

# **Standardization of digital geographic information (ISO/TC 211 and OGC)**

Workshop - The development of a standard for the zone geographical component  
Beijing 17 October 2018

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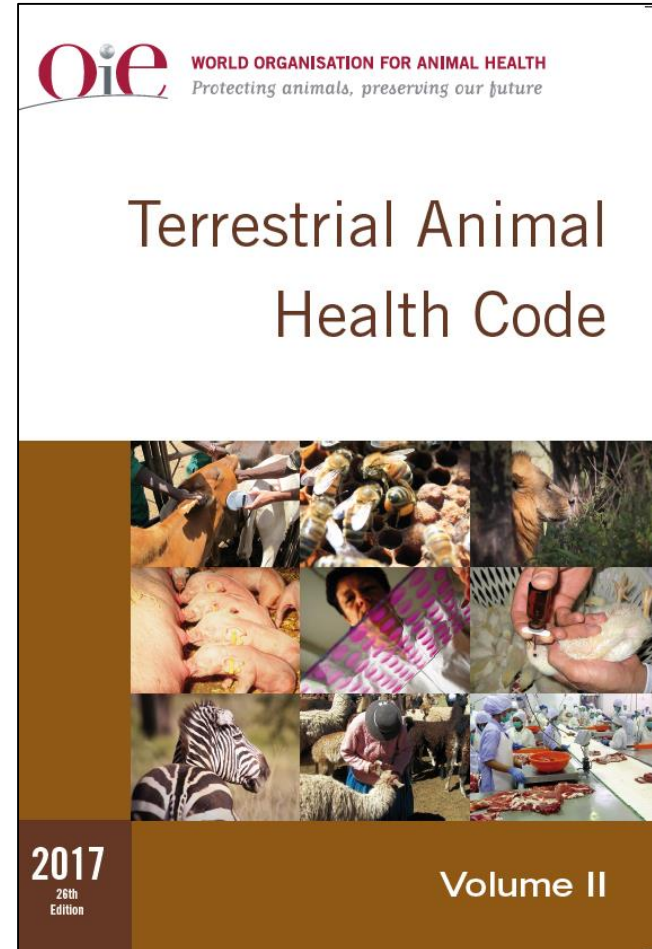
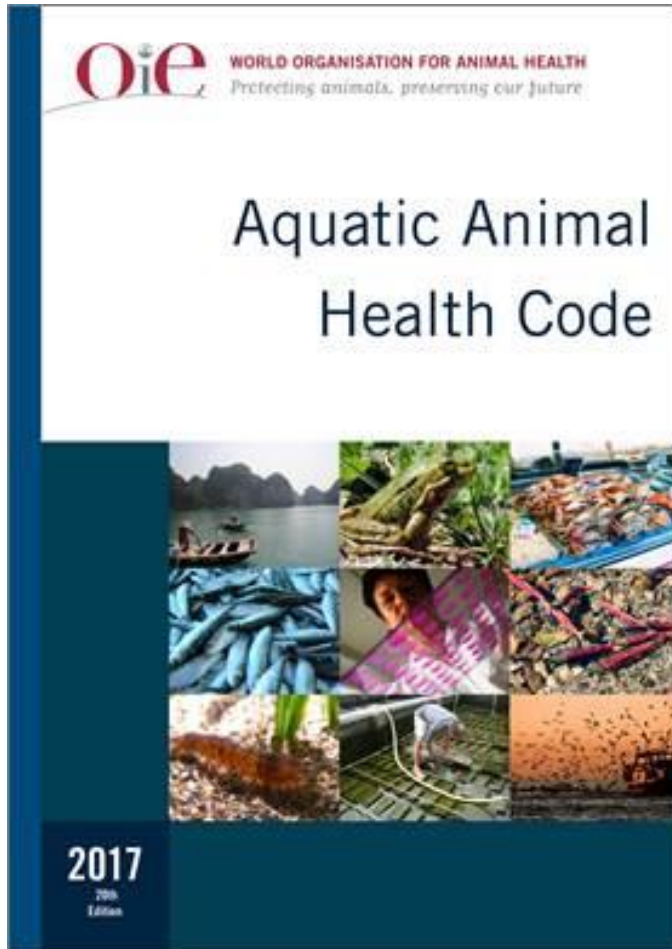
World Animal Health Information and Analysis Department

# What is a Standard?

Standards are defined by **ISO** as *documented **agreements** containing **technical specifications** or other **precise criteria** to be used consistently as **rules**, **guidelines** or **definitions**, to ensure that materials, products, processes and services are fit for their purpose*

# Examples of Standards

## *Standards for Animal diseases*



# Cooperation agreement on international standards related to the trade of animal and products derived from animals.

**ISO** International Organization for Standardization  
When the world agrees

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6 July 2011

## ISO strengthens cooperation with World Organization for Animal Health

Info: This news belongs to our archive.

ISO and the World Organization for Animal Health (OIE) on 6 July 2011 signed a cooperation agreement on international standards related to the trade of animal and products derived from animals.

The ISO-OIE agreement was signed at the ISO Central Secretariat in Geneva, Switzerland, by ISO Secretary-General Rob Steele and OIE Director General Bernard Vallat.

From left, at the signing of the ISO-OIE agreement: Mr Koen Meulens, ISO Deputy Secretary-General; Mr François Faisanier, Chair, ISO/TC 34, Food products; Mrs Sandrine Espallier, Secretary, ISO/TC 34; Dr Bernard Vallat, OIE Director General; Mr Rob Steele, ISO Secretary-General; Mrs Gillian Elisabeth Mykris, Deputy Head International Trade Department, OIE.

ISO, a nongovernmental organization with a membership comprising the national standards bodies of more than 160 countries, is the world's largest developer of voluntary international standards, with a current portfolio of more than 18 600.

The OIE is an intergovernmental organization with 178 member countries developing international standards concerning the safety of trade in animals and products of animal origin. OIE's aim is to improve animal health and welfare worldwide. The OIE is one of the so-called "three sisters", along with the Codex Alimentarius Commission and the International Plant Protection Convention, whose standards, guidelines and recommendations are specifically recognized in the World Trade Organization's Sanitary and phytosanitary (SPS) agreement.

Areas of ISO's work of potential interest to the OIE include standards for food products, microbiology, animal feeding stuffs, fisheries and aquaculture, conformity assessment, tractors and machinery for agriculture and forestry, quality management, biological evaluation of medical devices, consumer policy, ships and marine technologies, packaging and social responsibility.

The ISO-OIE cooperation agreement supports the ISO Strategic Plan 2011-2013 objective of "fastening partnerships that further increase the value and efficient development of International Standards" and complements ISO's efforts to collaborate with key intergovernmental organizations.

The agreement focuses on a targeted exchange of information on issues of mutual interest, provides for participation in each other's work and encourages the use and reference of each organization's standards, in accordance with their respective standards development rules and commercial policies.

**Related information**

- ISO/TC 34/SC 19: Animal feeding stuffs
- ISO/TC 234: Fisheries and aquaculture
- ISO/TC 34/SC 9: Microbiology
- ISO/TC 34: Food products

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## OIE

World Organization for Animal Health (OIE)

### Liaisons

Total number of liaisons: 12 | A liaisons: 11 | B liaisons: 0 | C liaisons: 1

Reference	Title	Category
ISO/CASCO	Committee on conformity assessment	A
ISO/TC 8	Ships and marine technology	A
ISO/TC 23/SC 19	Agricultural electronics	A
ISO/TC 34	Food products	A
ISO/TC 34/SC 9	Microbiology	A
ISO/TC 34/SC 10	Animal feeding stuffs	A
ISO/TC 34/SC 17	Management systems for food safety	A
ISO/TC 122	Packaging	A
ISO/TC 176	Quality management and quality assurance	A
ISO/TC 194	Biological and clinical evaluation of medical devices	A
ISO/TC 212/WG 5	Laboratory biorisk management	C
ISO/TC 234	Fisheries and aquaculture	A

**Notes**

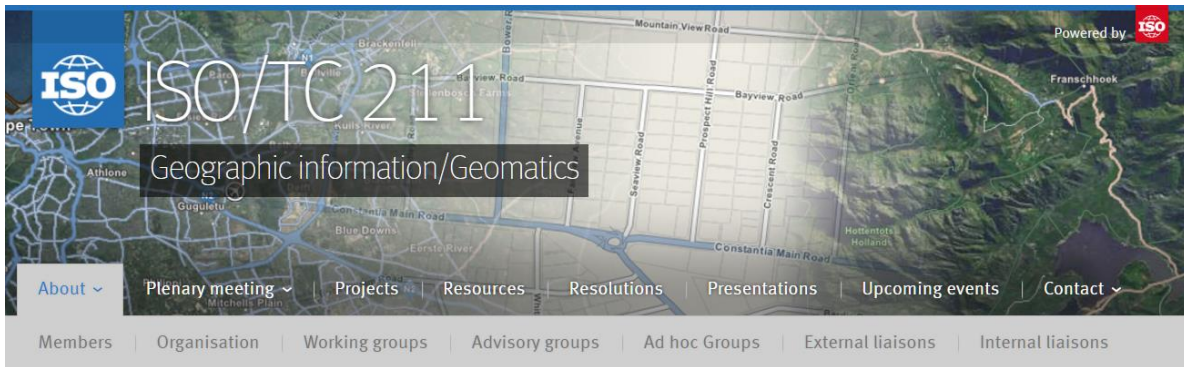
**Liaisons A:** Organizations that make an effective contribution to the work of the technical committee or subcommittee for questions dealt with by this technical committee or subcommittee.

**Liaisons B:** Organizations that have indicated a wish to be kept informed of the work of the technical committee or subcommittee.

**Liaisons C:** Organizations that make a technical contribution to and participate actively in the work of a working group.

# Standards in digital geographic information?

<https://committee.iso.org/home/tc211>



## Field of reference Geomatic:

discipline of gathering,  
storing, processing,  
and delivering  
geographic  
information or spatially  
referenced information

### Scope

Standardization in the field of digital geographic information. This work aims to establish a structured set of standards for information concerning objects or phenomena that are directly or indirectly associated with a location relative to the Earth.

These standards may specify, for geographic information, methods, tools and services for data management (including definition and description), acquiring, processing, analyzing, accessing, presenting and transferring such data in digital/electronic form between different users, systems and locations.

The work shall link to appropriate standards for information technology and data where possible, and provide a framework for the development of sector-specific applications using geographic data.

Chair and Secretariat at  
Standards for the SDGs  
in Geneva



# Scope

- Standardization in the field of **digital geographic information**.
- Establish a structured set of standards for information concerning objects or phenomena that are directly or indirectly associated with a **location relative to the Earth**.
- Standards may specify, for **geographic information, methods, tools** and **services** for **data management** (including definition and description), **acquiring, processing, analyzing, accessing, presenting** and **transferring** such data in digital/electronic form.

# Overall objectives of ISO/TC 211

- Increase the **understanding** and **usage** of geographic information
- Increase the **availability**, **access**, **integration**, and **sharing** of geographic information
- Promote the **efficient**, **effective**, and **economic use** of digital geographic information and associated hardware and software systems

# Current situation of ISO geographic standards

79 published

29 under development

INFRASTRUCTURE STANDARDS.....  
ISO 19101:2002 Geographic information – Reference Model .....  
ISO/TS 19103:2005 Geographic information – Conceptual Schema Language .....  
ISO/TS 19104:2008 Geographic information – Terminology .....  
ISO 19105:2000 Geographic information – Conformance and testing .....  
ISO 19106:2004 Geographic information – Profiles.....  
DATA MODEL STANDARDS .....  
ISO 19109:2005 Geographic information – Rules for application schema.....  
ISO 19107:2003 Geographic information – Spatial schema .....  
ISO 19123:2005 – Geographic information – Schema for coverage geometry and functions .....  
ISO 19108:2002 Geographic information – Temporal schema .....  
ISO 19141:2008 Geographic information – Schema for moving features .....  
ISO 19137:2007 Geographic information – Core profile of the spatial schema.....  
GEOGRAPHIC INFORMATION MANAGEMENT STANDARDS.....  
ISO 19110:2005 Geographic information – Methodology for feature cataloguing.....  
ISO 19111:2007 Geographic information – Spatial referencing by coordinates.....  
ISO 19112:2003 – Geographic information – Spatial referencing by geographic identifiers.....  
ISO 19113:2002 Geographic information – Quality principles.....  
ISO 19114:2003 Geographic information – Quality evaluation procedures .....  
ISO 19115:2003 – Geographic information - Metadata .....  
ISO 19131:2007 Geographic information – Data product specifications.....  
ISO 19135:2005 Geographic information – Procedures for item registration .....  
ISO 19127:2005 Geographic information – Geodetic codes and Parameters.....  
ISO 19138:2006 Geographic information – Data quality measures .....

GEOGRAPHIC INFORMATION SERVICES STANDARDS.....  
ISO 19119:2005 Geographic information – Services.....  
ISO 19116:2004 – Geographic information – Positioning services .....  
ISO 19117:2005 Geographic information – Portrayal.....  
ISO 19125-1:2004 Geographic information – Simple feature access – Part 1: Common architecture.....  
ISO 19125:2004 Geographic information – Simple feature access – Part 2: SQL option .....  
ISO 19128:2005 Geographic information – Web map server interface .....  
ISO 19132:2007 Geographic information – Location based services – Reference model .....  
ISO 19133:2005 Geographic information – Location based services – Tracking and navigation .....  
ISO 19134:2007 Geographic information – Location based services – Multimodal routing and navigation.....  
GEOGRAPHIC INFORMATION ENCODING STANDARDS .....  
ISO 19118:2005 Geographic information – Encoding .....  
ISO 6709:2008 Standard representation of geographic location by coordinates .....  
ISO 19136:2007 Geographic information – Geography Markup Language (GML).....  
ISO 19139:2007 Geographic information – Metadata – XML schema implementation .....  
STANDARDS FOR SPECIFIC THEMATIC AREAS .....  
ISO/TS 19101-2:2008 (E) Geographic information – Reference model – Part 2: Imagery .....  
ISO/TS 19115-2:2008 Geographic information – Metadata – Part 2: Extensions for imagery and gridded data .....



# Open Geospatial Consortium (OGC)

The screenshot shows the OGC website homepage. At the top left is the OGC logo with the tagline "Making location count." To the right of the logo is a navigation menu with items: About, Standards, Innovation, News & Events, Membership, and Resources. Below the navigation is a large banner image of a hand holding a rolled-up document, with the text "Subscribe to our Quarterly Newsletter" and "OGC Update" overlaid. Below the banner are two main sections: "Career Opportunities" and "Recent Tweets".

**Career Opportunities**  
OGC has one open position:  
We are seeking to hire an individual to become President/CEO

**Welcome to The Open Geospatial Consortium**  
The Open Geospatial Consortium (OGC) is an international not for profit organization committed to making quality open standards for the global geospatial community. These standards are made through a consensus process and are freely available for anyone to use to improve sharing of the world's geospatial data.

OGC standards are used in a wide variety of domains including: Geosciences & Environment; Defense & Intelligence; Smart Cities, including IoT & Sensor Webs, mobile tech, and the 3D & Built Environment; Emergency Response & Disaster Management; Aviation; Energy & Utilities; and many more.

Our 525+ member organizations come from across government, commercial organizations, NGOs, academic, and research institutes.

**Recent Tweets**  
Tweets by @opengeospatial

Open Geospatial: OGC Retweeted  
Mohsen Kalantari @smkalantari  
Parametrising a tree into an XML file, Singapore reconstructs digital twins of trees in CityGML. @UoMCSIDL @30DeR2018 #CityGML @opengeospatial

The Open Geospatial Consortium (OGC) is an international no profit organization of over 519 companies committed to making quality **open standards** for the global geospatial community

# Open Geospatial Consortium (OGC)

## 30 standards

The OGC standards baseline comprises more than **30 standards**, including:

- CSW – Catalog Service for the Web: access to catalog information
- **GML – Geography Markup Language:**
- **KML – Keyhole Markup Language:**
- O&M - Observations and Measurements
- OLS – Open Location Service (OpenLS)
- OGC Web Services Context Document
- OWS – OGC Web Service Common
- SensorML – Sensor Model Language
- SensorThings API
- SFS – Simple Features – SQL
- **SLD - Styled Layer Descriptor**
- **SRID, an identification for spatial coordinate systems**
- WaterML - model for the representation of hydrological observation data
- **WCS – Web Coverage Service.**
- WCPS – Web Coverage Processing Service.
- **WFS – Web Feature Service: for retrieving or altering feature descriptions**
- **WMS – Web Map Service: provides map images**
- **WMTS – Web Map Tile Service: provides map image tiles**
- **WPS – Web Processing Service: remote processing service**
- GeoSPARQL – Geographic SPARQL Protocol.
- WTS – Web Terrain Service (WTS)

# ISO and OGC

- ISO/TC211 and the Open Geospatial Consortium (OGC) established a **cooperative agreement** in 1998.
- The OGC has adopted several ISO/TC 211 standards on which to base their own work on implementation specifications
- The OGC submit their specifications for ISO standardization via ISO/TC 211.

# ISO and OGC

- Standards tracks of OGC and ISO **fully coordinated**
- Often **complementary** and where they overlap, there is no competition, but common action (e.g. in the geometry model).
- OGC provides **fast-paced standard development** and promotion of standards adoption.
- ISO is the dominant de jure international standards development organization (**SDO**)
- Through OGC's cooperative relationship with ISO, many of OGC's OGC Standards either have become ISO standards or are on track to become ISO standards.

# ISO and OGC

## ISO 19142 Geographic information -- Web Feature Service

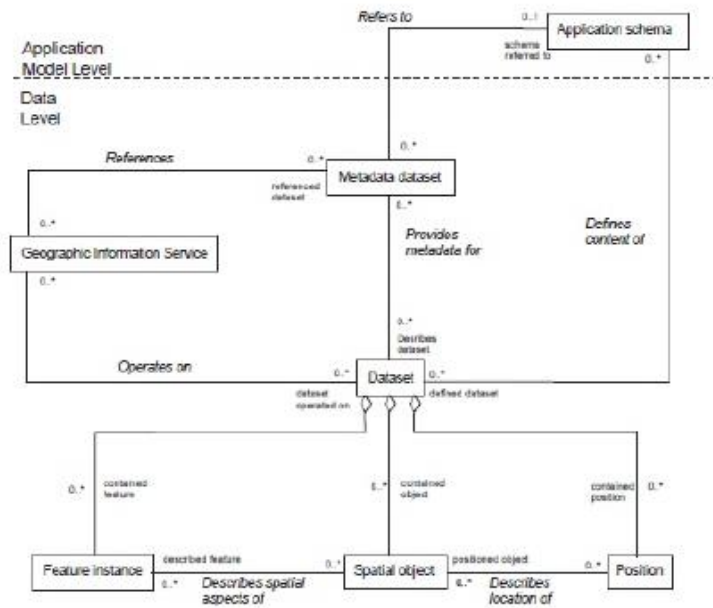
ISO 19142:2010 specifies the **behaviour of a web feature service** that provides transactions on and access to geographic features in a manner independent of the underlying data store. It specifies discovery operations, query operations, locking operations, transaction operations and operations to manage stored parameterized query expressions

## OGC - Web Feature Service 2.0 Interface Standard

This International Standard specifies the behaviour of a service that provides transactions on and access to geographic features in a manner independent of the underlying data store. It specifies discovery operations, query operations, locking operations, transaction operations and operations to manage stored parameterized query expressions.

# ISO 19101 – Reference model

## Domain reference model



The model describes the **overall requirements** for standardization and the fundamental principles that apply in **developing** and **using standards** for geographic information

# Thank you for your attention



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