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Standard

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Terminology management — Machine-readable terminology interchange

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Foreword

The Enosema Foundation (“ES”) is the premier non-profit standardization organization for terminology standardization and terminology related processes such as management. It facilitates the education, standardization, research, promotion, definition, and usage of terminology resources and management practices globally.

ES works with international partners and experts across the globe, reflecting the international nature of its mission. More information about ES is available on the official website (https://www.enosema.org).

The procedures used to develop this document and those intended for its further maintenance are described in the ES Directives.

In particular, the different approval criteria needed for the different types of ES documents should be noted. This document was drafted in accordance with the editorial rules of the ES Directives.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ES shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be provided in the Introduction.

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

This document was prepared by Technical Committee **Terminology**.

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Introduction

Concept records are only as useful as they are interchangeable. A concept created under the requirements of EFS 2513, expressed in the vocabulary of EFS 2510, and localized per EFS 2504 must survive the trip between systems: authoring tools, registers, publication frontends, and downstream consumers — human and machine.

Today that trip happens ad hoc. Every tool invents its own field names, its own status vocabulary, its own packaging. Records are exported and re-imported with silent field loss; SKOS projections become the only surviving representation; identifiers change between systems.

This document specifies the interchange of terminology and concept data for ES purposes. It defines:

— the concept record format for interchange, based on the glossarist v3 dataset model (managed concept and localized concept as separate, cross-referenced records);

— dataset identity and packaging, including the register metadata file and the GCR package container;

— the SKOS projection profile: exactly how ES concept systems project into SKOS, and which information such a projection is permitted to lose;

— bulk export requirements and the publication profile for browsable publication of registers.

The reference implementations of this document are the ES concept register (the relation vocabulary of EFS 2510, published at the Enosema concept register) and the concept-browser publication toolchain. Where this document specifies a format, those implementations demonstrate it; where a requirement is stated with **shall**, conformance is checkable against them.

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Terminology management — Machine-readable terminology interchange

1 Scope

This document specifies the machine-readable interchange of concepts, concept systems, and concept relations for ES purposes:

— the concept record format (managed concepts and localized concepts) for interchange between terminology management systems and registers;

— dataset identity, register metadata, and dataset packaging;

— the SKOS projection profile and its permitted losses;

— bulk export requirements; and

— the publication profile for browsable register sites.

This document applies to any system that produces, exchanges, or publishes ES concept data, and to any organization adopting the ES concept management system requirements of EFS 2513.

This document does not specify:

— the semantics of concept relations, which are specified in EFS 2510;

— terminology authoring methods, which are specified in ISO 704 and EFS 2501;

— the internal storage of any tool, only the formats at interchange boundaries;

— software behavior beyond the publication profile of Clause 8.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EFS 2504:2025, *Terminology management — Multilingual terminology*

EFS 2510:2026, *Terminology management — Concept systems and concept relations*

EFS 2513:2026, *Terminology management — Concept management systems — Requirements*

ISO 639-3[1)] , *Codes for the representation of names of languages — Part 3: Alpha-3 code for comprehensive coverage of languages*.

ISO 15924, *Information and documentation — Codes for the representation of names of scripts*.

ISO 24229, *Information and documentation — Codes for written language conversion systems*.

1) Withdrawn.

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ISO 19135-1[2)] , *Geographic information — Procedures for item registration — Part 1: Fundamentals*.

W3C SKOS, *SKOS Simple Knowledge Organization System Reference*, W3C Recommendation, https://www.w3.org/TR/skos-reference/

ISO/IEC Directives, Part 2, *ISO/IEC Directives, Part 2, Principles and rules for the structure and drafting of ISO and IEC documents*.

3 Terms, definitions and abbreviated terms

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org

3.1 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1.1
managed concept
concept record carrying the concept's identity, lifecycle metadata, relations, and the map from languages to localized concepts

3.1.2
localized concept
record carrying the language-specific content of a *managed concept* (3.1.1): designations, definitions, notes, examples, and sources

3.1.3
dataset
collection of concept records governed by one register metadata file

3.1.4
GCR package
.gcr
packaged, downloadable form of a *dataset* (3.1.3) used for interchange and archival

3.1.5
projection
lossy transformation of a dataset into a target vocabulary, such as SKOS

3.2 Abbreviated terms

ES	Enosema Foundation
GCR	glossarist concept register
TTL	Turtle (RDF serialization)
URN	uniform resource name

2) Withdrawn.

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4 Concept record interchange

4.1 Record layout

A concept is interchanged as one YAML file containing two documents:

a) the **managed concept** record: the concept's identifier, URN, lifecycle status, acceptance dates, sources, relations, and the localized-concept map; and

b) one **localized concept** record per language: the language code, terms with type and normative status, definitions, notes, examples, and sources.

The managed record and each localized record are cross-referenced by identifier: the managed record's localized-concept map keys language codes to localized record identifiers.

```
---
id: my-concept-01
data:
  identifier: my-concept-01
  uri: urn:example:concept:my-concept-01
  localized_concepts:
    eng: eng-my-concept-01
status: valid
date_accepted: '2026-01-01T00:00:00+00:00'
sources:
- type: authoritative
  origin:
    ref:
      source: Example Register
---
id: eng-my-concept-01
termid: my-concept-01
data:
  language_code: eng
  terms:
  - type: expression
    designation: example concept
    normative_status: preferred
  definition:
  - content: "A concept used as an interchange example."
status: valid
```

Figure 1

4.2 Field requirements

A conforming managed concept record shall carry:

a) `id` and `data.identifier`, equal and stable per the identifier scheme of EFS 2513;

b) `data.uri`, a URN that resolves per the register's URI policy;

c) `data.localized_concepts`, mapping ISO 639-3 language codes to localized record identifiers;

d) `status`, carrying the registration status per ISO 19135-1;

e) `sources`, citing the origin of the concept.

A conforming localized concept record shall carry:

a) `termid`, the identifier of its managed concept;

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b) `data.language_code`, an ISO 639-3 code; where a localization is romanized or transliterated, the record shall also carry the script (ISO 15924) and writing system conversion system (ISO 24229) fields per EFS 2504;

c) at least one `terms` entry with `designation`, `type` and `normative_status`; and

d) `definition` entries whose `content` states the intension of the concept.

4.3 Relations

Concept relations shall be carried on the managed concept record as typed references per EFS 2510: each relation records the relation type identifier, the related concept reference, and optional explanatory content. N-ary relations are interchanged as relation records per EFS 2510, as files separate from the concept records, and shall not be encoded as binary relations for the convenience of any tool.

4.4 Scalar quoting

Interchange files are YAML. Scalars that contain colons, quotes, or other YAML-delimiting characters shall be quoted; unquoted scalars that a YAML parser reads as a different type or structure than the record intends are a conformance error of the producing system.

NOTE Definitions citing standards, for example ISO 704:2022, contain colon characters and are a recurring source of such errors.

5 Datasets, register metadata and packaging

5.1 Dataset directory

A dataset is a directory containing:

a) `register.yaml`, the register metadata file (5.2);

b) the concept record files (Clause 4); and

c) optionally, per-language about pages, a bibliography file, and image assets referenced by definitions.

Dataset directories shall be consumable from a local path or a packaged archive (5.3) interchangeably: consumers shall not depend on files or layout beyond the ones this document specifies.

5.2 Register metadata

The `register.yaml` file shall carry:

a) `schema_type` equal to `glossarist` and `schema_version` equal to `3`;

b) `id`, the dataset identifier, unique within its publication;

c) `ref`, the human-readable reference of the dataset;

d) `year`, the edition year;

e) `urn`, the URN identifying the dataset as a whole;

f) `status`, the lifecycle status of the dataset edition (for example, `current`, `superseded`);

g) `owner`, the organization responsible for the dataset;

h) `source_repo`, the canonical repository of the source data; and

i) `languages` and `language_order`, the ISO 639-3 codes of the dataset's localizations in their display priority.

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Additional fields (tags, sections, ordering) may be carried; consumers shall preserve unknown fields rather than discard them.

5.3 GCR package

A GCR package is the packaged form of a dataset: an archive containing the dataset directory's contents, published at a stable URL for download by consumers. A package shall be versioned by its release, and a package shall not change after publication: corrections produce a new package release.

Datasets published as GCR packages shall remain byte-identical in content to their source dataset directories.

6 SKOS projection profile

6.1 Projection mappings

Where a dataset is projected into SKOS, the relation mappings of EFS 2510 apply: hierarchical relation types project to `skos:broader`/`skos:narrower`, associative types to `skos:related`, and mapping types to their corresponding `skos:exactMatch`, `skos:closeMatch`, `skos:broadMatch`, `skos:narrowMatch`, `skos:relatedMatch` properties.

Concepts shall project to `skos:Concept` resources with:

a) `skos:prefLabel` from the preferred designation of each language;

b) `skos:definition` from the definition content; and

c) `skos:inScheme` referencing the dataset's concept scheme, identified by the dataset URN.

6.2 What a projection may lose

A SKOS projection is lossy by construction. A conforming projection may omit: coordination method (generic, partitive, instantial distinction), inverse pairing, n-ary relations and their metadata (completeness, presence, count, delimiting status, criterion), registration metadata, per-record source citations, and lifecycle relations.

A projection shall not alter semantics: it shall not merge concepts, not redirect hierarchical projections into associative projections, and not present `skos:prefLabel` from non-preferred designations.

6.3 Round-trip prohibition

ES data shall not be round-tripped through SKOS alone: the full record format of Clause 4 is the only interchange-complete form. Publishers shall retain the full dataset alongside any SKOS projection and shall not treat the projection as the record of authority.

Where a SKOS property exists that corresponds to an ES relation type, the projection may carry it as an annotation on the projected concept (for example, `skos:exactMatch` for the `exact_match` type); the ES type identifier remains the record of authority in the full dataset.

7 Bulk exports

7.1 Required formats

A published dataset shall offer bulk exports in at least:

a) **CSV**, one row per concept per language, with columns covering the term identifier, URN, status, language, preferred term, alternative terms, definition, notes, examples, and source references;

b) **TTL** (Turtle), the SKOS projection per Clause 6; and

c) **JSON-LD**, the concept records as linked data.

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7.2 Optional formats

A publisher may additionally offer: TBX (per ISO 30042), JSON Lines, and YAML exports. Where offered, optional exports shall carry the same concept set as the required exports: no format shall silently drop concepts, localizations, or relations that another format carries.

7.3 Consistency

All bulk exports of a dataset edition shall be generated from the same snapshot of the dataset: a consumer combining exports from one edition can assume cross-format consistency of identifiers and content.

8 Publication profile

8.1 General

A browsable publication of a dataset — a register site — is a consumer of the formats of this document. This clause specifies the requirements a publication shall meet so that the published site faithfully presents the dataset.

8.2 Faithfulness requirements

The publication shall preserve and present, at minimum:

a) designations with their type and normative status, distinguishing preferred from admitted and deprecated forms;

b) definitions, notes, and examples, including embedded figures where the dataset references them: an image reference present in a definition, note, or example shall render as an image, not as literal text;

c) the language set of each concept, with language display order per the dataset's `language_order`;

d) relations: typed and directed per EFS 2510, including inverse presentation where helpful for reading; and

e) sources, with links where the record carries them.

8.3 Identification

Each concept page shall expose the concept's stable identifier and URN, and shall resolve at a stable URL derived from them. The site shall offer the bulk exports of Clause 7 at stable URLs, so that machine consumers can fetch datasets without scraping pages.

8.4 Search

A publication shall provide search across designations and definitions of the dataset. Where the site publishes more than one dataset edition, search shall distinguish editions, and superseded editions shall be presentable but marked as such per the register metadata status.

8.5 Build-time preservation

Fields present in the source dataset shall reach the published site: build tooling shall not drop model fields before rendering. A publication pipeline that discards fields (for example, dropping annotations or sources during an intermediate conversion) is nonconforming even if the final pages look correct, because downstream consumers of the pipeline's output lose the data.

NOTE The concept-browser toolchain is the reference implementation of this publication profile.

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9 Conformance

9.1 Requirements classes

9.1.1 Concept record producer

A system claiming the producer class shall emit concept records conforming to Clause 4 and dataset metadata conforming to 5.2, and shall not drop fields it does not understand when re-emitting records produced by others.

9.1.2 Dataset publisher

A system claiming the publisher class shall satisfy the producer class and shall additionally provide the bulk exports of Clause 7, a SKOS projection conforming to Clause 6 where SKOS publication is offered, and GCR packages per 5.3 where packaged distribution is offered.

9.1.3 Publication site

A system claiming the publication-site class shall satisfy the publication profile of Clause 8, consuming conforming datasets without modifying their records.

9.2 Conformance claims

A conformance claim shall state the class(es) claimed, the tool or system assessed, and its version. Claims shall be checkable from the formats alone: conformance to this document does not depend on undocumented behavior of any implementation.

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Bibliography

[1] ISO 25964-2, *Information and documentation — Thesauri and interoperability with other vocabularies — Part 2: Interoperability with other vocabularies*.

[2] ISO 30042, *Management of terminology resources — TermBase eXchange (TBX)*.

[3] FERIN, *Framework for Extensible Registration of INformation*, https://www.ferin.org/

[4] Glossarist concept model, *Glossarist concept model, dataset schema v3*, https://github.com/glossarist/concept-model

[5] JSON-LD 1.1, *JSON-LD 1.1, A JSON-based Serialization for Linked Data*, W3C Recommendation, https://www.w3.org/TR/json-ld11/

[6] EFS 2501:2025, *Terminology management — Principles and methods*

[7] EFS 2507:2025, *Terminology management — Concept relationships*

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