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Geographic information — Observations, measurements and samples

Information géographique — Observations, mesures et échantillons



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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 documents 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 Open Geospatial Consortium (OGC).

This second edition cancels and replaces the first edition (ISO 19156:2011), which has been technically revised.

The main changes are as follows:

- the UML model and the requirements/conformance class structure has been completely redesigned to address the contemporary modelling and observation data provision use cases;
- the fundamental Observation model has remained largely the same as in ISO 19156:2011, but certain carefully designed improvements and clarifications for the intended use have been included;
- the Sample model has been refined: given the integral nature of the Sample model, it has been decided to include that term in the name of the document;
- [Annex C](#) has been added listing the changes between ISO 19156:2011 and this document.

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

This document arises from work originally undertaken through the Open Geospatial Consortium's Sensor Web Enablement (SWE) activity. A set of interfaces and protocols was standardized through which applications and services are able to access sensors of all types, and observations generated by them, over the Web.

A new generation of geospatial standards is now emerging, based on general Web standards, architecture and current practice, as described in W3C Spatial Data on the Web Best Practices.^[31] This includes several new standards for describing and publishing sensors and observations, such as the OGC SensorThings API^[22] and the W3C/OGC Semantic Sensor Network Ontology.^[28] This second edition of ISO 19156 (now named "Observations, Measurements and Samples", or abbreviated to "OMS") is informed by these recent developments. The focus of revising ISO 19156:2011 is aimed at enabling the publication of observation data as part of the Web of data, while also supporting other means of data exchange.

The content presented in this document is derived from the previous edition published by Open Geospatial Consortium as OGC 10-004r3, and also ISO 19156:2011. A technical note describing the changes in comparison to ISO 19156:2011 is provided in [Annex C](#).

The name and contact information of the maintenance agency for this document can be found at www.iso.org/maintenance_agencies.