



www.gbif.org

...free and open access to biodiversity data

GBIF - Helping to build a Global Spatial Data Infrastructure

Figure 1 provides an overview of the main metadata related components envisaged for a decentralised and greatly expanded GBIF network.

Aspects of the system include:

- Publishing of data and associated metadata using the GBIF Integrated Publishing Toolkit (IPT)
- Ability to cope with metadata in several standards (e.g., EML¹, FGDC BDP², ISO 19115³)
- Ability to upload, index and store metadata in the GBIF metadata catalogue which acts as a database for metadata documents
- Special harvesting arrangements for existing metadata repositories at GBIF nodes.
- Packaging the metadata catalogue as a component of the Nodes Portal Toolkit: all instances of such catalogues will need to be able to communicate and share metadata
- Reciprocal sharing of metadata with other established metadata networks (e.g., NBII Clearinghouse, ILTER, OBIS)
- The GBIF Metadata Portal which provides the entry point for browsing and searching the metadata catalogue
- A forms based search interface which allows a user to search for datasets based on different criteria, e.g., taxon, spatial or temporal coverage; keywords
- Ability to download and/or access datasets through the provided web service end-points indicated in the metadata
- Ability to document undigitised datasets to made them discoverable with the possibility of prioritising mobilisation based on demand
- Linking the metadata catalogues on the GBIF network to the more general geospatial metadata catalogues at national and global level: in particular, GBIF can become a key provider of biodiversity metadata for national SDIs and for GEO BON and GEOSS.

GBIF is developing an informatics infrastructure to enable discovery and access to diverse biodiversity resources. The goal is to facilitate each participating member country to integrate biodiversity within their own national Spatial Data Infrastructure (SDI) and also through the GBIF network, as a whole, to play a central role in such global SDI initiatives as the Global Earth Observation System of Systems (GEOSS), and, in particular, its Biodiversity Observation Network, the goal of which is to enable data integration and interoperability across systems, from local to global scales, serving a wide variety of data (e.g., species occurrences, ecological, environmental, climatic or oceanographic data).

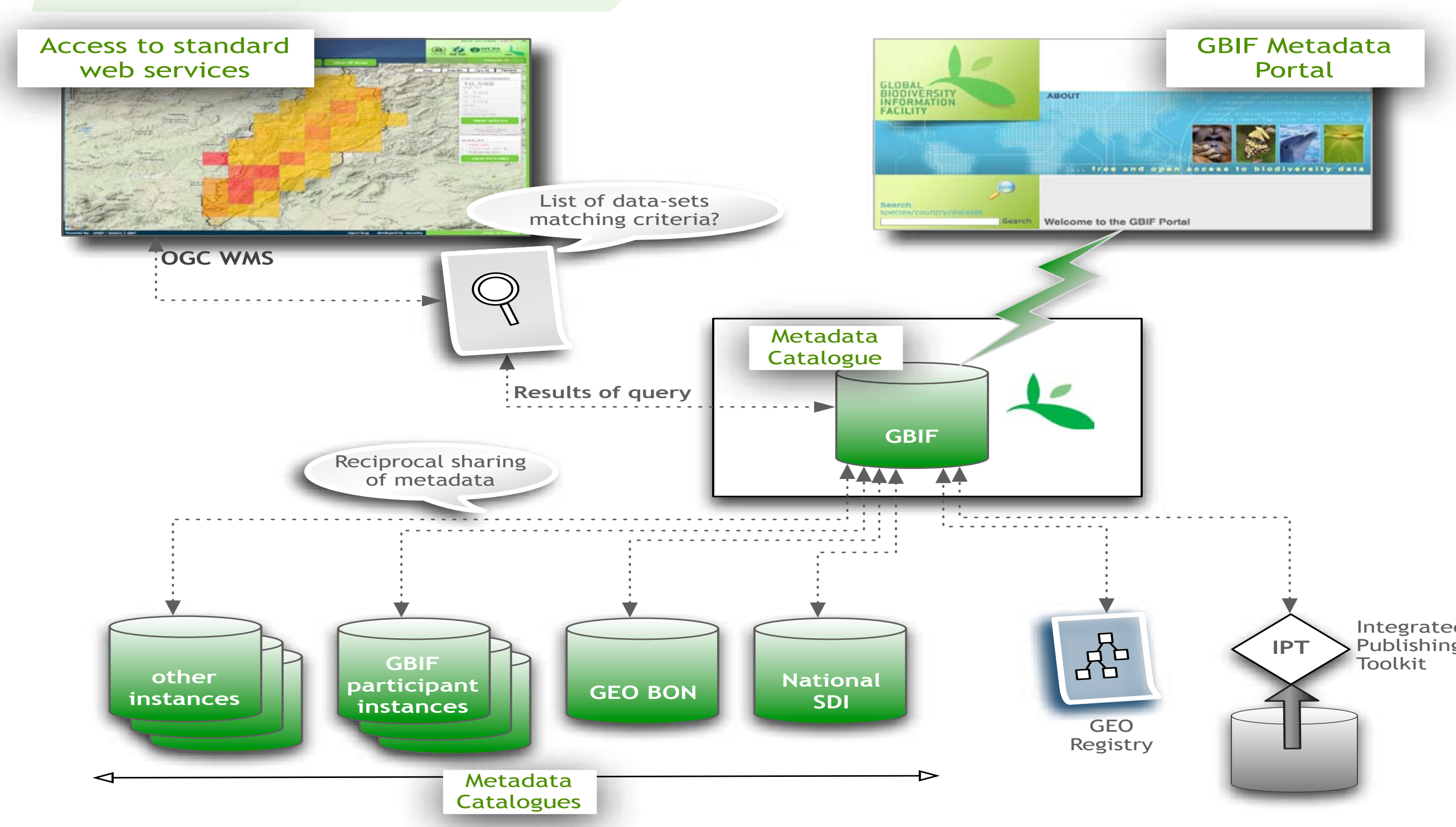


Figure 1. The main metadata related components in a decentralised and expanded GBIF network.

Service Oriented Architecture

The GBIF network is based on a scalable and distributed informatics architecture that implements international standards for data exchange formats and protocols thereby enabling the maximum degree of interoperability across heterogeneous, distributed data holdings and applications. Large distributed networks of this type featuring numerous providers and consumers of data can be characterised as a Service Oriented Architecture (SOA) where consumers discover providers and loosely coupled system components can be orchestrated as required to serve particular use cases. In an SOA, the key activities of inventory, discovery and access must be well coordinated through provision of registries and metadata catalogues, and through generation of specific indexes. Metadata is thus a central component in an expanded GBIF network where many types of web services are available for delivering data to users and diverse client applications that can exploit the data in novel and specialised ways.

About GBIF

GBIF makes digital biodiversity data **openly and freely available** on the Internet for everyone, and endorses both open source software and open data access. www.gbif.org

GBIF provides **scientific biodiversity data** for decision-making, research endeavours and public use. data.gbif.org

GBIF is a network of **data publishers who retain ownership and control** of the data they share. Linked datasets provide a more robust representation of biodiversity than any single dataset.

GBIF provides access to primary biodiversity data held in institutions in developed and developing countries. **Data shared through GBIF are repatriated data.**

GBIF is a **dynamic, growing partnership** of countries, organisations, institutions and individuals working together to mobilise scientific biodiversity data.

GBIF invites you to download species occurrence data freely and openly from <http://data.gbif.org>

GBIF invites you to **join** the GBIF network **and share** your biodiversity data, as well as participate in developing **new tools and services.**

1 Ecological Metadata Language
2 Federal Geographic Data Committee Biological Data Profile
3 International Organization for Standardization

