and no publicly accessible information on its development state.
- ( ) The specification is under development without published releases.
- ( ) The specification is under development with published preview releases.
- ( ) The specification has published major releases but without public documentation on its supporting processes (e.g. change management and release management).
- (•) The specification, in addition to having major releases available, has published documentation on its supporting processes (e.g. change management and release management).

* Justification

The specification of the Dataspace Protocol is the release candidate and considered to be stable. Since version 0.8 the specification is stable and tracks amendments on a detailed basis. All changes made to the specification can be reviewed in the GitHub repository. A versioning scheme beside the commits to the repository is not available but will be provided in the future.

IDSA Dataspace Protocol Specification: https://github.com/International-Data-Spaces-Association/ids-specification/tree/main/releases/2024-1

* **A7 - To what extent has the specification sufficient market acceptance for its use in the development of digital solutions/services?**

EIF Recommendation 4: Give preference to open specifications, taking due account of the coverage of functional needs, maturity and market support, and innovation.

Relates to how the specification is supported by the market, taking as a reference whether or not the specifications are widely used or implemented. There is an exception, and it is when the specification is used to implement innovative solutions, then, the specification should not be considered as failing to meet the requirements of the criterion.

- ( ) Not Answered
- ( ) Not Applicable
- ( ) There is no information about the specification's market uptake.
- ( ) The specification has known implementations but not enough to indicate market acceptance.
- ( ) The specification has widespread use indicating market acceptance.
- ( ) The specification has widespread use and relevant independent reports proving its market acceptance.
- (•) The specification does not have market acceptance because it is directly used to create innovative solutions.

* Justification

The Dataspace Protocol is part of both private and public innovative solutions. As for private, it is included in the "Building data spaces for sustainability use cases" section of Amazon Web Services Prescriptive Guidance, which provides time-tested strategies, guides, and patterns to help accelerate cloud migration, modernization, and optimization projects.

Regarding public initiatives, the Dataspace Protocol is mentioned in the making of Road-X, a robust and secure solution to exchange data and establish a collaborative ecosystem developed by the Nordic Institute for Interoperability Solutions (NIIS). It streamlines data exchange processes, enhances security, and facilitates interoperability, enabling organisations to derive greater value from their data assets.

AWS Prescriptive Guidance: https://docs.aws.amazon.com/prescriptive-guidance/latest/strategy-building-data-spaces/dataspace-protocol.html

NIIS Making of X-Road 8 - PoC: https://www.niis.org/blog

*** A8 - To what extent has the specification support from at least one community?**

EIF Recommendation 3: Ensure a level playing field for open-source software and demonstrate active and fair consideration of using open source software, taking into account the total cost of ownership of the solution.

Related to whether or not communities exist around the specification at any level legal, organisational, semantic, or technical contributions to its enhancement and development.

- ○ Not Answered
- ○ Not Applicable
- ○ There is no community linked to the specification.
- ○ Specification support is available but as part of a closed community requiring registration and possibly fees.
- ○ There is no specific community to support the specification but there are public channels for the exchange of help and knowledge among its users.
- ○ There is a community providing public support linked to the specification but in a best-effort manner.
- ◉ There is a community tasked to provide public support linked to the specification and manage its maintenance.

* Justification

The specification is maintained by International Data Spaces Global (IDS-G) working groups and any user can contribute by proposing discussions on the IDS-G GitHub Discussion channel.

IDS-G Discussions: https://github.com/International-Data-Spaces-Association/IDS-G/discussions

IDSA Working Groups: https://internationaldataspaces.org/make/working-groups-and-task-forces/

Transparency

*** A9 - To what extent does the specification enable the visibility of administrative procedures, rules data, and services?**

EIF Recommendation 5: Ensure internal visibility and provide external interfaces for European public services.

- Not Answered
- Not Applicable
- The specification hinders visibility.
- The specification neither promotes nor hinders visibility.
- The specification can contribute and promote the visibility of administrations, but it is not its main purpose.
- The specification can enable the visibility of administrations if combined with other specifications.
- (●) The specification actively promotes and supports visibility.

* Justification

The Dataspace Protocol defines the schemas and protocols required for entities to publish data, negotiate usage agreements, and access data as part of a federation of technical systems termed a dataspace. Therefore, its use improves the interoperability, data sovereignty and standardization of the IDS ecosystem, which is important for the visibility of administrative procedures, rules data, and services.

IDSA Dataspace Protocol Specification: https://docs.internationaldataspaces.org/ids-knowledgebase/v /dataspace-protocol/overview/readme

* **A10 - To what extent does the specification scope comprehensibly administrative procedures, rules data, and services?**

EIF Recommendation 5: Ensure internal visibility and provide external interfaces for European public services.

- Not Answered
- Not Applicable
- The specification hinders comprehensibility.
- The specification neither promotes nor hinders comprehensibility.
- The specification can contribute and promote the comprehensibility of administrations, but it is not its main purpose.
- The specification can scope the comprehensibility of administrations if combined with other specifications.
- (●) The specification actively promotes and supports comprehensibility.

* Justification

Taking the initial purpose of the specification, which is to establish a set of guiding principles as a foundation for data spaces, it can be considered that the specification is involved in fostering the comprehensibility of Public Administrations data as well as relevant data produced for the decision-making process.

IDSA Dataspace Protocol Specification: https://docs.internationaldataspaces.org/ids-knowledgebase/v /dataspace-protocol/overview/readme

* **A11 - To what extent does the specification enable the exposure of interfaces to access the public administration's services?**

EIF Recommendation 5: Ensure internal visibility and provide external interfaces for European public services.

Relates to ensuring availability of interfaces with internal information systems. As the EIF defines: *Public administrations operate a large number of what are often heterogeneous and disparate information systems in support of their internal processes. Interoperability depends on ensuring the availability of interfaces to these systems and the data they handle. In turn, interoperability facilitates the reuse of systems and data and enables these to be integrated into larger systems.*

- Not Answered
- Not Applicable
- The specification prevents the exposure of such interfaces.
- The specification neither promotes nor hinders the exposure of such interfaces.
- The specification can contribute to the exposure of interfaces, but it is not its main purpose.
- (•) The specification can enable the exposure of interfaces if combined with other specifications.
- The specification enables exposure of such interfaces.

* Justification

The Dataspace Protocol is a crucial part of the IDS, as it ensures a minimum viable interoperability between these different frameworks, products, or services. Thanks to this, trust and data sovereignity is possible in International Data Spaces, making data exchanges and interactions inside IDS secure and thus, enabling the exposure of interfaces to access the public administration's services.

IDSA Dataspace Protocol Specification: https://docs.internationaldataspaces.org/ids-knowledgebase/v /dataspace-protocol/overview/readme

Reusability

* **A12 - To what extent is the specification usable beyond the business-specific domain, allowing its usage across business domains?**

EIF Recommendation 6: Reuse and share solutions, and cooperate in the development of joint solutions when implementing European public services.

Relates to the use of the specification beyond a specific business domain. E.g. a specification developed under the eHealth domain that can be used in other domains or not.

- Not Answered
- Not Applicable
- The specification is tied to a specific domain and is restricted from being implemented or used in other domains.
- The specification is associated with a specific domain but its implementation and/or use in other domains is difficult.
- The specification is associated with a specific domain but could be partially implemented and/or used in other domains.
- The specification is associated with a specific domain but could be implemented and/or used 'as-is' to other domains.
- (•) The specification is domain-agnostic, designed to be implemented and/or used in any domain.

* Justification

This specification refers to the set of rules for data spaces so that they can be interoperable among them. Given that there are many data space projects with very different domains, requirements and architectures, Dataspace Protocol is inherently abstract and can be implemented and/or used in any domain as long as it fulfills the requirements.

IDSA Dataspace Protocol Specification: https://docs.internationaldataspaces.org/ids-knowledgebase/v /dataspace-protocol/overview/readme

Technological Neutrality and Data Portability

* **A13 - Is the specification technology agnostic?**

EIF Recommendation 8: Do not impose any technological solutions on citizens, businesses, and other administrations that are technology-specific or disproportionate to their real needs.

Technology-neutrality relates to not being dependent on any other ("sister") specifications, and platform-neutrality, not being dependent on any specific environment, web platform, operating system.

- ○ Not Answered
- ○ Not Applicable
- ○ NO
- ◉ YES

* Justification

The Dataspace Protocol aims to be versatile across various technologies by establishing rules and guidelines for data spaces. It provides frameworks that work with different technical setups, enabling smooth communication and management among diverse systems. Furthermore, the fact that the protocol uses widely spread standards such as HTTPS or ODRL confirms its technology agnostic status.

IDSA Dataspace Protocol Specification: https://docs.internationaldataspaces.org/ids-knowledgebase/v /dataspace-protocol/overview/readme

* **A14 - Is the specification platform agnostic?**

EIF Recommendation 8: Do not impose any technological solutions on citizens, businesses, and other administrations that are technology-specific or disproportionate to their real needs.

Technology-neutrality relates to not being dependent on any other ("sister") specifications, and platform-neutrality, not being dependent on any specific environment, web platform, operating system.

- ○ Not Answered
- ○ Not Applicable
- ○ NO
- ◉ YES

* Justification

The specification is independent from any particular software, hardware, or operating system. So, it can be said that the Dataspace Protocol is independent of any specific platform.

IDSA Dataspace Protocol Specification: https://docs.internationaldataspaces.org/ids-knowledgebase/v/dataspace-protocol/overview/readme

*** A15 - To what extent does the specification allow for partial implementations?**

EIF Recommendation 8: Do not impose any technological solutions on citizens, businesses, and other administrations that are technology-specific or disproportionate to their real needs.

Partial implementations refer to the application of specifications, not in their whole, but part of the requirements or features defined in the documentation.

It can also be understood as the implementation of different profiles, which is also related to a certain set of requirements depending on the context of implementation.

- ○ Not Answered
- ○ Not Applicable
- ○ The specification is only meant to be used as a whole.
- ○ The specification could be partially implemented but does not make specific provisions towards this.
- ○ The specification could be partially implemented but includes only guidelines towards this rather than sets of requirements.
- ○ The specification explicitly foresees sets of requirements that can be implemented incrementally.
- ◉ The specification explicitly foresees sets of requirements that can be implemented incrementally or separately.

* Justification

The specifications that form the Dataspace Protocol are organised in 5 documents, all of which can be implemented separately, depending on the purpose of implementing the protocol. Specifications can be used for dataspace modelling, common functionalities, cataloguing, contract negotiations and transfer processes.

IDSA Dataspace Protocol Specification: https://docs.internationaldataspaces.org/ids-knowledgebase/v/dataspace-protocol/overview/readme

*** A16 - Does the specification allow customisation?**

EIF Recommendation 8: Do not impose any technological solutions on citizens, businesses, and other administrations that are technology-specific or disproportionate to their real needs.

A clear example of customizations is Core Vocabularies, which define a set of general requirements that could fit in any context and allow for the customization to fit specific business requirements in the implementation.

- ○ Not Answered
- ○ Not Applicable
- ○ NO
- ◉ YES

* Justification

The specification builds on standards that are integrated within the ISO OSI model (ISO/IEC 7498-1:1994) layers, such as HTTPS. The primary aim of the OSI model standard is to delineate interactions between systems, regardless of these protocols, by providing clear and adaptable guidelines for implementation.

IDSA Dataspace Protocol Specification: https://docs.internationaldataspaces.org/ids-knowledgebase/v/dataspace-protocol/overview/readme

ISO/IEC 7498-1:1994: https://www.iso.org/standard/20269.html?browse=tc

* **A17 - Does the specification allow extension?**

EIF Recommendation 8: Do not impose any technological solutions on citizens, businesses, and other administrations that are technology-specific or disproportionate to their real needs.

A clear example of extension is Core Vocabularies, which are a set of general requirements fitting in different contexts that can complement each other in a sort of extensibility practice to fit specific business requirements in any implementation.

- ○ Not Answered
- ○ Not Applicable
- ○ NO
- ◉ YES

* Justification

The specification builds on standards that are integrated within the ISO OSI model (ISO/IEC 7498-1:1994), whose purpose is to define interactions between information systems and describing how to implement it in an unambiguous and extensible way.

IDSA Dataspace Protocol Specification: https://docs.internationaldataspaces.org/ids-knowledgebase/v/dataspace-protocol/overview/readme

ISO/IEC 7498-1:1994: https://www.iso.org/standard/20269.html?browse=tc

* **A18 - To what extent does the specification enable data portability between systems/applications supporting the implementation or evolution of European public services?**

EIF Recommendation 9: Ensure data portability, namely that data is easily transferable between systems and applications supporting the implementation and evolution of European public services without unjustified restrictions, if legally possible.

- ○ Not Answered
- ○ Not Applicable
- ○ The specification prevents or does not support data portability.
- ○ The specification neither addresses data portability nor prevents it.
- ○ The specification addresses data portability but without specific provisions to enable it.
- ○ The specification introduces certain aspects that can contribute to enabling data portability.
- ◉ The specification explicitly addresses and enables data portability.

* Justification

Dataspaces provide a way to integrate heterogeneous data from multiple sources. In many organisations, data is often scattered across different databases, systems, and formats. Dataspaces help create a unified view of this distributed data, enabling more effective analysis and decision-making. By integrating data, sharing and collaboration is easier. This can improve communication and data portability.

IDSA Dataspace Protocol Specification: https://docs.internationaldataspaces.org/ids-knowledgebase/v /dataspace-protocol/overview/readme

EIF PRINCIPLES RELATED TO GENERIC USER NEEDS AND EXPECTATIONS

This category includes all underlying principles from the EIF which are related to user needs. Principles included here are user-centricity (UP6), inclusion and accessibility (UP7), security and privacy (UP8), and multilingualism (UP9).

User-Centricity

* **A19 - To what extent does the specification allow relevant information to be reused when needed?**

EIF Recommendation 13: As far as possible under the legislation in force, ask users of European public services once-only and relevant-only information.

The Once-Only Principle is related to making the operations or transactions between administrations and stakeholders more efficient. It implies avoiding the provision of certain data or information twice or more when this information is already available for public administrations.
First European Data Space, Once Only Technical System (OOTS):
https://ec.europa.eu/digital-building-blocks/wikis/display/DIGITAL/Once+Only+Technical+System
Additional and relevant information can be found here: https://ec.europa.eu/cefdigital/wiki/display/CEFDIGITAL /Once+Only+Principle

- ( ) Not Answered
- ( ) Not Applicable
- ( ) Information needs to be provided whenever this is needed.
- ( ) There is limited reuse of provided information.
- ( ) Provided information is reused, but this is not consistently done.
- ( ) Provided information is reused, but not in all scenarios.
- (•) Information is provided once-only and reused as needed.

* Justification

The Dataspace Protocol enables the interaction between participants of a Dataspace. All data follows a series of requirements so that they can be reused as needed. The Dataspace Information Model, which forms the foundation of this specification, enables the interaction between participants of a Dataspace and specifies how they should do it in the most effective and efficient way.

IDSA Dataspace Protocol Information Model: https://docs.internationaldataspaces.org/ids-knowledgebase/v/dataspace-protocol/overview/model

Inclusion and Accessibility

* **A20 - To what extent does the specification enable the e-accessibility?**

EIF Recommendation 14: Ensure that all European public services are accessible to all citizens, including persons with disabilities, the elderly, and other disadvantaged groups. For digital public services, public administrations should comply with e-accessibility specifications that are widely recognised at the European or international level.

Examples of specifications addressing e-accessibility are, for instance, WAI-ARIA (https://www.w3.org/WAI/standards-guidelines/aria/) included within Web Content Accessibility Guidelines (WCAG) Overview (https://www.w3.org/WAI/standards-guidelines/wcag/).

- ○ Not Answered
- ◉ Not Applicable
- ○ The specification prevents or does not support e-accessibility.
- ○ The specification neither addresses e-accessibility nor prevents it.
- ○ The specification can contribute and promote e-accessibility, but it is not its main purpose.
- ○ The specification can enable e-accessibility if combined with other specifications.
- ○ The specification explicitly addresses and enables e-accessibility.

* Justification

The purpose of the Dataspace Protoccol is not related to e-accessibility. Therefore, this criterion is considered not applicable to this specification.

IDSA Dataspace Protocol: https://docs.internationaldataspaces.org/ids-knowledgebase/v/dataspace-protocol/overview/readme

Privacy

* **A21 - To what extent does the specification ensure the protection of personal data managed by Public Administrations?**

EIF Recommendation 15: Define common security and privacy framework and establish processes for public services to ensure secure and trustworthy data exchange between public administrations and in interactions with

citizens and businesses.

Relates to the actions that Public Administrations establish concerning sensitive information for the proper delivery of public services. The different actions imply the reception, classification, and exchange of such information.

Securing the right to the protection of personal data, by respecting the applicable legal framework for the large volumes of personal data of citizens, held and managed by Public administrations.

- ○ Not Answered
- ○ Not Applicable
- ○ The specification hinders the protection of personal data.
- ○ The specification does not address the protection of personal data but neither prevents it.
- ◉ The specification includes certain data protection considerations but without being exhaustive.
- ○ The specification explicitly addresses data protection but without referring to relevant regulations.
- ○ The specification explicitly addresses data protection and its alignment to relevant regulations.

* Justification

While the purpose of this specification is not related to ensuring the protection of personal data managed by Public Administrations, IDSA does define their privacy policy regarding personal data. Furthermore, data sovereignty is one of the pillars of IDS, which aims enables you to self-determine how, when and at what price others may use it across the value chain.

IDSA Privacy Policy: https://internationaldataspaces.org/privacypolicy/
IDSA Data Sovereignty: https://internationaldataspaces.org/why/data-sovereignty/

* **A22 - Does the specification provide means for restriction of access to information/data?**

EIF Recommendation 15: Define common security and privacy framework and establish processes for public services to ensure secure and trustworthy data exchange between public administrations and in interactions with citizens and businesses.

The principle of confidentiality defines that only the sender and the intended recipient(s) must be able to create the content of a message. Confidentiality have compromised if an unauthorized person is able to create a message.

- ○ Not Answered
- ○ Not Applicable
- ○ The specification prevents or does not support the implementation of confidentiality mechanisms/features.
- ○ The specification neither addresses confidentiality nor prevents it.
- ○ The specification addresses confidentiality but without specific provisions to enable it.
- ◉ The specification introduces certain aspects that can contribute to enabling confidentiality.
- ○ The specification explicitly addresses and enables the implementation of features to guarantee confidentiality.

* Justification

While the purpose of this specification is not directly related to restricting access to information/data, the Catalog Protocol part of the Dataspace Protocol defines how a Catalog is requested from a Catalog Service by a Consumer using an abstract message exchange format. Details for including authorisation tokens can be found in the protocol binding, e.g., Catalog HTTPS Binding.

IDSA Dataspace Protocol Catalog HTTPS Binding: https://docs.internationaldataspaces.org/ids-knowledgebase/v/dataspace-protocol/catalog/catalog.binding.https

* **A23 - Is the specification included in any initiative at European or National level covering privacy aspects?**

EIF Recommendation 15: Define common security and privacy framework and establish processes for public services to ensure secure and trustworthy data exchange between public administrations and in interactions with citizens and businesses.

Securing the right to the protection of personal data, by respecting the applicable legal framework for the large volumes of personal data of citizens, held and managed by Public administrations.

Relates to the actions that Public Administrations establish concerning sensitive information for the proper delivery of public services. The different actions imply the reception, classification, and exchange of such information.

For example, the ETSI (Electronic Signatures and Infrastructures) family of specifications are part of the trust establishment of the eDelivery solution, ensuring that its implementation is salient to guarantee security and privacy.

- ○ Not Answered
- ○ Not Applicable
- ○ Yes, but at national or regional level.
- ◉ Yes, at European level.

* Justification

The Dataspace Protocol is aligned with various European regulations regarding privacy aspects. Some of the regulations include the Data Governance Act (DGA), which aims to make more data available by regulating the reuse of publicly/held, protected data, and the Data Act Proposal (DA-E), which aims to ensure fairness in the digital environment, stimulate a competitive data market, open opportunities for data-driven innovation and make data more accessible.

IDSA Rulebook Legal Dimension: https://docs.internationaldataspaces.org/ids-knowledgebase/v/idsa-rulebook/idsa-rulebook/6_legal_dimension

Data Governance Act (DGA): https://ec.europa.eu/commission/presscorner/detail/en/ip_22_1113

Data Act Proposal (DA-E): https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32022R0868

Security

Data processing and exchange

* **A24 - To what extent does the specification enable the secure exchange of data?**

EIF Recommendation 15: Define common security and privacy framework and establish processes for public services to ensure secure and trustworthy data exchange between public administrations and in interactions with citizens and businesses.

This relates to the actions that Public Administrations establish concerning sensitive information for the proper delivery of public services. The different actions imply the reception, classification, and exchange of such information.

- Not Answered
- Not Applicable
- The specification prevents or does not support the secure and trustworthy exchange of data.
- The specification introduces certain aspects that can contribute to enabling the secure exchange of data.
- The specification addresses data security and trustworthy data exchange but does not foresee specific provisions to enable them.
- (●) The specification addresses data security and trustworthy data exchange but specific provisions to enable them are limited.
- The specification explicitly addresses and enables the secure and trustworthy exchange of data.

* Justification

While the data transfer is controlled by the Transfer Process Protocol mentioned above, the data transfer itself and especially the handling of technical exceptions is an obligation to the Transport Protocol. This specification does not cover the data transfer process as such.

IDSA Dataspace Protocol: https://docs.internationaldataspaces.org/ids-knowledgebase/v/dataspace-protocol/overview/readme

* **A25 - To what extent does the specification enable the secure processing of data?**

EIF Recommendation 15: Define common security and privacy framework and establish processes for public services to ensure secure and trustworthy data exchange between public administrations and in interactions with citizens and businesses.

Relates to the actions that Public Administrations establish concerning sensitive information for the proper delivery of public services. The different actions imply the reception, classification, and exchange of such information.

- Not Answered
- Not Applicable
- The specification prevents or does not support the secure and trustworthy processing of data.
- The specification introduces certain aspects that can contribute to enabling the secure processing of data.
- The specification addresses data security and trustworthy data processing but does not foresee specific provisions to enable them.
- (●) The specification addresses data security and trustworthy data processing but specific provisions to enable them are limited.
- The specification explicitly addresses and enables the secure and trustworthy processing of data.

* Justification

While the Dataspace Protocol is not involved in enabling the secure processing of data, important concepts for IDS like "Connectors" and providing a standard on how Datasets are deployed as DCAT Catalogs help improving secure processing of data.

IDSA Dataspace Protocol: https://docs.internationaldataspaces.org/ids-knowledgebase/v/dataspace-protocol/overview/readme

Data authenticity

* **A26 - To what extent the specification guarantees the authenticity and authentication of the roles agents involved in the data transactions?**

EIF Recommendation 15: Define common security and privacy framework and establish processes for public services to ensure secure and trustworthy data exchange between public administrations and in interactions with citizens and businesses.

Authentication defines that users are who they request to be. Availability defines that resources are available by authorized parties; “denial of service” attacks, which are the subject matter of national news, are attacks against availability. The concerns of information security professionals are access control and Nonrepudiation. Authorization defines the power that it can have over distinguishing authorized users from unauthorized users, and levels of access in-between. Authenticity defines the constant checks that it can have to run on the system to make sure sensitive places are protected and working perfectly.”

- ○ Not Answered
- ○ Not Applicable
- ○ The specification prevents or does not support the implementation of authentication features.
- ○ The specification neither addresses authenticity nor prevents it.
- ○ The specification addresses the implementation of authenticity features but without specific provisions to enable it.
- ◉ The specification introduces certain aspects that can contribute to enabling authenticity features.
- ○ The specification explicitly addresses and enables the implementation of authenticity features.

* Justification

While the Dataspace Protocol is not involved in guaranteeing the authenticity and authentication of the roles agents involved in the data transactions, the Transfer Process Protocol section of the specification outlines the key elements of a set of allowable Message Type sequences defined as a state machine. The endpointProperties property of the Transfer Request Message may contain two optional values related to the term authorisation, which is an opaque authorisation token that clients must present when accessing the transport-specific endpoint address, and its type.

IDSA Dataspace Protocol Transfer Process Protocol: https://docs.internationaldataspaces.org/ids-knowledgebase/v/dataspace-protocol/transfer-process/transfer.process.protocol

Data integrity

* **A27 - To what extent information is protected against unauthorised changes?**

EIF Recommendation 15: Define common security and privacy framework and establish processes for public services to ensure secure and trustworthy data exchange between public administrations and in interactions with

citizens and businesses.

Integrity defines that information is protected against unauthorized changes that are not perceptible to authorized users; some incidents of hacking compromise the integrity of databases and multiple resources.

- ○ Not Answered
- ○ Not Applicable
- ○ The specification prevents or does not support the implementation of data integrity mechanisms /features.
- ○ The specification neither addresses data integrity nor prevents it.
- ○ The specification addresses data integrity but without specific provisions to enable it.
- ◉ The specification introduces certain aspects that can contribute to enabling data integrity.
- ○ The specification explicitly addresses and enables the implementation of features to guarantee data integrity.

* Justification

While the Dataspace Protocol is not involved in protection against unauthorised changes, some aspects of the entire group of IDS specifications, such as the IDS "Connector" concept and metadata provisioning, which improves data traceability and data integrity.

IDSA Dataspace Protocol: https://docs.internationaldataspaces.org/ids-knowledgebase/v/dataspace-protocol/overview/readme

Data accuracy

*** A28 - To what extent does the specification ensure and enable data processing accuracy?**

EIF Recommendation 15: Define common security and privacy framework and establish processes for public services to ensure secure and trustworthy data exchange between public administrations and in interactions with citizens and businesses.

The accuracy and completeness of information systems and the data supported within the systems should be an administration concern. The information which has been inappropriately changed or destroyed (by external or employees) can impact the organization. Each organization should make controls to provide that data entered into and saved in its automated files and databases are complete and accurate and provide the accuracy of disseminated data.

- ○ Not Answered
- ○ Not Applicable
- ○ The specification prevents or does not support the implementation of data accuracy mechanisms/features.
- ○ The specification neither addresses data accuracy nor prevents it.
- ○ The specification addresses data accuracy but without specific provisions to enable it.
- ◉ The specification introduces certain aspects that can contribute to enabling data accuracy.
- ○ The specification explicitly addresses and enables the implementation of features to guarantee data accuracy.

* Justification

Dataspaces can contribute to improved data quality and governance by establishing a framework for managing metadata, ensuring data consistency, and enforcing data policies across the integrated datasets.

IDSA Dataspace Protocol: https://docs.internationaldataspaces.org/ids-knowledgebase/v/dataspace-protocol/overview/readme

Access Control

* **A29 - To what extent does the specification provide an access control mechanism?**

EIF Recommendation 15: Define common security and privacy framework and establish processes for public services to ensure secure and trustworthy data exchange between public administrations and in interactions with citizens and businesses.

The principle of access control decides who must be able to access what. For example, it must be able to define that user A can view the data in a database, but cannot refresh them. User A can be allowed to create updates as well. An access-control mechanism can be installed to provide this. Access control is associated with two areas including role management and rule management. Role management applies on the user side, whereas rule management targets the resources side.

- ○ Not Answered
- ◉ Not Applicable
- ○ The specification does not provide access control mechanisms.
- ○ The specification neither addresses nor prevents access control mechanisms.
- ○ The specification addresses access control mechanisms but without specific provisions to enable them.
- ○ The specification introduces certain aspects that can contribute to enabling access control mechanisms.
- ○ The specification explicitly foresees a set of requirements for the enabling of access control mechanisms.

* Justification

The Dataspace Protocol is not involved in protection against unauthorised changes. Therefore, this criterion does not apply to this specification.

IDSA Dataspace Protocol: https://docs.internationaldataspaces.org/ids-knowledgebase/v/dataspace-protocol/overview/readme

Multilingualism

* **A30 - To what extent could the specification be used in a multilingual context?**

EIF Recommendation 16: Use information systems and technical architectures that cater to multilingualism when establishing a European public service. Decide on the level of multilingualism support based on the needs of the expected users.

- ○ Not Answered
- ◉ Not Applicable
- ○ The specification cannot be used in a multilingual context.
- ○ The specification could be used in a multilingual context but has no specific provisions to facilitate this.
- ○ The specification foresees limited support for multilingualism.

- The specification foresees support for multilingualism but this is not complete.
- The specification is designed to fully support multilingualism.

* Justification

The purpose of this specification is not related to the delivery of multilingual public services. Therefore, this criterion is not applicable to this specification. Even so, database internationalisation plays a pivotal role in fostering seamless communication and collaboration in a multilingual context. By incorporating robust internationalisation features, databases empower organisations to effortlessly adapt their data structures and content to meet the specific needs of users around the world.

IDSA Dataspace Protocol: https://docs.internationaldataspaces.org/ids-knowledgebase/v/dataspace-protocol/overview/readme

EIF FOUNDATION PRINCIPLES FOR COOPERATION AMONG PUBLIC ADMINISTRATIONS

This category includes the criteria aiming to evaluate principles related to collaboration amongst public organisations, business, and citizens. This is related to the underlying principles of administrative simplification (UP10), preservation of information (UP11), and assessment of effectiveness and efficiency (UP12).

Administrative Simplification

* **A31 - Does the specification simplify the delivery of European public services?**

EIF Recommendation 17: Simplify processes and use digital channels whenever appropriate for the delivery of European public services, to respond promptly and with high quality to users' requests and reduce the administrative burden on public administrations, businesses and citizens.

A positive answer would cover every specification easing digitalisation and administratice simplification by for example helping an Identification service access a Digital Portfolo with citizens information.

- Not Answered
- Not Applicable
- NO
- YES

* Justification

The Dataspace Protocol can simplify the delivery of European public services as it offers a framework for the management of International Data Spaces, which aligns with Europe's vision of data. It standardises secure environments for data exchange between government entities, service providers and citizens, improving interoperability and data flow, etc.

IDSA Dataspace Protocol: https://docs.internationaldataspaces.org/ids-knowledgebase/v/dataspace-protocol/overview/readme

* **A32 - Does the specification enable digital service delivery channels?**

EIF Recommendation 17: Simplify processes and use digital channels whenever appropriate for the delivery of European public services, to respond promptly and with high quality to users' requests and reduce the administrative burden on public administrations, businesses and citizens.

A positive answer would cover that a specification eases or provides better means of delivering public services as a good asset for digitalisation and administrative simplification. For instance, a specification directly related to API performance easing and improving the delivery of a Digital Public Service through an API.

- ○ Not Answered
- ○ Not Applicable
- ○ NO
- ◉ YES

* Justification

While the purpose of Dataspace Protocol is not related to enabling digital service delivery channels directly, providing a common framework for the creation of IDS can improve data exchange between systems that implement digital services, improving effectiveness and efficiency.

IDSA Dataspace Protocol: https://docs.internationaldataspaces.org/ids-knowledgebase/v/dataspace-protocol/overview/readme

Preservation of Information

* **A33 - To what extent does the specification enable the long-term preservation of data/information /knowledge (electronic records included)?**

EIF Recommendation 18: Formulate a long-term preservation policy for information related to European public services and especially for information that is exchanged across borders.

Relates to the capacity of the specification to contribute to the long-term preservation of information.

- ○ Not Answered
- ○ Not Applicable
- ○ The specification prevents or does not support long-term preservation.
- ○ The specification neither addresses the long-term preservation nor prevents it.
- ◉ The specification addresses the long-term preservation of electronic resources (information, data, etc) in a limited manner.
- ○ The specification addresses long-term preservation of electronic resources (information, data, etc), but not in a complete manner.
- ○ The specification explicitly addresses and enables long-term preservation.

* Justification

While the purpose of Dataspace Protocol is not related to enabling the long-term preservation of data /information/knowledge (electronic records included) explicitly, the protocol does promote data management practices that can address this issue. For instance, establishing technical and semantic interoperability can improve long-term preservation of data greatly.

IDSA IDS Specification: https://github.com/International-Data-Spaces-Association/ids-specification/

Assessment of Effectiveness and Efficiency

* **A34 - To what extent are there assessments of the specification's effectiveness?**

EIF Recommendation 19: Evaluate the effectiveness and efficiency of different interoperability solutions and technological options considering user needs, proportionality, and balance between costs and benefits.

Related to the degree to which the specification is effective while using it. There are indirect methods to determine that the specification is effective, for instance when a solution that has an effective performance and uses the specification to deliver the expected service.

Effectiveness: *the extent to which the specifications reach the expected action according to its purpose.*

- ( ) Not Answered
- ( ) Not Applicable
- ( ) There are no such assessments.
- ( ) There are such assessments that indirectly address the specification.
- ( ) There are such assessments evaluating digital solutions' effectiveness that involve the specification.
- ( ) There are such assessments addressing the specification and its effectiveness together with other specifications.
- (•) There are such assessments directly addressing the specification.

* Justification

The effectiveness of the Dataspace Protocol is often evaluated through various means, including practical implementations and pilot projects. A 2020-paper discusses about the implementation of the IDS Information Model, which is part of the Dataspace Protocol, on top of standard ontologies as well as the process for its continuous evolution and usage of instances of the ontology with the focus on data control and protection in a federated ecosystem, which demonstrates the effectiveness of the specification.

The International Data Spaces Information Model – An Ontology for Sovereign Exchange of Digital Content: https://link.springer.com/chapter/10.1007/978-3-030-62466-8_12

* **A35 - To what extent are there assessments of the specification's efficiency?**

EIF Recommendation 19: Evaluate the effectiveness and efficiency of different interoperability solutions and technological options considering user needs, proportionality, and balance between costs and benefits.

Related to the good use of time and resources not wasted unnecessarily by a specification being used. There are indirect methods to determine that the specification is efficient, for instance, a solution delivering a service with an efficient performance that uses the specification.

Efficiency: times and means needed to achieve the results using the specification.

- ○ Not Answered
- ○ Not Applicable
- ○ There are no such assessments.
- ○ There are such assessments that indirectly address the specification.
- ○ There are assessments evaluating digital solutions' efficiency that involve the specification.
- ○ There are such assessments addressing the specification and its efficiency together with other specifications.
- ◉ There are such assessments directly addressing the specification.

* Justification

Assessments of the efficiency of the Dataspace Protocol primarily involve evaluating the performance, scalability, and practicality of implementations. For instance, a 2023-paper for Gaia-X Austria describes the main points to consider when building a dataspace and references for it. IDSA offers a dataspace reference architecture where a comprehensive dataspace protocol defines messages and API-bindings based on DCAT and ODRL, which highlights the specification's efficiency.

Building a Dataspace Gaia-X Austria: https://www.gaia-x.at/wp-content/uploads/2023/04/WhitepaperGaiaX.pdf

EIF INTEROPERABILITY LAYERS

This category is aligned with the related interoperability models described in the EIF and apply to all the public services. It includes six layers: interoperability governance, integrated public service governance, legal interoperability, organisational interoperability, semantic interoperability, and technical interoperability covered by criteria A2 to A10 under the Openness category.

Interoperability Governance

* **A36 - Is the (or could it be) specification mapped to the European Interoperability Architecture (EIRA)?**

EIF Recommendation 20: Ensure holistic governance of interoperability activities across administrative levels and sectors.

The EIRA defines the required capabilities for promoting interoperability as a set of Architecture Building Blocks (ABBs). The association of specification to these ABBs means the capacity to enable Legal, Organisational, Semantic, or Technical aspects needed for the development of interoperable public services. This association can be taken from ELIS the EIRA Library of Interoperability Specifications (ELIS) but also can be established ad-hoc.

- ○ Not Answered
- ○ Not Applicable
- ○ NO
- ◉ YES

* Justification

At the time of elaborating this assessment, this specification is included in the "Technical Agreement" and "Technical Interoperability Agreement" ABBs in the current European Library Of Specifications (ELIS), specifically the "Technical-Infrastructure View" layer. It is also included in the "Data Space", "Data Space Connector", "Data Space Connector Consumer" and "Data Space Connector Provider" ABBs, which are in the "Technical-Application View" layer.

EIRA Library of Interoperability Specifications (ELIS): https://joinup.ec.europa.eu/collection/common-assessment-method-standards-and-specifications-camss/solution/elis/release/600

* **A37 - To what extent can the conformance of the specification's implementations be assessed?**

EIF Recommendation 21: Put in place processes to select relevant standards and specifications, evaluate them, monitor their implementation, check compliance and test their interoperability.

Relates to the implementation of the specification being conformant with the requirements established in the text of the specification. There are different methods to ensure the conformance of an implementation: check manually if the implementation meets the requirements in the specification text (if any), use additional methods or resources provided to this purpose or use specific tools provided by the SDO developing the specification.

- ( ) Not Answered
- ( ) Not Applicable
- ( ) The specification does not include a definition of conformance.
- ( ) The specification defines conformance but not as a set of measurable requirements.
- ( ) The specification defines conformance as requirements that can be measured manually.
- ( ) The specification defines conformance as requirements with resources to enable automated measurement.
- (•) The specification is complemented by a conformance testing platform to allow testing of implementations.

* Justification

There is specific section in the specification regarding conformance called "Best Practices", which mentions that they are created and published by the International Data Spaces Association and are not considered to be normative. The specification of the Dataspace Protocol itself is normative. Furthermore, IDSA has an interoperability compliance test for technical components to achieve large-scale adoption.

Dataspace Protocol Best Practices: https://github.com/International-Data-Spaces-Association/ids-specification/tree/main/best.practices

IDSA Reference TestBed: https://internationaldataspaces.org/offers/reference-testbed/

* **A38 - Is the specification recommended by a European Member State?**

EIF Recommendation 23: Consult relevant catalogues of standards, specifications, and guidelines at the national and EU level, in accordance with your NIF and relevant DIFs, when procuring and developing ICT solutions.

Recommended specifications are these specifications that the Member States provide as examples for the implementation of certain digital public services or for being used when procuring these digital public services or solutions.

- ( ) Not Answered
- ( ) Not Applicable

- NO
- YES

* Justification

The Nordic Institute for Interoperability Solutions mentions the Dataspace Protocol in the making of Road-X 8, an open source data exchange layer solution that enables organizations to exchange information over the Internet. Road-X 8 Proof of Concept (PoC) started to integrate the standard Dataspace Protocol into X-Road and concentrate on the trust framework later.

NIIS Making of X-Road 8 - PoC: https://www.niis.org/blog

* **A39 - Is the specification selected for its use in a European Cross-border project/initiative?**

EIF Recommendation 23: Consult relevant catalogues of standards, specifications, and guidelines at national and EU level, in accordance with your NIF and relevant DIFs, when procuring and developing ICT solutions.

The European Commission set up a process for the identification and assessment of specifications for its use in the development of IT solutions and also when procuring them. Find here the commission implementing decisions that include the specifications identified by the European Commission: https://ec.europa.eu/growth/single-market/european-standards/ict-standardisation/ict-technical-specifications_en

Additionally, there could be other situations where a specification can be selected for European projects or initiatives out of the scope of the above-mentioned context. These specifications can be considered positively in this assessment.

- Not Answered
- Not Applicable
- NO
- YES

* Justification

The Data Spaces Business Alliance (DSBA) aims to converge the best skills, assets, and experience in Europe into a one-stop-shop for data spaces, from inception to deployment. The Data Spaces Business Alliance are Gaia-X European Association for Data and Cloud AISBL, the Big Data Value Association (BDVA), FIWARE Foundation, and the International Data Spaces Association (IDSA), who created and currently maintains the Dataspace Protocol. With this cross-industry expertise, resources and know-how, the Alliance drives awareness, evangelizes technology, shapes standards, and enables integration across industries.

Data Spaces Business Alliance (DSBA): https://data-spaces-business-alliance.eu/

* **A40 - Is the specification included in an open repository/catalogue of standards at national level?**

EIF Recommendation 23: Consult relevant catalogues of standards, specifications, and guidelines at the national and EU level, in accordance with your NIF and relevant DIFs, when procuring and developing ICT solutions.

EIF Recommendation 6: Reuse and share solutions, and cooperate in the development of joint solutions when implementing European public services.

- Not Answered
- Not Applicable

- (●) NO
- ( ) YES

* Justification

> The Dataspace Protocol is not included in any Member States' catalogues of recommended specifications.
>
> CAMSS List of Standards:
> https://joinup.ec.europa.eu/collection/common-assessment-method-standards-and-specifications-camss/camss-list-standards

* **A41 - Is the specification included in an open repository/catalogue of standards at European level?**

EIF Recommendation 23: Consult relevant catalogues of standards, specifications, and guidelines at the national and EU level, in accordance with your NIF and relevant DIFs, when procuring and developing ICT solutions.

EIF Recommendation 6: Reuse and share solutions, and cooperate in the development of joint solutions when implementing European public services.

- ( ) Not Answered
- ( ) Not Applicable
- ( ) NO
- (●) YES

* Justification

> The Dataspace Protocol is mentioned as one of the bulding blocks that exist in the Data Space Support Centre. The technical building blocks provide a view on the capabilities needed in a data space and provide specifications and references to standards which can assist in their implementation. In this case, the specification is part of the process model of the Control Plane.
>
> DSSC Control plane vs. Data plane: https://dssc.eu/space/BBE/178422298/Control+plane+vs.+Data+plane

Legal Interoperability

* **A42 - Is the specification a European Standard?**

EIF Recommendation 27: Ensure that legislation is screened by means of 'interoperability checks', to identify any barriers to interoperability. When drafting legislation to establish a European public service, seek to make it consistent with relevant legislation, perform a 'digital check', and consider data protection requirements.

European Standards are those standards developed by certain organisations dedicated to this purpose. CEN, CENELEC, and ETSI are the principal organisations and all of them are developing their standards under the basis of meeting the requirements established within the European Standardisation Regulation. CEN-CENELEC homepage: https://www.cencenelec.eu/

- ( ) Not Answered
- ( ) Not Applicable
- ( ) NO
- (●) YES

* Justification

While the Dataspace Protocol is developed by a European standardisation organisation called IDSA and is widely used, it is not a European Standard in the sense of being developed and published by CEN or CENELEC specifically for the European region.

International Data Spaces Association (IDSA): https://internationaldataspaces.org/

Organisational Interoperability

* **A43 - Does the specification facilitate the modelling of business processes?**

EIF Recommendation 28: Document your business processes using commonly accepted modelling techniques and agree on how these processes should be aligned to deliver a European public service.

- ○ Not Answered
- ○ Not Applicable
- ○ NO
- ◉ YES

* Justification

The Functional Requirements section of IDSA's Rulebook describes the mandatory functional requirements as well as optional elements for building trusted data spaces. The core function of a data space is to create secure data exchanging spaces and to negotiate available data contracts for enterprises, all of which is provided by the Dataspace Protocol.

IDSA Functional Requirements: https://docs.internationaldataspaces.org/ids-knowledgebase/v/idsa-rulebook/idsa-rulebook/3_functional_requirements

* **A44 - To what extent does the specification facilitate organisational interoperability agreements?**

EIF Recommendation 29: Clarify and formalise your organisational relationships for establishing and operating European public services.

Relates to specifications' capacities to help and ease the creation and formalisation of Interoperability agreements. E.g. Memorandums of Understanding (MoUs), Services Level Agreements (SLAs).

- ○ Not Answered
- ○ Not Applicable
- ○ The specification's definition hinders the drafting of such agreements.
- ○ The specification makes no provisions that would facilitate the drafting of such agreements.
- ○ The specification defines certain elements to facilitate such agreements.
- ○ The specification defines most elements to facilitate such agreements.
- ◉ The specification explicitly identifies all elements to be used in drafting such agreements.

* Justification

The Dataspace Protocol is a set of specifications designed to negotiate Agreements, among other functions. The Contract Negotiation Protocol and Contract Negotiation HTTPS Binding documents section of the specification definese how Contract Negotiations are conducted and requested via HTTPS endpoints. Furthermore, IDSA Rulebook aims is to describe clearly which rules are mandatory and which are optional guidelines. This governance framework includes functional, technical, operational, and legal dimensions.

Contract Negotiation Protocol: https://docs.internationaldataspaces.org/ids-knowledgebase/v/dataspace-protocol/contract-negotiation/contract.negotiation.protocol

IDSA Rulebook: https://docs.internationaldataspaces.org/ids-knowledgebase/v/idsa-rulebook/idsa-rulebook/1_introduction

Semantic Interoperability

* **A45 - Does the specification encourage the creation of communities along with the sharing of their data and results in national and/or European platforms?**

EIF Recommendation 32: Support the establishment of sector-specific and cross-sectoral communities that aim to create open information specifications and encourage relevant communities to share their results on national and European platforms.

Relates to specifications that are narrowly related to the data/information being exchanged, its format, and structure. It would allow a common method/mechanism to improve its reuse and exchange removing possible limitations. An example of it could be RDF, which is used to describe information and its metadata using specific syntax and serialisation.

- ( ) Not Answered
- ( ) Not Applicable
- ( ) Yes, but at national or regional level.
- (•) Yes, at European platforms.

* Justification

One of IDS' underlying objectives is to improve data interoperability and integrity. Therefore, it encourages the creation of communities along with the sharing of their data and results at European platforms (e.g. DBSA). Furthermore, IDS-G has public channels such as GitHub where users can discuss and ask any matter at hand.

The Data Spaces Business Alliance (DSBA): https://data-spaces-business-alliance.eu/

IDS-G DISCUSSIONS: https://github.com/International-Data-Spaces-Association/IDS-G/discussions

Useful links

CAMSS Joinup Page (https://joinup.ec.europa.eu/collection/common-assessment-method-standards-and-specifications-camss)

CAMSS Library of Assessments (https://joinup.ec.europa.eu/collection/common-assessment-method-standards-and-specifications-camss/camss-assessments-library)

CAMSS Assessment EIF Scenario - User Guide (https://joinup.ec.europa.eu/collection/common-assessment-method-standards-and-specifications-camss/solution/camss-assessment-eif-scenario/camss-assessment-eif-scenario-quick-user-guide)

Contact

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CAMSS Assessment EIF Scenario v6.0.0 - Results

CAMSS Assessment Result

Thank you for your contribution.

The score of the specification related to the scenario under which it is being evaluated depends on the scores achieved in each section of the survey. Please see the example below for guidance.

The following table shows the 'compliance levels' that a specification can reach depending on the assessment score.

EIF Scenario Compliance Level Conversion Table

Section	Compliance Level				
	Ad-hoc	Opportunistic	Essential	Sustainable	Seamless
Principles setting the context for EU Actions on Interoperability	20	40	50	80	90
EIF Core Interoperability Principles	0 to 340	341 to 681	681 to 1020	1021 to 1360	1361 to 1700
EIF Principles Related to generic user needs and expectations	0 to 240	241 to 480	481 to 720	721 to 960	961 to 1200

EIF Foundation principles for cooperation among public administrations	0 to 100	101 to 200	201 to 300	301 to 400	401 to 500
EIF Interoperability Layers	0 to 200	201 to 400	401 to 600	601 to 800	801 to 1000

The table below expresses the range of the score per section. When used in combination with the table above, the total score can be interpreted. See the example below for guidance.

Section Compliance Conversion Table

Compliance Level	Description
Ad-hoc	Poor level of conformance with the EIF - The specification does not cover the requirements and recommendations set out by the EIF in this area.
Opportunistic	Fair level of conformance with the EIF - The specification barely covers the requirements and recommendations set out by the European Interoperability Framework in this area.
Essential	Essential level of conformance with the EIF - The specification covers the basic aspects set out in the requirement and recommendations from the European Interoperability Framework.
Sustainable	Good level of conformance with the EIF scenario - The specification covers all the requirements and recommendations set out by the European Interoperability Framework in this area.
Seamless	Leading practice of conformance level with the EIF - The specification fully covers the requirements and recommendations set out by the European Interoperability Framework in this area.

Example – How to find the final Compliance Level

Using the score reached after the initial assessment, the interpretation can be made as follows.

1. In the summary table, observe the score for each section, e.g. EIF Core Interoperability Principles has 1800 points.

2. In the middle table – the Section Compliance Conversion Table – see that this number correlates to a column. In our example, the 1800 points of Core Interoperability Principles fall in the EIF Core Interoperability Principles row, and ‘1441 to 1800’ point range, placing it in the column 'Compliance **Seamless**'.

3. Next, in the top table – the EIF Scenario Compliance Level Conversion Table – we see Compliance Level "**Seamless**", and from its description that the specification for the EIF Core Interoperability Principles 'fully covers the requirements and recommendations set out by the European Interoperability Framework in this area.'.

For additional calculation of the assessment strength, please follow the instruction provided in the User Guide, found here.

Summary

Your Score 4120

Maximum Score 4500

Section	Score for this Section	
EIF PRINCIPLES SETTING THE CONTEXT FOR EU ACTIONS ON INTEROPERABILITY	20/100	
EIF CORE INTEROPERABILITY PRINCIPLES	1680 /1700	
EIF PRINCIPLES RELATED TO GENERIC USER NEEDS AND EXPECTATIONS	1040 /1200	
EIF FOUNDATION PRINCIPLES FOR COOPERATION AMONG PUBLIC ADMINISTRATIONS	460 /500	
EIF INTEROPERABILITY LAYERS	920 /1000	

Scores by Question

EIF PRINCIPLES SETTING THE CONTEXT FOR EU ACTIONS ON INTEROPERABILITY

Score for this Section: 20/100

A1 - To what extent has the specification been included in a national catalogue from a Member State whose National Interoperability Framework has a high performance on interoperability according to National Interoperability Framework Observatory factsheets?

Your answer	✖ The specification has not been included within the catalogue of any Member State.	20 out of 100 points	

EIF CORE INTEROPERABILITY PRINCIPLES

Score for this Section: 1680/1700

A2 - Does the specification facilitate the publication of data on the web?

Your answer	✔ In addition to the previous question, the specification is or incorporates open standards (e.g. W3C).	100 out of 100 points	

A3 - To what extent do stakeholders have the opportunity to contribute to the development of the specification?

Your answer	✔ The working group is open to all without specific fees, registration, or other conditions.	100 out of 100 points	

A4 - To what extent is a public review part of the release lifecycle?

Your answer	✔ All major and minor releases foresee a public review during which collected feedback is publicly visible.	100 out of 100 points	

A5 - To what extent do restrictions and royalties apply to the specification's use?

Your answer	✔ Use of the specification is royalty-free and its Intellectual Property Right (IPR) policy or licence is aligned with Fair, Reasonable and Non-Discriminatory (F/RAND) principles.	100 out of 100 points	

A6 - To what extent is the specification sufficiently mature for its use in the development of digital solutions/services?

Your answer	✔ The specification, in addition to having major releases available, has published documentation on its supporting processes (e.g. change management and release management).	100 out of 100 points

A7 - To what extent has the specification sufficient market acceptance for its use in the development of digital solutions/services?

Your answer	✔ The specification does not have market acceptance because it is directly used to create innovative solutions.	100 out of 100 points

A8 - To what extent has the specification support from at least one community?

Your answer	✔ There is a community tasked to provide public support linked to the specification and manage its maintenance.	100 out of 100 points

A9 - To what extent does the specification enable the visibility of administrative procedures, rules data, and services?

Your answer	✔ The specification actively promotes and supports visibility.	100 out of 100 points

A10 - To what extent does the specification scope comprehensibly administrative procedures, rules data, and services?

Your answer	✔ The specification actively promotes and supports comprehensibility.	100 out of 100 points

A11 - To what extent does the specification enable the exposure of interfaces to access the public administration's services?

Your answer	✔ The specification can enable the exposure of interfaces if combined with other specifications.	80 out of 100 points

A12 - To what extent is the specification usable beyond the business-specific domain, allowing its usage across business domains?

Your answer	✔ The specification is domain-agnostic, designed to be implemented and/or used in any domain.	100 out of 100 points

A13 - Is the specification technology agnostic?

Your answer	✔ YES	100 out of 100 points

A14 - Is the specification platform agnostic?

Your answer	✔ YES	100 out of 100 points

A15 - To what extent does the specification allow for partial implementations?

Your answer	✔ The specification explicitly foresees sets of requirements that can be implemented incrementally or separately.	100 out of 100 points

A16 - Does the specification allow customisation?

Your answer	✔ YES	100 out of 100 points

A17 - Does the specification allow extension?

Your answer	✔ YES	100 out of 100 points

A18 - To what extent does the specification enable data portability between systems/applications supporting the implementation or evolution of European public services?

Your answer	✔ The specification explicitly addresses and enables data portability.	100 out of 100 points

EIF PRINCIPLES RELATED TO GENERIC USER NEEDS AND EXPECTATIONS

Score for this Section: 1040/1200

A19 - To what extent does the specification allow relevant information to be reused when needed?

Your answer	✔ Information is provided once-only and reused as needed.	100 out of 100 points

A20 - To what extent does the specification enable the e-accessibility?

Your answer	✔ Not Applicable	100 out of 100 points

A21 - To what extent does the specification ensure the protection of personal data managed by Public Administrations?

Your answer	✔ The specification includes certain data protection considerations but without being exhaustive.	60 out of 100 points

A22 - Does the specification provide means for restriction of access to information/data?

Your answer	✔ The specification introduces certain aspects that can contribute to enabling confidentiality.	80 out of 100 points

A23 - Is the specification included in any initiative at European or National level covering privacy aspects?

Your answer	✔ Yes, at European level.	100 out of 100 points

A24 - To what extent does the specification enable the secure exchange of data?

Your answer	✔ The specification addresses data security and trustworthy data exchange but specific provisions to enable them are limited.	80 out of 100 points

A25 - To what extent does the specification enable the secure processing of data?

Your answer	✔ The specification addresses data security and trustworthy data processing but specific provisions to enable them are limited.	80 out of 100 points

A26 - To what extent the specification guarantees the authenticity and authentication of the roles agents involved in the data transactions?

Your answer	✔ The specification introduces certain aspects that can contribute to enabling authenticity features.	80 out of 100 points

A27 - To what extent information is protected against unauthorised changes?

Your answer	✔ The specification introduces certain aspects that can contribute to enabling data integrity.	80 out of 100 points

A28 - To what extent does the specification ensure and enable data processing accuracy?

Your answer	✔ The specification introduces certain aspects that can contribute to enabling data accuracy.	80 out of 100 points

A29 - To what extent does the specification provide an access control mechanism?

Your answer	✔ Not Applicable	100 out of 100 points

A30 - To what extent could the specification be used in a multilingual context?

Your answer	✔ Not Applicable	100 out of 100 points

EIF FOUNDATION PRINCIPLES FOR COOPERATION AMONG PUBLIC ADMINISTRATIONS

Score for this Section: 460/500

A31 - Does the specification simplify the delivery of European public services?

Your answer ✔ YES

100 out of 100 points

A32 - Does the specification enable digital service delivery channels?

Your answer ✔ YES

100 out of 100 points

A33 - To what extent does the specification enable the long-term preservation of data/information /knowledge (electronic records included)?

Your answer ✔ The specification addresses the long-term preservation of electronic resources (information, data, etc) in a limited manner.

60 out of 100 points

A34 - To what extent are there assessments of the specification's effectiveness?

Your answer ✔ There are such assessments directly addressing the specification.

100 out of 100 points

A35 - To what extent are there assessments of the specification's efficiency?

Your answer ✔ There are such assessments directly addressing the specification.

100 out of 100 points

EIF INTEROPERABILITY LAYERS

Score for this Section: 920/1000

A36 - Is the (or could it be) specification mapped to the European Interoperability Architecture (EIRA)?

Your answer ✔ YES

100 out of 100 points

A37 - To what extent can the conformance of the specification's implementations be assessed?

Your answer ✔ The specification is complemented by a conformance testing platform to allow testing of implementations.

100 out of 100 points

A38 - Is the specification recommended by a European Member State?

Your answer	✔ YES	100 out of 100 points

A39 - Is the specification selected for its use in a European Cross-border project/initiative?

Your answer	✔ YES	100 out of 100 points

A40 - Is the specification included in an open repository/catalogue of standards at national level?

Your answer	✖ NO	20 out of 100 points

A41 - Is the specification included in an open repository/catalogue of standards at European level?

Your answer	✔ YES	100 out of 100 points

A42 - Is the specification a European Standard?

Your answer	✔ YES	100 out of 100 points

A43 - Does the specification facilitate the modelling of business processes?

Your answer	✔ YES	100 out of 100 points

A44 - To what extent does the specification facilitate organisational interoperability agreements?

Your answer	✔ The specification explicitly identifies all elements to be used in drafting such agreements.	100 out of 100 points

A45 - Does the specification encourage the creation of communities along with the sharing of their data and results in national and/or European platforms?

Your answer	✔ Yes, at European platforms.	100 out of 100 points

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