The Geospatial Information Management (GIM) INSPIRE Data Specification and COPERNICUS “In situ data”

UN-GGIM: EUROPE
UNITED NATIONS INITIATIVE ON GLOBAL GEOSPATIAL INFORMATION MANAGEMENT

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1. Geospatial Information Management vs Geospatial Reference Information (GRI)

2. United Nations Global Geospatial Information Management (UN GGIM)


Outlook

1. Geospatial Information Management vs Geospatial Reference Information (GRI)

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Geospatial Reference Information (GRI) and coreGRI

- cGRI
- GRI
- GI
- GIM

MS (Public) + Private Sector
Geospatial Reference Information (GRI): Key points

• It provides an unambiguous location for a user’s data

• It enables merging (aggregating/fusing) of data from various sources

• It provides a geographic framework or context to allow others to better understand the spatial information that is being presented

• It is subject to a regular data maintenance regime (defined life cycle)

• It is provided by an authoritative source with a mandate (responsibility), for its maintenance and availability → NMCA

✓ FGDC, 2005; Rase et al., 2002
Geospatial Reference Information (GRI) and coreGRI

✗ Objective Data sets
✓ Accurate (at maximum level allowed by current technology).
✓ Same skeleton at all levels of information (National, Continental, Global) → consistent Data Sets
✓ Automatically obtainable (within the current possibilities)
✓ Funded only by Member States?
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In-situ Data: Geospatial Reference Information

Geodetic Reference System
Geographical grid system
Geographical names
Administrative boundaries
Hydrography
Transport networks
Digital Elevation Models (DEM)
Orthoimagery (high resolution)
Land cover & land use
Settlements
DEM Model Production (example)

Bottom-up model production

DEM01 from lidar data

DEM02

DEM25

DEM50

DEM200

DEM01 from lidar data
e.g.- Hydrography: automatic extraction process
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Aims and Objectives:

The United Nations initiative on Global Geospatial Information Management (UN-GGIM) aims at playing a **leading role** in setting the agenda for the **development of global geospatial information** and to promote its use to address **key global challenges**.

It provides a **forum** to liaise and **coordinate** among Member States, and **between** Member States and international organizations.
Five Regional Entities:

1. UN-GGIM Asia-Pacific
2. UN-GGIM Americas
3. UN-GGIM Arab States
4. UN-GGIM Africa
5. UN-GGIM Europe (2014, Chisinau, Moldavia)
http://un-ggim-europe.org/

Chair: Mr. Bengt Kjellson, Sweden
Vice Chairs: Ms. Dorine Burmanje, Netherlands
            Mr. Antonio Arozarena, Spain
Secretariat: Netherlands is responsible for the Secretariat to UN-GGIM: Europe
            EuroGeographics provides the secretariat service
            Contact: Carol Agius (carol.agius@eurogeographics.org)

Members:
Ms. Kristian Møller, Denmark
Mr. Hansjörg Kutterer, Germany
Mr. Ezio Bussoletti, Italy
Mr. Jacek Jarząbek, Poland
Mr. Tomaz Petek, Slovenia
Mr. Andrii Tarnopolskiy, Ukraine

Working Groups
A. Core Data Scope  →  Chair: France
B. Data Integration  →  Chair: Germany
UN-GGIM Organisation

Expert Group:
1. United Nations Expert Group on the Integration of Statistical and Geospatial Information (Australia and Mexico)
2. The United Nations Expert Group on Land Administration and Management (Netherland and Lesotho)

Working Groups
1. Working Group on Global Geodetic Reference Frame (Norway and Australia)
2. Working Group on Development of a Statement of Shared Principles for the Management of Geospatial Information (New Zealand)
3. Working Group on Trends in National Institutional Arrangements in Geospatial Information Management (Spain)
4. Working Group on Geospatial Information and Services for Disasters (Philippines and Jamaica)
5. IAEG-SDGs Working Group on Geospatial Information (Sweden and Mexico)
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3. Spanish approach: **New Production System.**

New Production System of Geospatial Reference Information (GRI)

1st step → National Plan for Land Observation (PNOT)
(2004 → 2016…)

2nd step → cGRI (...automatically extracted)
(2013 → 2016…)

3rd step → GRI (2017)
1st National Plan for Land Observation (PNOT):

PNOT

→ Collaborative
→ Agreed
→ Coordinated
→ Coproduced
→ Cofinanced

TO USERS

→ Economic savings
→ Unique data for all
→ Quality information
→ Data policy free and open

Public Administrations + Private sector

TO USERS
National Remote Sensing Program (PNT)
National Aerial Orthophoto Program (PNOA): PNOA IMAGE

scales (e) $\rightarrow$ resolution (s)
me = maximum error at 95% (cl)

$\text{s}_v$ = pixel size visualization
$\text{s}_c$ = pixel size for restitution

<table>
<thead>
<tr>
<th>e</th>
<th>me(m)</th>
<th>$s_v$(m)</th>
<th>$s_c$(m)</th>
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<tbody>
<tr>
<td>1:25.000</td>
<td>5</td>
<td>2,50</td>
<td>1,25</td>
</tr>
<tr>
<td>1:10.000</td>
<td>2</td>
<td>1</td>
<td>0,50</td>
</tr>
<tr>
<td>1:5.000</td>
<td>1</td>
<td>0,50</td>
<td>0,25</td>
</tr>
<tr>
<td>1:1.000</td>
<td>0,20</td>
<td>0,10</td>
<td>0,05/0,10</td>
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Technical specifications and products:

- Average density of 0.5-1 points/m²
- Side coating ≥ 15%
- Accuracy ≤ 30cm (95% NC)
- Covering all Spain
Land Cover and Land Use Information System (SIOSE)

Production Methodology

Scale 1:25000 Polygons from 0.5 to 2Ha

Buildings: 50%
Artificial Green Zones: 15%
Artificial Water: 5%
Vials: 15%
Other buildings: 5%
Surface not Built: 0%

Woody crops (fruit): 2%
Arable crops (other than rice): 70%
Arable crops (rice): 20%
Water sheets: 8%

PNOA mosaic, pixel size 25cm
SPOT mosaic, pixel size 2.5m
New strategy of Production System IGN/Spain:

- First, from the existing Geographical Products: maps, topographical data sets, specialized data sets, → GRI (first version)
New strategy of Production System IGN/Spain:

- First, from the existing Geographical Products: maps, topographical data sets, specialized data sets, … → GRI (first version)
- Secondly, from the GRI → Geographical Products
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GRI Production System  → **Benefits**

- Same source of information based in remotely sensors (consensus)
- Use the same GRI for everyone (same and unique land “skeleton”)
- Avoid duplicities
- More efficient Geospatial Information Management (GIM)
- Authoritative and Reliable, guaranteed information from Member States (MS)
- Great economic savings (+60%)
- Intellectual Property of GRI corresponds to MS: → optimal Data Policy for the user (i.e: free of charge…)}
Thank you

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