SLOVENSKI STANDARD
SIST EN ISO 19144-2:2024

01-julij-2024

Geografske informacije - Klasifikacijski sistemi - 2. del: Metajezik za pokrovnost (LCML) (ISO 19144-2:2023)

Geographic information - Classification systems - Part 2: Land Cover Meta Language (LCML) (ISO 19144-2:2023)

Geoinformation - Klassifizierungssysteme - Teil 2: Meta-Beschreibungssprache für Landbedeckung (ISO 19144-2:2023)

Titre manque - Partie 2: Métalangage de couverture du sol (LCML) (ISO 19144-2:2023)

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35.240.70	Uporabniške rešitve IT v znanosti	IT applications in science

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EUROPEAN STANDARD

NORME EUROPÉENNE

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EN ISO 19144-2

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English Version

Geographic information - Classification systems - Part 2: Land Cover Meta Language (LCML) (ISO 19144-2:2023)

Information géographique - Systèmes de classification - Partie 2: Métalangage pour l'occupation des sols (LCML) (ISO 19144-2:2023)

Geoinformation - Klassifizierungssysteme - Teil 2: Meta-Beschreibungssprache für Landbedeckung (ISO 19144-2:2023)

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EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (EN ISO 19144-2:2023) has been prepared by Technical Committee ISO/TC 211 "Geographic information/Geomatics" in collaboration with Technical Committee CEN/TC 287 “Geographic Information” the secretariat of which is held by BSI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2024, and conflicting national standards shall be withdrawn at the latest by June 2024.

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Endorsement notice

The text of ISO 19144-2:2023 has been approved by CEN as EN ISO 19144-2:2023 without any modification.

INTERNATIONAL STANDARD

ISO 19144-2

Second edition
2023-12

Geographic information — Classification systems —

Part 2: Land Cover Meta Language (LCML)

Information géographique — Systèmes de classification —
Partie 2: Métalangage pour l'occupation des sols (LCML)

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 211, *Geographic information/Geomatics*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 287, *Geographic Information,* in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement), and in collaboration with the Food and Agriculture Organization of the United Nations (UN FAO).

This second edition cancels and replaces the first edition (ISO 19144-2:2012), which has been technically revised.

The main changes are as follows:

— This revision of ISO 19144-2:2012 has divided the original International Standard into additional parts.

— Material from ISO 19144-2:2012, Clause 9, on registration has been removed and is intended to be included in ISO 19144-4.[1)]

— Material related to Land Use has been removed and is intended to be included in ISO/TS 19144-3.[2)]

— The high-level model has been changed to promote the attribute of *cover* and *elementSpreadingGeometry* to the LC_Element level with the addition of the new attribute, *density*.

— Various changes have been made to certain types and classes (see Annex E).

— Several of the definitions from ISO 19144-2:2012 have been improved in a backward compatible manner and UML and textual errors in the previous model have been corrected.

1) Under preparation. Stage at the time of publication: ISO/PWI 19144-4:2023.

2) Under preparation. Stage at the time of publication: ISO/AWI TS 19144-3:2023.

— A new Annex E has been added describing the changes to ISO 19144-2:2012 in more detail and addressing backward compatibility.

A list of all parts in the ISO 19144 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

Efficient assessment of Land Cover and the ability to monitor change are fundamental to the sustainable management of natural resources, environmental protection, food security and successful humanitarian programmes. Such information is also required to help with raising levels of nutrition, improving agricultural productivity, enhancing the lives of rural populations and contributing to the sustainable growth of the world economy. However, in the past, policymakers and planners have not had access to reliable and comparable Land Cover data, both for lower-income countries and sometimes also at the regional and global levels.

Access has been limited by two factors: lack of mapping activities and lack of commonality between systems. The solution has been to carry out separate regional mapping projects using national or regional Land Cover classification systems. However, it has been difficult to compare or to exchange information between current systems.

The aim of this document is to enable the comparison of information from existing classification systems in a meaningful way without replacing them. The aim is to complement the development of future classification systems that can offer more reliable collection methods for particular national or regional purposes by allowing them to be described in a consistent manner.

A critical factor in implementing such global activities is the availability of an international standard for the documentation of Land Cover classification systems. This then provides a reliable basis for interaction without replacing the increasing number of national, regional and global Land Cover mapping and monitoring activities. This enables comparisons of Land Cover classes to be made regardless of mapping scale, Land Cover type, data collection method or geographic location.

Another critical factor is the availability of a common reference for Land Cover classification systems. This document provides a metalanguage expressed as a UML model that allows different Land Cover classification systems to be described.

This document establishes a metalanguage for a set of objects and rules (language) to describe Land Cover features based on physiognomy that can be part of different Land Cover Legends (nomenclature). This provides a framework for comparing different systems and nomenclatures such as CORINE, Africover, Anderson (USGS), Global Map and national systems, without replacing them. This is not a description of a nomenclature, nor is it a description of a specific set of classes.

An additional part of the ISO 19144 series (ISO/TS 19144-3)[3)] addresses Land Use aspects. Land Use by human activity is different from Land Cover. Land Cover is based on the physiognomic aspects of the plants and other elements covering the observed surface of the Earth. Land Use identifies the human activities, such as agriculture, mining or other actions taken by humans to modify the Earth cover. Land use is primarily defined in terms of human economic functions which result in a series of different human activities. In this context, Land Cover defines biophysical Earth objects on which human activities take place. The two types of classifications are closely related and in some Classification Systems they are sometimes mixed. The Land Use Metalanguage described in ISO 19144-3 can be used alone to simply describe Land Use, or it can be combined with the Land Cover Metalanguage to be able to describe classification systems that have mixed aspects of both Land Cover and Land Use.

Another part of the ISO 19144 series (ISO 19144-4)[4)] is intended to include a description of the registration and implementation aspects for Land Cover Land Use Classification. This allows code lists and other details used in the Land Cover and Land Use systems to be registered. Code lists allow attribute values and other characteristics to be open-ended and registration allows these elements to be defined.

EXAMPLE Soil types can make use of the UN FAO soil classification list of soil types,[45] or the more recent World Reference Base for Soil Resources,[59] or the USDA soil taxonomy[60] or the European Soils Bureau legend.[19]

3) Under preparation. Stage at the time of publication: ISO/AWI TS 19144-3:2023.

4) Under preparation. Stage at the time of publication: ISO/PWI 19144-4:2023.

