Create your data management plan aligned with the GEO Data Management and FAIR Principles

Most projects require a Data Management Plan (DMP), which is often treated as a collection of good intentions without any real assessment of implementation. Data management principles, such as the GEO Data Management Principles and the FAIR Principles, have been defined and widely adopted by the international technical and scientific community as a means to support good data management. But how to write a good data management plan and how to assess the compliance of data or services with these well-known principles? The GEO Data Management Self-Assessment Tool has been developed to help you answer these and other questions.

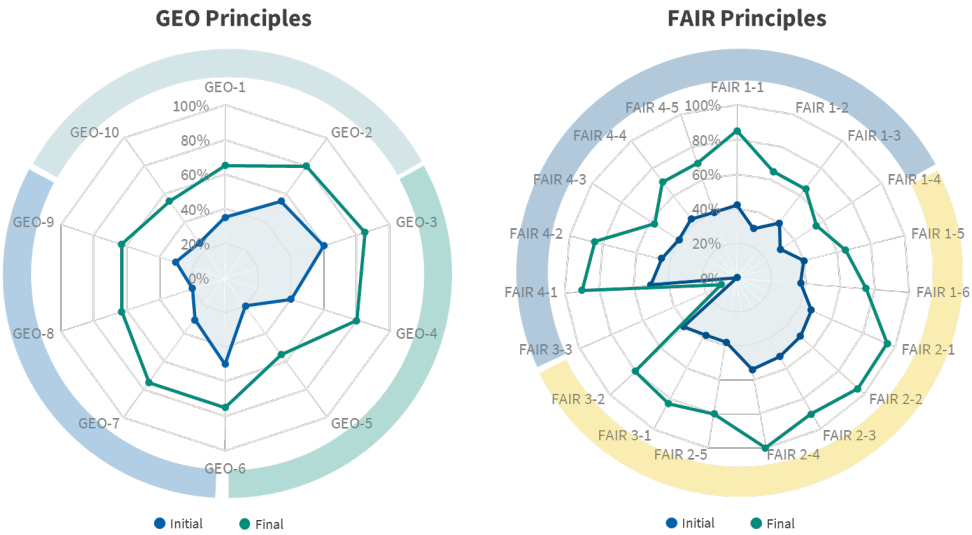
In 2015, GEO published and began advocating for the GEO Data Management Principles and related implementation guidelines, which were further updated in 2022 (link). They can be applied to the entire data management lifecycle and complement the FAIR Principles, which focus primarily on aspects of metadata, and the TRUST Principles, which focus primarily on the curation and preservation of data and related resources.

In March 2016, the FAIR principles were defined in a paper by a consortium of scientists and organisations published in the journal Scientific Data. The FAIR Principles emphasise machine-actionability (i.e., the ability of computational systems to find, access, interoperate with, and reuse data without or with minimal human intervention), as humans increasingly rely on computational support to deal with data due to the increase in volume, complexity, and rate of data creation.

In 2017, the e-shape European project launched the development of 37 pilot applications under seven thematic areas addressing societal challenges, fostering entrepreneurship, and supporting sustainable development, in line with the three main priorities of the GEO (SDGs, Paris Agreement, and Sendaï Framework). As part of a European project, these pilots were required to implement the FAIR Principles and provide a data management plan. As a contribution to the regional GEO, EuroGEO, they were expected to implement the GEO Data Management Principles.

There had been some pioneering work in mapping the FAIR and GEO Principles, showing that these management principles, which have the same objective, overlap at least in part.
In order to support compliance with these two sets of principles, and to facilitate the production of 37 homogeneous Data Management Plans, the project has invested considerable work in developing the Data Management Plan Self-Assessment Tool. This tool has proven its usability and usefulness to each of the pilots, to the project and to the reviewers. The following figure shows the trajectory of improvement toward GEO and FAIR compliance for the 37 pilots from the beginning to the end of the project.

e-shape analysis of 37 pilot projects - initial vs. final compliance



This tool has now been endorsed by the GEO Secretariat as a contribution from EuroGEO and is now available to all through the GEO Knowledge Hub.

Key benefits:
The self-assessment tool can be used in a variety of contexts and offers significant benefits to EO practitioners. Some examples include:

- Regulatory context: DMPs are required by national and international funding agencies, such as the European Commission. The self-assessment tool provides an automated DMP document with the ability to customise the look and feel of the template to match the corporate and/or project visual identity.
- Internal brainstorming: The self-assessment tool is a powerful tool to increase a team's implicit knowledge of an internal process/service/application regarding data sharing principles, including alignment with international standards and interoperability practices.
- Educating: The self-assessment tool is a powerful support tool for familiarising young professionals, including students and researchers, with the concept of open data and open knowledge practices, as well as EO data sharing and data management principles.

Key words:
GEO data management principles, GEO data sharing principles, FAIR principles, Data management plan, Open data, Open knowledge, GEO, EuroGEO, e-shape, OPIDoR

Next steps:
To support the GEO community, a joint team including MINES Paris PSL, University of Geneva and CNRS/INIST is currently developing a machine-actionable GEO DMP model that will be hosted and deployed on the DMP OPIDoR (https://opidor.fr/) platform and will guide users through the drafting and implementation of Data Management Plan. It is based on the DMPRoadmap open-source code and is supported by a dedicated API.

The Data Management Plan Self-Assessment tool helps you to understand, assess and manage your project's data management requirements, providing you with a level of compliance and a trajectory to demonstrate your progress to partners, users, sponsors, and project managers. Based on your input, the tool will automatically generate your Data Management Plan.

1. Testimonial(s):

"The data management plan has been well structured, monitored and implemented in a very differentiated and solid way and provides explicit knowledge about the complex management process of SHELTER all along the duration of the project."

- Marco Folegani (MEEO) - H2020 SHELTER project

"The procedure of creating and updating a DMP for PHD students along their 3 years training period, supports a better knowledge of data management and data sharing principles as promoted by GEO towards future young EO scientists"

- Lionel Menard (MINES Paris PSL University) -

"GEO DMP supports the data manager to make the FAIR principles more applicable in specific domains and to address further data management aspects more in detail."

- Marco Folegani (MEEO) - H2020 RescueMe project

2. Excerpt

Hint: This is the short text that is displayed on the overview pages

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