

OPENUP! ANNUAL REPORT 1 & PROGRESS REPORT 2 PUBLISHABLE SUMMARY

Project objectives

European natural history collections manage and give access to over 1.5 billion objects from the world's biodiversity heritage, covering most of the species described worldwide. These are reference objects, including all common and famous species in the world, those of high economic importance and even those that have already gone extinct. Many have great cultural value as they were collected during historical expeditions and scientific endeavours by well-known epochal explorers and scientists like Darwin, Linnaeus, or Stanley. In many cases, OpenUp! will make these treasures for the first time available to the general public in Europeana. As a result, Europeana will be providing scientists and policy makers with a substantial information source needed in the understanding and protection of global biodiversity. The content provided by OpenUp! is exactly complementary to the resources mobilised by the *eContentPlus* project BHL-Europe (Biodiversity Heritage Library Europe).

Although being clearly within the scope of Europeana as part of the scientific and cultural heritage, multimedia objects from the natural history domain are still dramatically underrepresented. This project aims at closing this gap. It will initially make available at least 1.1 million high quality images, movies, animal sound files, and natural history artwork. It brings together 23 institutions from 12 European countries. Access will be based on the established technical infrastructure of the Global Biodiversity Information Facility (GBIF) including the BioCASE network (Biological Collection Access System for Europe). Once the pathway and data flow from providers in the BioCASE network and GBIF has been created, it will provide a steady stream of additional multimedia objects to Europeana.

The project addresses the following specific objectives:

- Mapping between the ABCD (Access to Biological Collection Data) standard and the Europeana metadata scheme ESE/EDM
- Enrichment of metadata towards compliance with Europeana standards
- Incorporation of multilingual metadata, in particular vernacular names of organisms
- Incorporation of metadata that will allow semantic linking of content with other domains, particularly scientific organism names
- A single access point to distributed GBIF/BioCASE multimedia content for Europeana
- Adding data providers for multimedia content, set up of data provider software
- A sustainability plan for the future network maintenance
- The development of a consistent IPR and copyright strategies for future data providers

Description of work performed since the beginning of the project

The work progress has been completely according to plan. The technical requirements (Figure 1) for the provision of multimedia content to Europeana were met and **the first 200 000 multimedia objects were delivered to Europeana via the OpenUp! infrastructure** according to plan by the end of year 1. Workflows were analysed and optimized to streamline the generation and storing of links to multimedia objects and the metadata to be used for OpenUp!. All content providing project partners

have started to examine their content, to clean their data, to install the required provider software, and test their data on the BioCASE installation. This will ensure the provision of another 400 000 objects to Europeana as described in the workplan during the next project year.

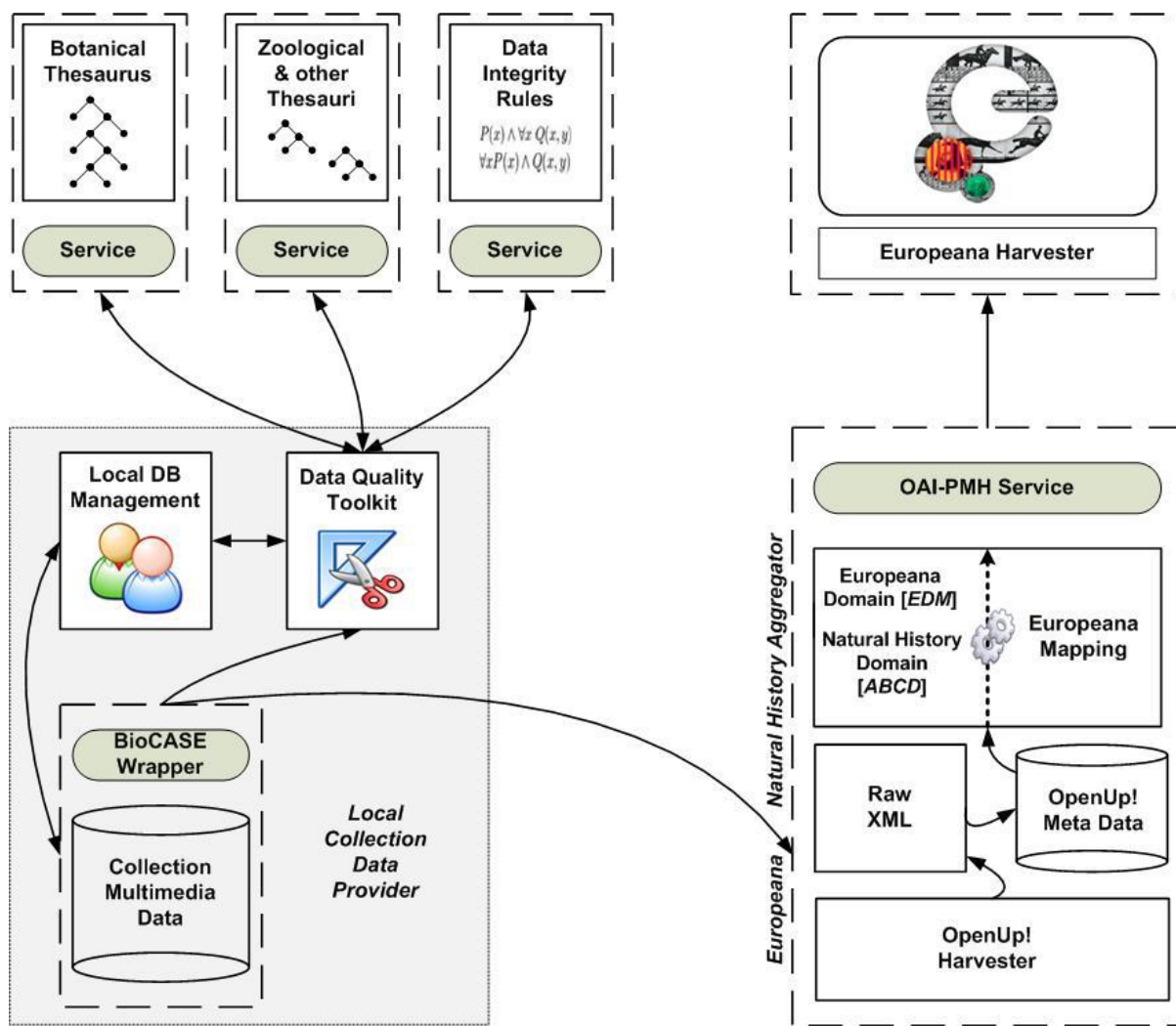


Figure 1: Data processing steps in the mobilisation of multimedia content from natural history institutions to Europeana

Main results achieved so far

The first **200 000 multimedia objects** were delivered to Europeana via the OpenUp! infrastructure at the end of year 1. So the goal for the first year, set as **performance indicator no.1**, was met.

An **Outreach and Dissemination Group (ODG)** was constituted and **templates for promotional materials** including the **project logo** were designed. The **OpenUp! communication site** was set up using a Scratchpad (Drupal content management system). A **Dissemination and Publication Plan** was

submitted and the first 6-monthly **OpenUp! Newsletter** and two issues of the **ODG News** were published on the website.

The mechanisms for **Content Provision and Metadata Enhancement** are in place. Preparatory work started at most of the content providers, including identification of additional existing resources, drawing together or harvesting the files and datasets, and defining needs for data transformations, internationalisation, and quality improvements. A Training Workshop for BioCASE providers was organised in Berlin and attended by 17 participants from 14 partner institutions, and a Workshop on Organizing Content Provision for OpenUp! was held on short notice to support collaboration.

The Technology Management Group coordinated the **implementation of the technical infrastructure** by means of weekly Skype meetings. All technical developments proceed according to plan:

- The production versions of the **Harvesting and Transformation Component** and the **OAI-PMH Interface** were delivered.
- The **initial OpenUp! metadatabase** was set up at the Natural History Museum in London.
- **Mappings** of the ABCD data elements to the Europeana Semantic Elements (ESE) were specified and implemented in the Harvesting and Transformation Component. End of February, the new EDM (Europeana Data Model) definition was released and published. This version is now being analysed for its use in the future data provisions of OpenUp! to Europeana. A model for the integration of content from the areas of **palaeontology and mineralogy** was submitted, which uses the ABCD extension for geosciences, EFG, which was also mapped into ESE. The **Collection Data Quality Toolkit** was specified and implemented. It is an open web-based application for OpenUp! data providers and BioCASE (Biological Collection Access Service) providers in general performing data quality checks on their data. The **Data Quality Service for Zoological and Botanical Names** and the **Data Integrity Service** were connected to the quality toolkit.
- A prototype for **metadata validation and enrichment layers** was completed. A mock-up for the **Common Names Service** was designed and implemented. **Common names lists will be provided in several different languages** including Hebrew, Norwegian, Swedish, Finnish, Icelandic, Czech, Slovak, Maori, English and German.

The **OpenUp! Helpdesk** was set up at <http://openup.helpdesk.africamuseum.be>. It links to the OpenUp! project website, features a first implementation of a question and answer dispatching system, provides the **OpenUp! Guidelines v.1 and other documents from related projects and networks like GBIF, BioCASE, Europeana, BHL-Europe and STERNA**, as well as information on upcoming events in the digital library, collections management and standardization domain.

The Outreach and Dissemination Group coordinated the collaborative efforts in these areas; achievements include the setup of the **OpenUp! Website** (<http://www.open-up.eu>), the **dissemination and publication plan**, the **newsletter** and **promotional materials**.

The **OpenUp! Consortium Agreement** came into effect on 6 December 2011.

An overview of **IPR** issues in OpenUp! and the Consortium's view on Europeana's new Data Exchange Agreement was prepared.

Cooperation with other projects/programmes is growing steadily: BHL-Europe, CETAF, GBIF, Natural Europe, STERNA, and ViBRANT.

The dates for the first **Annual Review Meeting**, the second **Project Assembly**, and **Working Group meetings** have been set for March 19-21, 2012. The meetings will take place at the Muséum National D'Histoire Naturelle (MNHN) in Paris.

An intense discussion process about the controversial application of the **Europeana Data Exchange Agreement** in the natural history research domain was initiated.

Expected final results and their potential impact and use

The inclusion of culturally-significant multimedia content from European natural history collections (i.e., more than 1 million pictures, artwork, movies, and audio files) and the cooperation of 23 well-known institutions from 12 different European countries will enhance the scientific dimension of Europeana by adding substantial information about the natural world complementing the digital biodiversity literature and adding to the existing material primarily from the arts and humanities. The users of Europeana will have direct online access to famous examples of natural and cultural heritage information that are kept in far-flung institutions preserving Europe's natural history and that are often inaccessible to the public or would be arduous to visit in person. Also, and due to the history of Europe and its colonial past, a lot of this information is of high interest to countries outside of Europe and it will play an important role in the repatriation of information on items kept in European repositories to their countries of origin. Accordingly, this project addresses end-users worldwide and will make them familiar with Europeana and its objectives.

Different user communities, including those in research for example from the fields of biology in general and specifically biodiversity conservation and land use management (agriculture, fish-farming, forestry, horticulture, disease control) as well as potential users in, e.g., education, citizen science, eco-tourism, or from pharmaceutical and drug companies will have access to information *via* Europeana, greatly facilitating their work in their respective field of expertise. The presented information also has an overall educational role and can be used in materials that make the general public aware of important challenges like climate change or loss of biodiversity. Last not least it will foster the general public's understanding of the role and the work carried out in natural history institutions beyond what is exposed in exhibition rooms.

From a technical point of view, many of the participating institutions have been or are still active in IT related projects. Their staff members are skilled in data processing and usage of international data-providing standards. The result of this project and the procedures set in place to make natural history data accessible can serve as proof of concept of the networking and distributed access mechanisms used for Europeana content provision. This experience can be extended to other content provider communities with a similar high degree of distribution.

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