

## CAMSS Assessment EIF Scenario v5.0.0

Fields marked with \* are mandatory.

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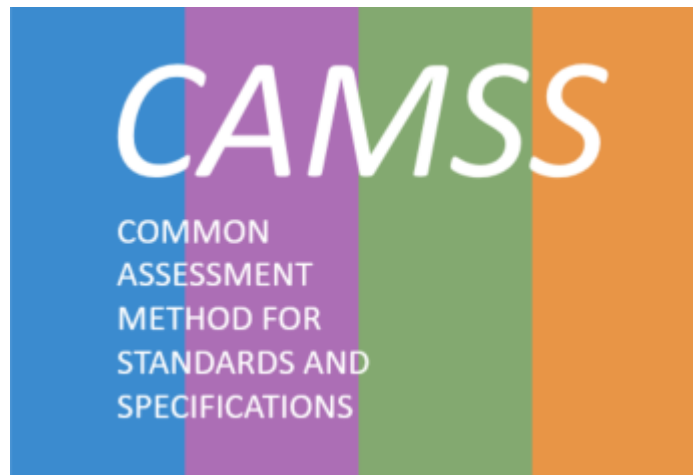


**Release Date:** 31/01/2022

**Scenario Version:** 5.0.0

### INTRODUCTION

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## 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.

Section	Compliance Level				
	Ad-hoc	Opportunistic	Essential	Sustainable	Seamless
<b>Principles setting the context for EU Actions on Interoperability</b>	20	40	50	80	90
<b>EIF Core Interoperability Principles</b>	0 to 440	441 to 880	881 to 1320	1321 to 1760	1761 to 2200
<b>EIF Principles Related to generic user needs and expectations</b>	0 to 100	101 to 200	201 to 300	301 to 400	401 to 500
<b>EIF Foundation principles for cooperation among public</b>	0 to 100	101 to 200	201 to 300	301 to 400	401 to 500

## administrations

### EIF

#### Interoperability Layers

0 to 220

221 to 440

441 to 660

661 to 880

881 to 1100

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

Compliance Level	Description
<b>Ad-hoc</b>	Poor level of conformance with the EIF - The specification does not cover the requirements and recommendations set out by the EIF in this area.
<b>Opportunistic</b>	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.
<b>Essential</b>	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.
<b>Sustainable</b>	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.
<b>Seamless</b>	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](mailto:DIGIT-CAMSS@ec.europa.eu). Follow all activities related to the CAMSS on our [CAMSS community page](#).

## USER CONSENT

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### **Disclaimer:**

*By no means will the Interoperability Specification assessment imply any endorsement of the EC to the assessed specification. Likewise, The use of CAMSS Tool 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.*

CAMSS Tools are based on EU Survey, by accepting the CAMSS Privacy Statment the user also accepts EU Survey [Privacy Statement](#) and the [Terms of use](#).

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

- ☒ \*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.

This assessment tool is licensed under the [European Union Public License \(EUPL\)](#)

## IDENTIFICATION

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### Information on the information provider

Your Last name

CAMSS Team

Your First Name

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

Contact Email

DIGIT-CAMSS@eu.europa.eu

\* 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

\* Specifcation type

- ☒ Specification
- ☐ Standard
- ☐ Application Profile
- ☐ Family of Specification

\* Title of the specification

OASIS Open Data Protocol (Odata)

\* Version of the specification

4.1

\* Description of the specification

The OData protocol is an application-level specification for interacting with data through RESTful interfaces. The specification supports the description of data models and the editing and querying of data according to those models.

\* URL from where the specification is distributed

[http://docs.oasis-open.org/odata/odata/v4.0/errata03/os/complete/part1-protocol/odata-v4.0-errata03-os-part1-protocol-complete.html#\\_Toc453752197](http://docs.oasis-open.org/odata/odata/v4.0/errata03/os/complete/part1-protocol/odata-v4.0-errata03-os-part1-protocol-complete.html#_Toc453752197)

\* 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)

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 Info

The OASIS OData addresses interoperability and eGovernment. The specification enables information to be accessed from a variety of sources including (but not limited to) relational databases, file systems, content management systems, and traditional websites.

## EIF PRINCIPLES SETTING THE CONTEXT FOR EU ACTIONS ON INTEROPERABILITY

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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

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**\* 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 uses 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-2020>

- ☐ 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**

Odata is included in 3 national catalogues of recommended specifications. They belong to France, Malta and The Netherlands.

The National Interoperability Framework (NIF) of these Member States varies when aligned with the European Interoperability Framework (EIF) according to the National Interoperability Framework Observatory (NIFO) factsheets.

National catalogue France:

[http://references.modernisation.gouv.fr/sites/default/files/Referentiel\\_General\\_Interoperabilite\\_V2.pdf](http://references.modernisation.gouv.fr/sites/default/files/Referentiel_General_Interoperabilite_V2.pdf)

National catalogue Netherlands:

<https://www.forumstandaardisatie.nl/open-standaarden/lijt>

NIFO factsheets:

<https://joinup.ec.europa.eu/collection/nifo-national-interoperability-framework-observatory/digital-public-administration-factsheets-2021>

## 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

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## \* A2 - Does the specification facilitate the publication of open data?

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
- ☐ NO
- ☒ YES

### \* Justification

According to the 5 star Open Data model suggested by Tim Berners-Lee about how to publish linked data, the forth star corresponds to represent data with URIs. According to the Odata home page, OData enables the publication of open data. This specification supports REST-based data services, allowing any resource, as well as open data, to be published and edited via simple HTTP messages.

Tim Berners-Lee 5-star schema for Open Data:  
<https://5stardata.info/en/>

Odata reference:  
<https://docs.oasis-open.org/odata/odata/v4.01/odata-v4.01-part1-protocol.html>

## A2(a) - To what extent does the specification facilitate the publication of public data as open data?

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

Relates to what degree of open data can reach the specification according to the main principles of 'open data'. These principles are stated by Tim Berners-Lee in the 5-Stars approach: <https://5stardata.info/en/>

- ☐ Not Answered
- ☐ Not Applicable
- ☐ The specification does not support the publication of data on the web, or does so but with a non-open licence.
- ☐ The specification supports publishing data on the web with an open licence 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).
- ☒ In addition to the requirements stated in the previous answer, the specification supports published data as Linked Data.

### \* Justification

According to the 5 star Open Data model suggested by Tim Berners-Lee about how to publish linked data, the forth star corresponds to represent data with URIs. OData follows REST principles, and as a consequence this specification supports the publication of data as open data.

Tim Berners-Lee 5-star schema for Open Data:

<https://5stardata.info/en/>

Odata reference, section 2 Overview:

[http://docs.oasis-open.org/odata/odata/v4.0/errata03/os/complete/part1-protocol/odata-v4.0-errata03-os-part1-protocol-complete.html#\\_Toc453752201](http://docs.oasis-open.org/odata/odata/v4.0/errata03/os/complete/part1-protocol/odata-v4.0-errata03-os-part1-protocol-complete.html#_Toc453752201)

REST reference, 'What is a resource?' section:

<https://restfulapi.net/>

**\* 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**

As defined on the OASIS Technical Committee (TC), only TC members are involved in the development of the OData specification. External contribution to this committee is possible through open channels.

OData OASIS Technical Committee reference:

[https://www.oasis-open.org/committees/comments/index.php?wg\\_abbrev=odata](https://www.oasis-open.org/committees/comments/index.php?wg_abbrev=odata)

OData OASIS Technical Committee, Overview reference:

[https://www.oasis-open.org/committees/tc\\_home.php?wg\\_abbrev=odata#overview](https://www.oasis-open.org/committees/tc_home.php?wg_abbrev=odata#overview)

OData.org working groups:

<https://www.odata.org/contribution/>

**\* 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

As defined on the OASIS Technical Committee (TC), the OData TC are involved in the release lifecycle of the specification. External contribution to this committee is possible through open channels. Up-to-date, the OData TC has announced three public reviews; however, the topic selection of these reviews is independent of the external contributors.

OData OASIS Technical Committee reference:

[https://www.oasis-open.org/committees/comments/index.php?wg\\_abbrev=odata](https://www.oasis-open.org/committees/comments/index.php?wg_abbrev=odata)

OData OASIS Technical Committee, Overview reference:

[https://www.oasis-open.org/committees/tc\\_home.php?wg\\_abbrev=odata#overview](https://www.oasis-open.org/committees/tc_home.php?wg_abbrev=odata#overview)

OData TC third review reference:

<https://www.oasis-open.org/2021/12/09/invitation-to-comment-on-odata-extension-for-temporal-data-v4-0-3/>

\* **A5 - Is the specification available with any restrictions related to Fair, Reasonable, and Non-Discriminatory ((F)RAND)?**

**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.

The FRAND basis relates to fair, reasonable, and non-discriminatory IPR disclosures.

- ☐ Not Answered
- ☐ Not Applicable
- ☐ NO
- ☒ YES

\* Justification

The OASIS Technical Committee, in charge of the development of OData, operates under RF (royalty-free) on RAND Mode of the OASIS IPR Policy. Therefore, the specification is licensed on a (F)RAND basis.

OData reference, section 1.0:

<https://docs.oasis-open.org/odata/odata/v4.01/odata-v4.01-part1-protocol.html>

OASIS Intellectual Property Rights Policy, section 10.2.2:

<https://www.oasis-open.org/policies-guidelines/ipr/>

\* **A6 - Is the specification licensed on a royalty-free basis?**

**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
- ☐ NO
- ☒ YES

**\* Justification**

The OASIS Technical Committee, in charge of the development of OData, operates under RF (royalty-free) on RAND Mode of the OASIS IPR Policy. Therefore, the specification is licensed on a Royalty-free.

OASIS Intellectual Property guidelines, section 5.2:  
<https://www.oasis-open.org/policies-guidelines/ipr/>

**\* A7 - 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**

OData was approved as an OASIS Standard in 2014 and as an ISO standard in 2017. Currently, there is OData version 4.1. Microsoft, as other corporations (see OData ecosystem reference) and organisations such as the World Health Organization (WHO), are using this specification in some of their systems.

Besides, the OData Technical committee is very active in terms of new releases.

OData Blog:  
<https://www.odata.org/blog/OData-Published-as-an-ISO-Standard/>

OData Technical Committee:  
[https://www.oasis-open.org/committees/tc\\_home.php?wg\\_abbrev=odata#technical](https://www.oasis-open.org/committees/tc_home.php?wg_abbrev=odata#technical)

OData ecosystem reference:  
<https://www.odata.org/ecosystem/>

Microsoft-OData reference:  
<https://docs.microsoft.com/es-es/odata/>

WHO reference:  
<https://www.who.int/data/gho/info/gho-odata-api>

**\* A8 - 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 being used to create innovative solutions.

- ☐ Not Answered
- ☐ Not Applicable - The specification does not have market acceptance because it is directly used to create innovative solutions.
- ☐ 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 has widespread use, indicating market acceptance.

**\* Justification**

There are pieces of evidence that state OData is wide-spread and used (see OData ecosystem reference). Although there are some market alternatives to OData, such as GData (Google), it is worth to note that there is some evidence of OData as an innovative solutions creator. Moreover, the specification has a dedicated Github tailored by the Microsoft community.

Stackshare-OData reference:  
<https://stackshare.io/odata/alternatives>

OData ecosystem reference:  
<https://www.odata.org/ecosystem/>

OData-Microsoft Github reference:  
<https://github.com/OData>

**\* A9 - 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 are surrounding 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

OData is maintained and developed by OASIS, which is an international community developing open standards; specifically, by the Technical Committee (TC). The specification maintenance is transparent, and even if its development and the approval process is restricted to the specification TC, anyone can contribute by submitting feedback to the mailing list. All the contributions are publicly available.

Developer community OASIS:  
<https://www.oasis-open.org/org/>

OData Technical Committee:  
<http://www.oasis-open.org/committees/odata/>

## Transparency

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\* **A10 - 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

OData offers a way to both break down data silos and increase the shared value of data (see Joinup reference). The specification contributes creating an ecosystem where data consumers and producers can interoperate more than ever, allowing more applications to make sense of a broader set of data. In this sense, the specification promotes visibility, for example through the OData data model. However, no evidence was found in terms of promoting and supporting the internal nor the external visibility of European public services.

Joinup OASIS Open Data Protocol reference:  
<https://joinup.ec.europa.eu/collection/ict-standards-procurement/solution/odp-oasis-open-data-protocol-odata-tc/about>

**\* A11 - 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**

OData offers a way to both break down data silos and increase the shared value of data. The specification contributes to creating an ecosystem where data consumers and producers can interoperate more than ever, allowing more applications to make sense of a broader set of data. In this sense, the specification promotes comprehensibility, for example through the OData data model. However, no evidence was found in terms of promoting and supporting the comprehensibility of European public services.

About ODP - OASIS Open Data Protocol (OData) TC (Joinup):

<https://joinup.ec.europa.eu/collection/ict-standards-procurement/solution/odp-oasis-open-data-protocol-odata-tc/about>

**\* A12 - 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 OData protocol is an application layer protocol for exchanging data through RESTful interfaces. In this sense, the specification enables exposure of any interface, including those interfaces providing access to public administration's services.

OData reference:

[http://docs.oasis-open.org/odata/odata/v4.0/errata03/os/complete/part1-protocol/odata-v4.0-errata03-os-part1-protocol-complete.html#\\_Toc453752201](http://docs.oasis-open.org/odata/odata/v4.0/errata03/os/complete/part1-protocol/odata-v4.0-errata03-os-part1-protocol-complete.html#_Toc453752201)

**\* A13 - To what extent does the specification ensure the protection of personal data managed by Public Administrations?**

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

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**

OData follows REST principles and there exists some kind of data protection. However, the purpose of OData is not related to the security and privacy of the data exchange.

OData reference:

[http://docs.oasis-open.org/odata/odata/v4.0/errata03/os/complete/part1-protocol/odata-v4.0-errata03-os-part1-protocol-complete.html#\\_Toc453752201](http://docs.oasis-open.org/odata/odata/v4.0/errata03/os/complete/part1-protocol/odata-v4.0-errata03-os-part1-protocol-complete.html#_Toc453752201)

## Reusability

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**\* A14 - 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 used in other domains.
- ☐ The specification is associated with a specific domain but its use in other domains is difficult.
- ☐ The specification is associated with a specific domain but could be partially used in other domains.
- ☐ The specification is associated with a specific domain but could be used 'as-is' to other domains.
- ☒ The specification is domain-agnostic, designed to be used in any domain.

**\* Justification**



OData services are used by a large community of users. These services use a common data model, which allows any client to interact with the service in a well-defined way (see OData reference). In this sense, the specification is domain-agnostic. For example, there are the Cambridge Weather-Pyslet demo service and the City of Medicine Hat Open Data Portal, in the field of academics and medicine, respectively.

OData ecosystem, Live services reference:  
<https://www.odata.org/ecosystem/>

OData reference, 4 Service model:  
[http://docs.oasis-open.org/odata/odata/v4.0/errata03/os/complete/part1-protocol/odata-v4.0-errata03-os-part1-protocol-complete.html#\\_Toc453752204](http://docs.oasis-open.org/odata/odata/v4.0/errata03/os/complete/part1-protocol/odata-v4.0-errata03-os-part1-protocol-complete.html#_Toc453752204)

**\* A15 - To what extent is the specification usable beyond the business-specific domain, allowing its implementation 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 in other domains.
- ☐ The specification is associated with a specific domain but its implementation in other domains is difficult.
- ☐ The specification is associated with a specific domain but could be partially implemented in other domains.
- ☐ The specification is associated with a specific domain but could be implemented 'as-is' to other domains.
- ☒ The specification is domain-agnostic, designed to be implemented in any domain.

**\* Justification**

OData services are used by a large community of users. The OData protocol differs from other REST-based web services in that it provides a uniform way of describing both the data and the data model. OData should be implemented as a very basic and compliant service; in this sense, the specification is domain-agnostic, designed to be implemented in any domain. For example, there are the Cambridge Weather-Pyslet demo service and the City of Medicine Hat Open Data Portal, in the field of academics and medicine, respectively.

OData ecosystem, Live services reference:  
<https://www.odata.org/ecosystem/>

OData reference, 2 Overview:  
[http://docs.oasis-open.org/odata/odata/v4.0/errata03/os/complete/part1-protocol/odata-v4.0-errata03-os-part1-protocol-complete.html#\\_Toc453752201](http://docs.oasis-open.org/odata/odata/v4.0/errata03/os/complete/part1-protocol/odata-v4.0-errata03-os-part1-protocol-complete.html#_Toc453752201)

## Technological Neutrality and Data Portability

**\* A16 - 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

Relates to the dependency of the specification to be implemented without relying on specific technologies or platforms.

- ☐ Not Answered
- ☐ Not Applicable
- ☒ NO
- ☐ YES

**\* Justification**

OData is tied up to RESTful APIs communication. Although the OData service declares its own data model in a machine-readable form, which allows customers to interact with the service on a generic basis, OData relies on RESTful APIs in order to be implemented.

OData reference, 4 Service Model:

[http://docs.oasis-open.org/odata/odata/v4.0/errata03/os/complete/part1-protocol/odata-v4.0-errata03-os-part1-protocol-complete.html#\\_Toc453752204](http://docs.oasis-open.org/odata/odata/v4.0/errata03/os/complete/part1-protocol/odata-v4.0-errata03-os-part1-protocol-complete.html#_Toc453752204)

**\* A17 - 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

Relates to the dependency of the specification to be implemented without relying on specific technologies or platforms.

- ☐ Not Answered
- ☐ Not Applicable
- ☒ NO
- ☐ YES

**\* Justification**

OData queries and shares data accross different systems via RESTful interfaces. RESTful APIs may be platform-agnostic, without any dependency on the environment or programming language being used; however, this use case is not always applied. Therefore, the specification is not platform-agnostic.

OData reference:

<http://docs.oasis-open.org/odata/odata/v4.0/odata-v4.0-part1-protocol.html>

RESTful reference, Use cases section:

<https://restfulapi.io/>

**\* A18 - 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 it defines in the text.

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

OData builds incrementally. Customers can easily build a very basic standards-compliant service. Only additional work will be needed to support extra or or add-on capabilities.

OData, 2 Overview:

[http://docs.oasis-open.org/odata/odata/v4.0/errata03/os/complete/part1-protocol/odata-v4.0-errata03-os-part1-protocol-complete.html#\\_Toc453752201](http://docs.oasis-open.org/odata/odata/v4.0/errata03/os/complete/part1-protocol/odata-v4.0-errata03-os-part1-protocol-complete.html#_Toc453752201)

\* A19 - 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

OData allows for including custom transformations (that is, query options) that the user explicitly requests, which are not necessary defined in the OData specification. However, these extensions are restrictive or limited to a specific functionality.

OData reference, 2 Overview and 6 Extensibility:

[http://docs.oasis-open.org/odata/odata/v4.0/errata03/os/complete/part1-protocol/odata-v4.0-errata03-os-part1-protocol-complete.html#\\_Toc453752211](http://docs.oasis-open.org/odata/odata/v4.0/errata03/os/complete/part1-protocol/odata-v4.0-errata03-os-part1-protocol-complete.html#_Toc453752211)

\* A20 - 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 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 OData protocol provides support for both user and version-driven extensibility by means of different extension methods, through a combination of versioning, conventions and explicit extension points.

OData reference, 6 Extensibility:

[http://docs.oasis-open.org/odata/odata/v4.0/errata03/os/complete/part1-protocol/odata-v4.0-errata03-os-part1-protocol-complete.html#\\_Toc453752211](http://docs.oasis-open.org/odata/odata/v4.0/errata03/os/complete/part1-protocol/odata-v4.0-errata03-os-part1-protocol-complete.html#_Toc453752211)

\* **A21 - To what extent does the specification enable data portability between systems/applications supporting the implementation 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

OData services return URLs to identify resources requested by clients. Where possible, interoperability increases by exploiting the information found in the route part of the URL. However, attention must be paid to those URLs including custom transformations (that is, query options) and clients must be aware of it in future requests to the identified resource.

OData reference, 6 Extensibility:

[http://docs.oasis-open.org/odata/odata/v4.0/errata03/os/complete/part1-protocol/odata-v4.0-errata03-os-part1-protocol-complete.html#\\_Toc453752211](http://docs.oasis-open.org/odata/odata/v4.0/errata03/os/complete/part1-protocol/odata-v4.0-errata03-os-part1-protocol-complete.html#_Toc453752211)

\* **A22 - To what extent does the specification enable data portability between systems/applications supporting the 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

OData services return URLs to identify resources requested by clients. Where possible, interoperability increases by exploiting the information found in the route part of the URL. However, attention must be paid to those URLs including custom transformations (that is, query options) and clients must be aware of it in future requests to the identified resource.

OData reference, 6 Extensibility:

[http://docs.oasis-open.org/odata/odata/v4.0/errata03/os/complete/part1-protocol/odata-v4.0-errata03-os-part1-protocol-complete.html#\\_Toc453752211](http://docs.oasis-open.org/odata/odata/v4.0/errata03/os/complete/part1-protocol/odata-v4.0-errata03-os-part1-protocol-complete.html#_Toc453752211)

## EIF PRINCIPLES RELATED TO GENERIC USER NEEDS AND EXPECTATIONS

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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

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\* **A23 - 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.

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

OData services return URLs to identify resources that may be later requested by clients. Where possible, data reusability increases by exploiting the information found in the route part of the URL, or by easing datasets management. However, data reusability might be limited. There is no evidence of any European solution confirming this aspect.

OData reference, 6.1 Query Option Extensibility:

[http://docs.oasis-open.org/odata/odata/v4.0/errata03/os/complete/part1-protocol/odata-v4.0-errata03-os-part1-protocol-complete.html#\\_Toc453752211](http://docs.oasis-open.org/odata/odata/v4.0/errata03/os/complete/part1-protocol/odata-v4.0-errata03-os-part1-protocol-complete.html#_Toc453752211)

## Inclusion and Accessibility

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### \* A24 - 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 Open Data Protocol (OData) supports the creation of data services based on REST, which allow resources to be published and edited by web clients via HTTP messages. OData could allow a third-party information system to act on behalf of citizens who cannot, permanently or temporarily, make direct use of public services. In this sense, it can contribute to e-accessibility.

OData reference, 1 Introduction:

<https://docs.oasis-open.org/odata/odata/v4.01/odata-v4.01-part1-protocol.html>

## Security and Privacy

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### \* A25 - 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.

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**

OData is a recommendation and protocol for data exchange. Therefore, the specification enables the secure exchange of data.

OData reference:

<http://docs.oasis-open.org/odata/odata/v4.0/odata-v4.0-part1-protocol.html>

**\* A26 - 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**

OData is a recommendation and protocol for data exchange. Therefore, the specification can contribute to enabling the secure processing of data.

OData reference:

<http://docs.oasis-open.org/odata/odata/v4.0/odata-v4.0-part1-protocol.html>

## Multilingualism

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**\* A27 - 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 OData is not related to the delivery of multilingual public services. Therefore, this criterion is not applicable to this specification.

OData reference:

<http://docs.oasis-open.org/odata/odata/v4.0/odata-v4.0-part1-protocol.htm>

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## EIF FOUNDATION PRINCIPLES FOR COOPERATION AMONG PUBLIC ADMINISTRATIONS

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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

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**\* A28 - 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.

- ☐ Not Answered
- ☐ Not Applicable
- ☐ NO
- ☒ YES

**\* Justification**

OData offers a way to both break down data silos and increase the shared value of data. The specification contributes creating an ecosystem where data consumers and producers can interoperate more than ever, allowing more applications to make sense of a broader set of data and eases the delivery of European public



services (see the Netherlands Advisory report stating the usability of OData as a solution to streamline the delivery of public services).

Joinup reference:

<https://joinup.ec.europa.eu/collection/ict-standards-procurement/solution/odp-oasis-open-data-protocol-odata-tc/about>

Netherlands OData Advisory report reference:

<https://www.forumstandaardisatie.nl/open-standaarden/odata>

**\* A29 - 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.

- ☐ Not Answered
- ☐ Not Applicable
- ☐ NO
- ☒ YES

**\* Justification**

OData offers access to information from relational databases, file systems, content management systems, traditional websites, and others. Therefore, it enables and reinforce the delivery of European public services.

Joinup reference:

<https://joinup.ec.europa.eu/collection/ict-standards-procurement/solution/odp-oasis-open-data-protocol-odata-tc/about>

## Preservation of Information

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**\* A30 - 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

OData is a protocol of querying and sharing, and as such is not supposed to offer long-term preservation of data. Therefore, this criterion is considered not applicable to this specification.

OData reference:

<https://docs.oasis-open.org/odata/odata/v4.01/odata-v4.01-part1-protocol.html>

## Assessment of Effectiveness and Efficiency

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\* **A31 - 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 then 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

There exist some assessments indirectly addressing the effectiveness of OData in industry (e.g., Microsoft Open Technologies), or documentation focusing on the improvement of the OData specification (e.g., the future release, OData.Neo).

OData assessments reference:

<https://www.odata.org/blog/>

Microsoft Open Technologies (China) reference:

<https://www.odata.org/blog/microsoft-open-technologies-releases-odata-producer-for-sugarcrm-to-boost-the-efficiency-of-corporate-data-exchange/>

OData.Neo reference:

<https://github.com/OData/OData.Neo>

\* **A32 - 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

After carrying out information retrieval, an expert group from The Netherlands has been assessing the OData in terms of efficiency. These experts announced a fast data processing.

Expert group's OData analysis:

<https://www.forumstandaardisatie.nl/open-standaarden/odata>

## EIF INTEROPERABILITY LAYERS

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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

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\* **A33 - 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

This specification is currently not included in the EIRA Library of Interoperability Specifications (ELIS), but will be included in the next release of the ELIS. The response to this criterion is positive because OData is mappable to the European Interoperability Reference Architecture (EIRA).

EIRA Library of Interoperability Specifications (ELIS):

<https://joinup.ec.europa.eu/collection/common-assessment-method-standards-and-specifications-camss/solution/elis/release/v110>

\* **A34 - 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

OData.org provides a OData Service Validation Tool for free to validate OData implementations.

OData Service Validation Tool:

<https://www.odata.org/blog/odata-service-validation-tool/>

\* **A35 - Is the specification recommended by an 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

There are two Member States recommending OData in their ICT National Catalogues. These Member States are The Netherlands and France.

Netherlands Catalogue reference:

<https://www.forumstandaardisatie.nl/open-standaarden/aanbevolen>

France catalogue reference:

[http://references.modernisation.gouv.fr/sites/default/files/Referentiel\\_General\\_Interoperabilite\\_V2.pdf](http://references.modernisation.gouv.fr/sites/default/files/Referentiel_General_Interoperabilite_V2.pdf)

CAMSS List of Standards:

<https://joinup.ec.europa.eu/collection/common-assessment-method-standards-and-specifications-camss/camss-list-standards>

**\* A36 - Is the specification selected for its use in an 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](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**

No formal agreements have been found between organisations or administrations including OData in a European public service provision.

ICT Technical Specifications reference:

[https://ec.europa.eu/growth/single-market/european-standards/ict-standardisation/ict-technical-specifications\\_en](https://ec.europa.eu/growth/single-market/european-standards/ict-standardisation/ict-technical-specifications_en)

**\* A37 - 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 specification is included in two Member States' catalogues of recommended specifications. These Member States are The Netherlands and France.

National catalogue France:

[http://references.modernisation.gouv.fr/sites/default/files/Referentiel\\_General\\_Interoperabilite\\_V2.pdf](http://references.modernisation.gouv.fr/sites/default/files/Referentiel_General_Interoperabilite_V2.pdf)

National catalogue Netherlands:

<https://www.forumstandaardisatie.nl/open-standaarden/lijt>

CAMSS List of Standards:

<https://joinup.ec.europa.eu/collection/common-assessment-method-standards-and-specifications-camss/camss-list-standards>

\* **A38 - 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 OData specification is included in the EUOS European catalogue of standards.

EUOS reference:

<https://www.standict.eu/standards-repository>

## Legal Interoperability

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\* **A39 - 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

After checking the different standard catalogues at supra-national level, there is no mention of Odata in any official document stating its conformance in regards to Regulation 1025/2012.

ICT technical specifications:

[https://ec.europa.eu/growth/single-market/european-standards/ict-standardisation/ict-technical-specifications\\_en](https://ec.europa.eu/growth/single-market/european-standards/ict-standardisation/ict-technical-specifications_en)

CENELEC and CEN search tool catalogue:

<https://standards.cencenelec.eu/dyn/www/f?p=CEN:105::RESET::::>

## Organisational Interoperability

\* **A40 - 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 purpose of OData is not related to the modelling of business processes. Therefore, this criterion is not applicable to the specification.

OData reference:

<https://docs.oasis-open.org/odata/odata/v4.01/odata-v4.01-part1-protocol.html>

\* **A41 - 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 purpose of OData is not related to the organisational interoperability agreements. Moreover, one of the MS recommending this specification, the Netherlands, confirms its not applicability over organisational aspects. Therefore, this criterion is not applicable to the specification.

OData reference:

<https://docs.oasis-open.org/odata/odata/v4.01/odata-v4.01-part1-protocol.html>

Netherlands' OData report:

<https://www.forumstandaardisatie.nl/open-standaarden/odata>

## Semantic Interoperability

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\* **A42 - Does the specification encourage the creation of communities along with the sharing of their data and results on national 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
- ☐ NO
- ☒ YES

\* Justification

OData promotes the sharing of data and results, and begs for its approval as an ISO/IEC Standard to help accelerate the specification adoption throughout the international community, particularly within government agencies. In this sense, the specification encourages both the creation of communities and the sharing of their data and results on national platforms.

OData reference, data exchange:

<https://www.oasis-open.org/news/pr/iso-iec-jtc-1-approves-oasis-odata-standard-for-open-data-exchange/>

\* **A43 - Does the specification encourage the creation of communities along with the sharing of their data and results on 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
- ☐ NO
- ☒ YES

**\* Justification**

OData promotes the sharing of data and results, and begs for its approval as an ISO/IEC Standard to help accelerate the specification adoption throughout the international community, particularly within government agencies. In this sense, the specification encourages both the creation of communities and the sharing of their data and results on European platforms.

OData referenece, data exchange:

<https://www.oasis-open.org/news/pr/iso-iec-jtc-1-approves-oasis-odata-standard-for-open-data-exchange/>

## Useful links

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

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

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

DIGIT-CAMSS@ec.europa.eu



# CAMSS Assessment EIF Scenario v5.0.0 - 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 440	441 to 880	881 to 1320	1321 to 1760	1761 to 2200
EIF Principles Related to generic user needs and expectations	0 to 100	101 to 200	201 to 300	301 to 400	401 to 500

**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 220

221 to 440

441 to 660

661 to 880

881 to 1100

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
<b>Ad-hoc</b>	Poor level of conformance with the EIF - The specification does not cover the requirements and recommendations set out by the EIF in this area.
<b>Opportunistic</b>	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.
<b>Essential</b>	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.
<b>Sustainable</b>	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.
<b>Seamless</b>	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 2200 points.
2. In the middle table – the Section Compliance Conversion Table – see that this number correlates to a column. In our example, the 2200 points of Core Interoperability Principles fall in the EIF Core Interoperability Principles row, and '1761 to 2200' 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** 3580

**Maximum Score** 4400



Section	Score for this Section	
EIF PRINCIPLES SETTING THE CONTEXT FOR EU ACTIONS ON INTEROPERABILITY	100 /100	<div><div></div></div>
EIF CORE INTEROPERABILITY PRINCIPLES	1800 /2200	<div><div></div></div>
EIF PRINCIPLES RELATED TO GENERIC USER NEEDS AND EXPECTATIONS	340 /500	<div><div></div></div>
EIF FOUNDATION PRINCIPLES FOR COOPERATION AMONG PUBLIC ADMINISTRATIONS	400 /500	<div><div></div></div>
EIF INTEROPERABILITY LAYERS	940 /1100	<div><div></div></div>


## Scores by Question

## EIF PRINCIPLES SETTING THE CONTEXT FOR EU ACTIONS ON INTEROPERABILITY


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Score for this Section: 100/100

**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 been included within the catalogue of a Member State with a higher performance than stated in the Digital Public Administration Factsheets from the NIFO.

100  
out of  
100  
points



## EIF CORE INTEROPERABILITY PRINCIPLES

---

Score for this Section: 1800/2200


**A2 - Does the specification facilitate the publication of open data?**

Your answer  YES


100  
out of  
100  
points




**A2(a) - To what extent does the specification facilitate the publication of public data as open data?**

Your answer  In addition to the requirements stated in the previous answer, the specification supports published data as Linked Data.


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 participation following a registration process.

80  
out of  
100  
points



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

Your answer  Public review is applied to certain releases depending on the involved changes.

40  
out of  
100  
points



**A5 - Is the specification available with any restrictions related to Fair, Reasonable, and Non-Discriminatory ((F)RAND)?**

Your answer  YES

100  
out of  
100  
points




**A6 - Is the specification licensed on a royalty-free basis?**

Your answer  YES

100  
out of  
100  
points




**A7 - 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




**A8 - To what extent has the specification sufficient market acceptance for its use in the development of digital solutions/services?**

Your answer  The specification has widespread use, indicating market acceptance.

100  
out of  
100  
points




**A9 - 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



**A10 - To what extent does the specification enable the visibility of administrative procedures, rules data, and services?**

Your answer  The specification can contribute and promote the visibility of administrations, but it is not its main purpose.

60  
out of  
100  
points



**A11 - To what extent does the specification scope comprehensively administrative procedures, rules data, and services?**

Your  
answer

✔ The specification can contribute and promote the comprehensibility of administrations, but it is not its main purpose.

60  
out of  
100  
points



**A12 - To what extent does the specification enable the exposure of interfaces to access the public administration's services?**

Your  
answer

✔ The specification enables exposure of such interfaces.

100  
out of  
100  
points



**A13 - To what extent does the specification ensure the protection of personal data managed by Public Administrations?**

Your  
answer

✔ Not Applicable

100  
out of  
100  
points



**A14 - 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 used in any domain.

100  
out of  
100  
points



**A15 - To what extent is the specification usable beyond the business-specific domain, allowing its implementation across business domains?**

Your  
answer

✔ The specification is domain-agnostic, designed to be implemented in any domain.

100  
out of  
100  
points



**A16 - Is the specification technology agnostic?**

Your  
answer

✘ NO

20  
out of  
100  
points



**A17 - Is the specification platform agnostic?**

Your  
answer

✘ NO

20  
out of  
100  
points



**A18 - 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



**A19 - Does the specification allow customisation?**

Your  
answer

✔ YES

100  
out of  
100  
points



**A20 - Does the specification allow extension?**

Your  
answer

✔ YES

100  
out of  
100  
points



**A21 - To what extent does the specification enable data portability between systems/applications supporting the implementation of European public services?**

Your  
answer

✔ The specification addresses data portability but without specific provisions to enable it.

60  
out of  
100  
points



**A22 - To what extent does the specification enable data portability between systems/applications supporting the evolution of European public services?**

Your  
answer

✔ The specification addresses data portability but without specific provisions to enable it.

60  
out of  
100  
points



## EIF PRINCIPLES RELATED TO GENERIC USER NEEDS AND EXPECTATIONS

Score for this Section: 340/500

**A23 - To what extent does the specification allow relevant information to be reused when needed?**

Your  
answer

✔ There is limited reuse of provided information.

40  
out of  
100  
points





**A24 - To what extent does the specification enable the e-accessibility?**

Your  
answer

✓ The specification can contribute and promote e-accessibility, but it is not its main purpose.

60  
out of  
100  
points



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

Your  
answer

✓ The specification explicitly addresses and enables the secure and trustworthy exchange of data.

100  
out of  
100  
points



**A26 - To what extent does the specification enable the secure processing of data?**

Your  
answer

✓ The specification introduces certain aspects that can contribute to enabling the secure processing of data.

40  
out of  
100  
points



**A27 - 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: 400/500

**A28 - Does the specification simplify the delivery of European public services?**

Your  
answer

✓ YES

100  
out of  
100  
points



**A29 - Does the specification enable digital service delivery channels?**

Your  
answer

✓ YES



100  
out of  
100  
points





**A30 - To what extent does the specification enable the long-term preservation of data/information /knowledge (electronic records included)?**

Your answer  Not Applicable 100 out of 100 points 

**A31 - To what extent are there assessments of the specification's effectiveness?**

Your answer  There are such assessments that indirectly address the specification. 40 out of 100 points 

**A32 - To what extent are there assessments of the specification's efficiency?**

Your answer  There are assessments evaluating digital solutions' efficiency that involve the specification. 60 out of 100 points 



## EIF INTEROPERABILITY LAYERS

Score for this Section: 940/1100

**A33 - Is the (or could it be) specification mapped to the European Interoperability Architecture (EIRA)?**

Your answer  YES 100 out of 100 points 

**A34 - 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 

**A35 - Is the specification recommended by an European Member State?**

Your answer  YES 100 out of 100 points 

**A36 - Is the specification selected for its use in an European Cross-border project/initiative?**

Your answer  NO 20 out of 100 points 

**A37 - Is the specification included in an open repository/catalogue of standards at national level?**

Your  YES  
answer

100  
out of  
100  
points



**A38 - Is the specification included in an open repository/catalogue of standards at European level?**

Your  YES  
answer

100  
out of  
100  
points




**A39 - Is the specification a European Standard?**

Your  NO  
answer

20  
out of  
100  
points




**A40 - Does the specification facilitate the modelling of business processes?**

Your  Not Applicable  
answer

100  
out of  
100  
points



**A41 - To what extent does the specification facilitate organisational interoperability agreements?**

Your  Not Applicable  
answer

100  
out of  
100  
points



**A42 - Does the specification encourage the creation of communities along with the sharing of their data and results on national platforms?**

Your  YES  
answer

100  
out of  
100  
points



**A43 - Does the specification encourage the creation of communities along with the sharing of their data and results on European platforms?**

Your  YES  
answer

100  
out of  
100  
points



Contact	<a href="mailto:DIGIT-CAMSS@ec.europa.eu">DIGIT-CAMSS@ec.europa.eu</a>
	<a href="#">CAMSS Joinup Page</a>
Useful links	<a href="#">CAMSS Library of Assessments</a>
	<a href="#">CAMSS Assessment EIF Scenario - User Guide</a>
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