CAMSS Assessment EIF Scenario v6.0.0

> Fields marked with * are mandatory.
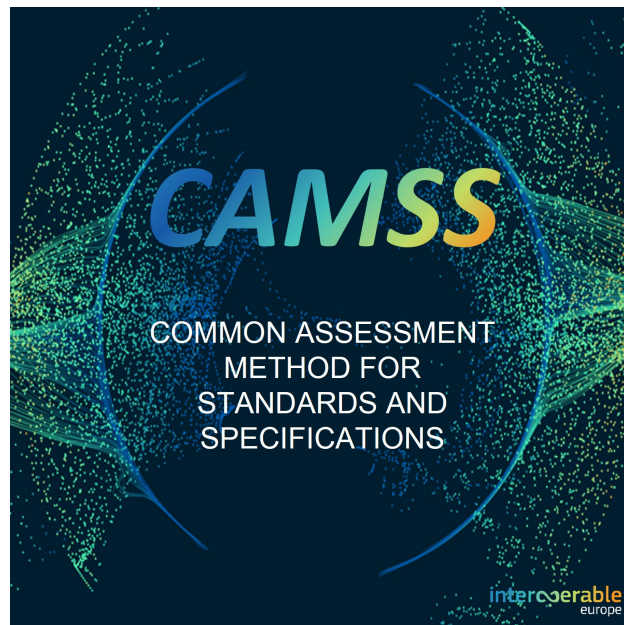
CAMSS Assessment EIF Scenario v6.0.0

Release Date: 14/04/2023

Scenario Version: 6.0.0

INTRODUCTION

EIF Scenario

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

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

Background

CAMSS is the European guide for assessing and selecting standards and specifications for an eGovernment project, a reference when building an architecture, and an enabler for justifying the choice of standards and specifications in terms of interoperability needs and requirements. It is fully aligned with the European Standardisation Regulation 1025/2012.

The main objective of CAMSS is achieving interoperability and avoiding vendor lock-in by establishing a neutral and unbiased method for the assessment of technical specifications and standards in the field of ICT. This method will be compliant with Regulation 1025/2012 on European Standardisation.

While ICT solutions have specific characteristics at the political, legal, and organisational levels; semantic and technical interoperability are based mostly on technical specifications or standards. Within the context of the elaboration of their National Interoperability Frameworks, Member States organise the assessment of technical specifications or standards, in order to establish their national recommendations. Deciding on the recommended technical specifications or standards often calls for a resource-intensive and time-consuming assessment. In order to tackle this, the Digital Europe Programme (DEP) defines an action focused on the development of a common assessment method for standards and specifications (CAMSS).

The purpose of CAMSS is:

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

The expected benefits of the CAMSS are:

- Ensuring greater transparency throughout the selection of standards in the context of ICT strategies, architectures, and interoperability frameworks. This will be achieved through the establishment of a commonly agreed assessment method, assessment process, and a list of assessment attributes.

- Reducing resource and time requirements and avoiding duplication of efforts. (Partial) sharing of finalised assessments of standards and specifications.

- Allowing easier and faster assessments, and reusing the ones already performed through the creation and maintenance of a library of standards.

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

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 340	341 to 680	681 to 1020	1021 to 1360	1361 to 1700
EIF Principles Related to generic user needs and expectations	0 to 240	241 to 480	481 to 720	721 to 960	961 to 1200

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

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

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

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

USER CONSENT

Disclaimer:

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

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

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

☑ *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 is licensed under the European Union Public License (EUPL)

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

* Specification type

Specification: Set of agreed, descriptive, and normative statements about how a specification should be designed or made.

Standard: Specification that is largely adopted and possibly endorsed.

Application Profile: An application profile "customises one or more existing specifications potentially for a given use case or a policy domain adding an end to end narrative describing and ensuring the interoperability of its underlying specification(s)".

Family: A family is a collection of interrelated and/or complementary specifications, standards, or application profiles and the explanation of how they are combined, used, or both.

- ⦿ Specification
- ○ Standard
- ○ Application Profile
- ○ Family of Specification

* Title of the specification

> Yet Another Markup Language (YAML)

* Version of the specification

> v1.2.2

* Description of the specification

> YAML is a human-friendly, cross language, unicode-based data serialization language designed around the common native data types of dynamic programming languages. It is broadly useful for programming needs ranging from configuration files to internet messaging to object persistence to data auditing and visualization.

* URL from where the specification is distributed

> https://yaml.org/spec/1.2.2/

* 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:

YAML Language Development Team

* and, provide its URL:

https://yaml.org/spec/1.2.2/ext/team/

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

YAML's adaptability makes it a versatile choice across a wide spectrum of applications. From configuration management to data exchange and automation, YAML's usability spans various domains, offering an accessible and structured means to represent and manage data. Data exchange in a common language and a better readability can be useful for interoperability between public administrations, in order to establish an unic workframe.

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

YAML is included in 1 national catalogue of recommended specifications. It belongs to France. The National Interoperability Framework (NIF) of France is fully aligned with at least 2 out of 3 sections of the European Interoperability Framework (EIF) according to the National Interoperability Framework Observatory (NIFO) factsheets.

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

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

France National catalogue:
http://references.modernisation.gouv.fr/sites/default/files/Referentiel_General_Interoperabilite_V2.pdf

EIF CORE INTEROPERABILITY PRINCIPLES

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

Openness

* A2 - Does the specification facilitate the publication of data on the web?
EIF Recommendation 2: Publish the data you own as open data unless certain restrictions apply.

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

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

* Justification

The purpose of the specification is not related to the publication of public data as Open Data. Therefore this criterion is not applicable to the specification.

YAML specification:
https://yaml.org/spec/1.2.2/

* 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

> Changes to the YAML language itself will be made using a "requests for comments (RFC)" process. The working group is currently engaged in finalising the remaining details of this process, with the intention of having them all resolved in the near future. Despite this, some ways to get involved are reporting typos, mistakes, bugs, discussing ideas and submitting fixes for the build system.
>
> Contribution to YAML:
> https://github.com/yaml/yaml-spec/blob/main/.github/contributing.md

* 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

Changes to the YAML language itself will be made using a Requrest For Comments (RFC) process. The project has an active core team but they do all changes publicly and take some direction from issues and pull requests. Despite this, the working group is still working out the final details of this process, so for now there are no details about how it will be this public review.

Contribution to YAML:
https://github.com/yaml/yaml-spec/blob/main/.github/contributing.md

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

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

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

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

* Justification

YAML is an open file format published with an open license to use as the user sees fit. With that said, most of the subsets, tools and libraries for YAML have assorted licenses that are slightly more specific. For example, the YAML CSS Framework is published under the CC-BY 2.0 Creative Commons Attibution license, which simply requires an attribution link to the originating site.

YAML specification:
https://yaml.org/spec/1.2.2/

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

<u>EIF Recommendation 4:</u> 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

> YAML can be used with kubernetes. Kubernetes objects are intention registries that can be found inside Kubernetes system. These objects are useful to represent the state of a cluster. More specifically, kubernetes objects can describe which applications work in containers, the resources available for these applications, and how these aplications behave, in relation to reboot and update policies.
>
> Kubernetes reference:
> https://kubernetes.io/es/docs/concepts/overview/working-with-objects/kubernetes-objects/

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

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

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

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

* Justification

> The YAML is broadly useful for programming needs ranging from configuration files to internet messaging to object persistence to data auditing and visualization. YAML has been used in "Integrated Open Access Materials Modelling Innovation Platform for Europe" project to generate workflows based on a structured YAML data format.
>
> YAML specification:
> https://yaml.org/spec/1.2.2/
>
> "Integrated Open Access Materials Modelling Innovation Platform for Europe" project:
> https://cordis.europa.eu/project/id/953167

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

<u>EIF Recommendation 3:</u> 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

> YAML is supported and developed by the YAML organization, and by the YAML Language Development Team.
> The development team is in charge of the YAML releases and updates, and also sets the terms of the RFC process. Moreover, in github there is published content to understand how the specification works, as well as tools to test YAML, among other things.
>
> YAML Language Development Team:
> https://yaml.org/spec/1.2.2/ext/team/

Transparency

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

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

○ Not Answered

○ Not Applicable

○ The specification hinders visibility.

○ The specification neither promotes nor hinders visibility.

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

○ The specification can enable the visibility of administrations if combined with other specifications.

◉ The specification actively promotes and supports visibility.

* Justification

> YAML can help enabling the visibility of administrative procedures by listing public administrations services or having a record of interested people. Moreover, configuration management allows to store software configurations to make them more accesible. In addition, it also allows defining automation workflows, making the steps and logic of administrative processes more explicit and reviewable.
>
> YAML specification:
> https://yaml.org/spec/1.2.2/

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

13

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

> YAML can be used to document the steps involved in administrative procedures in a structured way. By breaking down procedures into hierarchical tasks, it can improve clarity. Moreover, YAML can help listing rules and services.
>
> YAML specification:
> https://yaml.org/spec/1.2.2/

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

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

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

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

* Justification

> YAML can enable the exposure of interfaces, particularly in the context of APIs and other service configurations. By using YAML to define and document interfaces, developers and administrators can clearly communicate the structure, endpoints, methods, and parameters of their services. Some API specifications use YAML to define the structure of API requests and responses.
>
> YAML specification:
> https://yaml.org/spec/1.2.2/
>
> OpenAPI definitions in YAML
> https://swagger.io/docs/specification/basic-structure/

Reusability

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

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

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

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

Justification

> YAML is a data serialization model that can be used in any domain. It is designed to be human-friendly, and works well with modern programming languages for common everyday tasks.
>
> YAML specification:
> https://yaml.org/spec/1.2.2/#chapter-1-introduction-to-yaml

Technological Neutrality and Data Portability

A13 - Is the specification technology agnostic?

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

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

- ◯ Not Answered
- ◯ Not Applicable
- ◯ NO
- ⦿ YES

Justification

> The specification supports diverse technological environments given that ensuring broad applicability and adaptability to multiple contexts, from configuration management to data serialization between other fuctionalities.
>
> YAML specification:
> https://yaml.org/spec/1.2.2/

* A14 - Is the specification platform agnostic?

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

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

- ◯ Not Answered
- ◯ Not Applicable
- ◯ NO
- ⦿ YES

* Justification

> By employing a common data model, adhering to platform-neutral principles, YAML can be effectively implemented across a wide range of platforms.
>
> YAML specification:
> https://yaml.org/spec/1.2.2/

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

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

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

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

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

* Justification

> YAML is commonly used for configuration files. The specification can be used to create simple configuration files, thus, ignoring more complex features. In addition, it can be adopted and implemented gradually, depending on the organitzation needs.
>
> YAML specification:
> https://yaml.org/spec/1.2.2/

* A16 - Does the specification allow customisation?

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

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

- ○ Not Answered
- ○ Not Applicable
- ○ NO
- ● YES

* Justification

> YAML can be customized by adjusting key-value pairs, lists, and nested structures. Moreover, settings can be configured, and data structures can be defined and constructed.
>
> YAML specification:
> https://yaml.org/spec/1.2.2/#31-processes

* A17 - Does the specification allow extension?

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

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

- ○ Not Answered
- ○ Not Applicable
- ○ NO
- ● YES

* Justification

> YAML is designed to be extensible. One of the extensions available is the Core schema which is an extension of the JSON schema, allowing for more human-readable presentation of the same types.
>
> Core Schema YAML:
> https://yaml.org/spec/1.2.2/#103-core-schema

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

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

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

* Justification

> One of the design goals of YAML is data portability between programming languages. An example can be found in the processes and models section, where it is explained that one measure to maximize data portability is separating properties needed for serialization and presentation. Once it has been done, YAML representations of application information will be consistent and portable between various programming environments.
>
> YAML specification:
> https://yaml.org/spec/1.2.2/#32-information-models

EIF PRINCIPLES RELATED TO GENERIC USER NEEDS AND EXPECTATIONS

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

User-Centricity

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

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

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

- ○ Not Answered
- ○

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

* Justification

> YAML allows for efficient reuse of relevant information through anchors, aliases, and references. Anchors enable defining reusable content, while aliases let you reuse these anchors throughout the document. Additionally, references can merge different mappings, allowing you to combine and use them at any point, enhancing flexibility and reducing redundancy.
>
> YAML specification:
> https://yaml.org/spec/1.2.2/#3222-anchors-and-aliases

Inclusion and Accessibility

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

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

Examples of specifications addressing e-accessibility are, for instance, WAI-ARIA (https://www.w3.org/WAI/standards-guidelines/aria/) included within Web Content Accessibility Guidelines (WCAG) Overview (https://www.w3.org/WAI/standards-guidelines/wcag/).
- ○ Not Answered
- ○ Not Applicable
- ○ The specification prevents or does not support e-accessibility.
- ○ The specification neither addresses e-accessibility nor prevents it.
- ○ The specification can contribute and promote e-accessibility, but it is not its main purpose.
- ○ The specification can enable e-accessibility if combined with other specifications.
- ● The specification explicitly addresses and enables e-accessibility.

* Justification

> Clear and well-structured YAML can enhance e-accessibility by making it easier for screen readers and other assistive technologies to interpret the content. Moreover, including comments describing the purpose of specific settings or options can benefit developers, testers, and maintainers, improving overall accessibility.
>
> YAML specification:
> https://yaml.org/spec/1.2.2/

Privacy

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

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

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

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

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

* Justification

> The purpose of YAML is not related to ensure the protection of personal data managed by Public Administrations. Therefore, this criterion is considered not applicable to this specification.
>
> YAML specification:
> https://yaml.org/spec/1.2.2/

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

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

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

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

Justification

> The purpose of YAML is not related to provide means for restriction of access to information/data. Therefore, this criterion is considered not applicable to this specification.
>
> YAML specification:
> https://yaml.org/spec/1.2.2/

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

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

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

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

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

- ◯ Not Answered
- ⦿ Not Applicable
- ◯ Yes, but at national or regional level.
- ◯ Yes, at European level.

* Justification

> YAML is not included in any initiative at European or National level covering privacy aspects. Therefore, this criterion is considered not applicable to this specification.
>
> YAML specification:
> https://yaml.org/spec/1.2.2/

Security

Data processing and exchange

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

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

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

○ Not Answered

○ Not Applicable

○ The specification prevents or does not support the secure and trustworthy exchange of data.

● The specification introduces certain aspects that can contribute to enabling the secure exchange of data.

○ The specification addresses data security and trustworthy data exchange but does not foresee specific provisions to enable them.

○ The specification addresses data security and trustworthy data exchange but specific provisions to enable them are limited.

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

* Justification

> One of the main purposes of YAML is to establish a common language that facilitates the exchange of data between organizations. Although YAML can contribute to improve the exchange of data, it is not adressed to guarantee security in this exchange. Despite this, YAML together with other specifications and applications can improve the security in data exchange.
>
> YAML specification:
> https://yaml.org/spec/1.2.2/#11-goals

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

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

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

○ Not Answered

○ Not Applicable

○ The specification prevents or does not support the secure and trustworthy processing of data.

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

○ The specification addresses data security and trustworthy data processing but does not foresee specific provisions to enable them.

○ The specification addresses data security and trustworthy data processing but specific provisions to enable them are limited.

○ The specification explicitly addresses and enables the secure and trustworthy processing of data.

* Justification

> The specification enable the processing of data but not its security. To cover security aspects or issues, it is possible to enable external mechanisms like encryption or implementing security mechanisms on the systems processing the YAML data.
>
> YAML specification:
> https://yaml.org/spec/1.2.2/

Data authenticity

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

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

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

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

* Justification

> The purpose of YAML is not related to the authenticity and authentication of the roles agents involved in the data transactions. Therefore, this criterion is considered not applicable to this specification.
>
> YAML specification:
> https://yaml.org/spec/1.2.2/

Data integrity

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

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

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

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

* Justification

The purpose of YAML is not related to data integrity. Therefore, this criterion is considered not applicable to this specification.

YAML specification:
https://yaml.org/spec/1.2.2/

Data accuracy

* A28 - To what extent does the specification ensure and enable data processing accuracy?
EIF Recommendation 15: Define common security and privacy framework and establish processes for public services to ensure secure and trustworthy data exchange between public administrations and in interactions with citizens and businesses.

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

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

* Justification

While YAML doesn't guarantee accurate data, its structure and readability can facilitate manual review and integration with data validation tools. Therefore, the specification can contribute to data processing accuracy when used together with other applications or specifications.

YAML specification:
https://yaml.org/spec/1.2.2/

Access Control

* A29 - To what extent does the specification provide an access control mechanism?
EIF Recommendation 15: Define common security and privacy framework and establish processes for public services to ensure secure and trustworthy data exchange between public administrations and in interactions with citizens and businesses.

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

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

* Justification

> The purpose of YAML is not related to provide means for restriction of access to information/data. Therefore, this criterion is considered not applicable to this specification.
>
> YAML specification:
> https://yaml.org/spec/1.2.2/

Multilingualism

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

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

  ○ Not Answered
  ○ Not Applicable
  ○ The specification cannot be used in a multilingual context.
  ● The specification could be used in a multilingual context but has no specific provisions to facilitate this.
  ○ The specification foresees limited support for multilingualism.
  ○ The specification foresees support for multilingualism but this is not complete.
  ○ The specification is designed to fully support multilingualism.

* Justification

> The data structure of YAML could facilitate the understanding in different languages. Despite this, the main purpose of YAML is not to be used in multilingual context.
>
> YAML specification:
> https://yaml.org/spec/1.2.2/

EIF FOUNDATION PRINCIPLES FOR COOPERATION AMONG PUBLIC ADMINISTRATIONS

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

Administrative Simplification

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

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

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

- ○ Not Answered
- ○ Not Applicable
- ○ NO
- ● YES

Justification

> YAML's structured format allows to exchange data between different systems and services, facilitating interoperability and integration. Moreover, public services can use YAML to define workflows and automation scripts, improving efficiency and reducing manual intervention. This is particularly useful in public services where multiple agencies and systems need to work together.
>
> YAML specification:
> https://yaml.org/spec/1.2.2/

A32 - Does the specification enable digital service delivery channels?

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

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

- ○ Not Answered
- ○ Not Applicable
- ○ NO
- ● YES

Justification

> One of the goals of YAML is to ensure portability between programming languages. Its specification facilitates data exchange between organizations, promoting interoperability. This makes YAML ideal for implementing digital services, supporting the principle of digital-first by enabling seamless integration and efficient communication across various platforms and systems.
>
> YAML specification:
> https://yaml.org/spec/1.2.2/

Preservation of Information

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

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

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

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

* Justification

> YAML is not specifically designed for the long-term preservation of data, information, or electronic records. One of its functions is to transmit and store data in a human-readable and easy-to-write format. However, organizations can leverage YAML in conjunction with other practices to contribute to the long-term preservation of relevant information. For example, it is possible to store and transmit python objects using YAML format.
>
> YAML specification:
> https://yaml.org/spec/1.2.2/
>
> Pythonforbeginners reference:
> https://www.pythonforbeginners.com/basics/convert-python-dictionary-to-yaml#htoc-what-is-the-yaml-format

Assessment of Effectiveness and Efficiency

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

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

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

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

- ○ Not Answered
- ○ Not Applicable

- ◯ There are no such assessments.
- ◯ There are such assessments that indirectly address the specification.
- ◯ There are such assessments evaluating digital solutions' effectiveness that involve the specification.
- ◯ There are such assessments addressing the specification and its effectiveness together with other specifications.
- ⦿ There are such assessments directly addressing the specification.

* Justification

> There are already existing studies and documents assessing and documenting YAML features and providing possible improvements of its performance among other aspects. There are two papers that can be useful to discover how YAML can be effective.
>
> In "Comparision between JSON and YAML for data serialization" it is determined and discussed the primary differences between two different serialization formats, namely YAML and JSON.
>
> In "YAML: A tool for hardware design visualization and capture", is described an approach that helps to capture the structural aspects of a design at a high level of abstraction and enables the system designer to enter designs "schematically" using predefined structural and functional entities conforming to UML notation. Therefore, the specification can achieve different objectives alone or together with other specifications.
>
> "Comparision between JSON and YAML for data serialization":
> https://citeseerx.ist.psu.edu/document?
> repid=rep1&type=pdf&doi=636a2b04d98c0af8e9d6f59148352dd63af4f0c1
>
> "YAML: A tool for hardware design visualization and capture":
> https://ieeexplore.ieee.org/abstract/document/874023

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

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

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

Efficiency: times and means needed to achieve the results using the specification.
- ◯ Not Answered
- ◯ Not Applicable
- ◯ There are no such assessments.
- ◯ There are such assessments that indirectly address the specification.
- ◯ There are assessments evaluating digital solutions' efficiency that involve the specification.
- ◯ There are such assessments addressing the specification and its efficiency together with other specifications.
- ⦿ There are such assessments directly addressing the specification.

* Justification

> There are already existing studies and documents assessing and documenting YAML features, which can help to discover how the specification can be efficient. Specifically, the paper "YAML: A tool for hardware design visualization and capture" helps to understand how YAML can be used for achieve complex targets using YAML only. This paper describes an approach that helps to capture the structural aspects of a design

at a high level of abstraction and enables the system designer to enter designs "schematically" using predefined structural and functional entities conforming to UML notation.

"YAML: A tool for hardware design visualization and capture":
https://ieeexplore.ieee.org/abstract/document/874023

EIF INTEROPERABILITY LAYERS

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

Interoperability Governance

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

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

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

- ○ Not Answered
- ○ Not Applicable
- ○ NO
- ● YES

* Justification

YAML is already associated with EIRA ABBs in the EIRA Library of Interoperability Specifications (ELIS). More specifically, YAML can define the interoperability aspects of the "Container", "Container Registry", and "Containers Manager" ABBs of the EIRA Technical Infrastructure View.

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

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

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

Relates to the implementation of the specification being conformant with the requirements established in the text of

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

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

* Justification

Following the completion of the research into conformity tests and certifications, a tool has been identified that enables the testing of implementations. The YAML Test Suite repository contains data for testing the correctness of YAML processors. The tests come in two formats. The src directory contains files that encode all the YAML data using YAML. Additionally, the data from these tests is accessible in a format where each test is contained within its own directory.

YAML Test Suite:
https://github.com/yaml/yaml-test-suite

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

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

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

- ○ Not Answered
- ○ Not Applicable
- ○ NO
- ● YES

* Justification

France has been found recommending YAML in their ICT National Catalogue. Moreover, it has been used in European projects.

OpenModel project:
https://cordis.europa.eu/project/id/953167/reporting

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

France National catalogue:
http://references.modernisation.gouv.fr/sites/default/files/Referentiel_General_Interoperabilite_V2.pdf

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

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

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

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

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

* Justification

> YAML has been used in OpenModel project. In this project, YAML is used as structured data format in which AiiDA workflows are based. AiiDA is an open-source Python framework designed to assist researchers in automating, managing, preserving, sharing, and replicating complex workflows and the data involved in contemporary computational science. The development of this project is focused on the high level API which facilitates the ability to dynamically generate AiiDA workflows based on a YAML structured data format.
>
> OpenModel project:
> https://cordis.europa.eu/project/id/953167/reporting

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

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

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

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

* Justification

> YAML is included in 1 Member States' catalogues of recommended specifications. It Member State is France.
>
> CAMSS list of standards:
> https://joinup.ec.europa.eu/collection/common-assessment-method-standards-and-specifications-camss/camss-list-standards

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

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

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

- ○ Not Answered
- ○ Not Applicable
- ● NO
- ○ YES

* Justification

> YAML is not included in an open repository/catalogue of standards at European level.
>
> YAML specification:
> https://yaml.org/spec/1.2.2/

Legal Interoperability

* A42 - Is the specification a European Standard?

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

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

- ○ Not Answered
- ○ Not Applicable
- ● NO
- ○ YES

* Justification

> YAML is not listed as an official standard by European standardization organizations like CEN (European Committee for Standardization) or ETSI (European Telecommunications Standards Institute).
>
> YAML specification:
> https://yaml.org/spec/1.2.2/

Organisational Interoperability

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

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

- ○ Not Answered
- ○ Not Applicable
- ○ NO
- ● YES

* Justification

> YAML can facilitate the modeling of business processes by providing a readable and structured format for defining workflows, configurations, and data exchanges. Its flexibility and compatibility with tools like BPMN (Business Process Model and Notation) and workflow automation platforms (e.g., Ansible, Kubernetes) make it useful for documenting and automating business processes efficiently.
>
> YAML specification:
> https://yaml.org/spec/1.2.2/
>
> BPML generator for YAML:
> https://www.giancarlomangiagli.it/en/BPMNator_BPMN_generator_from_YAML.html

* **A44 - To what extent does the specification facilitate organisational interoperability agreements?**
EIF Recommendation 29: Clarify and formalise your organisational relationships for establishing and operating European public services.

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

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

* Justification

> YAML can facilitate organisational interoperability agreements. The specification is easily readable by humans and data can be exchanged between organizations. This fact can help to improve organisational interoperability.
>
> YAML specification:
> https://yaml.org/spec/1.2.2/#11-goals

Semantic Interoperability

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

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

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

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

* Justification

> Several developer platforms discuss YAML extensively, one prominent example being Stack Overflow. Stack Overflow operates as a community-driven forum where developers can ask questions, share insights, and provide solutions related to YAML.
>
> Stackoverflow YAML:
> https://stackoverflow.com/questions/tagged/yaml

Useful links

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

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

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

Contact

DIGIT-CAMSS@ec.europa.eu

CAMSS Assessment EIF Scenario v6.0.0 - Results

CAMSS Assessment Result

Thank you for your contribution.

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

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

EIF Scenario Compliance Level Conversion Table

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

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

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

Section Compliance Conversion Table

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

Example – How to find the final Compliance Level

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

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

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

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

For additional calculation of the assessment strength, please follow the instruction provided in the User Guide, found [here](#).

Summary:

Your Score	4060
Maximum Score	4500

Section	Score for this Section	
EIF PRINCIPLES SETTING THE CONTEXT FOR EU ACTIONS ON INTEROPERABILITY	100 /100	
EIF CORE INTEROPERABILITY PRINCIPLES	1680 /1700	
EIF PRINCIPLES RELATED TO GENERIC USER NEEDS AND EXPECTATIONS	960 /1200	
EIF FOUNDATION PRINCIPLES FOR COOPERATION AMONG PUBLIC ADMINISTRATIONS	500 /500	
EIF INTEROPERABILITY LAYERS	820 /1000	

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: 1680/1700

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

Your answer ✔️ Not Applicable

100 out of 100 points

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

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

100 out of 100 points

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

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

100 out of 100 points

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

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

100 out of 100 points

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

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

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

| Your answer | ✔ The specification has widespread use and relevant independent reports proving its market acceptance. | 100 out of 100 points | |

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

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

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

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

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

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

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

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

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

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

A13 - Is the specification technology agnostic?

Your answer	✔ YES	100 out of 100 points

A14 - Is the specification platform agnostic?

Your answer	✔ YES	100 out of 100 points

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

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

A16 - Does the specification allow customisation?

Your answer	✔ YES	100 out of 100 points

A17 - Does the specification allow extension?

Your answer	✔ YES	100 out of 100 points

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

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

EIF PRINCIPLES RELATED TO GENERIC USER NEEDS AND EXPECTATIONS

Score for this Section: 960/1200

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

Your answer   ✔️ Provided information is reused, but not in all scenarios.

80 out of 100 points

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

Your answer   ✔️ The specification explicitly addresses and enables e-accessibility.

100 out of 100 points

A21 - 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

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

Your answer   ✔️ Not Applicable

100 out of 100 points

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

Your answer   ✔️ Not Applicable

100 out of 100 points

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

Your answer   ✔️ The specification introduces certain aspects that can contribute to enabling the secure exchange of data.

40 out of 100 points

A25 - 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

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

Your answer ✔ Not Applicable

100 out of 100 points

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

Your answer ✔ Not Applicable

100 out of 100 points

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

Your answer ✔ The specification addresses data accuracy but without specific provisions to enable it.

60 out of 100 points

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

Your answer ✔ Not Applicable

100 out of 100 points

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

Your answer ✔ The specification could be used in a multilingual context but has no specific provisions to facilitate this.

40 out of 100 points

EIF FOUNDATION PRINCIPLES FOR COOPERATION AMONG PUBLIC ADMINISTRATIONS

Score for this Section: 500/500

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

Your answer ✔ YES

100 out of 100 points

A32 - Does the specification enable digital service delivery channels?

Your answer	✔ YES	100 out of 100 points	

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

Your answer	✔ Not Applicable	100 out of 100 points	

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

Your answer	✔ There are such assessments directly addressing the specification.	100 out of 100 points	

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

Your answer	✔ There are such assessments directly addressing the specification.	100 out of 100 points	

EIF INTEROPERABILITY LAYERS   Score for this Section: 820/1000

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

Your answer	✔ YES	100 out of 100 points	

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

Your answer	✔ The specification is complemented by a conformance testing platform to allow testing of implementations.	100 out of 100 points	

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

Your answer	✔ YES	100 out of 100 points	

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

Your answer ✔ YES

100 out of 100 points

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

Your answer ✔ YES

100 out of 100 points

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

Your answer ✖ NO

20 out of 100 points

A42 - Is the specification a European Standard?

Your answer ✖ NO

20 out of 100 points

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

Your answer ✔ YES

100 out of 100 points

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

Your answer ✔ The specification defines most elements to facilitate such agreements.

80 out of 100 points

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

Your answer ✔ Yes, at European platforms.

100 out of 100 points

Contact	DIGIT-CAMSS@ec.europa.eu
	CAMSS Joinup Page
Useful links	CAMSS Library of Assessments
	CAMSS Assessment EIF Scenario - User Guide
Contribution ID	4ad839c5-54b2-49c9-8bdc-cce77e5e5372
Completed at	25/10/2024 13:31:42
Completion time	-