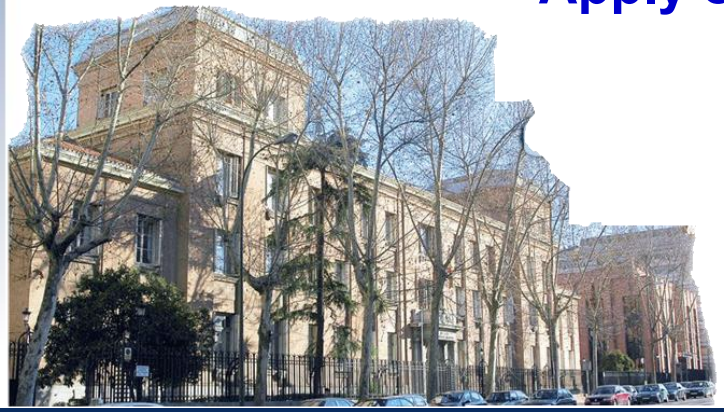
Quality Knowledge Exchange Network EuroGeographics

Madrid, October 15th, 2015

The Production of Global/Continental **G**eospatial **R**eference **I**nformation (**GRI**) from the Countries perspective

"Apply once, use many times"



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Outlook

1. **G**eospatial **R**eference **I**nformation (**GRI**).

2. From **cGRI** to **GRI.**

3. **Global/Continental GRI**. Spanish perspective.

4. Harmonized and sustainable **New** Production System.

5. Conclusions.

Outlook

1. **G**eospatial **R**eference **I**nformation (**GRI**).

2. **Global** From **c**GRI to **GRI.**

3. **GRI**. National perspective.

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Geospatial Reference Information (GRI): Key points

- It provides an unambiguous location for a user's data
- It enables merging (aggregating) 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)

Criteria regarding GRI:

- Official (Authoritative)
- Reliable
- Accuracy corresponding to level of requirements
- Sustainable
- Consistent at all level (National, European and Global)

Geospatial Reference Information (GRI)
→ Caracteristics

- **GRI Structure:**
  - **Bottom-up** approach
  - **Integrated** production system: Bottom-up (from National to Global) with Top-down approach (from Global to National)
  - **Collaborative** Maintenance of databases (open and distributed production, including VGI)

- **GRI Contents:**
  - Orthoimagery, DEM, Geographic Data Sets, Land Cover/Use …

INSPIRE

Annex I

Coordinate reference systems
Geographical grid systems
Geographical names
Administrative units
Addresses
Cadastral parcels
Transport networks
Hydrography
Protected sites

Annex II

Elevation
Land Cover
Orthoimagery
Geology

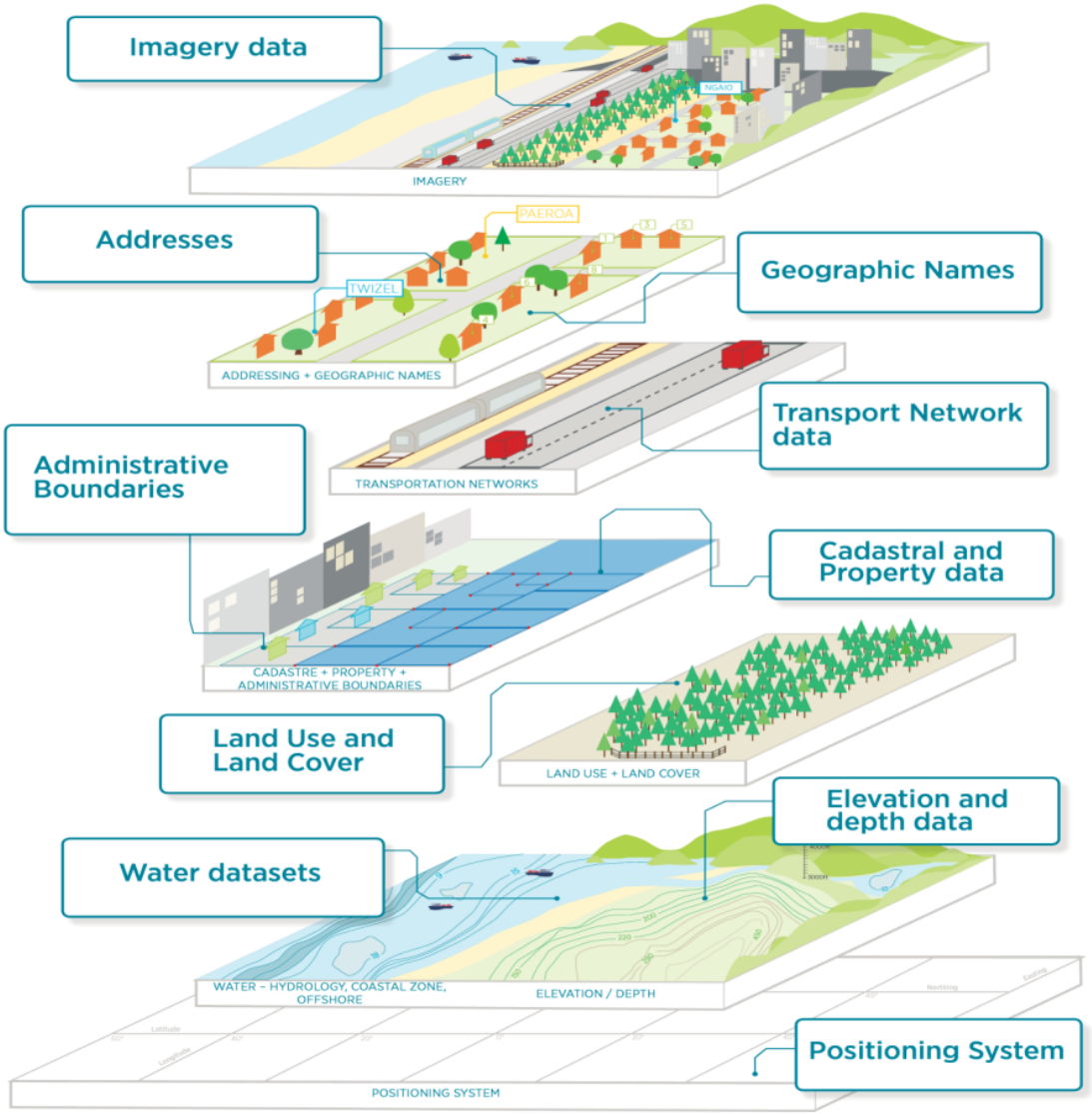
Annex III

……
Land Use

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

Fundamental Data Sets:
ANZLIC (Australia/N. Zelanda)



United Nations Economic Commission for Africa: Geoinformation & Spatial Statistics

	CODIST	INSPIRE	ANZLIC	UN-GGIM
	Africa	*Europe*	*Au. & NZ*	*Proposal*
1	Geodetic Control Network	Coordinate reference systems	Positioning	Positioning (geodetic)
2	Geographic names	Geographical names	Place names	Names (Gazetteer)
3	Boundaries	Administrative units	Administrative boundaries	Administrative Boundaries
4	Hydrography	Hydrography	Water	Water (Hydrology)
5	Land Management	Cadastral parcels	Geocoded addressing	Address (Buildings)
6	Transportation	Transport networks	Transport	Transport
7	Natural Environment	Protected sites	Land cover	Cadastre (Tenure)
8	Utilities	Addresses	Land parcels	Land Cover (Vegetation)
9	Hypsography	Geographical grid systems	Elevation & depth	Elevation
10	Imagery		Imagery	Imagery (Satellite & photo)
11				Bathymetry (Hydro.)

UN-GGIM Secretariat and Bureau → 4 additional WG´s

Follow up to the Fifth Session of the United Nations Committee of Experts on Global Geospatial Information Management (UN-GGIM):

→ 4. Determination of **Global Fundamental Geospatial Data Themes**:

The Committee supported the initiative proposed by **UN-GGIM: Europe** to establish and lead a working group to liaise with other Regional Committees of UN-GGIM

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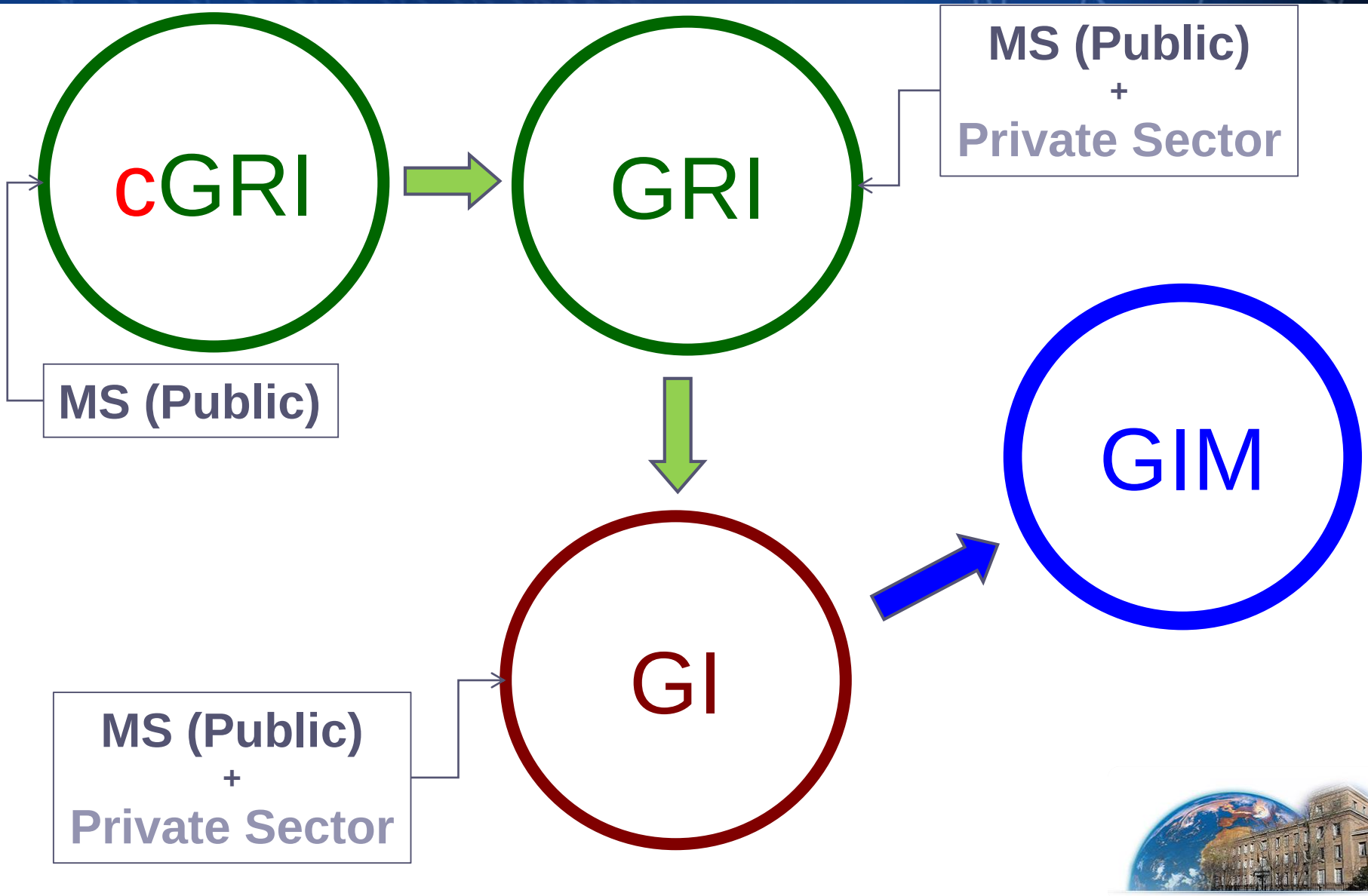
Geospatial Reference Information (GRI) and coreGRI



Geospatial Reference Information (GRI) and coreGRI

cGRI

- ✓ **Not subjective (factual)**
- ✓ **Accurate** (at maximum level allowed by current technology).
- ✓ Same **skeleton** at all levels of information (National, Continental, Global) → **consistent**
- ✓ **Automatically** obtainable (within the current technology)
- ✓ **Funded** by Member States?

Definition of core data GRI (→ UN GGIM Europe) *"draft"*

"authoritative data from UN Member States that satisfy minimal needs of cross border, European and Global level"

- **This means:**
  - **sustainable data mastered by countries,**
  - **data which users can trust,**
  - **data upon which thematic data and users own data can be based,**
  - **data with temporal and historical dimension.**

- **Meant to address supranational requirements with homogeneous specifications and content at pan-European level**
  - **However core data: skeleton also used at local and national level**

- **Core data will address national requirements and stakes that are minimal in the sense that they are common to European Countries**

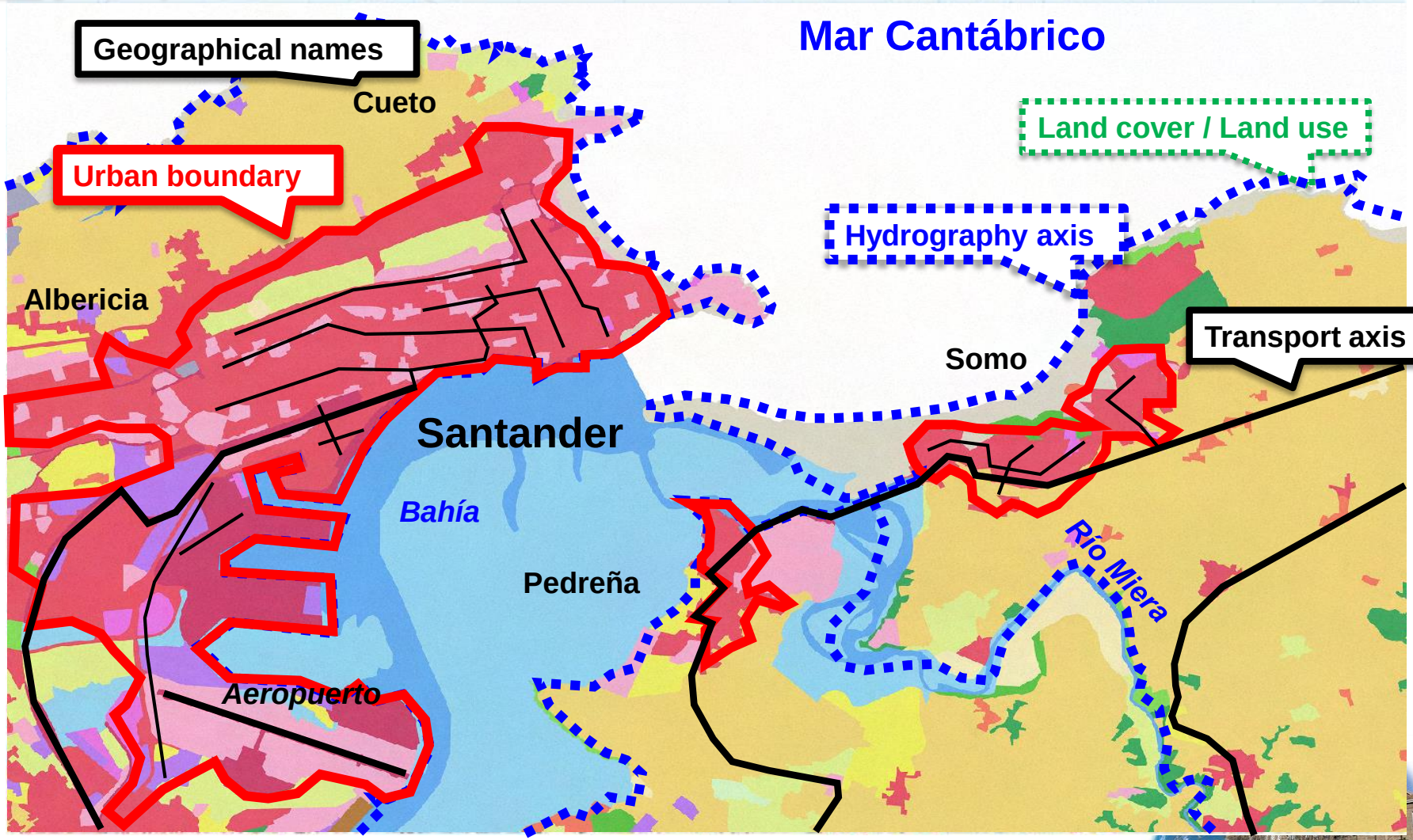
Geospatial Reference Information (GRI) and coreGRI

Definitions:

- **1. coreGeospatial Reference Information (cGRI) =** basic **GRI** produced by Member States for Copernicus services definition
- **2. GRI = cGRI +** other parameters of **GRI** required by Copernicus services...
- **3. Copernicus services = GRI +** Thematic information facilitated for others involved actors in Copernicus

Geospatial Reference Information (GRI) and coreGRI

coreGRI example:
Basic geometry and attributes



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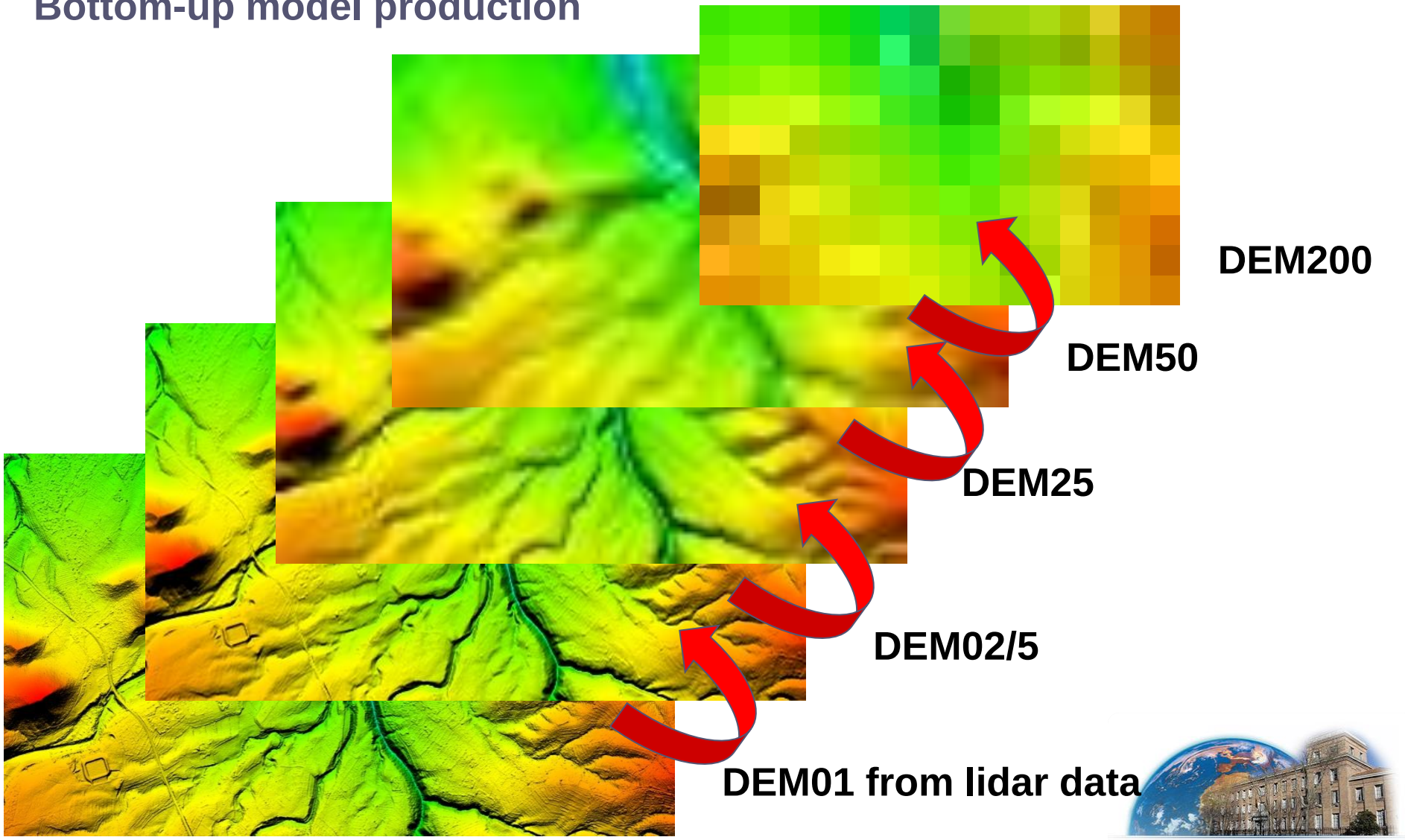
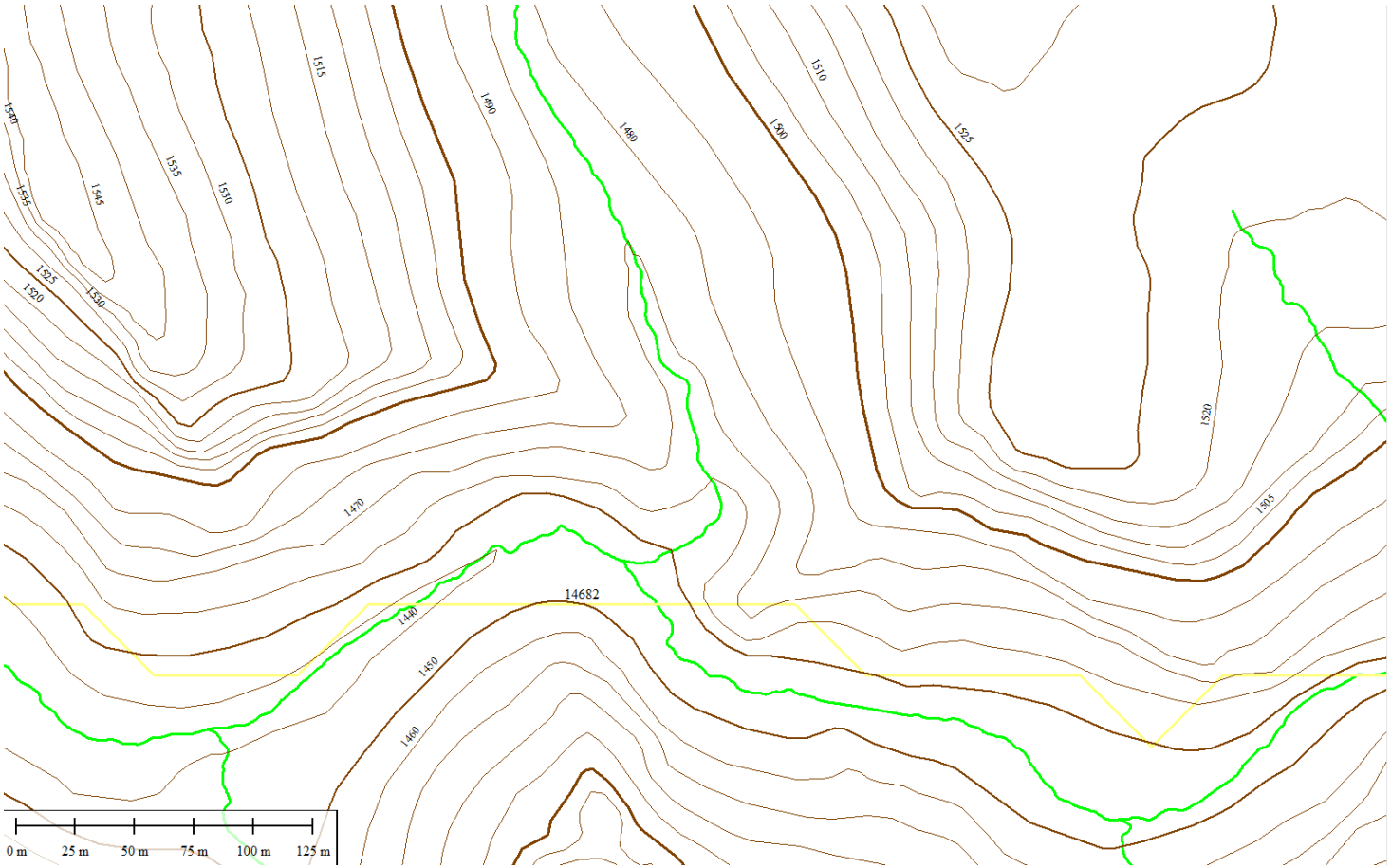
DEM Model Production (example)

Bottom-up model production

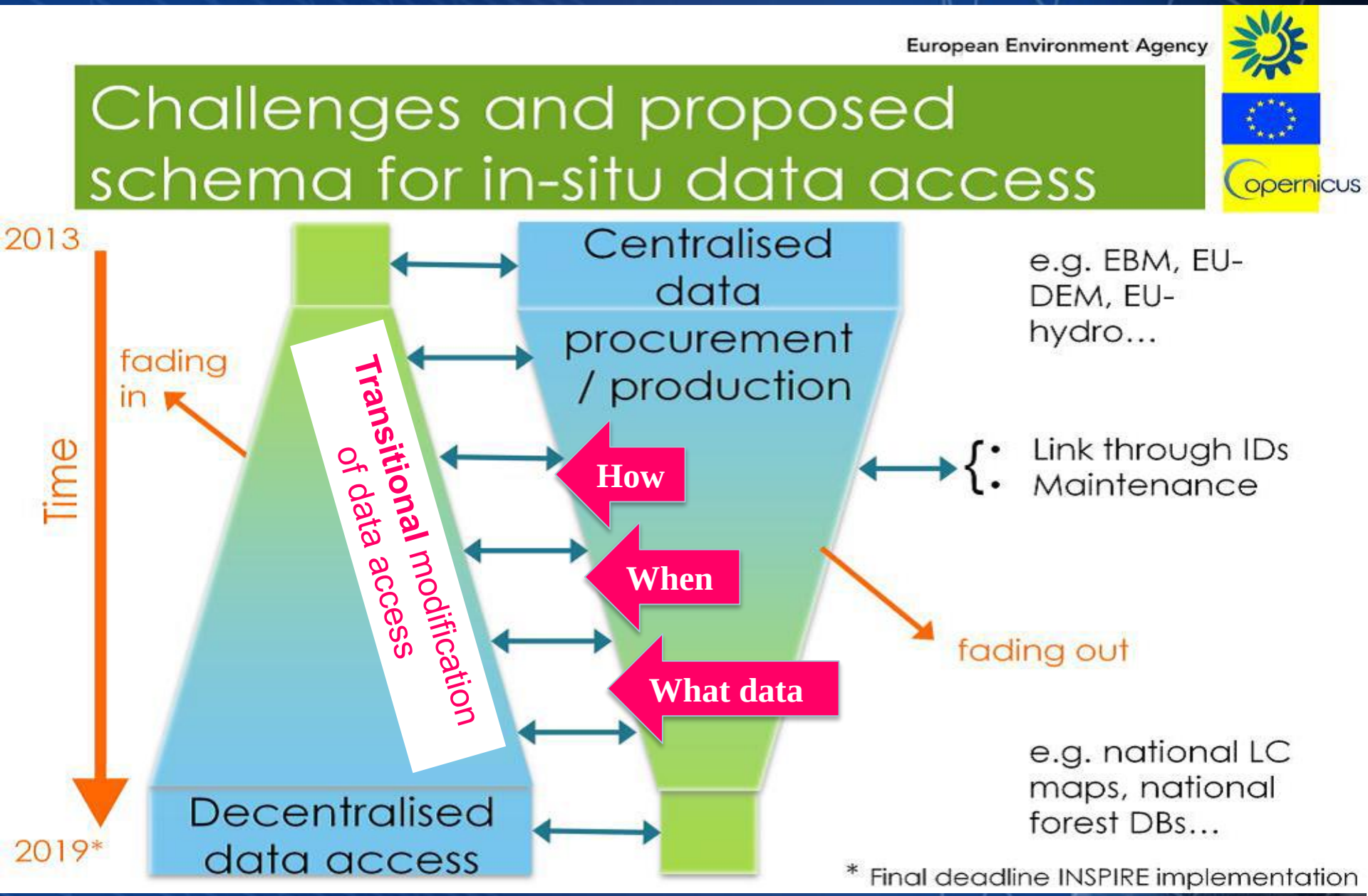


LIDAR-DEM/HYDRO and Contour Lines



MS´s produce DEM with more accuracy and resolution. There are consistency between river networks and contour lines. All products are permanently updated

Copernicus in-situ data access



Geospatial Reference Information (GRI) and coreGRI → steps

- User needs → Technical requirements (**Nat/Cont/Global)**
- Data Model → **UN GGIM** (Europe → INSPIRE)
- Images needed → **National to Global (definition)**
- New Production System → **Member Sta**
- cGRI (+GRI Data sets) → **Member States**

new or improving the current national production systems

Internet Platform in order to integrate information from different Member States →

→developed at Continental/Global level?

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Harmonized and sustainable New Production System from cGRI to GRI (example)

COPERNICUS services/Global

Geospatial Reference Information GRI

LEVEL	ACCURACY	IMAGES	UPDATE	PRODUCTION
World (United Nations)	≤ 10m	2.5-5.0m	6 years	Top Down & Bottom Up (MS)
Continental	≤ 5m	1.25-2.5m	3- 6 years	Top Down & Bottom Up (MS)
Member States	≤ 1m	0.25-0.5m	3- 6 years	Bottom Up

TRENDS

New Production System

Core Geospatial Reference Information cGRI

Data Model

(INSPIRE)

REQUERIMENTS

cGRD	Elements	UPDATE
Hydrography / DEM	River axis	Each 6 years
Transportation Network	Road axis	Each 3 years
Urban areas (Settlement)	Urban area perimeter	Each 3 years
Land Cover / Land use	Poligons	Each 6 years

Internet platform Integration cGRI+(GRI)

COPERNICUS → INSPIRE

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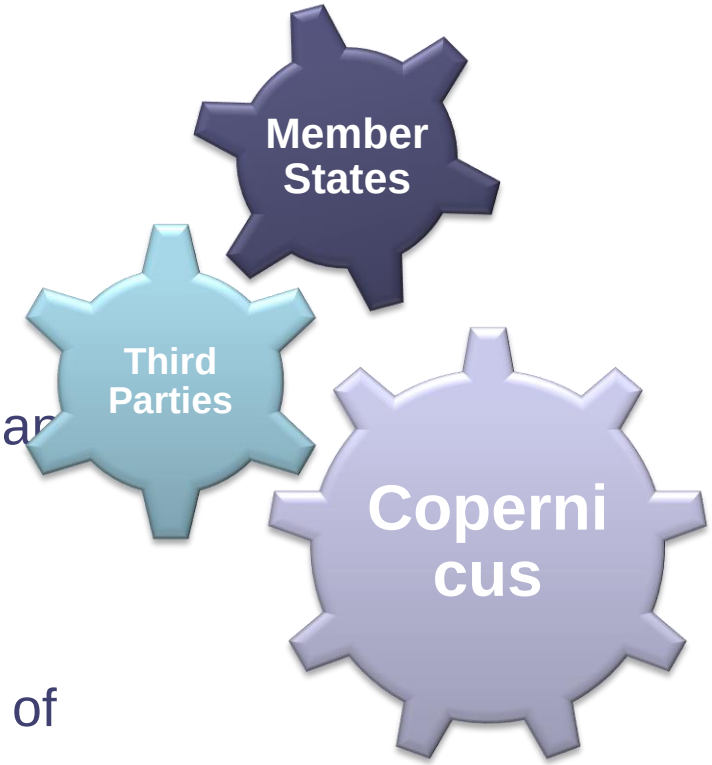
GRI Production System → Benefits

- Use the **same GRI for everyone** (same and unique land **"skeleton"**)
- Avoid **duplicities**
- More **efficient** Geospatial Information Management (GIM)
- **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…)

Copernicus → "Apply once use many times"

- **Benefits for Member States**
  - **Official national data** used for European responses
  - **New users and new business** perspectives
  - **Sustainability of the production**
- **Benefits for Copernicus**
  - **Official national data** used for European responses
  - **Data comparable** between levels, **avoiding misunderstanding**
  - **Cost reduce**, avoiding new production of data
- **Benefits for third parties**
  - Business in the **data integration** and **homogenization (harmonization)**



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2013 UNITED NATIONS PUBLIC SERVICE FORUM
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"Transformative e-Government and Innovation: Creating a Better Future for All"

MANAMA, KINGDOM OF BAHRAIN
24 - 27 JUNE 2013

Thank you

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