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<td>Lead beneficiary</td>
<td>UniHB</td>
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Introduction

Deliverable 6.3 is embedded within work package 6 (Interface with policy and intergovernmental bodies). This deliverable describes the current state of GEO/ GEOSS, its developments with regard to data management, and the connection of FixO³ to GEOSS.

GEO (Group on Earth Observations) is a voluntary partnership of governments (~90) and organizations (~80) that envisions “a future wherein decisions and actions for the benefit of humankind are informed by coordinated, comprehensive and sustained Earth observations and information.”

The main GEO objectives are the improvement and coordination of observation systems, the advancement of broad open data policies / practices, and increasing the use of EO data and information.

GEO community is creating a Global Earth Observation System of Systems (GEOSS) that will link Earth observation resources world-wide across multiple Societal Benefit Areas (e.g., agriculture, biodiversity, climate, disasters, ecosystems, energy, health, water and weather) and make those resources available for better informed decision-making.

GEOSS Data Sharing Principles

According to the GEOSS 10-year implementation plan (2005-2015), “The societal benefits of Earth observations cannot be achieved without data sharing”. Therefore, the Group on Earth Observations (GEO) implemented a set of high level Data Sharing Principles as a foundation for GEOSS:

- There will be full and open exchange of data, metadata and products shared within GEOSS, recognizing relevant international instruments and national policies and legislation;
- All shared data, metadata and products will be made available with minimum time delay and at minimum cost;
- All shared data, metadata and products being free of charge or no more than cost of reproduction will be encouraged for research and education.

The GEOSS Data Sharing Action Plan was drafted in 2010 with the aim of emphasising the importance of data sharing and implementing the GEOSS Data Sharing Principles. Current efforts in GEOSS regard, among others, interoperability improvement for existing and future observation systems, provision of an open infrastructure in accordance with the GEOSS Data Sharing Principles, promotion

1  http://www.earthobservations.org/vision.php
2  http://www.earthobservations.org/wigeo.php
4  http://www.earthobservations.org/dswg.php
of a coordinated life-cycle data management process, and further development / enhancement of best practices for observation, collection and access to data and information.

Another important point pursued in GEOSS is the brokering approach, which is realised by implementing the GEO Discovery and Access Broker (GEO DAB). The DAB enables GEOSS to evolve to a multi-disciplinary metasystem platform and greatly improves accessibility and harmonisation.

One important initiative that is described in the 2012-2015 workplan \(^5\) and has been transferred to the GEO Transitional Work Programme 2016 \(^6\) is the Blue Planet initiative. This is significant for FixO\(^3\) and other projects that generate / disseminate oceanographic data because it aims at:

- providing sustained ocean observations and information to underpin the development and assess the efficacy of global-change adaptation measures
- improving global coverage and data accuracy of coastal and open-ocean observing systems
- coordinating and promoting the gathering, processing, and analysis of ocean observations
- developing a global operational ocean forecasting network
- establishing a global ocean information system by making observations and information, generated on a routine basis, available through the GEOSS Common Infrastructure (GCI)

**FixO\(^3\) observatories in GEOSS: Standards and Services Registry**

The FixO\(^3\) standards and services registry \(^7\) is based on GEOSS entries. It was implemented by using the GEOSS Component and Service Registry (CSR) API and embedded into the FixO\(^3\) website. All partners were requested to register their observatories with the GEOSS CSR and submit the resulting resource ID’s to the data management team.

The FixO\(^3\) standards and services registry offers quick and easy access to information about the observatories, which contains the unique GEOSS ID, type of resource, online resources for the provision of general information as well as data archive search functionality (for archived data), and standards the observatory complies to. Direct links to the GEOSS resource pages and to the raw xml are also provided. The xml is ISO-compliant and, as such, standardised and machine readable.

So far, 18 FixO\(^3\) observatories and services have been registered with the GEOSS CSR. While this is a great success, the few remaining observatory operators must also be convinced to engage in the registration process.

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5  https://www.earthobservations.org/docshow.php?id=129  
6  http://www.earthobservations.org/geoss_imp.php?smid=200  
7  http://www.fixo3.eu/observatory-metadata/
Future work related to GEOSS

It must be ensured that FixO³ related information is kept up to date within the GEOSS registry, i.e. new services should be registered in a timely manner. The observatory and service descriptions should be revised in order to make sure that a registry search for “FixO³” yields all appropriate results, which is currently not the case as not all resource descriptions contain this phrase.

It will be useful to evaluate FixO³ activities with regard to GEOSS guidelines. In this way possible shortcomings might be identified and resolved in a timely manner. A suggestion by Eric Delory (PLOCAN) describes a scenario where FixO³ may contribute achievements and new ideas to GEO/GEOSS, in particular the Blue Planet initiative (C1: Sustained Ocean Observations component). This will be discussed and evaluated in the coming months.