



International Cartographic Association
Association Cartographique Internationale

ICA Commission: SDI & Standards

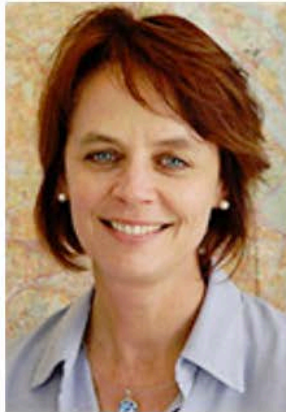
Presented by Serena Coetzee, University of Pretoria
Chair: ICA Commission on SDI & Standards

SDI-Open 2017, George Washington University, Washington DC
1 July 2017

Terms of reference

- **Collaborate** with other ICA Commissions
- **Research**
 - Impact and use cartography in SDI, e.g. standards, spatial semantics, ontologies, volunteered geographical information (VGI), data quality; continue work on extending, improving and applying the **ICA's SDI model**.
- **Publish**
 - Reports, conference presentations and/or journal articles on our work
- **Workshops** on SDI and standards
- Contribute to the **International Map Year**
- **Meetings** at suitable meetings and conferences
- **Liaison** with other organizations, ISO/TC211, GSDI, ...

Who are we?



Serena Coetzee

Centre for Geoinformation
Science
University of Pretoria
Private Bag X20
Hatfield 0028, South Africa
phone: +27 12 420 3823
fax: +27 12 841 3037
e-mail:
serena.coetzee@up.ac.za



Franz-Josef Behr

Laboratory for Open Geospatial Software, Data and
Standards
Stuttgart University of Applied Sciences
Schellingstraße 24
70174 Stuttgart, Germany
phone: +49 711 8926 2606
fax: +49 711/8926-2556
e-mail: franz-josef.behr@hft-stuttgart.de

Commission Chairs

Who are we?



Antony Cooper

Built Environment Unit

CSIR

PO Box 395

Pretoria 0001

South Africa

phone: +27 12 841 4121

fax: +27 12 841 3037

e-mail: acooper@csir.co.za



Harold Moellering

Department of Geography

The Ohio State University

1036 Derby Hall

154 North Oval Mall

Columbus, Oh 43210-1361, USA

e-mail: moellering.1@osu.edu

Former
Commission Chairs

Executive Committee

Executive Committee liaison: David Forrest



Who are we?



In a spatial data infrastructure...

Users want to **find** spatial data

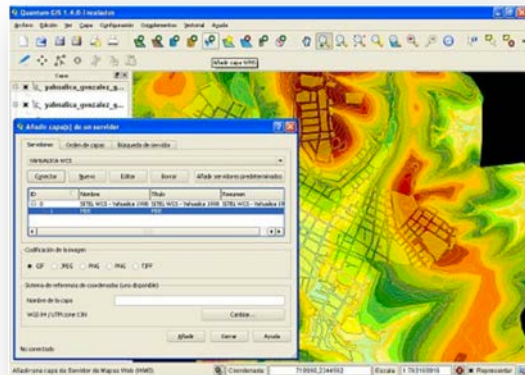
Metadata, catalogues, discovery, portals...

Users want to **access** spatial data

Web services, licenses, costs, interoperability...

Users want to **use** spatial data

Quality, update frequency, report errors...



www.ggis.org, <http://maps.me/en/home>, <http://www.linz.govt.nz>, www.bigthink.com

ICA's SDI model

Describes an SDI from different viewpoints (based on ISO 10746-1:1998) ...

Viewpoints	
✓ Enterprise	Concerned with the purpose, scope and policies governing the activities of the specified system within the organization of which it is a part
✓ Information	Concerned with the kinds of information handled by the system and constraints on the use and interpretation of that information
✓ Computational	Concerned with the functional decomposition of the system into a set of objects that interact at interfaces – enabling system distribution
Engineering	Concerned with the infrastructure required to support system distribution
Technology	Concerned with the choice of technology to support system distribution

ICA's SDI model

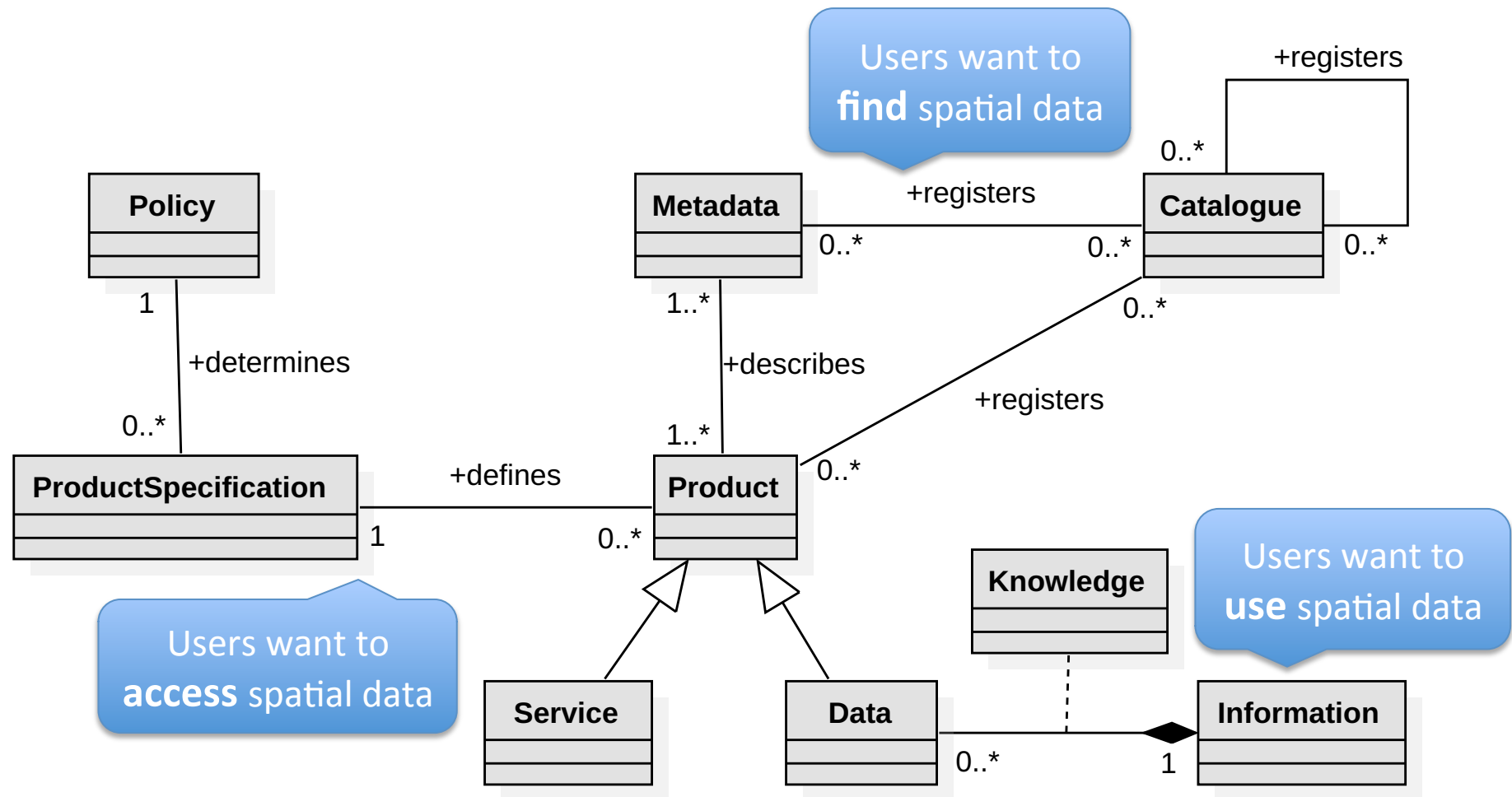
SDI stakeholder

- individual or organization with an interest in the SDI achieving its purpose
- impacts and influences the SDI or is affected by the SDI

SDI Stakeholders	
Policy Maker	Sets the policy pursued by an SDI and all its stakeholders
Producer	Produces SDI data or services
Provider	Provides data or services to users throughout SDI
Broker	Brings users and providers together and assists in the negotiation of contracts between them
Value-Added Reseller	Adds some new feature to an existing product or group of products, and then makes it available as a new product
User	Uses the SDI for its intended purpose

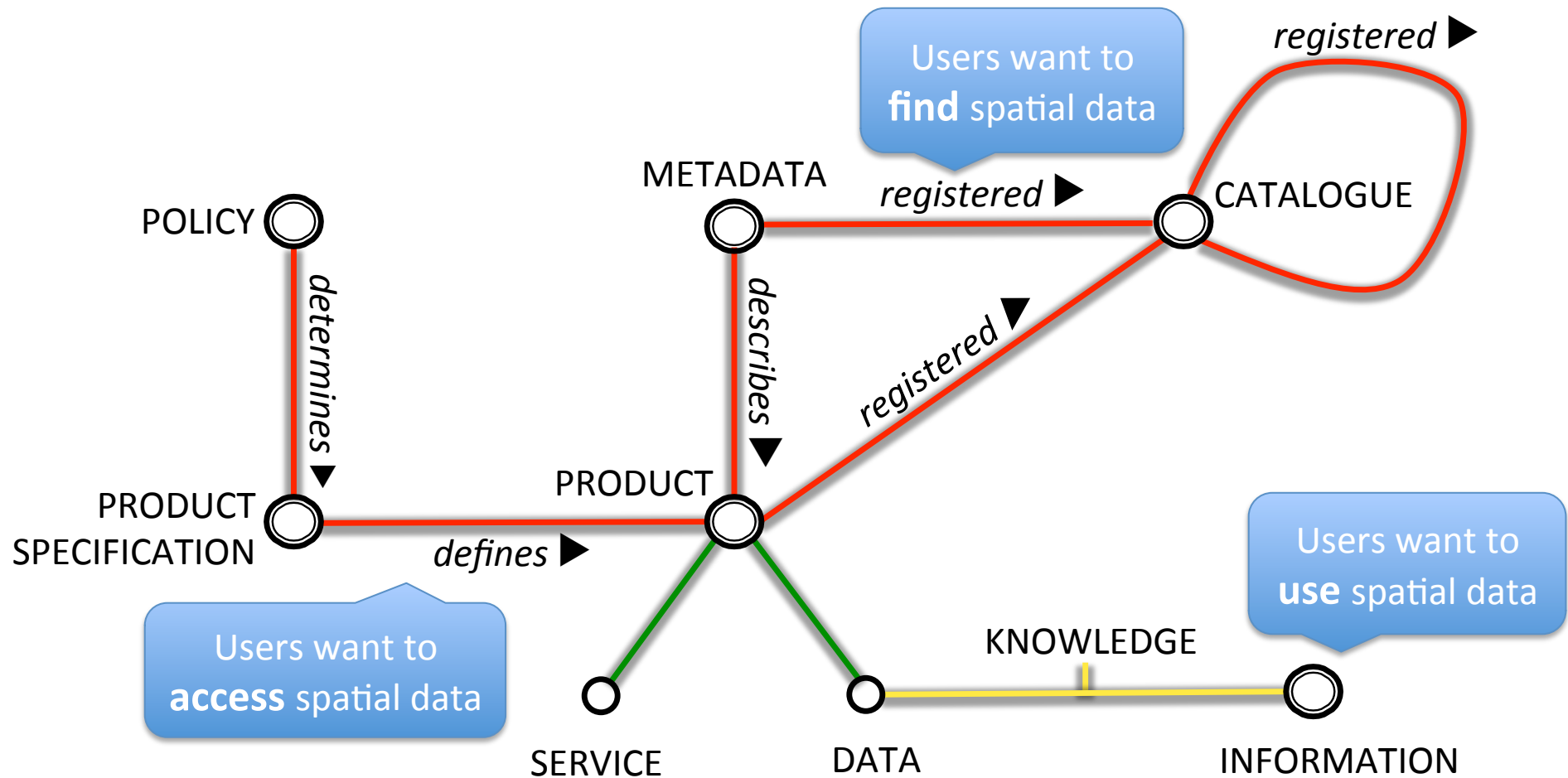
Information viewpoint

ICA's SDI model

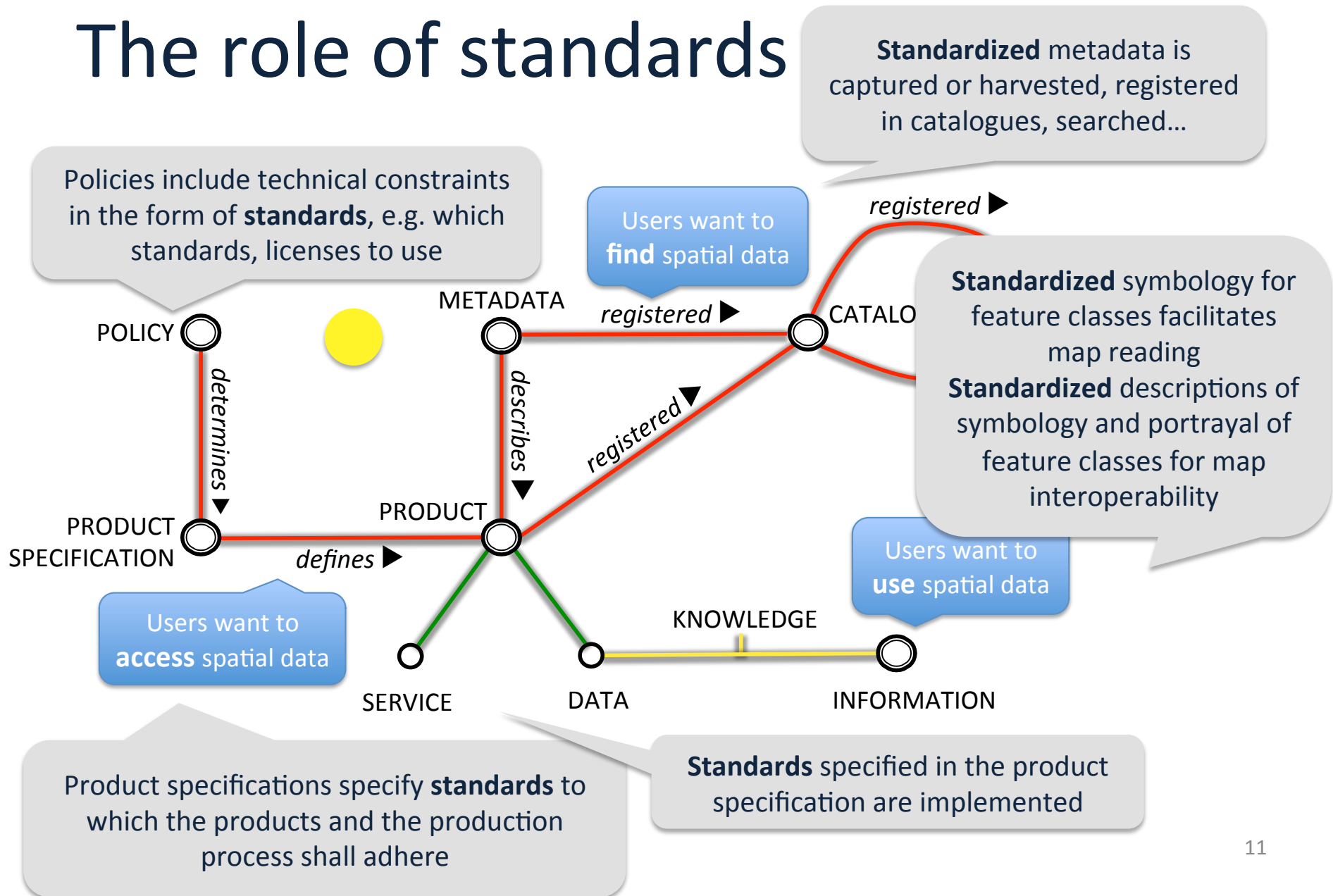


Information
viewpoint

ICA's SDI model



The role of standards



Academic SDI

Oral presentation @ ICC 2017
Wednesday, 7 July 2017 8:30
Maryland A

- Towards understanding SDIs for research and education
- Review SDI implementations at universities and research institutes Czechia, Netherlands, Poland, South Africa
 - Purpose
 - Identified stakeholders according to ICA's SDI model
 - Lessons learnt
- Present model of the 'Academic SDI'

Schedule includes 36 presentations
related to standards

38 presentations
related to SDIs



JULY 2-7, 2017 / WASH



Home

Login

- Registration >
- Hotel and Travel Information >
- Full Schedule
- Browse Full Schedule >
- International Cartographic Exhibition >
- Exhibitors >
- My Schedule
Login required

All Days

Sat, Jul 1

Sun, Jul 2

Mon, Jul 3

Tue, Jul 4

Wed, Jul 5

Thu, Jul 6

Fri, Jul 7

Search for: standards

Q standards

76 results found.

Saturday, July 1, 2017

Sunday, July 2, 2017

Monday, July 3, 2017

Tuesday, July 4, 2017

1:30 PM - 2:30 PM

TECHNICAL SESSIONS - 4500s



1:30 PM - 1:50 PM

4506.1 - Challenges in sharing of geospatial data by data custodians in South Africa

Location: Maryland A

SDI and Standards

1:50 PM - 2:10 PM

4506.2 - 3D topography, part of the key register Topography in the Netherlands?

Location: Maryland A

SDI and Standards



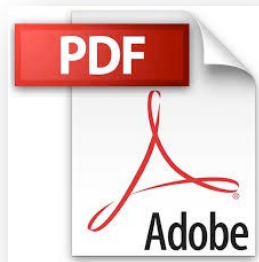


United Nations
Economic Commission for Africa



International Cartographic Association
Association Cartographique Internationale

- **Mapping Africa for Africa**
 - Initiative of UN ECA CODIST-Geo
 - Endorsed and supported by the ICA
- **Guidelines of Best Practice for the Acquisition, Storage, Maintenance and Dissemination of Fundamental Geo-Spatial Datasets**
 - Target audience: practitioners in African countries
 - Usually but not always from national mapping organizations
 - Take account of conditions experienced in African countries
 - Open resource
 - Practical, 'hands-on' guide
 - Edited by Derek Clarke, former ICA Vice-President



Guidelines of Best Practice for the Acquisition, Storage, Maintenance and Dissemination of Fundamental Geo-Spatial Datasets

Editor: Derek Clarke

<http://wiki.icaci.org>



Part A: **Introduction**

Part B: **Ontology** of fundamental geo-spatial datasets

Part C: **Standards** for fundamental geo-spatial datasets

Part D: **Acquisition** of fundamental geo-spatial datasets

Part E: **Storage** of fundamental geo-spatial datasets

Part F: **Maintenance** of fundamental geo-spatial datasets

Part G: **Dissemination** of fundamental geo-spatial datasets

Part H: **Organizational issues**

Part I: **Users perspective** of fundamental geo-spatial datasets

Part J: **Versioning** of document

Annexures

References



- Main page
- Recent changes
- Random page
- Help
- Content
 - Standards
- Tools
 - What links here
 - Related changes
 - Upload file
 - Special pages
 - Printable version
 - Permanent link
 - Page information

Page [Discussion](#)

[Read](#)

[Edit](#)

[View history](#)



[More](#) ▾



Standards

[Translate this page](#); This page contains changes which are not marked for translation.

Other languages:

English

These pages of the wiki are based on *Part C: Standards for fu*
Practice for the Acquisition, Storage, Maintenance and Dissen

The Standards page (this page) provides background informat
standards are defined; the development and implementation o
fundamental geospatial datasets are introduced. Standards rel
geospatial datasets are listed with links to implementation ben
maintenance and dissemination of geospatial data.

The wiki was created by the ICA Commission on SDI and Stan
Geographic information/Geomatics and other volunteers.

Contents [\[hide\]](#)

1 Background

- 1.1 Types of standards
- 1.2 Development of standards
- 1.3 Implementation of standards
- 1.4 Key standards bodies for geospatial data
 - 1.4.1 International Organization for Standardization (ISO)
 - 1.4.2 Open Geospatial Consortium (OGC)
 - 1.4.3 International Hydrographic Organization (IHO)
 - 1.4.4 Cooperation between IHO, ISO/TC 211 and OGC
 - 1.4.5 Other standards developing organisations

2 Groups of standards for geographic information

3 Conventions to follow when contributing to this Wiki

4 See also

5 External links

6 Acknowledgments

Contents [\[hide\]](#)

1 Background

1.1 Types of standards

1.2 Development of standards

1.3 Implementation of standards

1.4 Key standards bodies for geospatial data

1.4.1 International Organization for Standardization (ISO)

1.4.2 Open Geospatial Consortium (OGC)

1.4.3 International Hydrographic Organization (IHO)

1.4.4 Cooperation between IHO, ISO/TC 211 and OGC

1.4.5 Other standards developing organisations

2 Groups of standards for geographic information

3 Conventions to follow when contributing to this Wiki

4 See also

5 External links

6 Acknowledgments



Main page
Recent changes
Random page
Help

Content
Standards

Tools
What links here
Related changes
Upload file
Special pages
Printable version
Permanent link
Page information

Page **Discussion**

Read

Edit

View history



More ▾

Search



ISO 19157:2013 Geographic information - Data quality

Contents [\[hide\]](#)

- 1 Overview
- 2 Scope
- 3 Implementation benefits
- 4 Implementation guidelines
- 5 See also

Implementation guidelines

Overview [\[edit\]](#)

Full name	ISO 19157:2013, Geographic information - Data quality ↗
Version	Edition 1
Amendments	None
Corrigenda	None
Published by	ISO/TC 211
Languages	English
Online overview	https://www.iso.org/obp/ui/#iso:std:iso:19157:ed-1:v1:en ↗
Derived ontologies	https://github.com/ISO-TC211/GOM/tree/master/isotc211_GOM_harmonizedOntology/19157/2013 ↗
Type of standard	ISO International Standard Meta level
Application	The standard specifies the description, evaluation and reporting of the quality of geographic data.
Conformance classes	Data quality evaluation process Data quality metadata Standalone quality report Data quality measure



Strengthen the means of implementation and revitalize the
Global Partnership for Sustainable Development

THE GLOBAL GOALS
For Sustainable Development

**17 PARTNERSHIPS
FOR THE GOALS**

Targets

Target 17.18: By 2020, enhance capacity-building support to developing countries, including for least developed countries and small island developing States, to increase significantly the availability of high-quality, timely and reliable data disaggregated by income, gender, age, race, ethnicity, migratory status, disability, geographic location and other characteristics relevant in national contexts.

Indicators

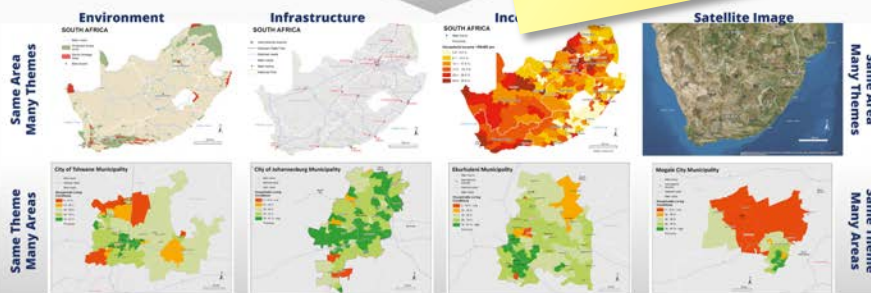
Indicator 17.18.1: Proportion of countries with a national capacity-building strategy in place, produced at the national level, in accordance with the target, in accordance with the target, in accordance with the target.

Data collection



Geographic information is any information explicitly associated with a location relative to the Earth's surface. It is required to monitor sustainable development. Multiple stakeholders are involved in data collection. Departments typically collect demographic information and geographic information about the natural environment.

Vast amounts of geographic information are grouped by administrative areas for further analysis, comparison and aggregation.



A spatial data infrastructure (SDI) is an evolving concept about facilitating and coordinating the exchange and sharing of spatial data and services between stakeholders from different levels in the spatial data community. Many countries have SDIs to manage and use their geographic information assets better by taking a perspective that starts at the local level and proceeds up through state, national and regional levels to the global level.

SDI stakeholder	Description
Policy maker	Sets the policy pursued by an SDI and all its stakeholders
Producer	Produces SDI data or services
Provider	Provides data or services to users throughout SDI
Broker	Brings users and providers together and assists in the negotiation of contracts between them
Value-added reseller	Adds some new feature to an existing product or group of products, and then makes it available as a new product
User	Uses the SDI for its intended purpose

SDI stakeholders according to the ICA's SDI model

SDIs facilitate sharing of geographic information and services, e.g. through geoportals. Sharing relies on standards for interoperability.



Geographic information and services available through SDIs facilitate map production, analysis, decision-making and planning of interventions for achieving the global goals for sustainable development.



The ICA Commission on Spatial data infrastructure (SDI) and Standards focuses on the role and impact of SDI and standards on cartography and mapping. It has developed a conceptual model of an SDI that contributes to understanding SDI stakeholders, their roles and activities, and processes in which SDI stakeholders are

involved. In support of world wide capacity building, a wiki site on guidelines and implementation benefits of geographic information standards is maintained at <http://wiki.icaci.org>.

ICACI Commission on Spatial data infrastructure (SDI) and Standards
Chair: Serena Coetzee scoetzee@icaci.org
Vice-chair: Françoise Joubert fjoubert@icaci.org



WE MAPS
INTERNATIONAL MAP YEAR 2015-2016

International Cartographic Association
Association Cartographique Internationale



*SDI & standards
make data
available for maps*

Data collection

Data manipulation and
preparation

Spatial data infrastructure
and standards

Cartographic products

Posters are available for download at

<http://icaci.org/maps-and-sustainable-development-goals/>

Upcoming

Commission Meeting
Thursday, 6 July 2017 11:40 – 12:30
Maryland A

- Further collaborative research on Academic SDI
- Chapter in proposed book
 - Mapping the sustainable development goals – ICA best practice
- 2018
 - Commission Meeting (location to be decided)
 - Mini-meetings at other events, e.g. ISO/TC 211 plenary week
- ICC 2019 in Tokyo
 - Pre-conference workshop
 - Conference paper by Commission members?

ICA Commission on SDI & Standards

<http://sdistandards.icaci.org/>

- Website
 - Resources: List of publications
- Join
 - Mailing list for discussions
 - ica-sdistandards@lazarus.elte.hu
 - WordPress Registered Subscribers for notifications
 - <http://sdistandards.icaci.org>
 - If you want to join, email one of the Chairs
 - serenacoetzee@gmail.com or franz-josef.behr@hft-stuttgart.de