**Information technology — SEDRIS language bindings —**
**Part 1: Functional specification**

# 1 Scope

This part of ISO/IEC 18023 addresses the concepts, syntax and semantics for the representation and interchange of environmental data. It specifies:

1. a data representation model for expressing environmental data,
2. the data types and classes that together constitute the data representation model, and
3. an application program interface that supports the storage and retrieval of environmental data using the data representation model.

This part of ISO/IEC 18023 may be applied to the representation of any environmental data including:

1. terrain,
2. ocean,
3. atmosphere, and
4. space.

Examples of the representation of terrain data include but are not limited to:

a. physical and administrative boundaries based on characteristics of a planetary surface,
b. terrain phenomena (for example, flooding, volcanic eruption and tectonics),
c. natural features (for example, mountains, canyons and rivers), and
d. artificial features (for example, buildings, roads and vehicles).

Examples of the representation of ocean data include but are not limited to:

a. physical and administrative boundaries based on characteristics of a planetary ocean,
b. oceanographic phenomena including temperature and pressure,
c. natural features (for example, waves, currents and eddies), and
d. artificial features (for example, buoys, drilling platforms and vessels).

Examples of the representation of atmospheric data include but are not limited to:

a. physical and administrative boundaries based on characteristics of a planetary atmosphere,
b. atmospheric phenomena (for example, winds, temperature and pressure),
c. natural features (for example, tornados, fronts and fog banks), and
d. artificial features (for example, rockets and aircraft).

Examples of the representation of space data include but are not limited to:

a. physical boundaries based on characteristics of space,
b. space phenomena (for example, radiation and space weather),
c. natural features (for example, solar wind, radiation belts and comets), and
d. artificial features (for example, satellites and spacecraft).

This part of ISO/IEC 18023 also specifies topological, rule-based, and other constraints that ensure appropriate data can be available for applications that rely on automatically generated behaviours when

interacting with environmental data.

This part of ISO/IEC 18023 may be applied to any application or system that represents and/or interchanges environmental data including, but not limited to, the following:

1. visualization,
2. analysis,
3. simulation,
4. planning and design,
5. entertainment,
6. modelling,
7. training, and
8. education.

# 2 Normative references

The following referenced documents are indispensable for the application 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.

| Identifier | Reference |
|---|---|
| I639 | ISO 639-1, *Codes for the representation of names of languages — Part 1: Alpha-2 code.* |
| I646 | ISO/IEC 646, *Information technology — ISO 7-bit coded character set for information interchange.* |
| I3166 | ISO 3166 (all parts), *Codes for the representation of names of countries and their subdivisions.* |
| I8601 | ISO 8601:2004, *Data elements and interchange formats — Information interchange — Representation of dates and times.* |
| I9973 | ISO/IEC 9973, *Information technology — Computer graphics and image processing — Procedures for registration of graphical items.* |
| I10646 | ISO/IEC 10646, *Information technology — Universal Multiple-Octet Coded Character Set (UCS).* |
| I18023-2 | ISO/IEC 18023-2:2005, *Information technology — Universal Multiple-Octet Coded Character Set (UCS) — SEDRIS — Part 2: Abstract transmittal format.* |
| I18023-3 | ISO/IEC 18023-3:2005, *Information technology — Universal Multiple-Octet Coded Character Set (UCS) — SEDRIS — Part 3: Transmittal format binary encoding.* |
| I18025 | ISO/IEC 18025, *Information technology — Environmental Data Coding Specification (EDCS).* |
| I18026 | ISO/IEC 18026:2005, *Information technology — Spatial Reference Model (SRM).* |
| I19115 | ISO 19115:2003, *Geographic information — Metadata.* |
| I19501 | ISO/IEC 19501:2005, *Information technology — Open Distributed Processing — Unified Modeling Language (UML) Version 1.4.2.* |
| IEC60559 | IEC 60559, *Binary floating-point arithmetic for microprocessor systems*. |
| RFC1738 | IETF RFC 1738, *Uniform Resource Locators (URL)*, *Internet standards track protocol*. |

RFC2141 IETF RFC 2141, *URN Syntax*.

http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO_IEC_18023-1_Ed1.html