Fundamental Data Themes – Where next?

Side Meeting

8th Session of the Committee of Experts
30th July 2018
Agenda

1. Introductory Remarks
   Antonio Arozarena, Vice-Chair, UN:GGIM Europe Regional Committee

2. Review of progress to date
   Clare Hadley, WG Chair
   Mark Iliffe, UN-GGIM Secretariat

3. Round Table on future actions:
   Pier-Giorgio Zaccheddu  EG – ISGI
   Gary Johnston          SC-GGRF
   Siau Yong Ng          WG – NIA
   Christina Wasström     ISO/TC211
   André Nonguiерma     UN-GGIM:Africa Secretariat
   Mark Iliffe            UN-GGIM Secretariat

4. Open Discussion
   Moderated and interactive discussion and questions from the floor

5. Summary and Conclusions
   Moderator: Carol Agius

6. Second Administrative Level Boundaries
   Guillaume Le Sourd, UN Dept of Field Support
Review of progress to date

Clare Hadley, Chair of FDWG

July 2018
Background to the FDWG

GGIM 5 – A report on fundamental data themes prepared by GGIM:Europe.
GGIM5 agreed that there is:

’an urgent need for a set of global fundamental geospatial data themes that could be harmonized in order to enable the measurement, monitoring and management of sustainable development in a consistent way over time and to facilitate evidence-based decision-making and policy-making’
UN GGIM: Europe asked to take lead to:

- Produce a recommendation for a minimum list of global fundamental geospatial data themes. Each data theme should be supported by a description and guidelines.
- Take account of existing activity being undertaken by UN-GGIM regional committees, ensuring that where possible existing resources are used.
- Consider the prioritisation of the data themes and how they link to other data needs with in the UN-GGIM programme of work.
- Consider the specific needs and vulnerabilities of small island developing States.
- Ensure that the data themes should be technical in nature so as not to raise political concerns.
The route we took ...
Methodology

- Regions
  - Input
  - Workshops
    - Input
    - WG Members
      - Input
It was not difficult to find existing work ...
## ‘Common Denominator’ approach

<table>
<thead>
<tr>
<th>UN-GGIM: Europe</th>
<th>GGIM: Africa (UNECA and GSDR)</th>
<th>GGIM: AP (ANZLIC)</th>
<th>UN-GGIM: Arab States</th>
<th>UN GGIM: Americas (PAIGH)</th>
<th>WG - NIA</th>
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</thead>
<tbody>
<tr>
<td>Geographical names</td>
<td>Geographic names</td>
<td>Place names</td>
<td>Names</td>
<td>Geographic names</td>
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<td>Administrative units</td>
<td>Boundaries</td>
<td>Administrative boundaries</td>
<td>Administrative Boundaries</td>
<td>Administrative Units</td>
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<td>Transport networks</td>
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<td>Transport Networks</td>
<td>Communications networks</td>
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<td>Hydrography</td>
<td>Hydrography</td>
<td>Water</td>
<td>Hydrography</td>
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<tr>
<td>Ortoimagery</td>
<td>Imagery</td>
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<td>Images</td>
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<td>Elevation</td>
<td>Hypsography</td>
<td>Elevation and depth</td>
<td>Elevation</td>
<td>Relief</td>
<td>Elevation</td>
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<td>Land cover</td>
<td>Natural environment</td>
<td>Land cover</td>
<td>Land cover</td>
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<tr>
<td>Cadastral parcels</td>
<td>Tenure/parcels (part of land management theme)</td>
<td>Land parcel and property</td>
<td>Land parcels</td>
<td>Cadastral records</td>
<td>Cadastral parcels</td>
</tr>
<tr>
<td>Addresses</td>
<td>Street addresses (part of land management theme)</td>
<td>Geocoded addressing</td>
<td>Addresses</td>
<td>Addresses</td>
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<tr>
<td>Buildings</td>
<td>Populated places (part of Boundaries theme)</td>
<td></td>
<td></td>
<td>Population</td>
<td>Settlements</td>
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<td>Utilities and government services</td>
<td>Utilities and services</td>
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<td>Utilities</td>
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<tr>
<td>Area Management</td>
<td>Land management units/areas</td>
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<td>Statistical Units</td>
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<td>Land Use</td>
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## SDG Requirements approach

<table>
<thead>
<tr>
<th>INSPIRE Theme</th>
<th>Sustainable Development Goal</th>
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<td>Address</td>
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<tr>
<td>Administrative units</td>
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<td>Cadastral parcels</td>
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<td>Geographical Names</td>
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<td>Hydrography</td>
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<td>Transport networks (road, rail, water, air, cable)</td>
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<td>Protected sites</td>
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<tr>
<td>Elevation</td>
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<tr>
<td>Land cover</td>
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<td>Ortho-Imagery</td>
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<tr>
<td>Geology</td>
<td>0</td>
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<tr>
<td>Buildings</td>
<td>0</td>
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<tr>
<td>Land use (existing, planned)</td>
<td>0</td>
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<tr>
<td>Soils</td>
<td>0</td>
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<td>Human health</td>
<td>0</td>
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<td>Governmental services and utilities</td>
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<td>Environmental Monitoring facilities</td>
<td>0</td>
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<td>Production facilities</td>
<td>0</td>
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<tr>
<td>Agricultural facilities</td>
<td>0</td>
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<tr>
<td>Population distribution/ Statistical Units</td>
<td>0</td>
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<td>Area management - Regulated areas</td>
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<td>Natural risk zones</td>
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<tr>
<td>Sea regions</td>
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<td>Oceanographic features</td>
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<td>Atmospheric conditions – meteorologic features</td>
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<tr>
<td>Biogeographical regions</td>
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<tr>
<td>Habitats and biotope</td>
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<td>Species distribution</td>
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<td>Energy resources</td>
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<td>Mineral resources</td>
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</table>
Methodology

Regions

WG Members

Workshops

Input

Minimum List (Draft)

Input

GGIM Groups + SIDS

Input

Minimum List

Input

Review

Input

GGIM7
Data Themes and Reference Frame

- Addresses
- Buildings and Settlements
- Elevation and depth
- Functional Areas
- Geographical Names
- Geology and Soils
- Land Cover and Land Use
- Land Parcels
- Orthoimagery
- Physical infrastructure
- Population distribution
- Transport Networks
- Water
- Reference Frame: Global Geodetic Reference Framework
GGIM7 – Fundamental Data Highlights

The Committee of Experts:

- **Supported adoption** of the minimum list subject to minor suggested amendments, noting that it had been developed through broad consultation and consensus.
- Agreed that the GGIM:Europe should complete the top level theme descriptions and further detail could be done with experts in specific domains.
- Supported the offer from GGIM:Europe to work with Secretariat and other groups to draw up plans for promoting and socialising the proposed ML to the wider community including the non-geospatial community.
- Took note of the suggestions that the WG consider:
  - Including measures to ensure implement the data themes
  - Recognising positioning as a theme
  - How the themes may be integrated into statistics, EO and other imagery
  - How to bring contributing elements of GGIM’s work together into a coherent communication so as to amplify their impact in influencing national policies
Progress since GGIM7
Methodology

Regions

Input

Input

Input

WG Members

Minimum List (Draft)

Review

Minimum List

GGIM Groups + SIDS

Theme Experts

Input

Theme Descriptions (Draft)

WG Members

Workshops

Input

Input

Input

Input

UN-GGIM: EUROPE | UNITED NATIONS COMMITTEE OF EXPERTS ON GLOBAL GEOSPATIAL INFORMATION MANAGEMENT
## Theme Description – One side A4 only

<table>
<thead>
<tr>
<th>Theme title</th>
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<tbody>
<tr>
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<table>
<thead>
<tr>
<th>Description</th>
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</table>

<table>
<thead>
<tr>
<th>Why this theme fundamental?</th>
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<tr>
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</table>

<table>
<thead>
<tr>
<th>Which sustainable development goals (SDGs) will it help to meet?</th>
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<tbody>
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</table>

<table>
<thead>
<tr>
<th>Geospatial data features in more detail</th>
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<tbody>
<tr>
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</table>

<table>
<thead>
<tr>
<th>Possible sources of geospatial data</th>
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<tbody>
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<td></td>
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</table>

<table>
<thead>
<tr>
<th>Existing geospatial data standards</th>
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<tbody>
<tr>
<td></td>
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</tbody>
</table>
# Example - Addresses

<table>
<thead>
<tr>
<th>Theme title:</th>
<th>Addresses</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>An address is a structured label, usually containing a property number, a street name and a locality name. It’s used to identify a plot of land, a building or part of a building, or some other construction, together with coordinates indicating their geographic position. Addresses are often used as a proxy for other data themes such as Land Parcels.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Why is this theme fundamental?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Addresses underpin government administration at all levels; and good administration is a prerequisite for achieving sustainable development goals. An address is often the unit to which a public service, such as water, is provided. Addresses also enable effective communication with citizens; informing them of policies applying to them, and notifying them of relevant incidents. The theme also helps in managing buildings and properties, and supports social surveys. Datasets relating to individuals or households are often linked to addresses, which can therefore play a role in connecting otherwise-unrelated information. Geocoding addresses relates such information to geographic location. This allows for location-based data analytics and data mining.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Which sustainable development goals (SDGs) will it help to meet?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Addresses have been identified as playing a key role in the achievement of SDGs 4, 6, 7, 9 and 11.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Geospatial data features in more detail</th>
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</thead>
<tbody>
<tr>
<td>The addresses theme comprises a single feature type, address, to which a variable number of attributes may be attached. Typically, in urban areas these comprise at least one locator (building, floor or apartment number and/or name), a two-dimensional geographic position and a number of address components which place the address within other features such as a road, a locality, an administrative unit or postal code. In rural areas the locator may be less precise.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Possible sources of geospatial data</th>
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</thead>
<tbody>
<tr>
<td>Address datasets are usually maintained by public authorities. While data may be created and maintained at local level, it should ideally be compiled into a single national register.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Existing geospatial data standards</th>
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<tbody>
<tr>
<td>Note: This is indicative. Other lists of standards exist and UN-GGIM will seek to work with thematic experts to develop a list of relevant data standards.</td>
</tr>
<tr>
<td>• INSPIRE Data Specification on Addresses -- Technical Guidelines 3.1</td>
</tr>
<tr>
<td>• ISO 19160-1:2015 Addressing -- Part 1: Conceptual model</td>
</tr>
<tr>
<td>• ISA Programme Location Core Vocabulary</td>
</tr>
<tr>
<td>• ISO 19160-4(UPU, Universal Postal Union) Addressing--Part4: International postal address components and template language</td>
</tr>
</tbody>
</table>
Methodology

Workshops → Input → Minimum List (Draft) → Review → Minimum List → Theme Descriptions (Draft) → Review → Theme Descriptions

Input from:
- Regions
- GGIM Groups + SIDS
- WG Members

Input to:
- GGIM7
- WG Members
Where does the road go now?
Where does the road go now?

• Promotion and awareness raising
Icons

- Global Geodetic Reference Frame
- Geographical Names
- Addresses
- Functional Areas
- Buildings and Settlements
- Land Parcels
- Transport Networks
- Elevation and Depth
- Population Distribution
- Land Cover and Land Use
- Geology and Soils
- Physical Infrastructure
- Water
- Orthoimagery
Data Themes Storyboard

Created by the GGIM Secretariat:

Story Map Cascade
Where does the road go now?

• Promotion and awareness raising
• Inclusion in the Integrated Geospatial Information Framework
Integrated Geospatial Information Framework
Where does the road go now?

• Promotion and awareness raising
• Inclusion in the Integrated Geospatial Information Framework
• Regional and national implementation ...
Workshop on implementation in Africa
Workshop on Fundamental Themes - Europe
How are we doing against our ToRs?

1. Produce a recommendation for a minimum list of global fundamental geospatial data themes. ✔
2. Each data theme should be supported by a description and guidelines. ✔
3. Take account of existing activity being undertaken by UN-GGIM regional committees, ensuring that where possible existing resources are used. ✔
4. Consider the prioritisation of the data themes and how they link to other data needs with in the UN-GGIM programme of work. ✔
5. Consider the specific needs and vulnerabilities of small island developing States. ✔
6. Ensure that the data themes should be technical in nature as not to raise political concerns. ✔

And

7. Suggestions from the Committee of Experts at GGIM7 ✔
GGIM8 - Report

Report to GGIM8 includes:

- Methodology
- Theme Descriptions
- Theme icons
- Promotion activities
- Recommendations to Committee of Experts
The Committee of Experts is invited to:

(a) Take note of the report and express its views on the valuable progress of the Working Group, including the provision of theme descriptions for the 14 global fundamental geospatial data themes; and

(b) Provide guidance on steps to promote, communicate and raise awareness of the 14 global fundamental geospatial data themes widely across the global geospatial information community, UN-GGIM Regional Committees, wider UN System, and within the broader global geospatial ecosystem.
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   Siau Yong Ng                WG – NIA
   Christina Wasström          ISO/TC211
   André Nonguierma            UN-GGIM:Africa Secretariat
   Mark Iliffe                 UN-GGIM Secretariat

4. Open Discussion
   Moderated and interactive discussion and questions from the floor

5. Summary and Conclusions
   Moderator: Carol Agius

6. Second Administrative Level Boundaries
   Guillaume Le Sourd, UN Dept of Field Support
Round Table
Where next? – Round Table

Round Table participants have been asked:

• **How do the fundamental themes fit with your work programme?**

And then:

• **What steps do you think should be taken to promote and socialise the themes, integrate them with other GGIM work, and support implementation?**
Round Table on future actions

Pier-Giorgio Zacchettau  
Gary Johnston  
Siau Yong Ng  
Christina Wasström  
André Nonguierma  
Mark Iliffe  
Rik Wouters  

EG – ISGI  
SC-GGRF  
WG – NIA  
ISO/TC211  
UN-GGIM: Africa Sec  
UN-GGIM Secretariat  
EG-LADM

Moderators: Clare Hadley and Carol Agius
Discussion
Summary and Conclusions
Agenda

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Thank you for coming!