AS/NZS ISO 19144.2:2012
ISO 19144-2:2012

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Australian/New Zealand Standard™

Geographic information—Classification systems

Part 2: Land Cover Meta Language (LCML)

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee IT-004, Geographical Information/Geomatics. It was approved on behalf of the Council of Standards Australia on 6 November 2012 and on behalf of the Council of Standards New Zealand on 1 November 2012.
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Australian Hydrographic Office
Australian Map Circle
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Australian/New Zealand Standard™

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Part 2: Land Cover Meta Language (LCML)

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee IT-004, Geographical Information/Geomatics.

The objective of this Standard is to specify a Land Cover Meta Language (LCML) expressed as a UML metamodel that allows different land cover classification systems to be described based on the physiognomic aspects.

This Standard is identical with, and has been reproduced from, ISO 191442-2:2012, *Geographic information—Classification systems,* Part 2: *Land Cover Meta Language (LCML)*.

As this Standard is reproduced from an International Standard, the following applies:

(a) Its number appears on the cover and title page while the International Standard number appears only on the cover.

(b) In the source text 'this part of ISO 19144' should read 'this Australian/New Zealand Standard'.

(c) A full point substitutes for a comma when referring to a decimal marker.

References to International Standards should be replaced by references to Australian or Australian/New Zealand Standards, as follows:

Reference to International Standard		*Australian/New Zealand Standard*	
ISO/TS 19103	Geographic information—Conceptual schema language	AS/NZS ISO 19103	Geographic information—Conceptual schema language
ISO 19109	Geographic information—Rules for application schema	19109	Geographic information—Rules for application schema
19135	Geographic information—Procedures for item registration	19135	Geographic information—Procedures for item registration
19144	Geographic information—Classification systems	19144	Geographic information—Classification systems
19144-1	Part 1: Classification system structure	19144.1	Part 1: Classification system structure

The terms 'normative' and 'informative' have been used in this Standard to define the application of the annex to which they apply. A 'normative' annex is an integral part of a Standard, whereas an 'informative' annex is only for information and guidance.

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INTRODUCTION

Efficient assessment of land cover and the ability to monitor change are fundamental to sustainable management of natural resources, environmental protection, food security and successful humanitarian programmes. Such information is also required to help towards raising levels of nutrition, improving agricultural productivity, enhancing the lives of rural populations and contributing to sustainable growth of the world economy. However, in the past, policy-makers and planners have not had access to reliable and comparable land cover data, not only for lower-income countries but 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 not been possible to compare or to exchange information between current systems.

The aim of this part of ISO 19144 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 a common, umbrella land cover classification system structure. 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 part of ISO 19144 provides a metalanguage expressed as a UML model that allows different land cover classification systems to be described.

This part of ISO 19144 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.

AUSTRALIAN/NEW ZEALAND STANDARD

Geographic information—Classification systems

Part 2:
Land Cover Meta Language (LCML)

1 Scope

This part of ISO 19144 specifies a Land Cover Meta Language (LCML) expressed as a UML metamodel that allows different land cover classification systems to be described based on the physiognomic aspects. This part of ISO 19144 also specifies the detailed structure of a register for the extension of LCML but does not specify the maintenance of the register. This part of ISO 19144 recognizes that there exist a number of land cover classification systems. It provides a common reference structure for the comparison and integration of data for any generic land cover classification system, but does not intend to replace those classification systems.

2 Conformance

2.1 Classes

Three conformance classes are identified in this part of ISO 19144.

2.2 Conformance of a land cover classification system

A land cover classification system, as defined in accordance with the LCML defined in this part of ISO 19144, shall satisfy the conditions specified in the following abstract test suite:

a) ISO 19144-1 (Annex A) for general conformance of the classification system;

b) A.2.

2.3 Conformance of a register for the extension of the metalanguage

The register defined in this part of ISO 19144 shall satisfy all of the conditions specified in the following abstract test suites:

a) ISO 19135 for the general register structure;

b) A.3.1 for the minimum register content;

c) A.3.2 for uniqueness of registered metaclass names;

d) A.3.3 for backward compatibility.

2.4 Conformance of a comparison process of land cover classification systems

The process of comparison of two land cover classification systems shall be done by developing descriptions of the two land cover classification systems, each in accordance with the abstract test suite in A.2, and then identifying the differences in accordance with the abstract test suite in A.4.

3 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.