Cross-domain data management in a complex environment, the case of the Italian Istituto Nazionale di Geofisica e Vulcanologia (INGV)

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JULY 8-18 JUILLET 2019 | MONTRÉAL, CANADA

27th / **27**e **IUGG General Assembly**

Assemblée Générale de l'UGGI

International Union of Geodesy and Geophysics | Union Géodésique et Géophysique Internationale

IUGG *Centennial* | 1919-2019 | *Centenaire* de l'UGGI

Established in the year 2000, is a Public Research Institute under the direct control of the Italian Ministry of Education, Universities and Research.

3 Departments		
Environment	*Volcanoes*	*Earthquakes*
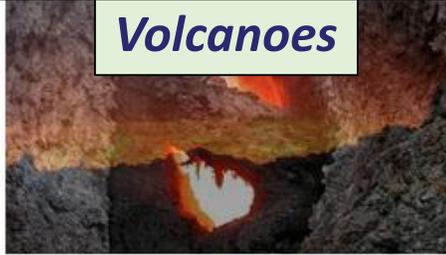
- Main branches distributed in 7 Italian cities
- Smaller branches in 17 other cities
- ~ 800 researchers & technicians
- Seismic, GNSS, gravity, magnetic, geochemical networks
- Experimental laboratories for rocks and fluids
- Computational resources
- 3 surveillance centers 24/7 for the seismic, volcanic and tsunami monitoring in cooperation with the Civil Protection

INGV Milan
INGV Bologna
INGV Pisa
INGV Rome
INGV Naples
INGV Palermo
INGV Catania
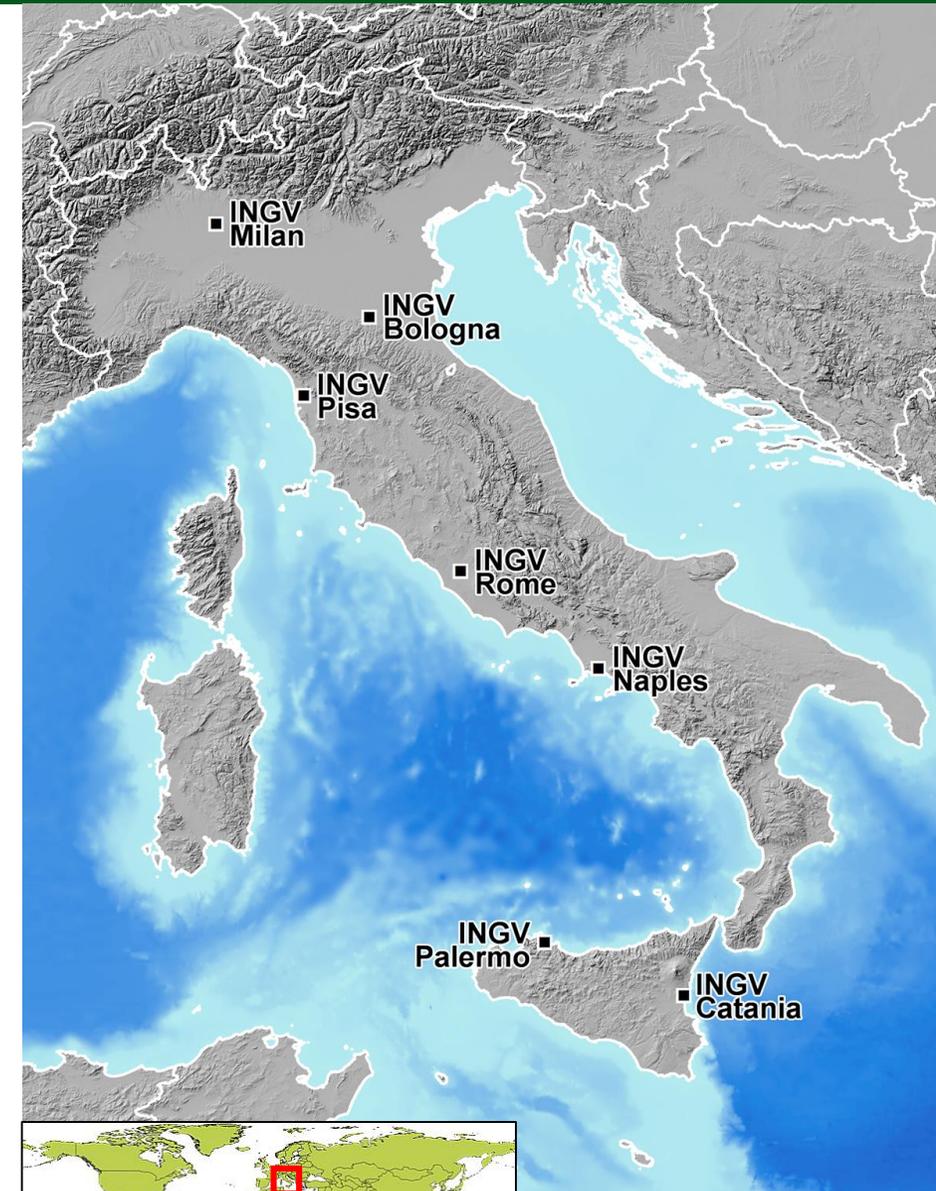
- Establish a framework allowing to facilitate the adoption of **Open Science** principles

- Provide a clear set of **definitions** for key terms

- Identify the research **data** and **publications** made **publicly available**

- **Classify** the various type of data and their level of intellectual contribution

- Define the **ownership, rights and terms** of use associated to data

- Identify **roles and responsibilities** for the data management

- Establish facilities and/or tools allowing to **put the Data Policy into practice**

- Pave the way for enhancing the how the **scientific research evaluation** works

- Define a detailed implementation **roadmap**

European laws

Italian laws

International laws

Guidelines on Open Access & Open Science

- Rules on the Public Sector information
- European protection of databases (sui-generis rights)
- Copyright conventions & treaties
- Open Access rules for publications
- Rules on publicly funded projects
- European INSPIRE infrastructure

- Research Data Alliance (RDA)
- OpenAIRE
- Digital agenda for Europe (& Italy)
- Science Europe
- European Commission
- League of European Research Universities (LERU)
- ERICs (European Research Infrastructures Consortiums)

Clear separation between Research Infrastructure and the output data that enters the Research Life Cycle

Scientific steering committee(s)

Researchers career

Administration
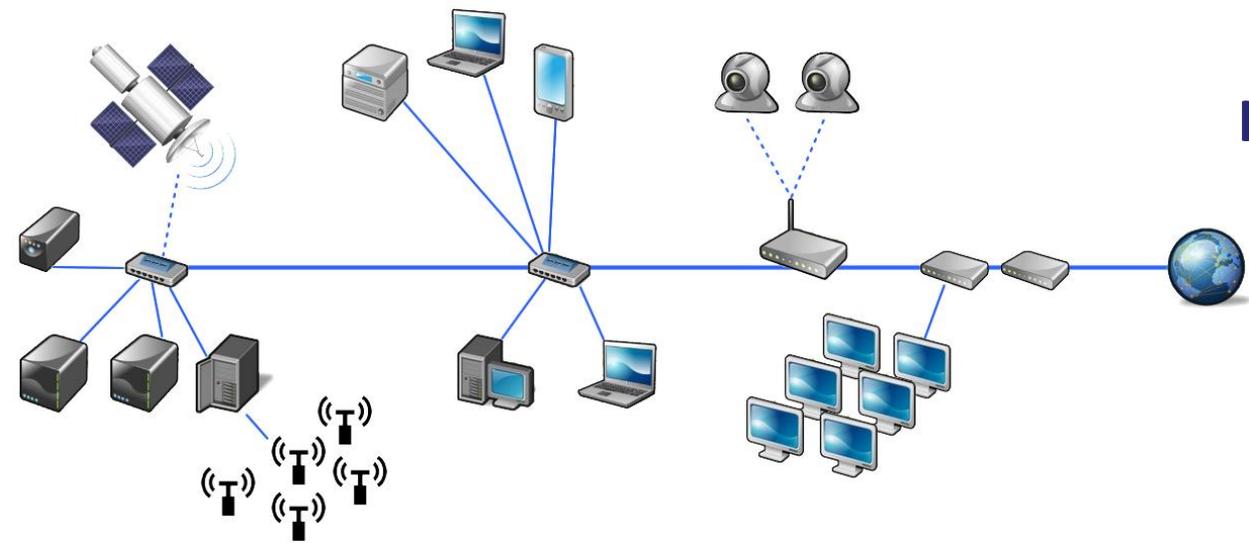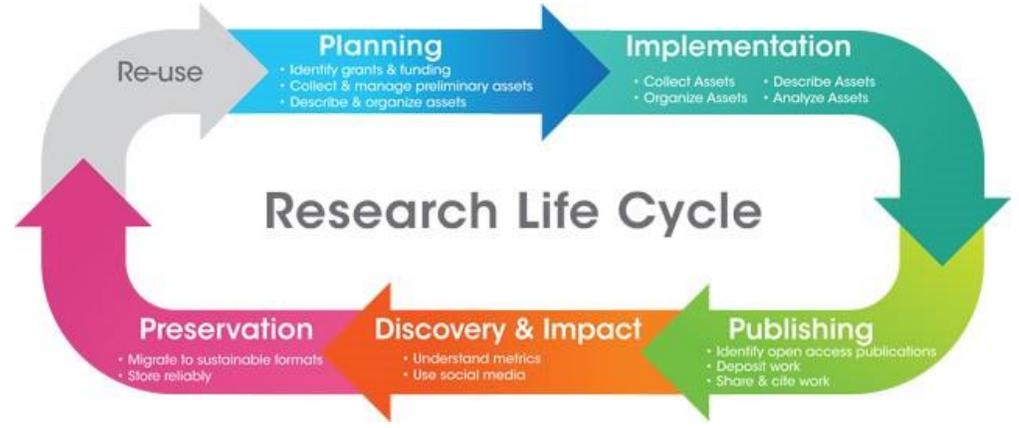
Data Management
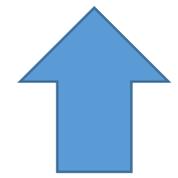
Data Policy

Research Infrastructure
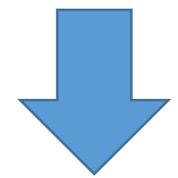
Data Creation

Implementation roadmap

PIDgroup

Berlin Decl. on OA

Credentials for the DataCite (DOI)

Italian Position Statement OA

WG on Data Policy

Data Policy Principles

Data census

Policy for publications

Credentials for the INSPIRE portal

Doc on Implementation Rules

Data Management Office established

● Temporary
● Long-term

2012 2013 2014 2015 2016 2017 2018 2019 2020
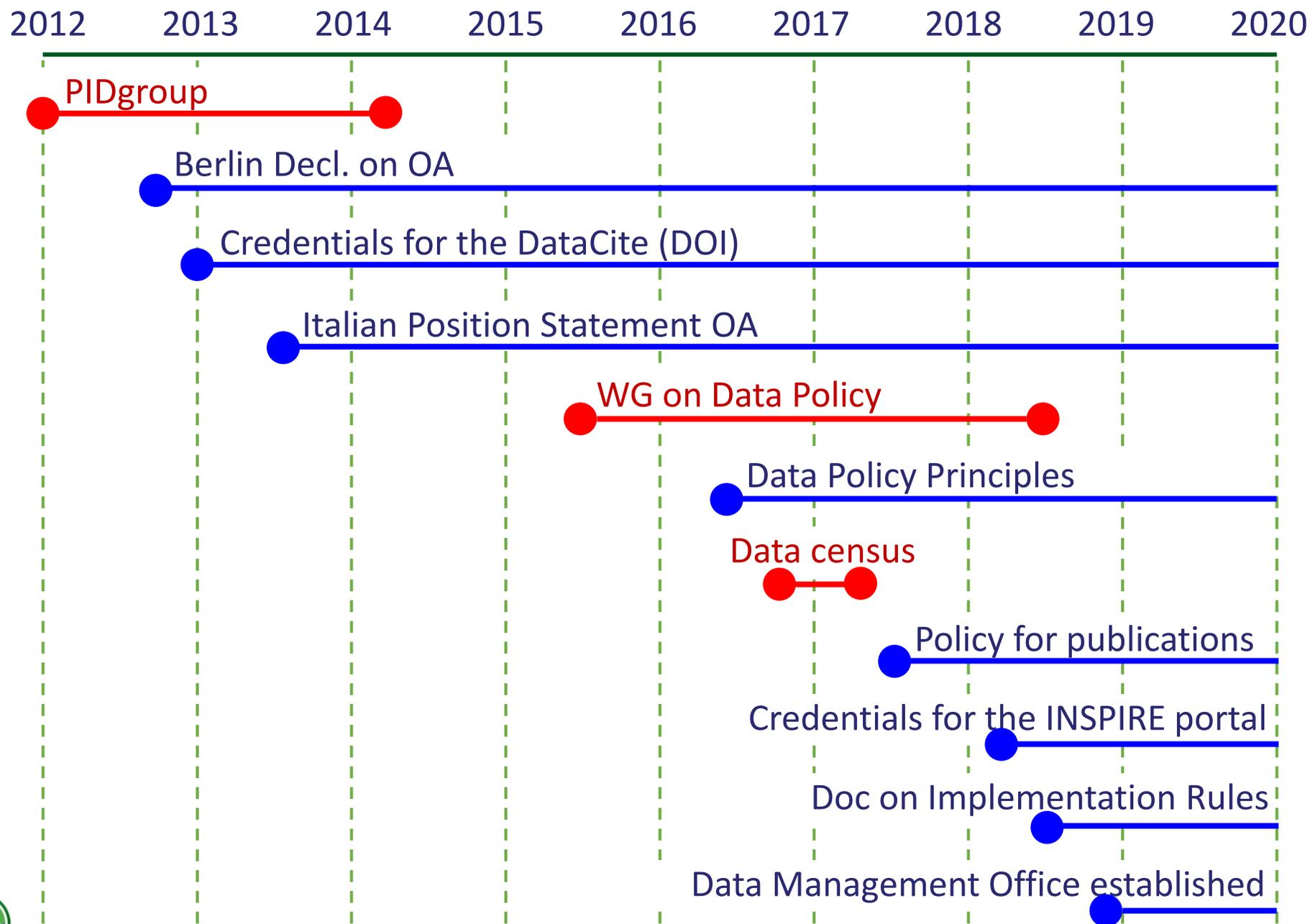
The regulations composing the INGV Data Policy consists of 3 documents:

1. **Data Policy Principles***

   • Define the area of competence, the legal framework and the main principles inspiring the Data Policy

2. **Open Access Policy on published papers***

   • Establish a Commission supervising the adoption of the Open Access principles

   • Enforce employees to deposit their works in the Institutional repository (green road) established since 2005, and encourage the publication on the Open Access compliant scientific journal (gold road) run by INGV

3. **Detailed implementation plan for data management***

   • Provides precise definitions and procedures on how to manage published data

   • Establish the Data Registry and Data Management Office to look after it

   ** In Italian only, an English translation is ongoing.*

In coordination with the EPOS & EMSO ERICs, INGV selected the Creative Commons licenses. The type of license depends on the level of intellectual contribution to the data creation.

0 raw or basic data

1 data products coming from (nearly) automated procedures

Preferred license

2 data products resulting from scientific investigations

3 integrated data products resulting from complex analysis
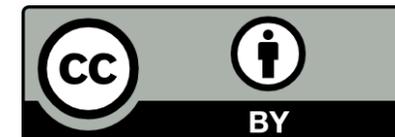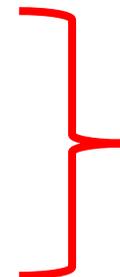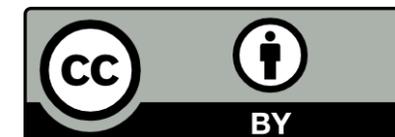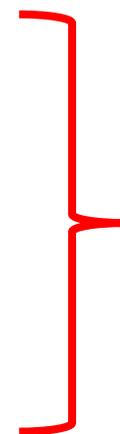
but authors
can suggest another
license if they have a
solid reason for it.
Each request
will be evaluated.

(Meta)Data Registry
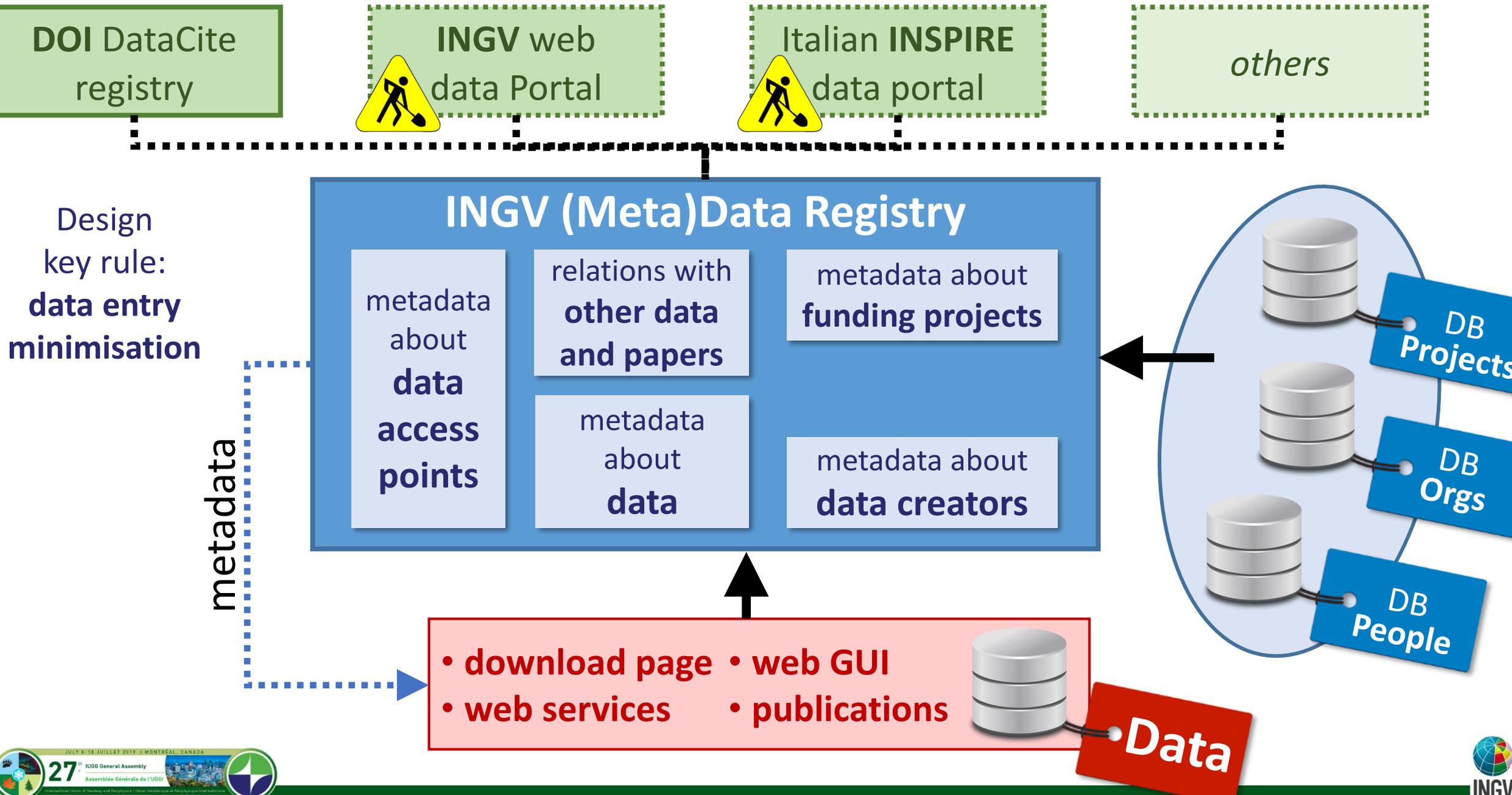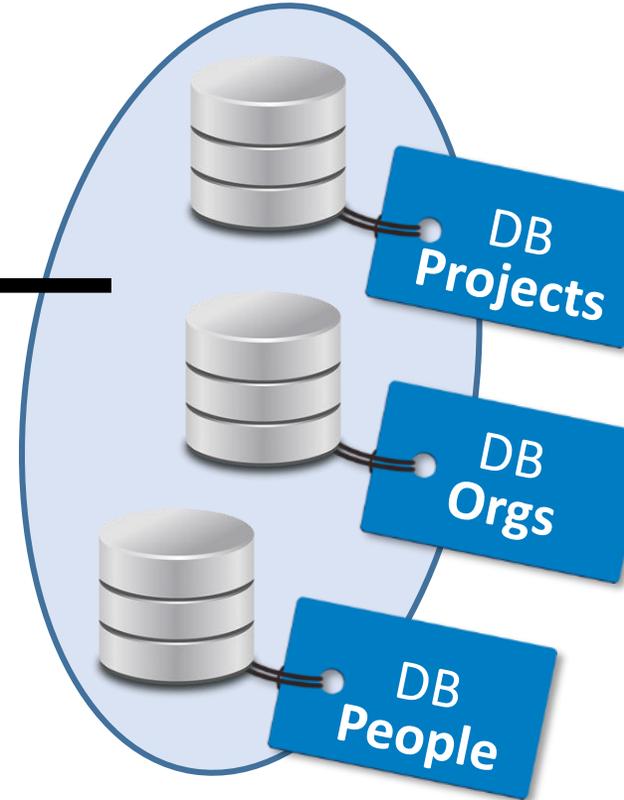
- Promote the adoption of Open Science
- Implement and manage the (Meta)Data Registry
- Revise agreements dealing with data in coordination with the legal office

Part-time involvement

Office Coordinator*
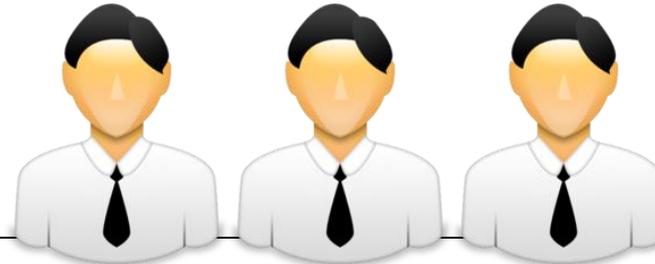
Seismic, Volcanic, Environmental Data Experts*

IT Expert*

- Plan the activity
- Interact with scientific and administrative managers
- Interact with the legal office
- Interact with the transparency manager

- Deals with disciplinary specific issues
- Supervise the Data Registry scientific content
- Suggest the most suitable standards for harmonizing and optimizing data

- Support the coordinator in selecting IT solutions
- Supervise the various existing databases hosting the data
- Interact with the IT management office

- INGV has created a **legal, scientific and administrative framework** laying key elements for a better exploitation of the outcome of its research activities.

- The preparation work took **3 years**, required a very **high effort at the beginning** to acquire the necessary skills (i.e. legal terms, overlapping and articulated guidelines) and, being a **pilot program**, had to deal with no comparable examples.

- The decisions incorporated in the Data Policy received contributions and the **endorsement of many people at multiple levels** (President, Scientific and Management Boards, Directors of Departments & Branches, Scientists, IT experts).

- A **Data Registry** was created together with a **Data Management Office**; it will collect, identify (DOI), give credits to the data producers, clarify the terms of use of the data and will make accessible the data to anyone from a **unique entry point**.

- The **first benchmark** of the regulations and tools will come at the **end of 2019**.

Thank you
for your attention!

datamanagementoffice@ingv.it