International Standard

ISO 19152-3

First edition
2024-07

Geographic information — Land Administration Domain Model (LADM) —

Part 3: Marine georegulation

Information géographique — Modèle du domaine de l'administration des terres (LADM) —

Partie 3: Géoréglementation marine

Reference number
ISO 19152-3:2024(en)

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Published in Switzerland

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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).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents. ISO shall not be held responsible for identifying any or all such patent rights.

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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 International Hydrographic Organization (IHO).

This edition of ISO 19152-3, together with all other parts in the ISO 19152 series, cancels and replaces the first edition (ISO 19152:2012), which has been technically revised. This document is a new part to the ISO 19152 series and makes no changes to the original ISO 19152:2007.

A list of all parts in the ISO 19152 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.

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Introduction

ISO 19152:2012 specifically addressed the land registration aspects of land administration. This document (ISO 19152-3:2023) introduces the broader term "georegulation", which addresses any area of geographic information in which rights, restrictions or responsibilities (RRR) can be applied. Georegulation is the activity of delimiting and asserting control over geographical spaces through regulations. This document allows the objects of georegulation to be documented in a systematic and consistent manner. Although the broader term "georegulation" is used throughout the document, the main element of the title of the document remains “Land Administration Domain Model” to retain compatibility with the previous edition of the document.

This document addresses georegulation in the marine environment. Rights and obligations created by georegulation share a basic structure, as described in ISO 19152-1. Marine activity, including transportation, resource extraction and food production (fishing and marine aquaculture), is of great importance. Different rights and obligations can exist on the surface, in the water column and on the seabed. The model defined in this document can be used for marine cadastres as well as other use cases (such as conservation areas, living resources and fishery management areas, non-living resources management areas, seabed tenure, etc.), and to describe data in support of the United Nations Convention on the Law of the Sea (UNCLOS)[27] or other conventions, e.g. administrative areas described in support of safe navigation under the International Convention for the Safety of Life At Sea (SOLAS).[28]

The oceans are of importance to all humankind, and specific areas along coastlines are under the jurisdiction of nation states. The jurisdiction of coastal states extends to certain maritime zones. Users and states have rights, restrictions and responsibilities in specific zones. The area beyond coastal states’ zones is without exercise or claim of sovereignty and the rights regarding the resources are vested in mankind.[27] In specific cases there are private rights, such as the rights associated with fishing or resource extraction. Some individuals can have property rights on land adjacent to water potentially extending into the area covered by water. This can be described in a marine cadastre, described using the structures available in this document.

International marine rights are addressed in international treaties globally through UN conventions and between nations; in particular, the United Nations Convention on the Law of the Sea (UNCLOS).[27] Marine safety and navigation are addressed by the International Maritime Organization (IMO) international convention on Safety Of Life At Sea (SOLAS) 1974.[28] Other international conventions, treaties and national laws establish rights and obligations.

The International Hydrographic Organization is an international standards development organization that specializes in the marine space. It develops standards for safe navigation, marine jurisdictions, oceanography and other aspects of the marine space in close cooperation with other international organizations such as the UN DOALOS[29] and ISO. In particular it supports several UN conventions such as the UNCLOS[27] and the SOLAS[28] conventions in cooperation with the UN IMO.[30] Alignment between ISO International Standards for the marine space and the IHO is important.

United Nations’ Sustainable Development Goal 14C and United Nations’ General Assembly Resolution A/RES/59/24 directed the IHO to provide technical standards for maritime zones. The IHO supports standards development for oceanography, marine science and the UN SOLAS and the UNCLOS conventions.[31] In particular, as part of the S-100 Universal Hydrographic Data Model,[18] IHO has developed a series of standards and specifications that address the marine space.[32] These include IHO S-121[20] on maritime limits and boundaries and IHO S-122[33] on marine protected areas.

A characteristic of georegulation objects in the marine space is that their geometry structure can need to be aligned with IHO S-100[18] and ISO 19107. As such, there can be different “feature” types. This is in alignment with the way "feature" is defined in the general feature model from ISO 19109 and the approach to feature cataloguing defined in ISO 19110. For their geographic information aspects, the IHO suite of hydrographic standards is based on many of the ISO/TC 211 suite of Geographic Information documents, through S-100. S-121[20] on maritime limits and boundaries directly supports the UNCLOS[27] and is built upon the ISO 19152 series. Due to the close links between S-121[20] and the ISO 19152 series, this document makes direct reference to S-100 and S-121.

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Since many of the rights and restrictions in the marine space come either from international or bi-national treaties, or national proclamations or laws, within the context of georegulation, it can be necessary to express the text or preamble of a treaty or law. A "governance" object has therefore been added to the administrative structure in this document to allow legal text to be associated with an administrative unit. In many cases the parties involved in rights, restrictions and responsibilities (RRR) relationships in the marine space are nations. This means that the code lists of types of parties and administrative units defined in other parts of the ISO 19152 series will not necessarily apply. Unique code lists have been defined to address the marine space. Further, treaties are often the reference source for both the administrative and spatial aspects, so the distinction between types of sources has been eliminated.

The ISO 19152 series is a general abstract model for Land Administrative Domain Model (LADM) systems. It provides a uniform way of describing national or other systems. The ISO 19152 series is implemented through profiles, such as country profiles, in accordance with ISO 19106. S-121[20] is a profile for the description of marine limits and boundaries (MLB) in the context of support for the SOLAS[28] and the UNCLOS[27] conventions supported by the IHO series of standards. This document has two conformance classes, one that directly supports the S-121 profile, and the other more general conformance class that supports other aspects of marine georegulation. The profile for MLB is defined in S-121. The support of other aspects of marine georegulation will require the development of specific profiles to address these other areas.

This document is a derived work, developed under a cooperative agreement with the IHO, based on S-121[20] and used with permission.

In accordance with the ISO/IEC Directives, Part 2, 2018, Rules for the structure and drafting of International Standards, in International Standards the decimal sign is a comma on the line. However, the General Conference on Weights and Measures (Conférence Générale des Poids et Mesures) at its meeting in 2003 passed unanimously the following resolution:

"The decimal marker shall be either a point on the line or a comma on the line."

In practice, the choice between these alternatives depends on customary use in the language concerned. In the technical areas of geodesy and geographic information it is customary for the decimal point always to be used, for all languages. That practice is used throughout this document.

NOTE The direction of positive rotation used in this document is positive in a counter clockwise direction in alignment with ISO 19109 and ISO 19107. The IHO S-100 series of standards makes use of "Heading Orientation" which is positive in a clockwise direction. The user needs to be aware of this difference.

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Geographic information — Land Administration Domain Model (LADM) —

Part 3:
Marine georegulation

1 Scope

This document specifies the concepts and structure for standardization for georegulation in the marine space.

This document addresses the information structures related to management of legal spaces (such as the international maritime limits and boundaries, marine living and non-living resources management areas, marine conservation areas, etc.) and their related rights and obligations.

This document establishes the common elements and basic schema to structure marine georegulation information system. It builds upon the common components defined in ISO 19152-1.

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.

ISO 19152-1, *Geographic information — Land Administration Domain Model (LADM) — Part 1: Generic conceptual model*

3 Terms, definitions and abbreviated terms

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 19152-1 and the following 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/

3.1.1
boundary
<marine_georegulation> delimitation between two or more zones

Note 1 to entry: A boundary involves two or more parties.

Note 2 to entry: Adapted from Reference [20].

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