

CAMSS Assessment EIF Scenario v5.1.0

Fields marked with * are mandatory.

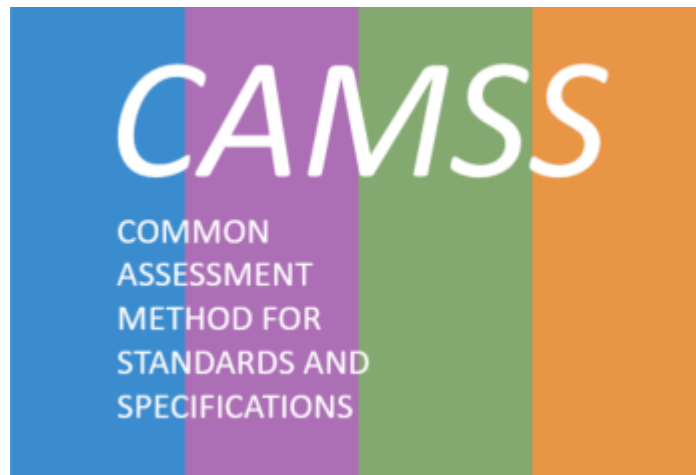
CAMSS Assessment EIF Scenario v5.1.0



Release Date: 18/07/2022

Scenario Version: 5.1.0

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.

Section	Compliance Level				
	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 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	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
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

☒ *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

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

* 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: 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

OpenAPI Specification (OAS)

* Version of the specification

3.1.0

* Description of the specification

The OpenAPI Specification (OAS) defines a standard, programming language-agnostic interface description for HTTP APIs, which allows both humans and computers to discover and understand the capabilities of a service without requiring access to source code, additional documentation, or inspection of network traffic.

* URL from where the specification is distributed

<https://spec.openapis.org/oas/latest.html#openapi-specification>

* 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:

OpenAPI Initiative

* and, provide its URL:

<https://www.openapis.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 OpenAPI specification (OAS) is a vendor-neutral description format for documenting APIs development. OpenAPI is the most broadly adopted industry standard for describing new APIs, since it has the most developed tooling ecosystem and its format is readable by both machines and humans.

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

OAS is included in the catalogues of Malta and The Netherlands. The national interoperability framework of The Netherlands is fully aligned with at least 4 out of 5 sections of the European Interoperability Framework (EIF) according to the National Interoperability Framework Observatory (NIFO) factsheets. Malta,

nonetheless, does not have a high performance, being aligned only with two sections of the EIF.

National Catalogue of The Netherlands:

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

National Catalogue of Malta:

<https://mccaa.org.mt/Section/Content?contentId=1243>

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

* 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

We can state that OAS is related to the publication of open data given that it constitutes a tool that facilitates the development of RESTful conformant APIs. Since RESTful APIs can generate plugins that allow for the retrieval of resources in any given format, we can state that OAS facilitates the publication of open data.

OAS specification:

<https://spec.openapis.org/oas/latest.html#openapi-specification>

Tim Berners-Lee in the 5-Stars approach:

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

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**

OAS supports the creation of APIs that follow the REST architectural style. RESTful APIs are encoded in JSON format which is a way to encode data structures like lists and dictionaries to strings that ensure that they are easily readable by machines.

OAS specification:

<https://spec.openapis.org/oas/latest.html#openapi-specification>

Tim Berners-Lee in the 5-Stars approach:

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

*** 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 Open API Initiative's charter created, "an open source, Technical Developer Community (TDC), open to any participant, whether an OAI Member or not. " The TDC is responsible for overseeing the evolution of the OpenAPI Specification, and for offering suggestions on how to improve it.

OpenAPI participation:

<https://www.openapis.org/news/blogs/2016/07/you-can-get-involved-creating-openapi-specification-and-heres-how>

OAS specification:
<https://spec.openapis.org/oas/latest.html#openapi-specification>

*** 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**

Through the Github platform, the OAS community is encharged of reviewing all the releases as well as raising issues and proposing improvements.

OAS specification:
<https://spec.openapis.org/oas/latest.html#openapi-specification>

OAS in Github:
<https://github.com/OAI/OpenAPI-Specification/#participation>

*** 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 OAS is an open-source, royalty-free specification. It is also available with any restrictions related to Fair, Reasonable, and Non Discriminatory ((F)RAND) rights, and it can be accessed from its website and in the Github repository.

OAS specification:
<https://spec.openapis.org/oas/latest.html#openapi-specification>

OAS in Github:

<https://github.com/OAI/OpenAPI-Specification/#participation>

OAS governance rules:

<https://www.openapis.org/participate/how-to-contribute/governance>

*** 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 OAS is an open-source, royalty-free specification. It is available for free for its use and implementation both on its website and on the Github repository.

OAS specification:

<https://spec.openapis.org/oas/latest.html#openapi-specification>

OAS in Github:

<https://github.com/OAI/OpenAPI-Specification/#participation>

OAS governance rules:

<https://www.openapis.org/participate/how-to-contribute/governance>

*** 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

OAS has a long history of developments and improvements. Starting in 2010 as the Swagger API, OAS quickly increased in popularity, and in 2015 acquired its actual name under the sponsorship of the Linux Foundation, and other funding members such as IBM, resulting in the most widely used tool for the creation and documentation of APIs.

OAS specification:

<https://spec.openapis.org/oas/latest.html#openapi-specification>

OAS in Github:

<https://github.com/OAI/OpenAPI-Specification/#participation>

* **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 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

Given the number of organisations that contribute to the funding of OAS (Google, IBM, Microsoft, etc) there can be stated that the specification has widespread market acceptance. It is also being implemented in the RISIS project, which aims to develop an e-infrastructure that supports full virtual transnational access to research datasets.

Automatic Query-centric API for Routine Access to Linked Data:

<https://iswc2017.semanticweb.org/wp-content/uploads/papers/MainProceedings/430.pdf>

RISIS webpage:

<https://www.risis2.eu/about/>

OAS specification:

<https://spec.openapis.org/oas/latest.html#openapi-specification>

* **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 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**

OAS development is guided by the Technical Steering Committee (TSC) a group of committers in charge of implementing new versions of the specification. Moreover, the OAS has support from the community in Github, where anyone interested is encouraged to pull requests and give feedback on its implementation.

OAS Github: participation
<https://github.com/OAI/OpenAPI-Specification/>

Transparency

*** 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**

OAS can be a good visibility enabler when it comes to documenting and creating new APIs. Performing code generation for documentation, clients and servers, OAS contributes to the visibility of administrative procedures given that it facilitates APIs implementation, improving understandability and interaction for clients.

OAS specification:
<https://spec.openapis.org/oas/latest.html#openapi-specification>

OAS in Github:
<https://github.com/OAI/OpenAPI-Specification/#participation>

*** 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**

OAS defines a standard, programming language-agnostic interface description for HTTP APIs, which allows both humans and computers to discover and understand the capabilities of a service without requiring access to source code, additional documentation, or inspection of network traffic. OAS usefulness, therefore, lies in the comprehensibility of the APIs development, as it facilitates coding and also documenting the development in an easy, understandable way.

OAS specification:
<https://spec.openapis.org/oas/latest.html#openapi-specification>

OAS in Github:
<https://github.com/OAI/OpenAPI-Specification/#participation>

*** 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**

OAS includes support for REST APIs. A RESTful API is a clear enabler of the exposure of interfaces, given that it performs information exchange with secure, reliable and efficient software communication standards.

OAS specification:

<https://spec.openapis.org/oas/latest.html#openapi-specification>

OAS in Github:

<https://github.com/OAI/OpenAPI-Specification/#participation>

*** 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**

The OAS points out some essential security aspects addressing the protection of personal data. For example, the specification mentions security schemes that can be used by the operations, such as HTTP authentication, API key or OAuth. Nonetheless, these personal data protection mechanisms rely on external protocols not specified by OAS.

OAS specification:

<https://spec.openapis.org/oas/latest.html#openapi-specification>

OAS in Github:

<https://github.com/OAI/OpenAPI-Specification/#participation>

Reusability

*** 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

The purpose of OAS is to help with the development and documentation of APIs, with any kind of restrictions related to the domain it is to be applied; therefore, OAS is domain-agnostic and can be used in any domain.

OAS specification:

<https://spec.openapis.org/oas/latest.html#openapi-specification>

OAS in Github:

<https://github.com/OAI/OpenAPI-Specification/#participation>

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

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- ☐ 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.
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OAS in Github:

<https://github.com/OAI/OpenAPI-Specification/#participation>

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.

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**

OAS is independent of any specification and can be implemented without relying on other technologies.

OAS specification:

<https://spec.openapis.org/oas/latest.html#openapi-specification>

OAS in Github:

<https://github.com/OAI/OpenAPI-Specification/#participation>

*** 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.

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**

OAS is independent of any specification and can be implemented without any dependency on platforms.

OAS specification:

<https://spec.openapis.org/oas/latest.html#openapi-specification>

OAS in Github:

<https://github.com/OAI/OpenAPI-Specification/#participation>

*** 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 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**

OAS is designed to ease the process of creating an API. As each API set of requirements may vary, it is necessary for the specification to allow for partial implementations, although, as it is stated in the specification's introduction, there is still a need for a minimal degree of implementation.

OAS specification:

<https://spec.openapis.org/oas/latest.html#openapi-specification>

OAS in Github:

<https://github.com/OAI/OpenAPI-Specification/#participation>

*** 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**

Since OAS is a tool that serves as a guide for the development and documentation of APIs, it can be said that customisation is always allowed as long as it complies with the structure set by the specification.

OAS specification:

<https://spec.openapis.org/oas/latest.html#openapi-specification>

OAS in Github:

<https://github.com/OAI/OpenAPI-Specification/#participation>

*** 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 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**

While the OpenAPI Specification tries to accommodate most use cases, additional data can be added to extend the specification at certain points. The extensions may or may not be supported by the available tooling, but if tools are internal or open-sourced, those may be extended as well to add requested support.

OAS Extensions:

<https://spec.openapis.org/oas/latest.html#specification-extensions>

OAS specification:

<https://spec.openapis.org/oas/latest.html#openapi-specification>

OAS in Github:

<https://github.com/OAI/OpenAPI-Specification/#participation>

*** 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**

Applications implemented based on OpenAPI interface files can automatically generate documentation of methods, parameters and models. This helps keep the documentation, client libraries, and source code in sync, thus, enabling data portability between systems.

OAS specification:

<https://spec.openapis.org/oas/latest.html#openapi-specification>

OAS in Github:
<https://github.com/OAI/OpenAPI-Specification/#participation>

*** 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**

Applications implemented based on OpenAPI interface files can automatically generate documentation of methods, parameters and models. This helps keep the documentation, client libraries, and source code in sync, thus, enabling data portability between systems.

OAS specification:
<https://spec.openapis.org/oas/latest.html#openapi-specification>

OAS in Github:
<https://github.com/OAI/OpenAPI-Specification/#participation>

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

*** 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.

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 purpose of OAS is not related to the reuse of information, therefore this criterion is not applicable to the specification.

OAS specification:

<https://spec.openapis.org/oas/latest.html#openapi-specification>

OAS in Github:

<https://github.com/OAI/OpenAPI-Specification/#participation>

Inclusion and Accessibility

* **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 purpose of OAS is not related to e-accessibility, therefore, this criterion is not applicable to the specification.

OAS specification:
<https://spec.openapis.org/oas/latest.html#openapi-specification>

OAS in Github:
<https://github.com/OAI/OpenAPI-Specification/#participation>

Security and Privacy

* 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

OAS takes into account essential safety aspects when it comes to the design of APIs. Security in OAS is tackled with the "Security Requirement Object" where security mechanisms are settled to authorise requests.

OAS Security Requirements Object:
<https://spec.openapis.org/oas/latest.html#security-requirement-object>

OAS specification:
<https://spec.openapis.org/oas/latest.html#openapi-specification>

OAS in Github:
<https://github.com/OAI/OpenAPI-Specification/#participation>

* 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

OAS takes into account essential safety aspects when it comes to the design of APIs. Security in OAS is tackled with the "Security Requirement Object" where security mechanisms are settled in order to authorise requests.

OAS Security Requirements Object:

<https://spec.openapis.org/oas/latest.html#security-requirement-object>

OAS specification:

<https://spec.openapis.org/oas/latest.html#openapi-specification>

OAS in Github:

<https://github.com/OAI/OpenAPI-Specification/#participation>

Multilingualism

* **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 OAS is not related to multilingualism, therefore, this criterion is not applicable to the specification.

OAS specification:

<https://spec.openapis.org/oas/latest.html#openapi-specification>

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

* 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.

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

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

* Justification

OAS has many functionalities that can simplify the delivery of European public services. One of the most notable aspects of OAS is its conformity with REST architectural style, which means it allows for the connection of components in microservices applications. This OAS characteristic, is a key enabler for the simplification of European public services, as it eases the digitalisation and accessibility of RESTful APIs design, documentation and functionalities.

OAS specification:
<https://spec.openapis.org/oas/latest.html#openapi-specification>

OAS in Github:
<https://github.com/OAI/OpenAPI-Specification/#participation>

* 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.

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**

OAS can enable the delivery of European public services in the sense that it conveys a clear structure and procedure for the creation of APIs that can provide services that reduce the administrative burden. Using OAS, is a way to keep APIs documentation and source code synchronized, while the consumers are found to understand the capabilities of each operation on the API, and subsequently, interact without comprehending the implementation logic.

OAS specification:

<https://spec.openapis.org/oas/latest.html#openapi-specification>

OAS in Github:

<https://github.com/OAI/OpenAPI-Specification/#participation>

Preservation of Information

*** 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**

Although some APIs are designed for the long-term preservation of data and information, no specific provisions are stated in OAS.

OAS specification:

<https://spec.openapis.org/oas/latest.html#openapi-specification>

Assessment of Effectiveness and Efficiency

* 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 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

There can be found many assessments that confirm the usefulness of the OAS. In terms of effectiveness, there are articles analysing OAS for security design issues, or others that prove the effectiveness of the automatic generation of test cases for REST APIs using OAS.

Analyzing OpenAPI Specifications for Security Design Issues:
<https://ieeexplore.ieee.org/abstract/document/9652639>

Automatic Generation of Test Cases for REST APIs: A Specification-Based Approach:
<https://ieeexplore.ieee.org/abstract/document/8536162>

OAS specification:
<https://spec.openapis.org/oas/latest.html#openapi-specification>

* 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

OAS has been proven very efficient when it comes to converting programming languages, as it is stated in the paper "From Open API to Semantic Specifications and Code Adapters", where OAS is tested for the conversion of a semantic OWL-S specification.

From Open API to Semantic Specifications and Code Adapters:
<https://ieeexplore.ieee.org/abstract/document/8029798>

OAS specification:
<https://spec.openapis.org/oas/latest.html#openapi-specification>

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

* **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

OAS is already mapped into the EIRA Library of Interoperable Specifications in the machine to machine interface ABB from the EIRA Technical View.

ELIS referenece:

<https://joinup.ec.europa.eu/collection/common-assessment-method-standards-and-specifications-camss/solution/elis/release/v500>

* **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

OAS gives itself a criterion and guidelines and structure to develop APIs and also constitutes an environment for testing the conformity of the application to the OAS parameters. To this end, OAS conformance testing functionalities range from data and description validation (to check for the correct syntax and data flow) to mock servers (to provide example responses before writing code).

Advantages of using OpenAPI:

<https://oai.github.io/Documentation/start-here.html#advantages-of-using-openapi>

OAS specification:

<https://spec.openapis.org/oas/latest.html#openapi-specification>

OAS in Github:

<https://github.com/OAI/OpenAPI-Specification/#participation>

* **A35 - 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

OAS is recommended by The Netherlands and Malta.

National Catalogue of The Netherlands:
<https://www.forumstandaardisatie.nl/open-standaarden>

National Catalogue of Malta:
<https://mccaa.org.mt/Section/Content?contentId=1243>

* **A36 - 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

OAS has been found to be used in the Research Infrastructure for Science and Innovation Policy Studies (named as RISIS) Where OpenAPI takes part in a project aiming to automatize query-centric APIs for accessing to Linked Data.

Automatic Query-centric API for Routine Access to Linked Data:
<https://iswc2017.semanticweb.org/wp-content/uploads/papers/MainProceedings/430.pdf>

RISIS webpage:
<https://www.risis2.eu/about/>

* **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

OAS has been found to be include in the national catalogues of The Netherlands and Malta.

National Catalogue of The Netherlands:

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

National Catalogue of Malta:

<https://mccaa.org.mt/Section/Content?contentId=1243>

* 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

OAS is not included in an open repository/catalogue of standards at the European level.

OAS specification:

<https://spec.openapis.org/oas/latest.html#openapi-specification>

ICT technical specifications:

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:::>

CENELEC and CEN website:

<https://www.cencenelec.eu/>

Legal Interoperability

* 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**

OAS is developed by the OpenAPI initiative (OAI), an organisation operating under the Linux Foundation. Therefore, it is not a European standard.

OAS specification:

<https://spec.openapis.org/oas/latest.html#openapi-specification>

OAS in Github:

<https://github.com/OAI/OpenAPI-Specification/#participation>

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**

In some aspects, OAS can facilitate the modelling of business processes since it is a tool to document the design of an API in an automated manner as well as to develop RESTful APIs themselves in a simpler and more efficient way.

OAS specification:

<https://spec.openapis.org/oas/latest.html#openapi-specification>

OAS in Github:

<https://github.com/OAI/OpenAPI-Specification/#participation>

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 OAS is not related to organisational interoperability agreements, therefore this criterion is not applicable to the specification.

OAS specification:

<https://spec.openapis.org/oas/latest.html#openapi-specification>

OAS in Github:

<https://github.com/OAI/OpenAPI-Specification/#participation>

Semantic Interoperability

- * **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

The Github platform hosts the OpenAPI guidelines and specifications, as well as a space for contributions and proposals of improvements in which any individual interested is encouraged to participate and raise issues regarding OAS implementation. OAS has also been found to be featured in the Central Digital and Data Office platform from the United Kingdom. In this platform, information about the use and

implementation of OAS is shared and reviewed,

OAS discussion forum in Github:

<https://github.com/OAI/OpenAPI-Specification/discussions>

Describing RESTful APIs with OpenAPI 3:

<https://www.gov.uk/government/publications/recommended-open-standards-for-government/describing-restful-apis-with-openapi-3>

*** 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**

After searching in different European platforms, OAS has not been found to take part in the creation of communities along with the sharing of their data and results on European Platforms.

OAS specification:

<https://spec.openapis.org/oas/latest.html#openapi-specification>

OAS in Github:

<https://github.com/OAI/OpenAPI-Specification/#participation>

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)

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CAMSS Assessment EIF Scenario v5.1.0 - 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
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 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 3960

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	2100 /2200	<div><div></div></div>
EIF PRINCIPLES RELATED TO GENERIC USER NEEDS AND EXPECTATIONS	500 /500	<div><div></div></div>
EIF FOUNDATION PRINCIPLES FOR COOPERATION AMONG PUBLIC ADMINISTRATIONS	440 /500	<div><div></div></div>
EIF INTEROPERABILITY LAYERS	820 /1100	<div><div></div></div>

Scores by Question

EIF PRINCIPLES SETTING THE CONTEXT FOR EU ACTIONS ON INTEROPERABILITY

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: 2100/2200


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  The specification supports publishing data on the web with an open licence and in a structured, machine-readable format.

40
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 - 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 and relevant independent reports proving its 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 actively promotes and supports visibility.


100
out of
100
points




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

Your answer  The specification actively promotes and supports comprehensibility.


100 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  The specification includes certain data protection considerations but without being exhaustive.


60 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  YES

100 out of 100 points




A17 - Is the specification platform agnostic?

Your answer  YES

100 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 explicitly addresses and enables data portability.

100
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 explicitly addresses and enables data portability.


100
out of
100
points



EIF PRINCIPLES RELATED TO GENERIC USER NEEDS AND EXPECTATIONS

Score for this Section: 500/500

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

Your answer  Not Applicable

100
out of
100
points



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

Your
answer

✔ Not Applicable

100
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 explicitly addresses and enables the secure and trustworthy processing of data.

100
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: 440/500

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  The specification neither addresses the long-term preservation nor prevents it.


40
out of
100
points




A31 - 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



A32 - 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: 820/1100


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 a European Member State?

Your answer  YES

100
out of
100
points



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

Your answer  YES

100
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  NO
answer

20
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  YES
answer

100
out of
100
points



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

Your  The specification defines certain elements to
answer facilitate such agreements.

60
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  NO
answer

20
out of
100
points



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[CAMSS Assessment EIF Scenario - User Guide](#)

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