

CAMSS Assessment EIF Scenario v6.0.0

Fields marked with * are mandatory.

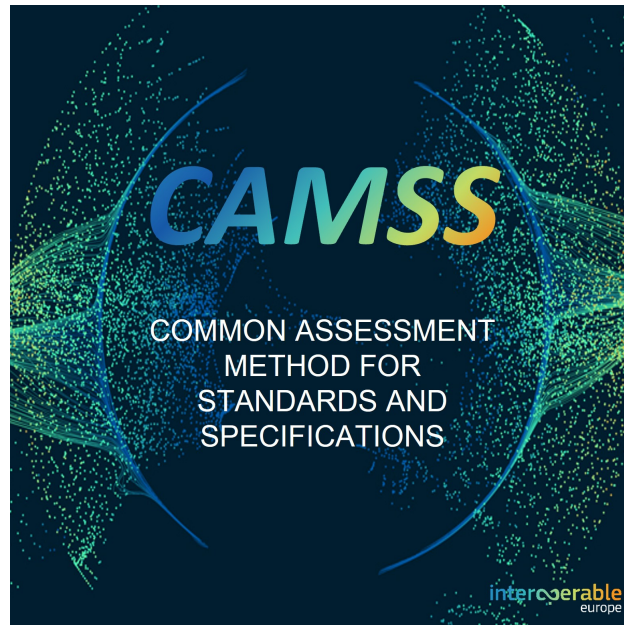
CAMSS Assessment EIF Scenario v6.0.0



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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

Your First Name

Your Position / Role

* Your Organisation

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

Verifiable Credentials

* Version of the specification

1.1.0

* Description of the specification

Verifiable Credentials is a specification that provides a mechanism to express credentials (e.g., driver’s license or government-issued passports) on the Web in a way that is cryptographically secure, privacy respecting, and machine-verifiable.

This means they can be stored on digital devices, and it is possible to use cryptography to verify their data and authorship.

* URL from where the specification is distributed

<https://www.w3.org/TR/vc-data-model/>

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

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

- openEHR (<https://www.openehr.org/>)
- IETF (<https://www.ietf.org/>)
- Other (SDO/SSO)

Contact information/contact person of the SDO

a) for the organisation

b) for the specification submitted

Information on the assessment of the specification

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

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

Considerations

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

- YES
- NO

Additional Information

Verifiable Credentials can improve interoperability and eGovernment through the creation of tamper-evident and more trustworthy official documents in a privacy-respecting manner.

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**

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

CAMSS List of Standards:

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

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

This specification was published by the W3C Verifiable Credentials Working Group as a method to help solve problems related to integrity and privacy of personal information on the Web. For this reason, W3C recommends the wide deployment of this specification as a standard for the Web.

W3C Verifiable Credentials:
<https://www.w3.org/TR/vc-data-model/>

* 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 registration process to join and participate in the W3C Verifiable Credentials Working Group depends on whether the stakeholder works for a W3C Member organization or not. If their employer is not able to join W3C and the stakeholder considers they have the expertise and availability to participate, they may request to participate as an Invited Expert.

W3C Verifiable Credentials Working Group:
<https://www.w3.org/groups/wg/vc/>

* **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:

W3C has a defined and publicly available Process for the Development and approval process of the specification as a recommended standard, including a public review.

W3C Process document:
<https://www.w3.org/2018/Process-20180201/#Policies>

Additional Information

In case you need to add further justification.

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

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

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

- Not Answered
- Not Applicable
- The specification has no public definition of its Intellectual Property Right (IPR) policy or licence.
- Use of the specification is restricted and requires the payment of royalty fees.
-

Use of the specification is royalty-free but imposes an Intellectual Property Right (IPR) policy or licence that goes against Fair, Reasonable and Non-Discriminatory (F/RAND) principles.

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

Justification:

The W3C Royalty-Free IPR licenses granted under the W3C Patent Policy apply to all W3C specifications, including this specification.

W3C Patent practice:

<https://www.w3.org/TR/patent-practice#ref-AC>

Additional Information

In case you need to add further justification.

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

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

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

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

*** Justification**

W3C Verifiable Credentials' first public working draft was published in 2017. Since then, one major release has been published and several minor changes have been recommended. In addition, different documentation on its supporting processes has been published to ensure the correct change and release of its content. Therefore, this specification has been evolved enough and mechanisms for its development have been put in place.

W3C Recommendation Track:

<https://www.w3.org/2021/Process-20211102/#rec-track>

General Requirements for Technical Reports:

<https://www.w3.org/2021/Process-20211102/#recs-and-notes>

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

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

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

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

*** Justification**

Verifiable Credentials is being directly used to create innovative solutions in different areas. In the emerging Web3 landscape, the need for secure and trustworthy identity solutions has become more important than ever. Thanks to Verifiable Credentials, issuing organizations can generate fraud-proof digital credentials and verifying organizations can instantly check the authenticity of those credentials. One use case would be European Blockchain Services Infrastructure (EBSI), an European initiative that has developed several frameworks to address business problems using the 3WC Verifiable Credentials data model.

Verifiable Credentials:
<https://www.w3.org/TR/vc-data-model/>

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

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

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

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

*** Justification**

The Credentials Community Group's mission is to explore the creation, storage, presentation, verification, and user control of credentials. They focus on a verifiable credential (a set of claims) created by an issuer

about a subject—a person, group, or thing—and seek solutions inclusive of approaches such as: self-sovereign identity; presentation of proofs by the bearer; data minimization; and centralized, federated, and decentralized registry and identity systems. Their tasks include drafting and incubating Internet specifications for further standardization and prototyping and testing reference implementations.

Credentials Community Group:
<https://www.w3.org/community/credentials/>

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

This specification presents the standard to which all digital documents conform to improve the efficiency, interoperability, and readability of all documents/certificates. For instance, since it plays a major role within the European Blockchain Services Infrastructure (EBSI) ecosystem, it is helpful fostering the visibility of administrative data and supporting the decision-making process.

Verifiable Credentials:
<https://www.w3.org/TR/vc-data-model/>

EBSI W3C Verifiable Credentials:
<https://ec.europa.eu/digital-building-blocks/wikis/pages/viewpage.action?pageId=555222155>

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

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

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

* Justification

Verifiable Credentials aims to translate the benefits that physical credentials provide into digital credentials on the Web. Taking initial purpose of the specification, it can be considered that the specification is involved in fostering the comprehensibility of Public Administrations data as well as relevant data produced for the decision-making process.

Verifiable Credentials:
<https://www.w3.org/TR/vc-data-model/>

* **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

As Verifiable Credentials defines the standard way to present credentials/certificates on the internet in a common digital way, it ensures 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.

Verifiable Credentials:
<https://www.w3.org/TR/vc-data-model/>

Reusability

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

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

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



Not Answered

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

* Justification

This specification refers to the W3C Verifiable Credentials Data Model so, it is inherently abstract and can be implemented and/or used in any domain as long as it fulfills the requirements. Therefore, its use goes beyond a specific business domain.

Verifiable Credentials:
<https://www.w3.org/TR/vc-data-model/>

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 is independent from any particular software, hardware, or operating system. So, it can be said that EuroVoc is independent of any specific technology.

Verifiable Credentials:
<https://www.w3.org/TR/vc-data-model/>

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

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

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

- Not Answered
- Not Applicable
- NO
- YES

* Justification

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

Verifiable Credentials:

<https://www.w3.org/TR/vc-data-model/>

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

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

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

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

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

* Justification

The W3C Verifiable Credentials (VC) specification is designed to be modular and flexible, allowing for partial implementations based on specific use cases and requirements. Verifiable Credentials provide a standard way to express and exchange credentials on the web in a secure and privacy-preserving manner.

Verifiable Credentials:

<https://www.w3.org/TR/vc-data-model/>

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

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

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

- Not Answered
- Not Applicable
- NO
- YES

* Justification

The W3C Verifiable Credentials specification allows for customization to a certain extent. This means that users can tailor the structure of the credentials to their specific needs. For example, if they are dealing with educational credentials, they might define a credential type specific to educational achievements.

Verifiable Credentials:

<https://www.w3.org/TR/vc-data-model/>

* **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

One of the goals of the Verifiable Credentials Data Model is to enable permissionless innovation. To achieve this, the data model needs to be extensible in a number of different ways. For instance, the W3C Community Group has created a document that serves as an informative registry for all known Verifiable Credentials extensions, regardless of its stability.

Verifiable Credentials Extensibility:

<https://www.w3.org/TR/vc-data-model/#extensibility>

Verifiable Credentials Extension Registry:

<https://w3c-ccg.github.io/vc-extension-registry/>

* **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

Verifiable Credentials explicitly addresses and enables data portability between systems/applications supporting the implementation or evolution of European public services by providing them with the means to issue, manage and verify fraud-proof credentials efficiently and securely and for users to maintain greater privacy and control over their personal data.

Verifiable Credentials:

<https://www.w3.org/TR/vc-data-model/>

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

Verifiable Credentials support selective disclosure, allowing individuals to share only the relevant pieces of information necessary for a particular transaction or interaction. The specification provides mechanisms that support the selective sharing and reuse of relevant information, contributing to more efficient and privacy-preserving interactions in various scenarios.

Verifiable Credentials:

<https://www.w3.org/TR/vc-data-model/>

Inclusion and Accessibility

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

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

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

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

* Justification

Verifiable Credentials can be used to represent different types of credentials, including those related to identity, qualifications, certifications, and more. The specification mentions that it is important to follow accessibility guidelines and standards, such as WCAG21, to ensure that all people, regardless of ability, can make use of this data.

Verifiable Credentials:

<https://www.w3.org/TR/vc-data-model/>

WCAG:

<https://www.w3.org/TR/WCAG21/>

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 specification explicitly addresses data protection and its alignment to relevant regulations. There are details available about the general privacy considerations and specific privacy implications of deploying the Verifiable Credentials Data Model into production environments.

Verifiable Credentials Privacy Considerations:
<https://www.w3.org/TR/vc-data-model/#privacy-considerations>

* 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

Given that a verifiable credential often contains personally identifiable information (PII), implementers are strongly advised to use mechanisms while storing and transporting verifiable credentials that protect the data

from those who should not access it. Mechanisms that could be considered include Transport Layer Security (TLS) or other means of encrypting the data while in transit, as well as encryption or data access control mechanisms to protect the data in a verifiable credential while at rest.

Verifiable Credentials Privacy Considerations:
<https://www.w3.org/TR/vc-data-model/#privacy-considerations>

*** 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**

Verifiable Credentials was included in the European Blockchain Services Infrastructure (EBSI), the first pan-European, public-driven blockchain initiative of its kind. EBSI VC/VP data models build upon W3C Verifiable Credentials, which defines the standard way to present credentials/certificates on the internet in a common digital way, improving the efficiency, interoperability, and readability of all documents/certificates.

Verifiable Credentials Privacy Considerations:
<https://www.w3.org/TR/vc-data-model/#privacy-considerations>

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

Given the purpose of this specification, which is to enable organizations and individuals to create and share verified data, the secure exchange of data is explicitly addressed.

Verifiable Credentials Security Considerations:

<https://www.w3.org/TR/vc-data-model/#security-considerations>

* **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

There are a number of security considerations that issuers, holders, and verifiers should be aware of when processing data described by this specification. There is a specific section in the specification that attempts to highlight a broad set of security considerations. Implementers are urged to seek the advice of security and cryptography professionals when implementing mission critical systems using the technology outlined in this specification.

Verifiable Credentials Security Considerations:

<https://www.w3.org/TR/vc-data-model/#security-considerations>

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 specification guarantees the authenticity and authentication of the roles agents involved in the data transactions (issuer and holder) with a verifier, a role where an entity performs by receiving one or more verifiable credentials, optionally inside a verifiable presentation for processing. This specification describes mechanisms for ensuring the authenticity of Verifiable Credentials and similar types of constrained digital documents using cryptography, especially through the use of digital signatures and related mathematical proofs.

Verifiable Credentials Data Integrity:
<https://www.w3.org/TR/vc-data-integrity/>

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

Verifiable Credentials include several features to protect against unauthorized changes and ensure the integrity and security of the credentials. Verifiable Credentials are typically signed using digital signatures and its content is often hashed before signing. Also, the specification insists on the selective disclosure feature, which allows the holder to present only specific claims or attributes from a credential. This specification describes mechanisms for ensuring integrity of Verifiable Credentials and similar types of constrained digital documents using cryptography, especially through the use of digital signatures and related mathematical proofs.

Verifiable Credentials Data Integrity:
<https://www.w3.org/TR/vc-data-integrity/>

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

As a specification created to provide a standard-way to express credentials on the Web, there are several features that ensure the alignment with this definition. One example is the credential metadata, which contains crucial information about the credential itself, such as the credential type, issue date, and expiration date. Another example would be proofs like a digital signature, ensuring that the credential genuinely originates from the claimed issuer and has remained untampered. These facts increase the reliability of the exchanged data.

Verifiable Credentials:
<https://www.w3.org/TR/vc-data-model/>

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 specification does provide an access control mechanism for the credentials. A credential's repository is a program, such as a storage vault or personal verifiable credential wallet, that stores and protects access to holders' verifiable credentials. This helps minimize the risk of exposing unnecessary information, reducing the potential impact of unauthorized changes or disclosures.

Verifiable Credentials:
<https://www.w3.org/TR/vc-data-model/>

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 specification strongly encourages data publishers to read the section on Cross-Syntax Expression in the Strings on the Web: Language and Direction Metadata document to ensure that the expression of language and base direction information is possible across multiple expression syntaxes.

Verifiable Credentials Internationalization Considerations:
<https://www.w3.org/TR/vc-data-model/#internationalization-considerations>

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 administrative simplification by for example helping an Identification service access a Digital Portfolio with citizens information.

- Not Answered
- Not Applicable
- NO
- YES

* Justification

Verifiable Credentials simplifies the delivery of European public services by offering a standard format for the digital representation of credentials that are cryptographically secure, verifiable through machines, and that guarantee privacy. Thanks to this specification, digital documents related to European public services containing information about a person or entity that can be easily shared and automatically verified.

Verifiable Credentials:
<https://www.w3.org/TR/vc-data-model/>

* 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

The purpose of Verifiable Credentials enable digital service delivery channels as a good asset for digitalisation and administrative simplification. For instance, government-issued identity documents, such as national ID cards, can be verifiable credentials, which can be easily managed and verified while the individual maintains control over their personal data.

Verifiable Credentials:
<https://www.w3.org/TR/vc-data-model/>

Preservation of Information

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

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

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

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

* Justification

While Verifiable Credentials themselves do not guarantee long-term preservation, their use within a broader framework of standards and data archiving best practices can contribute to the sustainability and preservation of electronic records and information.

Verifiable Credentials:
<https://www.w3.org/TR/vc-data-model/>

Assessment of Effectiveness and Efficiency

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

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

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

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

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

*** Justification**

The effectiveness of Verifiable Credentials is often evaluated through various means, including practical implementations, pilot projects, and community feedback. For example, the effectiveness of Verifiable Credentials is often evaluated based on its adoption in various use cases and the W3C Working Group has published a collection of those:

Verifiable Credentials Use Cases:
<https://www.w3.org/TR/vc-use-cases/>

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

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

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

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

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

*** Justification**

Assessments of the efficiency of W3C Verifiable Credentials primarily involve evaluating the performance, scalability, and practicality of implementations. Real-world Implementations provide valuable insights into how Verifiable Credentials perform in diverse use cases and environments and the W3C Working Group has published a collection of those:

Verifiable Credentials Use Cases:

<https://www.w3.org/TR/vc-use-cases/>

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**

According to the EIRA Library of Interoperability Specifications (ELIS), Verifiable Credentials is included in the "Distributed Blockchain Network" ABB from the Technical Infrastructure view and the "Privacy" ABB from the technical Application 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

This specification includes evaluations of verifiable credentials through a verifiable data registry. This role an entity may perform is the evaluation of whether a verifiable credential or verifiable presentation is an authentic and timely statement of the issuer or presenter, respectively includes checking that: the credential (or presentation) conforms to the specification; the proof method is satisfied; and, if present, the status is successfully checked.

Verifiable Credentials:

<https://www.w3.org/TR/vc-data-model/>

Verifiable Credentials conformance:

<https://www.w3.org/TR/vc-data-model/#conformance>

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

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

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

- Not Answered
- Not Applicable
- NO
- YES

* Justification

The specification is included in Spain's catalogue of recommended specifications, as shown in the official consolidated document BOE-A-2023-16284.

CAMSS List of Standards:

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

Spanish Consolidated Legislation: <https://www.boe.es/buscar/act.php?id=BOE-A-2023-16284>

*** 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**

European Blockchain Services Infrastructure (EBSI) is the first pan-European, public-driven blockchain initiative of its kind and verifiable credentials and verifiable presentations play a major role within the EBSI ecosystem. EBSI VC/VP data models build upon the W3C Verifiable Credentials, which defines the standard way to present credentials/certificates on the internet in a common digital way.

EBSI W3C Verifiable Credentials (VCs) and W3C Verifiable Presentations (VPs):
<https://ec.europa.eu/digital-building-blocks/wikis/pages/viewpage.action?pageId=555222155>

*** 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**

Verifiable Credentials is not included in any Member States' catalogues of recommended specifications.

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

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

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

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

- Not Answered
- Not Applicable
- NO
- YES

* Justification

Verifiable Credentials is included in the Rolling Plan for ICT standardisation regarding electronic identification and trust services including e-signatures.

Rolling Plan for ICT Standardisation: <https://joinup.ec.europa.eu/collection/rolling-plan-ict-standardisation/electronic-identification-and-trust-services-including-e-signatures>

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

Verifiable Credentials is developed by W3C, a standard development organisation based in the US. Moreover, Verifiable Credentials specification does not appear in any of the main European standard development bodies, therefore, the specification is not a European standard.

CEN-CENELEC homepage:
<https://www.cencenelec.eu/>

ICT technical specifications:
https://single-market-economy.ec.europa.eu/single-market/european-standards/ict-standardisation/ict-technical-specifications_en

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

While the primary focus of W3C Verifiable Credentials (VC) is on secure and privacy-preserving credential exchange, they can play a role in supporting and enhancing the modeling of certain business processes. Verifiable Credentials provide a standardized way to express and exchange claims, and this capability can be leveraged in various business contexts.

Verifiable Credentials:
<https://www.w3.org/TR/vc-data-model/>

* 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

Verifiable Credentials can play a role in facilitating organizational interoperability agreements, particularly in the context of identity management and secure exchange of private personal data.

Verifiable Credentials:
<https://www.w3.org/TR/vc-data-model/>

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**

Verifiable Credentials is developed by W3C, a standard development organisation based in the US, thus, sharing of their data and results in national and/or European platforms is out of their scope. Nevertheless, the specification can contribute to the creation of communities and the sharing of data and results, particularly in the context of digital identity, credentialing, and related applications as they offer a standard for credentials being exchanged, its format, and structure.

Verifiable Credentials:
<https://www.w3.org/TR/vc-data-model/>

Useful links

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

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

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

Contact

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CAMSS Assessment EIF Scenario v6.0.0 - Results

CAMSS Assessment Result

Thank you for your contribution.

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

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

EIF Scenario Compliance Level Conversion Table

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

EIF Foundation principles for cooperation among public administrations

0 to 100 101 to 200 201 to 300 301 to 400 401 to 500

EIF Interoperability Layers

0 to 200 201 to 400 401 to 600 601 to 800 801 to 1000

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

Section Compliance Conversion Table

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

Example – How to find the final Compliance Level

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

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

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

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

Summary

Your Score 4080

Maximum Score 4500



Section	Score for this Section	
EIF PRINCIPLES SETTING THE CONTEXT FOR EU ACTIONS ON INTEROPERABILITY	20/100	
EIF CORE INTEROPERABILITY PRINCIPLES	1680 /1700	
EIF PRINCIPLES RELATED TO GENERIC USER NEEDS AND EXPECTATIONS	1140 /1200	
EIF FOUNDATION PRINCIPLES FOR COOPERATION AMONG PUBLIC ADMINISTRATIONS	460 /500	
EIF INTEROPERABILITY LAYERS	780 /1000	

Scores by Question

EIF PRINCIPLES SETTING THE CONTEXT FOR EU ACTIONS ON INTEROPERABILITY

Score for this Section: 20/100

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

Your answer **✗** The specification has not been included within the catalogue of any Member State.

20
out of
100
points



EIF CORE INTEROPERABILITY PRINCIPLES

Score for this Section: 1680/1700

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

Your answer **✓** In addition to the previous question, the specification is or incorporates open standards (e.g. W3C).

100
out of
100
points



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

Your answer **✓** The working group is open to participation following a registration process.

80
out of
100
points



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

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

100
out of
100
points




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


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

100
out of
100
points



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

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


100 out of 100 points 


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

Your answer  The specification does not have market acceptance because it is directly used to create innovative solutions.


100 out of 100 points 


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

Your answer  There is a community tasked to provide public support linked to the specification and manage its maintenance.


100 out of 100 points 


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

Your answer  The specification actively promotes and supports visibility.


100 out of 100 points 


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

Your answer  The specification actively promotes and supports comprehensibility.

100 out of 100 points 

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

Your answer  The specification enables exposure of such interfaces.

100 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: 1140/1200

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

60
out of
100
points



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

Your answer The specification explicitly addresses data protection and its alignment to relevant regulations.

100
out of
100
points



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

Your answer The specification explicitly addresses and enables the implementation of features to guarantee confidentiality.

100
out of
100
points



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

Your answer Yes, at European level.

100
out of
100
points




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

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

100
out of
100
points




A25 - 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




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

Your answer  The specification explicitly addresses and enables the implementation of authenticity features.

100
out of
100
points




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

Your answer  The specification explicitly addresses and enables the implementation of features to guarantee data integrity.

100
out of
100
points




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

Your answer  The specification explicitly addresses and enables the implementation of features to guarantee data accuracy.

100
out of
100
points




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

Your answer  The specification explicitly foresees a set of requirements for the enabling of access control mechanisms.

100
out of
100
points



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

Your answer  The specification is designed to fully support multilingualism.

100
out of
100
points



EIF FOUNDATION PRINCIPLES FOR COOPERATION AMONG PUBLIC ADMINISTRATIONS Score for this Section: 460/500


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

Your answer YES 100 out of 100 points 


A32 - Does the specification enable digital service delivery channels?

Your answer YES 100 out of 100 points 


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

Your answer The specification addresses the long-term preservation of electronic resources (information, data, etc) in a limited manner. 60 out of 100 points 

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

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

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

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


EIF INTEROPERABILITY LAYERS

Score for this Section: 780/1000

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 defines conformance as requirements with resources to enable automated measurement. 80 out of 100 points 

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

Your answer YES

100
out of
100
points



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

Your answer YES

100
out of
100
points



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

Your answer NO

20
out of
100
points



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

Your answer YES

100
out of
100
points



A42 - Is the specification a European Standard?

Your answer 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 certain elements to facilitate such agreements.

60
out of
100
points



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

Your answer  Yes, at European platforms.

100
out of
100
points



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