



ASSESSMENT SUMMARY v1.0.0

Codes for the representation of names of languages-- Part 2: alpha-3 code (ISO 639-2)¹

The Library of Congress (LOC)² & International Organization for Standardization (ISO)³

¹ The ISO 639-2 specification homepage: <https://www.loc.gov/standards/iso639-2/>

² The maintenance organisation homepage: <https://www.loc.gov/librarians/standards>

³ The development organisation homepage: <https://www.iso.org/standards.html>

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1. INTRODUCTION

The present document is a summary of the assessment of the ISO 639-2 carried out by CAMSS using the CAMSS Assessment EIF scenario⁴. The purpose of this scenario is assessing the compliance of a standard or specification with the European Interoperability Framework (EIF)⁵.

2. ASSESSMENT SUMMARY

The **Codes for the representation of names of languages-- Part 2: alpha-3 code (ISO 639-2)** is a set of three-letter codes for the representation of the name of languages. ISO 639-2 is an ISO standard and lists a total of 487 codes. The specification is one of the language standards used by the Publications Office of the European Union⁶ (OP) for defining the EU 'language' code list⁷. Some European platforms, such as eForms⁸, have adopted this tailored code list as a reusable interoperability solution.

The ISO 639-2, as well as the ISO 639 family standard, enables to ensuring the display of web, or platform content in European digital channels; content providers may use language representations to declare the language of a website or a part of it. The specification increases the user experience regardless of the linguistic context.

The specification has been developed by The Library of Congress (LOC), which is an EEUU national institution specialised in documentation and information sciences with a relevant influence in the international community, and the ISO 639-2 maintenance organisation. The specification has also been approved as a standard by the International Organization for Standardization (ISO), which develops and publishes international standards. It is worth to note that the specification has been developed closely with other ISO 639 specifications, especially with ISO 639-1 and ISO 639-3, each one focusing on a specific type of need.

2.1. EIF Interoperability Principles

Interoperability principles are fundamental behavioural aspects that drive interoperability actions. They are relevant to the process of establishing interoperable European public services. They describe the context in which European public services are designed and implemented.

The specification fully supports the principles setting context for EU actions on interoperability:

- **Subsidiarity and proportionality**

ISO 639-2 is included in 3 national catalogues of recommended specifications. They belong to Ireland, Norway and Spain. The National Interoperability Framework (NIF) of these Member States varies when aligned with the European Interoperability Framework (EIF) according to the

⁴ EUSurvey EIF Scenario: https://ec.europa.eu/eusurvey/runner/EIFScenario_v500

⁵ The EIF homepage: https://ec.europa.eu/isa2/eif_en

⁶ OP homepage: <https://op.europa.eu/en/home>

⁷ eForms 'language' code list: https://docs.ted.europa.eu/eforms/0.5.0/codelists/index.html#_tailed_codelists

⁸ eForms: https://ec.europa.eu/growth/single-market/public-procurement/digital-procurement/eforms_en

National Interoperability Framework Observatory (NIFO)⁹ factsheets. For both Norway and Spain, interoperability has a high performance in all the interoperability layers. In the case of Ireland, there is a need of improvement in Interoperability Governance, the Legal and Organisational layers.

The specification does support the principles setting context for EU actions on interoperability:

- **Openness**

ISO 639-2 is a set of codes representing the name of 487 languages and widely used in contexts where metadata is required. The specification does not relate to the publication of data as open data, but eases the display of data and content accessibility within digital channels. The development process has been developed by LOC¹⁰, and is freely accessible to any user. On the contrary, the specification does not include a public review. Participation in the ISO 639-2 development is possible, depending on the membership category of the participant with regard to the ISO membership manual ('ISO member rights, good practice and obligations' section)¹¹. Moreover, LOC is the developer community that maintains this specification and attends language code change requests from any stakeholder.

In terms of availability, ISO 639-2 is publicly available for free in the dedicated LOC's section¹² and all tailored code lists from the OP are also available in Joinup¹³. In accordance with Common Patent Policy for ITU-T/ITU-R/ISO/IEC¹⁴ the ISO 639-2 is licensed under (F)RAND and royalty-free basis, although some terms allow patent holders to apply specific costs.

- **Transparency**

ISO 639-2 does not directly allow the availability of interfaces, nor increases the discoverability and searchability of them. Therefore, transparency is not applicable to this specification.

- **Reusability**

The ISO 639-2 is publicly available for its use for free at LOC's website. Additionally, even though it was developed to be used by library and documentation domains, the specification can also be used for any domain that requires the expression of language in codes. The EU Official 'language'

⁹ National Interoperability Framework (NIF): <https://joinup.ec.europa.eu/collection/national-interoperability-framework-observatory-nifo/nifo-factsheets>

¹⁰ The Library of Congress: <https://www.loc.gov/librarians/standards>

¹¹ ISO Membership Manual: <https://www.iso.org/publication/PUB100399.html>

¹² ISO 639-2 distribution page: https://www.loc.gov/standards/iso639-2/ascii_8bits.html

¹³ Joinup-ISO 639-2 distribution page: <https://joinup.ec.europa.eu/collection/eu-semantic-interoperability-catalogue/solution/language>

¹⁴ ISO Common Patent Policy for ITU-T/ITU-R/ISO/IEC: <https://www.iso.org/iso-standards-and-patents.html>

code list¹⁵, as well as the SCL-language classification¹⁶, provides the outline of standard code lists for languages in Europe and they draw on the ISO 639-2 alpha3 codes, among others.

- **Technological neutrality and data portability**

ISO 639-2 is intended to identify a language name. This specification relates to metadata and can be used in any system that ingests metadata. However, there exist the risk of hampering the interoperability of systems nor the scalability when independent systems adopt one or another language code representation. This creates a risk of hampering interoperability when the metadata system is not compatible between systems, or even backward compatible.

The specification does support the principles related to generic user needs and expectations:

- **User-centricity**

The purpose of ISO 639-2 is not related to the implementation of the once-only principle and has not any focus on the user, although the specification has a relevant function in determining the type of language in which the information is displayed in some websites or platforms.

- **Inclusion and accessibility**

ISO 639-2, as well as the ISO 639 family standard, enables to ensuring the display of web content, and therefore addresses e-accessibility. For example, the HTML 'lang' attribute declares the language of a website or a part of it.

- **Security and privacy**

The purpose of ISO 639-2 is not related to security and privacy of the data exchange, nor to the trustworthy and secure data processing. Therefore, this criterion is not applicable to this specification.

- **Multilingualism**

ISO 639-2 is intended to serve as a device to identify a language name. In addition, there might exist other specifications designed to support multilingualism (e.g., the DCAT Application profile for data portals in Europe, DCAT-AP).

The specification does not support the foundation principles for cooperation among public administrations:

- **Administrative Simplification**

¹⁵ EU 'language' code list: <https://op.europa.eu/en/web/eu-vocabularies/dataset/-/resource?uri=http://publications.europa.eu/resource/dataset/language>

¹⁶ SCL-language classification distribution page: https://joinup.ec.europa.eu/collection/eu-semantic-interoperability-catalogue/solution/scl-languages?f%5B0%5D=solution_content_bundle%3Aasset_distribution

The purpose of ISO 639-2 is not related to reduce administrative burden. The specification is only intended to serve as a code to identify a language name.

- **Preservation of information**

The specification is intended to serve as a code to identify a language name. Therefore, it is not designed to address nor prevent data long-term preservation.

- **Assessment of effectiveness and efficiency**

There is no evidence of any assessment regarding the effectiveness and efficiency of the ISO 639-2 specification, nor any evaluation submitted by a European administration on this regard.

2.2. EIF Interoperability Layers

The interoperability model which is applicable to all digital public services includes:

- Four layers of interoperability: legal, organisational, semantic and technical;
- A cross-cutting component of the four layers, 'integrated public service governance';
- A background layer, 'interoperability governance'.

The Specification supports the implementation of digital public services complying with the EIF interoperability model:

- **Interoperability governance**

ISO 639-2 can be mapped with the EIRA's ABB "Data Set" from the Semantic View. Moreover, the specification is recommended and included in three national catalogues: the Irish¹⁷, Norwegian¹⁸ and Spanish¹⁹ catalogues. Despite having been included in these MS's catalogues, it is not included in any catalogue at European Level. In terms of implementation conformity, there is a list of criteria used to define new ISO 639-2 language codes, which defines and enables to manually assessing the conformance of the specification's implementation.

- **Legal Interoperability**

Although the ISO 639-2 specification being customised for the creation of the tailored 'language' code list by the OP, there is no reference to ISO 639-2 as a recognised European standard.

- **Organisational interoperability**

¹⁷ Ireland National Catalogue: <https://data.gov.ie/pages/opendatatechnicalframework#recommended-standards-for-open-data>

¹⁸ Norway National Catalogue: <https://www.digdir.no/digitale-felleslosninger/nettlesarbaserte-tenester/1491>

¹⁹Spain National Catalogue: https://administracionelectronica.gob.es/pae/Home/pae_Estrategias/pae_Interoperabilidad_Inicio/pae_Nor_mas_tecnicas_de_interoperabilidad.html#CATALOGOESTANDARES

The purpose of ISO 639-2 is not related to the modelling of business processes, but has had an important contribution in the formalisation of Interoperability agreements like the Interinstitutional Style Guide²⁰ (the Montenegrin language name is coded as stated in ISO 639-2).

- **Semantic Interoperability**

The Library of Congress is de facto national library of the United States, and altogether with the ISO ensures the maintenance of this specification. However, ISO 639-2 does not encourage the creation of communities nor promotes the sharing of data and results in any national nor European platform.

²⁰ EC Interinstitutional Style Guide: <https://publications.europa.eu/code/en/en-370200.htm#an1-cand>

3. ASSESSMENT RESULTS

This section presents an overview of the results of the CAMSS assessments for **ISO 639-2**. The CAMSS “Strength” indicator measures the reliability of the assessment by calculating the number of answered (applicable) criteria. On the other hand, the number of favourable answers and the number of unfavourable ones is used to calculate the “Automated Score” per category and an “Overall Score”.

Category	Automated Score	Assessment Strength	Compliance Level
Principle setting the context for EU actions on interoperability	100/100	100%	Seamless
Core interoperability principles	1680/2100	86%	Sustainable
Principles related to generic user needs and expectations	480/500	40%	Seamless
Foundation principles for cooperation among public administrations	280/500	60%	Essential
Interoperability layers*	700/1100	91%	Sustainable
Overall Score	3240/4300	80%	

**The technical interoperability layer is covered by the criteria corresponding to the core interoperability principle "Openness".*

With an 80% of assessment strength, this assessment can be considered representative of the specification compliance with the EIF principles and recommendations.

The Overall Automated Score of 75,35% (3240/4300) demonstrates that the specification supports the European Interoperability Framework in the domains where it applies.