Joint Group: Standards Side Event
Tuesday: 4:30pm – 6:00pm

Positioning geospatial information to address global challenges

UN-GGIM | United Nations Initiative on Global Geospatial Information Management

ggim.un.org
Agenda

- Introductory Remarks and Welcome
- Changes to the Guide & Companion Document
- Understanding the Survey Data
- Standards work with the UN
- How to be engaged with Standards?
- What is going to happen over the next 12 months that you should know about
International Hydrographic Organization (IHO)

- Intergovernmental consultative and technical organization
- Established in 1921
- To support safety of navigation and the protection of the marine environment
- One of the IHO objectives
  - to bring about the greatest possible uniformity in nautical charts and documents (i.e. standardization)

www.iho.int
International Organization for Standardization (ISO)

- World's largest developer of standards
  - Network of national standards institutes from 163 countries
  - 19,500 standards published
- Established in 1946-1947
- Recognized by the UN
- Principal activity is developing technical standards
- Technical Committees (TCs)
  - From food safety to computers, and agriculture to healthcare, ISO standards impact all our lives
  - ISO/TC 211, Geographic information/geomatics
    - Lawrence D. Eicher Leadership Award in 2010

www.iso.org  https://committee.iso.org/home/tc211
Open Geospatial Consortium

- Industry consortium of around 500 members
- 2000+ implementations of standards and specifications, some certified to be compliant
- Focus
  - to define, document and test implementation standards for use with geospatial content and services
  - integration of geospatial content and services into applications for the benefit of mankind

www.opengeospatial.org
Co-operation

ISO/TC 211, OGC and IHO have been formally – and practically - co-operating since 1994.

They also benefit from a range of people working actively in across organizations.
Version 2

A Guide to the Role of Standards in Geospatial Information Management

A Guide to the Role of Standards in Geospatial Information Management

Companion document on Standards Recommendations by Tier
“Guide to the Role of Geospatial Standards” & “Standards Recommendations by Tier”

• Version 2 of the Guide & Tier
• The survey assisted with the revision
• New topics have been included in the new version
  – Spatial Data on the Web
  – Geopackage
  – Discrete Global Grid System
  – Marine Boundaries
“Guide to the Role of Geospatial Standards” & “Standards Recommendations by Tier”

- Tier 4
  - Internet of Things
  - Linked Data
  - Smart Cities
  - Intelligent Transport Systems
  - Unmanned Aerial Systems
OGC Technology Trends

Case Study - highlight
2018 UN-GGIM Geospatial Standards Survey

• Decision 7/113 (d) of the 7th Session of UNGGIM

“The Committee of Experts on Global Geospatial Information Management welcomed the proposed survey on considering a review and update of the standards guide and companion documents, and urged Member States to contribute and to provide feedback on their use of the standards guide and implementing standards within their national frameworks; “
Results from the Survey
The Questions

1. About the responder (Kind of organization, in which countries the organization most active, In which UN-GGIM Region the organization is based)

2. If the responder was aware of the two guides prepared by the international standards organizations (ISO/TC 211, OGC and IHO) and published by the UN GGIM (A Guide to the Role of Standards in Geospatial Information Management and Guide to the Role of Standards in Geospatial Information Management Companion document on Standards Recommendations by Tier)

3. Which group of staff in your organization used the guide and companion document?

4. To what level did the standards guide and companion document influence your organization's decision regarding the use of standards?

5. Which of the following organizations' geospatial standards does your organization currently implement?

6. Do you believe there are barriers to your organization's ability to implement geospatial standards?

7. Does your organization participate in the development of geospatial standards in any of the following organizations?

8. Do you believe there are barriers to your organization participating in the development of international geospatial standards?

9. Do the countries in which your organization is active reference any geospatial standards in legislation and/or policy frameworks?

10. Thinking about your organization, at which level is training regarding geospatial standards most needed

11. Do you have any suggestions for how the international standards organizations could provide improved training and/or communication regarding the development and use of Geospatial Standards?
Positioning geospatial information to address global challenges

Type of organization

- National standardization body
- Mapping organization
- Education/Research
- Privat sector organization
- Hydrographic organization
- Statistic organization
- Other public organizations
The guide influence in organizations

- Great Influence
- Confirmed our use of standards
- Somewhat useful
- Not changed anything
Barriers to participate in standardization

- Lack of awareness
- Lack of skills
- Work in English
- Cost of membership
- Cost of traveling
- Time for participation
Need of support - training
(from international standards organisations)

- Awareness for policy makers
- By training the members of organization
- Organizing workshop or special training courses
- Structured online courses (e.g. coursera)
- Set up platforms on the web: forums, courses, workshops, webinars, etc.
- Study the extent of training insufficiency globally, and work with the UN-GGIM Academic Network to enhance the provision of training for standards comprehension and implementation.
Need of support – support
(from international standards organisations)

• Some arrangements for "dummies" and showing examples of practical use/implementations, and "selling" and showing examples of use more like buildingSMART.

• Simple 'get started' guides addressed to different common use cases - some may be domain specific, others more general. That is, a set of papers on 'how to use geospatial standards to solve this problem'.

• Use-case demonstrators that illustrate the value and opportunity of using a standard.
Need of support – other
(from international standards organisations)

• Skills gaps evaluation
• Need to have translations of standards
• Case studies / examples from member states adoption/implementation
• Road maps for adoption/implementation
• Partnerships with private sector for local level workshops
• It is important to strengthen the dissemination of the standards free of charge and if is possible in different languages.
• Support materials available for interpretation and implementation of regulations and standards
Need of support – other
(from international standards organisations)

• I think by attending more of such conferences and/or meetings where Geospatial standards will be shared, and ultimately end up being at par with the ISO regarding our geospatial information. "Standards in Action" sessions should be encouraged at conferences and meetings.

• The international standardization organization may consider future thinking through university of the concern country.
Survey Results – Next Step

• Publicly release Survey results
• Engage with the legal and policy working group to develop guidance on improving Policy Development for use of Geospatial Standards
• Engage with the Academic Network Improve skills and education for standards implementation
Standards work with the UN
IHO

• New Draft Publications
  – S-100 Edition 4.0.0 – Universal Hydrographic Data Model
  – S-102 Edition 2.0.0 – Bathymetric Surface Product Specification
• Revising a number of Technical Standards
• S-121 Maritime Limits and Boundaries
IHO

- S-121 purpose is to allow States to communicate official digital representations of their maritime limits and boundaries to public and international community. The United Nations Division for Ocean Affairs and the Law of the Sea is contributing to this work and the new version of ISO 19152 LADM.
OGC

• New Domain Working Group to support the collaboration work of Geospatial & Statistical communities

• Land Administration DWG & Smart Cities: SCIRA & MUDDI Underground Pilot

• International Interoperability Projects:
  – Maritime boundaries
  – Disasters Interoperability Study
ISO/TC 211

- Land Administration Domain Model (LADM) Revision
- Addressing
- ISO and SDGs
LADM

• Land Administration Domain Model (ISO-19152) is being revised to meet new requirements from different domains

• Possible topics
  – Taxation and Validation
  – 3D & 4D
  – Land Management Processes
  – Volunteered Land Administration and Crowdsourcing
  – Legal Space to Physical Objects
  – Blockchain Technology
LADM

- Inputs from FIG, OGC, IHO, UN-DOALOS, World Bank, UNGGIM, FAO, UN-HABITAT and Royal Institution of Chartered Surveyors (RICS)
- 12 Month gathering of use cases and submissions
- Project Managed – Chris Body
What is an address?
Classes or types: street address, box address...
Components: street number, street name, place name...

Values or names
Street number=392
Street name=Church Street
Place name=Pretoria

Street number=392
Street name=Kerkstraat
Place name=Pretoria

Street number=392
Street name=Stanza Bopape Street
Place name=Tshwane

Rendering on mail items
Mr Joe Soap
392 Nelson Mandela Drive
Polokwane
0087
South Africa

Rendering on maps

Signposts
Standardized terminology

- **address**
  - structured information that uniquely references an object for purposes of identification and location
- **address component**
  - constituent part of the address
- **address class**
  - addresses combined from the same list of address components according to the same address reference system
- **address reference system**
  - system that defines how address components are combined to form an address
- **addressable object**
  - object that may be referenced by an address
- **address alias**
  - one of a set of addresses referencing the same addressable object
How to assign addresses

Similar to ISO 9000, specifies good practice
Useful as tender or funding requirement
How to measure quality of address data

• Rules
  – Each cadastral land parcel shall be associated with at least one address.

Quality requirements
  – Max 200 items can be missing.
  – Max 200 items can be in excess.
  – Max 200 items can have incorrect suburb names

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<th>Data quality measure</th>
<th>Data quality requirement</th>
<th>Data quality measured</th>
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<td>Yes</td>
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<tr>
<td>Omission</td>
<td>Number of missing items</td>
<td>200</td>
<td>300</td>
<td>No</td>
</tr>
</tbody>
</table>
How to write addresses on mail items

Figure 6 — Automation of postal address rendering with templates
Profile interchange

- Select an address type from a dropdown
- Depending on the address type, different text boxes appear
- Address verification before delivery is sent

Profile of ISO 19160-1 describes addresses of specific country (e.g. SA), region (e.g. EU) or application (e.g. postal)
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SDGs in the World of Standards

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OGC Information Technology Standards for Sustainable Development

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Contributing to the UN Sustainable Development Goals with ISO standards
How to get involved

• ISO/TC 211
  – National Standards Bodies
  – Liaison
  – Invited experts

• OGC
  – Open Membership (fee)
  – Domain Working Group (public open)
  – Innovation Programs

• IHO
  – Intergovernmental consultative & technical organisation
  – Liaison
Thank you