



International Cartographic Association
Association Cartographique Internationale

International Cartographic Association: *How can we contribute to the work of the OGC Portrayal DWG?*

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with Franz-Josef Behr, Jan Brus, Silvana Camboim, Barend Kobben, Petr Kubicek and Dalia Varanka

at the

OGC Portrayal DWG meeting (virtual), 17 June 2021



International Cartographic Association
Association Cartographique Internationale

www.icaci.org

To promote the
disciplines and professions of
Cartography and GIScience
in an international context



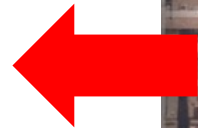
 **ICC**
2021
Florence, ITALY
13 • 17 DECEMBER 2021

30th
International
Cartographic
Conference

Florence, Italy

- T01. Art in Cartography
- T02. Atlases
- T03. Cartographic Heritage into the Digital Domain
- T04. Cartography and Children
- T05. Cartography for Early Warning and Crisis Management
- T06. Cognition in Geovisualization
- T07. Education and Continuous Learning in Cartography
- T08. Generalization and Multiple Representation
- T09. Artificial Intelligence in Mapping
- T10. Social Sensing and Visual Analytics
- T11. History of Cartography
- T12. Location Based Services and Ubiquitous Mapping
- T13. Map Design
- T14. Map Production and Geoinformation Management
- T15. Maps and Accessibility
- T16. Participatory Mapping
- T17. Marine Cartography
- T18. Mountain Cartography

- T19. Open Geospatial Data and Technologies
- T20. Planetary Cartography
- T21. Spatial Data Infrastructure and Standards
- T22. Sensor-Driven Mapping
- T23. Toponymy in Cartography
- T24. Cartography and Public Health
- T25. Cartography and Sustainable Development
- T26. Perspectives in a New Cartographic Research Agenda
- T27. Transformation of National Mapping Agencies
- T28. Cartography in Digital Humanities
- T29. Mapping Urban Environments
- T30. Theoretical Cartography
- T31. Cartography for Leisure
- T32. Military Mapping
- T33. Augmented and Virtual Realities in Cartography
- T34. Use, User, and Usability
- T35. Map Projections
- T36. Cartography, Privacy, and Ethics





President's Blog #3: ICA joins the OGC as Associate Member

The ICA recently joined the Open Geospatial Consortium (OGC) as an associate member. As an international consortium of more than 500 businesses, government agencies, research organizations, and universities, the OGC focuses on the interoperability of geospatial data, applications and services "to make geospatial (location) information and services FAIR – Findable, Accessible, Interoperable, and Reusable" (<https://www.ogc.org/>).



OGC membership makes it possible for ICA Commission Members to participate in standards development and gives them access to member-only content in the OGC portal. This includes attendance and participation in OGC meetings, voting rights in working groups, and insight into geospatial technology trends with recommendations for actions in the technology forecast report. Additional benefits are the awareness and promotion of the ICA and cartography to a broader public and further intensified contact with leading geospatial organisations.

The Commissions on [SDI and Standards](#), [Cognitive Issues in Geographic Information Visualization](#) and [Open Source Geospatial Technologies](#) have started regular discussions to coordinate the ICA's involvement in the OGC. We think that the ICA can make a particular contribution by contributing to the standardization of cartography-specific terminology and by bringing in a user-centred perspective to the technical standards of the OGC through communicating our understanding of what design choices are effective.

Regular discussions between four ICA Commissions followed ...

Category: [President's Blog](#) **Tag:** [OGC](#)

ICA Commission on SDI & Standards

SDIs:

What is the impact and use of cartography, **standards**, spatial semantics, ontologies, volunteered geographical information (VGI), data quality, virtual globes and other technological developments?

Research, Education, Publications

- With other ICA Commissions
- With other organizations, e.g. ISO/TC 211, OGC, IHO...



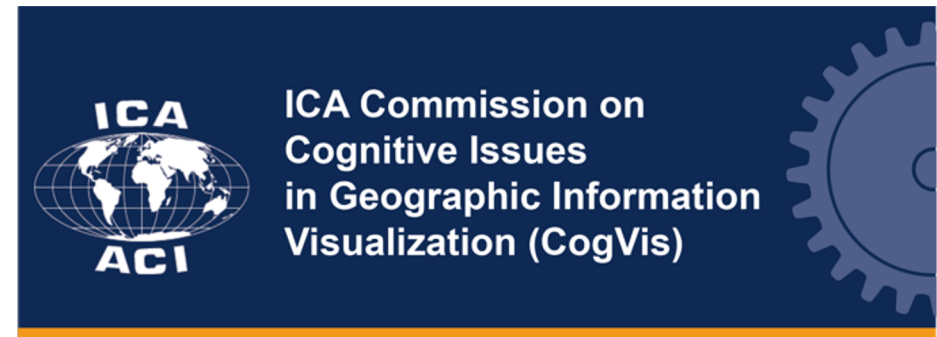


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ICA Commission on Cognitive Issues in Geospatial Information Visualization

We design empirical research that investigates cognitive processes people use when they work with maps, especially for making decisions. We explore all types of spatial data visualization including 3D and Extended Reality.

We are keen to explore opportunities to engage with standards organisations (e.g., OGC) to use knowledge from our Commission to positively influence and contribute to standards related to maps and decision making.



<http://cogvis.icaci.org>



Image from
Iconscout



Perspectives on making cartographic knowledge accessible to software developers

ICA Commission on Open Source Geospatial Technologies

This commission aims to building up open...



Source



Standards



Data



Science



Education

...for bridging the digital divide.



ICA Commission on Open Source Geospatial Technologies

Together with OSGeo and ISPRS, we started the Geo For All network, which today has around 80 laboratories in universities and research centers around the world, collaborating for the dissemination of Open Principles in Geospatial Education.

We also work closely with the Youth Mappers network, which has 271 laboratories dedicated to promoting collaborative mapping with the OpenStreetMap community and the HOT (Humanitarian OpenStreetMap Team)





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ICA Commission on Geospatial Semantics

Semantic technology creates opportunities for new geospatial data portrayals

- Graph data models for geographical processes
- Concept maps for relations between information resources

The image shows the USGS MAKB (Map and Query Builder) interface. On the left, a map of Fairfax County, Virginia, is displayed with various layers and markers. On the right, a complex semantic graph is overlaid on the map. The graph consists of numerous nodes (circles) representing different entities and their relationships. Key nodes include 'Image (Image/Map)', 'Document (CreativeWork)', 'Person (Person/Person)', 'Agent (Agent)', and 'Online E...'. Relationships are indicated by lines and labels such as 'Subclass of', 'knows', 'work in', 'account', 'mem', 'made', 'status', and 'labor ID'. The graph is highly interconnected, illustrating the semantic relationships between various geospatial and information resources.

International Cartography Association Commission on Geospatial Semantics

Science

Place matters. The environment varies geographically.

Technology

Technical designs are needed that better reflect cognitive and contextual meaning.

Society

Semantics enable us to communicate the human experience.

<https://icaci-geospatalsemantics.usgs.gov/>



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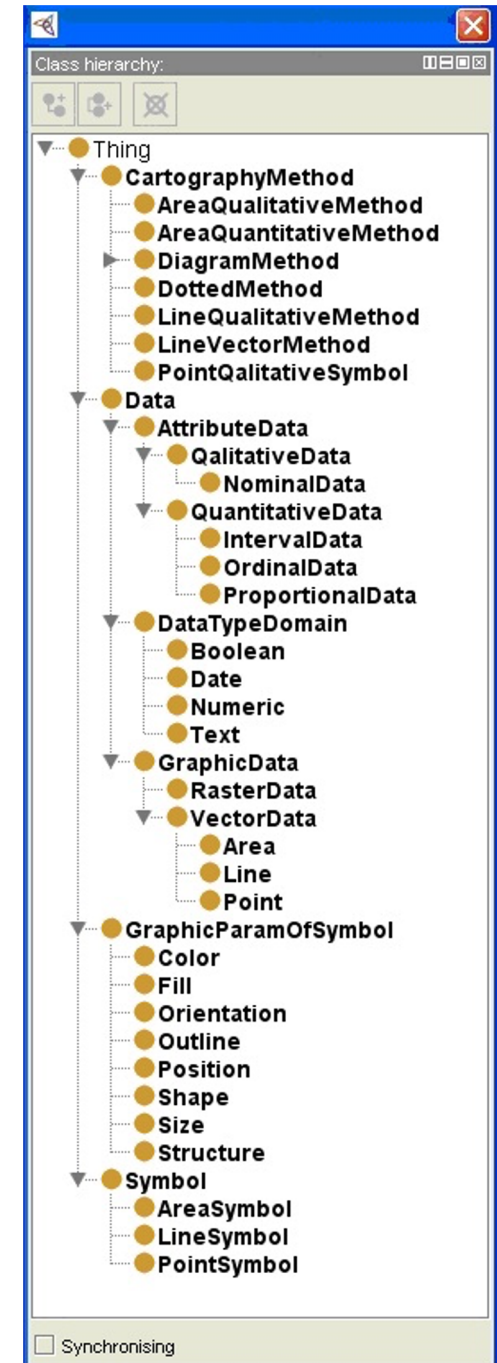
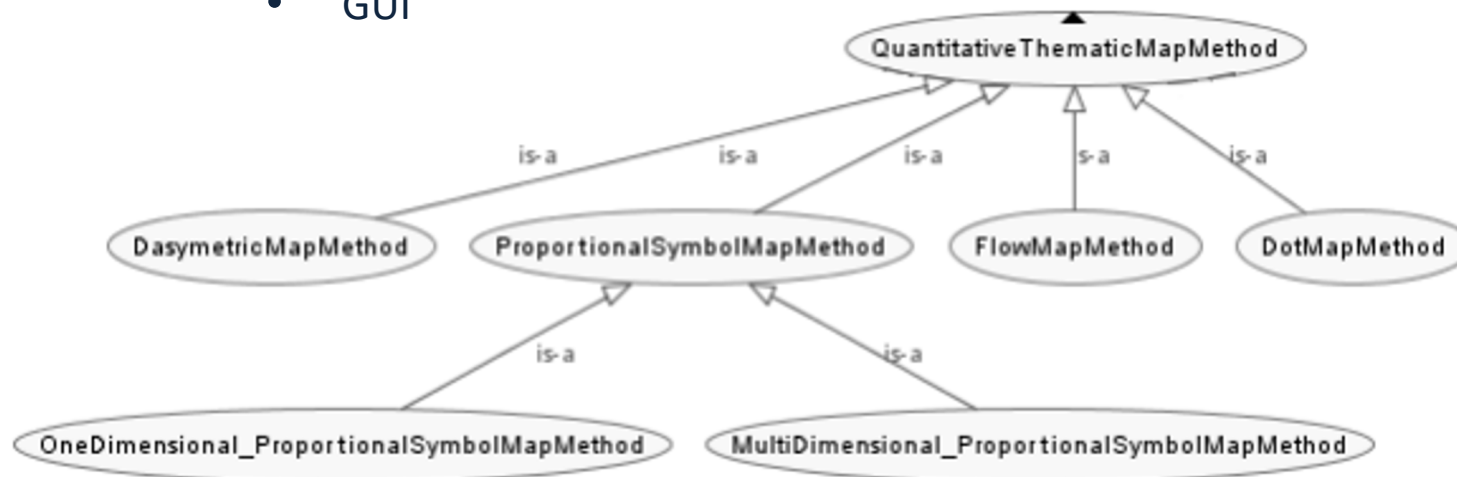
How can we contribute to the OGC Portrayal DWG?

For example, by making cartographic knowledge
accessible to software developers...

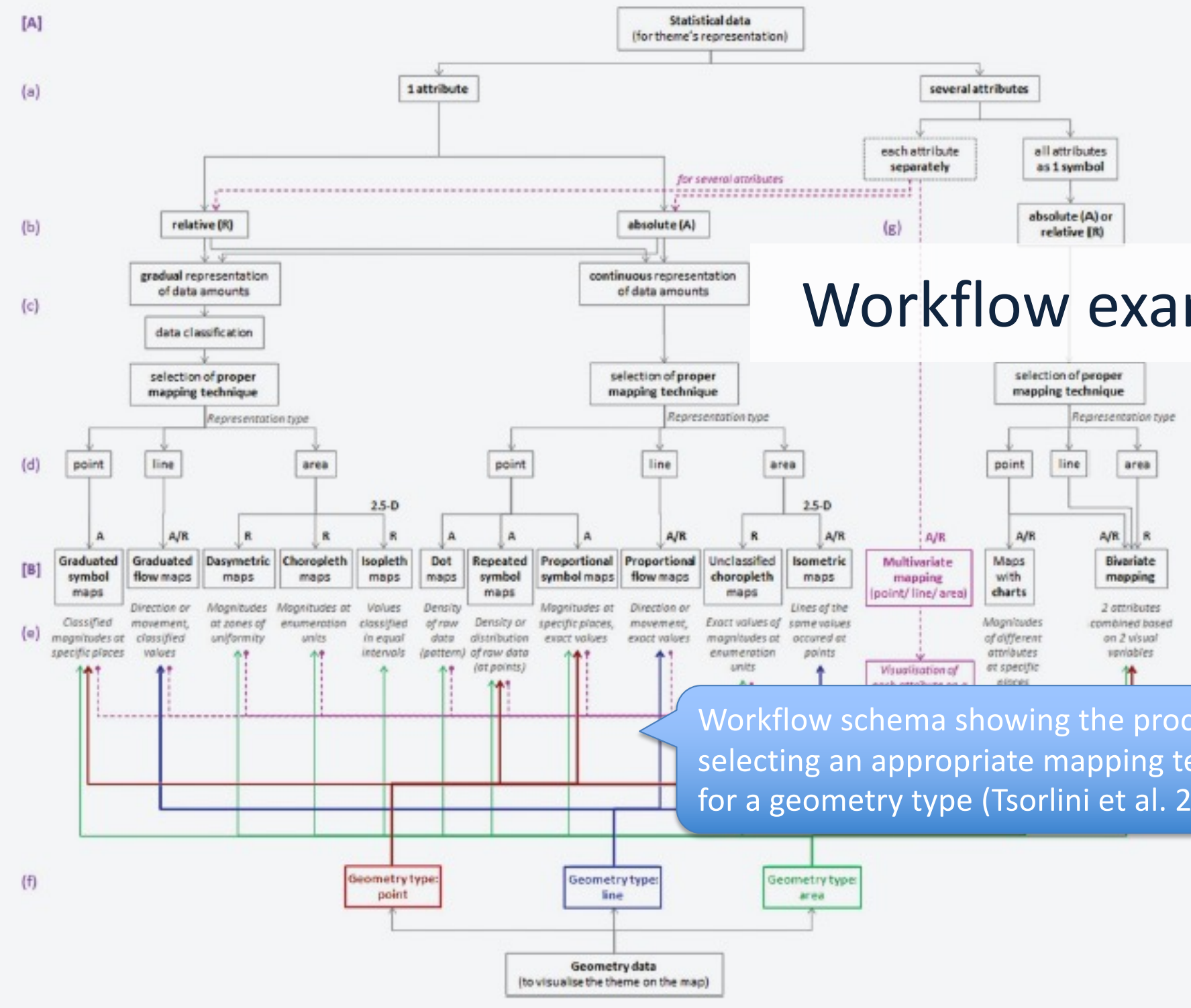


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- **Intelligent system for interactive support of thematic map design**
- project to help in decision processes during maps creation
 - formalizing the cartographical knowledge
 - creating cartographical rules
 - ontology building
 - ontology to JAVA classes transformation
 - expert system developing
 - GUI

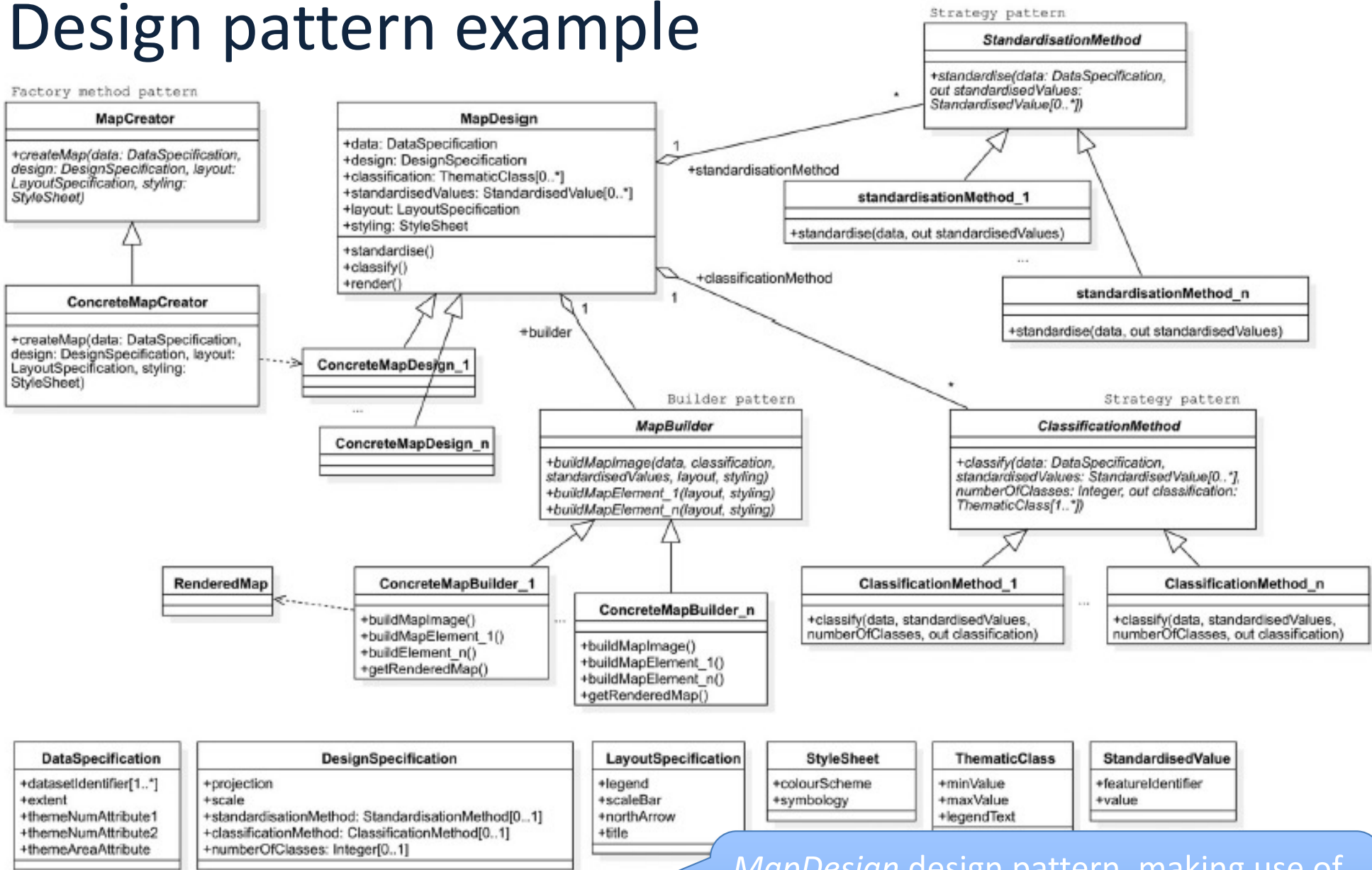


Workflow example



Workflow schema showing the process of selecting an appropriate mapping technique for a geometry type (Tsorlini et al. 2017)

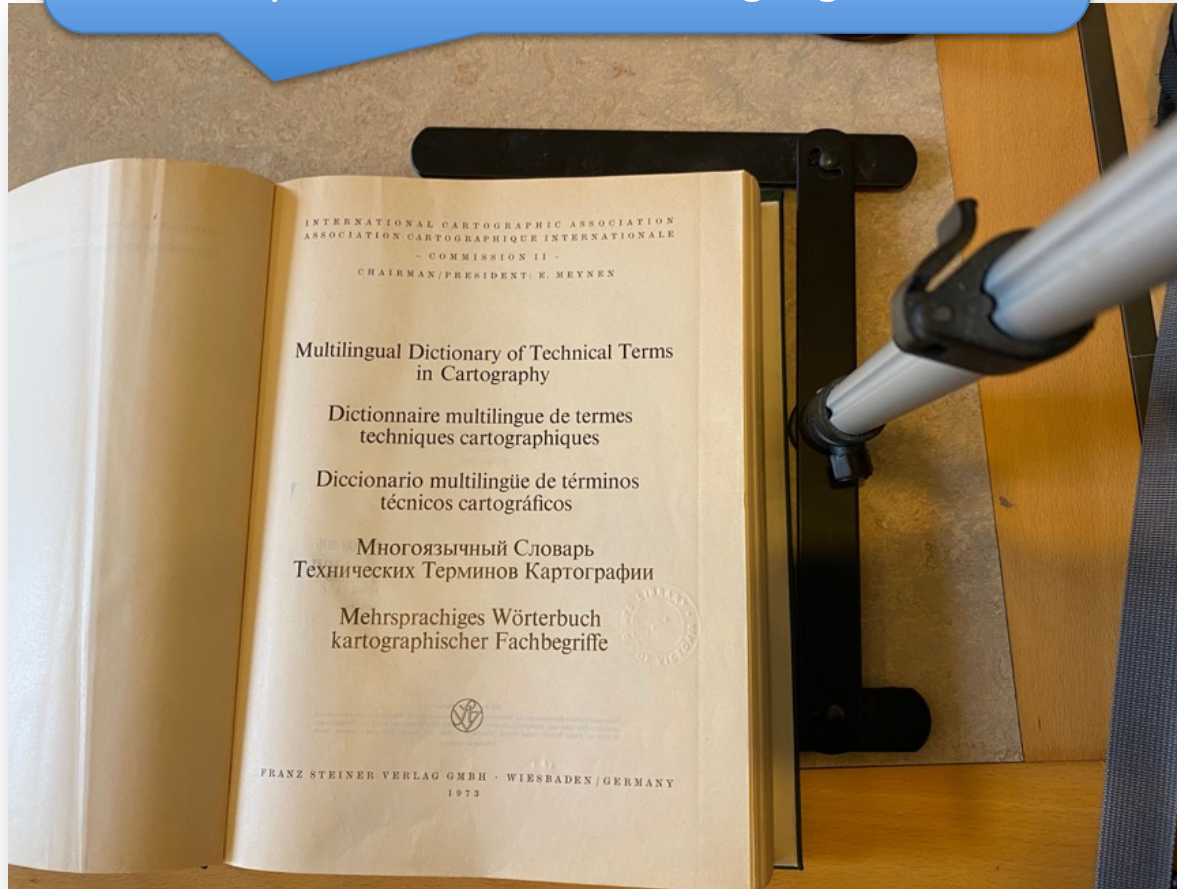
Design pattern example



MapDesign design pattern, making use of the Factory, Builder and Strategy design patterns (Coetzee and Rautenbach 2017)

1973

Terms *and* definitions in 5 European languages
Dictionary translated into 14 languages



1997

Terms *and* definitions in 5 European languages
Terms in 20 languages

Joachim Neumann

**Enzyklopädisches Wörterbuch Kartographie
in 25 Sprachen**

2. erweiterte Ausgabe

**Encyclopedic Dictionary of Cartography
in 25 languages**

2nd enlarged edition

**Diccionario Enciclopédico de Cartografía
en 25 idiomas**

2ª edición ampliada

**Dictionnaire encyclopédique de cartographie
en 25 langues**

2ème édition amplifiée

**Энциклопедический словарь по картографии
на 25 языках**

2-е расширенное издание

K·G·Saur München 1997

Terminology

- Some terms are now obsolete
 - e.g. double line scribe, opisometer, enlargement camera
- New terms have emerged, e.g.
 - e.g. interactive map, augmented reality, GIS
 - e.g. zoom and pan
 - may need definitions specifically for online maps
- Make the terminology available online and open
 - e.g. glossaries of ISO/TC 211 or OGC Glossary
 - e.g. Geolexica, Wiki site, etc.



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How can we contribute to the OGC Portrayal DWG?

We'll appreciate your input, ideas, guidance...

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ICA Commission on Cognitive Issues in Geographic Information Visualization cogvis.icaci.org

ICA Commission on Open Source Geospatial Technologies opensourcegeospatial.icaci.org

ICA Commission on Geospatial Semantics icaci-geospatialsemantics.usgs.gov