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<http://open-up.cybertaxonomy.africamuseum.be/> (Helpdesk)

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INTRODUCTION

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, Humboldt or Stanley. OpenUp! has made these treasures for the first time available to the general public via the European digital library, museum, and archive Europeana. As a result, Europeana is providing scientists, policy makers, and the general public with a substantial information source needed in the understanding and protection of global biodiversity. The content provided by OpenUp! is 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 had been dramatically underrepresented. OpenUp! has closed this gap. It has made available over 1.9 million records with one or more high quality images, movies, animal sound files, and natural history artwork (Figure 1), bringing together 20 content-providing institutions from 12 European countries.

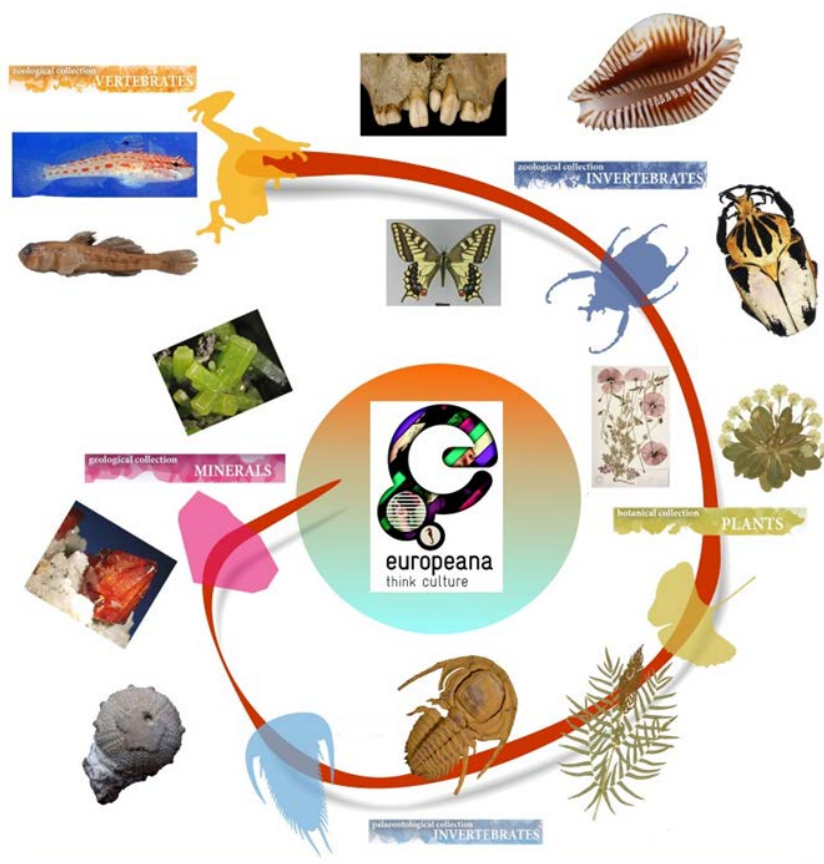


Figure 1: Examples of content made accessible in Europeana via OpenUp!

Data access is based on the established technical infrastructure of the BioCASE network (Biological Collection Access Service for Europe), which itself is largely included in the Global Biodiversity Information Facility (GBIF). Now that the pathway and data flow from providers in the BioCASE network and GBIF have been created, BioCASE provides a steady stream of newly added multimedia objects to Europeana.

The project addressed the following specific objectives:

- Mapping between the ABCD (Access to Biological Collection Data) community standard and the Europeana metadata schemes ESE and 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 synonyms of 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 future network maintenance
- The development of a consistent IPR and copyright strategies for future data providers.

DESCRIPTION OF WORK PERFORMED

The technical requirements for the provision of multimedia content to Europeana were met at the end of the first project year and since then **over 1.9 million records with one or more multimedia objects were connected with Europeana via the OpenUp! infrastructure** (Fig. 2). All content providers installed the required BioCASE provider software and mapped their data sources which were then ready for harvesting by the OpenUp! tools and eventually Europeana. At the end of the project, work continues at content providers, including further identification of existing resources, drawing together or harvesting files and datasets, and defining needs for data transformations, internationalization, and quality improvements. Apart from the constant and reliable provision of technical support, the OpenUp! Helpdesk Facility has concentrated on preparing the ground for the extension of the OpenUp! network, which was a key activity in the last project year together with the discussion of measures to ensure project sustainability.

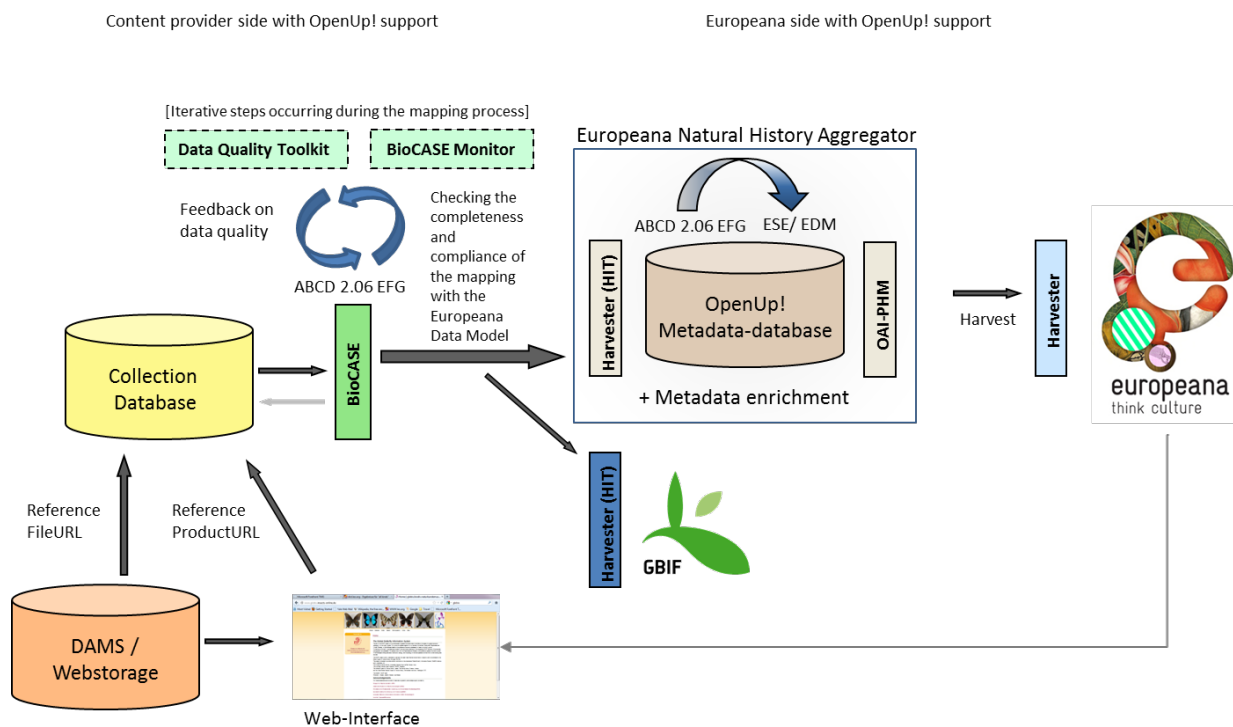


Figure 2: OpenUp! workflow depicting data flow from the local collection database to data exposition ready for harvesting by Europeana, performing standardisation and transformation processes including several quality checks.

Abbreviations used: ABCD – Access to Biological Collection Data; BioCASE – Biological Collection Access Service for Europe; EFG – Extension for Geosciences; ESE – Europeana Semantic Elements; EDM – Europeana Data Model; OAI-PHM – Open Archives Initiative – Protocol for Metadata Harvesting, DAMS – Digital Asset Management System.

MAIN RESULTS

Over 1.9 million records with multimedia objects were connected to Europeana via the OpenUp! infrastructure by now (April 2014), i.e., almost a million objects more than had been aimed for at the beginning of the project (see Appendix 1 for more detailed figures¹). Now that the sustainable pipeline from natural history collections to Europeana is in place, many more objects will follow even after project termination. The understandings with respect to the objectives of the OpenUp! network, the commitment of participants, issues of intellectual property etc. were laid down in a **Memorandum of Understanding** (Appendix 2). This MoU is to be signed by all institutions that are already providing content or that are willing to join the OpenUp! network in the future.

Overall, **87 deliverable/milestone/component reports** were published from OpenUp! consortium members. These reports describe all project achievements in detail and – with few exceptions – can be freely downloaded from the OpenUp! website.

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

- The **OpenUp! Metadatabase** was set up at the Natural History Museum in London.
- A **Mirroring System** was installed to secure the long-term availability of the metadata of the OpenUp! Aggregator at three partner institutions. The aggregator itself was installed on a virtual server, which has been distributed to AIT and BGBM.
- An **Availability Checker** was developed to reduce the likelihood of broken links for OpenUp! records in Europeana.
- The production versions of the **Harvesting and Transformation Component** and the **OAI-PMH Interface** were delivered and a **final workflow and software documentation** published. The Harvesting and Transformation Component realizes the harvesting of ABCD metadata from a content provider and transforms it into the Europeana data standards ESE/EDM. It consists of the GBIF-HIT Harvester, the Pentaho Data Integration component, the OpenUp! Metadata Data Manager (SQL-Server and Data Import Utility) and the OAI-Provider.
- **Mappings** of the ABCD data elements to the Europeana Semantic Elements (ESE) and Europeana Data Model (EDM) were specified and implemented in the **Harvesting and Transformation Component**. An OpenUp! to ESE/EDM documentation was published. 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/EDM.
- The **Collections Data Quality Toolkit** (DQT) 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. With the DQT, data providers are now able to critically assess the completeness and correctness of their data and to correct and enrich them according to their needs. The **Data Quality Service for Zoological and Botanical Names** and the **Data Integrity Service** were connected to the quality toolkit. A quality check of

¹ Complying with recommendation 1 from the 3rd periodic review of OpenUp!: “A synthetic table on objects/records showing clearly how many were submitted to Europeana and how many were already made available through Europeana (for every project year and by the date of the report).”

the ABCD mapping and a compliance check with Europeana standards can be performed with the newly introduced **BioCAsE Monitor Service**.

- A system for **harvesting, parsing and caching federated reference data** (common names, person names and geographical place names) was developed and deployed.
- Based on the analysis of EDM and various domain specific vocabularies, a concept for inclusion of **metadata vocabularies and metadata enrichment** was published after existing tools for building and deploying semantic knowledge representations had been evaluated. A technical routine was then developed that is used to implement the **OpenUp! Metadata Enrichment Services**. These are collecting substantial amounts of multilingual reference information (scientific names, common names, person names, and geographical names) that greatly improve the scope of semantic linking of natural history content with other domains in Europeana. A **caching layer** was deployed for productive use which greatly enhances the speed of the common names webservice.
- A report on multilingual data for natural history objects was published. **Common names lists are provided in many different languages**, including Czech, Danish, English, Finnish, German, Hebrew, Hungarian, Icelandic, Maori, Norwegian, Russian, Slovak, Swedish, and Ukrainian. The service delivers 465,194 different common names for 139,932 distinct scientific names (February 2014).

All the aforementioned activities and services will be maintained free-of-charge by participant institutions beyond the project period. The process of Harvesting and Transformation of ABCD data and the actual data provision for and ensuing communication with Europeana will be carried out by AIT with a service fee charged to institutions (Appendix 3), based on a Service Level Agreement (App. 4).

The **OpenUp! Helpdesk** was set up and will be further maintained at <http://open-up.cybertaxonomy.africamuseum.be/>. It links to but is independent of the OpenUp! project website (which will be discontinued at some point in the future). The Helpdesk provides an extensive list of open, free, and easily accessible **online documents** in different languages for further reference such as the OpenUp! Guidelines 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 extension of the OpenUp! network was fostered with the publication of a preliminary list of potential associated partners along with a **standard procedure for associated partners** and a **new providers information package**.

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 OpenUp! Newsletter, and further promotional materials such as, e.g., a flyer, a self-running OpenUp! demonstration and an online demonstration of bundled results from other work packages that can be downloaded from the website. In addition to presentations about OpenUp! at conferences and workshops worldwide, the ODG made use of **social media** such as Facebook, a blog, Twitter, Flickr, and Pinterest for dissemination purposes. They also focussed on **outreach to the educational sector** and distributed an online questionnaire to assess and promote the usage of OpenUp!/Europeana content in schools.

An overview of **IPR** issues in OpenUp! and the Consortium's view on Europeana's new Data Exchange Agreement was prepared. An intense discussion process about the controversial application of the **Europeana Data Exchange Agreement (DEA)** in the natural history research domain was initiated, with

the result that now all OpenUp! partners provide data to Europeana under the new DEA. A report on IPR problems and solutions for the domain of natural history objects was published.

Cooperation with other projects/programmes was growing steadily: AnnoSys, BHL-Europe, BioCASE, CETAF, EU BON, Europeana Creative, GBIF, Natural Europe, pro-iBiosphere, BioVeL, STERNA, reBIND, and ViBRANT. Three **STERNA** partners whose content had not yet been available in Europeana and who had not been OpenUp! partners were approached and they agreed to connect to Europeana via the OpenUp! infrastructure.

The **OpenUp! Consortium Agreement** came into effect on 6 December 2011. **Amendment No. 1 and No. 2** were both approved by the EC. **The revised Annex I – Description of Work dated 19/07/2013 has replaced all former versions of the DoW.**

POTENTIAL IMPACT AND USE OF PROJECT RESULTS AND TARGET GROUPS

The inclusion of culturally-significant multimedia content from European natural history collections 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 previously existing material that came 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 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, much of this information is of high interest to countries outside Europe and it will play an important role in the provision 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) as well as potential users in education, citizen science, eco-tourism, or from industry now have access to this kind of information *via* Europeana. 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 but 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, 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. The use of BioCASE and the ABCD in the context of OpenUp! has been a decisive factor in the recent approval of a DFG project dealing with the provision of a new version of the ABCD standard² (see Appendix 5). This experience can be extended to other content provider communities with a similar high degree of distribution of data sources.

² Complying with recommendation 3 (in part) from the 3rd periodic review of OpenUp!: [make] 'a reference to the project "A community platform for the development and documentation of the ABCD standard for natural history collections (DFG)".'

*Use cases*³

Europeana Creative applications using OpenUp! content

The publication of Europeana metadata under the terms of the Creative Commons Public Domain Dedication (CC0) in September 2012 facilitated the development of innovative applications based on Europeana content. The Europeana Creative project set out to demonstrate that Europeana can trigger the creative re-use of digital cultural heritage content and associated metadata. Since the launch of the project end of February 2013, the project partners develop a number of pilot applications focused on design, tourism, education and social networks.

Representatives of the National Museum in Prague and the Museum für Naturkunde in Berlin collaborate in the *Natural History Education Pilot* with application and game specialists. The pilot presents attractive and interactive re-use of digital natural history content, with the aim of inspiring creative industries to use it for educational as well as commercial applications. The pilot includes two products targeting different user groups, demonstrating the educational use of digital natural history content in game applications:

a) Serious Adventure Game

Aimed at: school children 12+, families, students, adults

Made by: EXOZET Berlin

This is designed as first person hidden objects game, situated at the Museum für Naturkunde and other locations in Berlin, as well as the National Museum in Prague. The story reveals a secret legacy of Alexander von Humboldt, including a mystery which needs to be unravelled by his descendant Sara. Sara needs to solve several puzzles and is tasked to find pieces of a mysterious map, which will lead to the great secret.

b) Memory Game

Aimed at: visitors and museum lecturers; families

Made by: SEMANTIKA

The memory game includes numerous given memory sets of content according to several eye-catching natural history themes with editorials and quizzes. The game offers users the opportunity to create their own sets using Europeana content and to devise additional questions. It also provides the option to use the game in different contexts, for example in other museum exhibitions.

Biodiversity Library Exhibition

The Biodiversity Library Exhibition (BLE) is a unique platform for the dissemination of Natural History multimedia content and knowledge to the public. This project combines images from Europeana (including OpenUp! content) and information from the Encyclopedia of Life (EoL) with illustrations and literature from the Biodiversity Heritage Library (BHL) and BHL-Europe. Four topic series named “Spices”, “Expeditions”, “Poisonous Nature”, and “Nature at your Home” respectively were published, offering information, images and links on selected taxa by interactive cards. Since the first launch in

³ Complying with recommendation 3 (in part) from the 3rd periodic review of OpenUp!: “Information within the impact section on the preparatory work done within Europeana Creative on OpenUp! data reuse”

2012 the number of visitors has increased to over 70.000 visits, 10% of them being returning visitors. Most visits origin from the US, followed by Czech users.

Impact on IPR policies of participating institutions⁴

As mentioned before, the new requirement of publishing the textual metadata in Europeana under a CC-0 no rights reserved waiver initiated an intense discussion in the natural history community (see also C1.4.1., the report on “IPR problems and solutions for the domain of natural history”. In the course of the preparation of the funding application for OpenUp!, providers were convinced by the coordinating team to agree to put their metadata under a CC-by license, explicitly excluding the NC (non-commercial) clause. All agreed and this was fixed in the text of OpenUp!’s description of work for the contract. The arguments for the exclusion of NC are discussed extensively in the article by Hagedorn & al. (2011)⁵, who come to the conclusion that “NC licenses ... provide a broad protection for the copyright owner, but strongly limit the potential for re-use, collaboration and sharing in ways unexpected by many users”. In addition to clarifying the problems with the NC clause, the article provides background on CC licensing in general. In order to argue in favour of dropping licensing all together (CC-0), it is necessary to understand the legal background. The arguments in favour of releasing metadata under CC-0 as opposed to putting the data under a CC-by (or similar) license may be summarised as follows:

- Legal applicability: CC licenses are based on copyright. It is unclear to what extent NH metadata is copyrightable at all, if they were, it is unclear who the actual holder of the copyright is.
- Willingness to enforce: While there are numerous examples (e.g. in the context of large-scale analysis of GBIF data) where individual right statements were not followed, we have not found an institution that would be willing to actually enforce attribution for collection metadata in court.
- Comparison to other forms of publishing: there is no legal requirement to cite sources from literature. However, citation of sources (i.e. attribution) is morally enforced because it is part of the recognised good practice in science.
- Obstacle to research: especially in scenarios that would lead to attribution stacking, a legal requirement for attribution may lead to exclusion of data from analysis (or even pose a barrier to publish unrelated data – see Mietchen 2012⁶).
- Part of the mission: natural history museums and herbaria are knowledge institutions, traditionally making their collections accessible to researchers and the public – why taking a different stance on the data once it is in electronic form? As stated by Creative Commons⁷:

⁴ Complying with recommendation 4 from the 3rd periodic review of OpenUp!: “A succinct summary illustrating the motivating factors which help to convince institutions to use CC0 for those metadata which could have been considered research outcomes.”

⁵ Hagedorn, G., Mietchen, D., Morris, R. A., Agosti, D., Penev, L., Berendsohn, W. G. & Hobern, D. 2011. Creative Commons licenses and the non-commercial condition: Implications for the re-use of biodiversity information. ZooKeys 150: 127–149. <http://www.pensoft.net/journals/zookeys/article/2189/creative-commons-licenses-and-the-non-commercial-condition-implications-for-the-re-use-of-biodiversity-information>.

⁶ <http://wir.okfn.org/2012/01/27/attribution-stacking-as-a-barrier-to-reuse>

⁷ <http://wiki.creativecommons.org/Data>

“Much of the potential value of data is to society at large — more data has the potential to facilitate enhanced scientific collaboration and reproducibility, more efficient markets, increased government and corporate transparency, and overall to speed discovery and understanding of solutions to planetary and societal needs.”

The solution devised by OpenUp! in 2012 included an option of restricting data provision; data providers had to agree to at least make part of their data available under CC-0 for Europeana. By the end of the OpenUp! project, 10 partners and the 2 new data providers make their full metadata available under CC-0, 9 partners (representing about 40% of the records) still restrict their metadata.

SUSTAINABILITY STRATEGY⁸

Sustainability of OpenUp! means on the one hand sustainability and extendibility of the OpenUp! contribution workflow for Europeana (see Fig. 2), on the other hand sustenance of the components of that workflow that have a function in other networks or initiatives.

We can distinguish 4 main components of the workflow:

1. Metadata provision

OpenUp! data providers have all agreed to continue providing data to Europeana, indeed, all but one of them will be contributing financially to keep up the OpenUp! harvesting and transformation component, showing their commitment. As demonstrated by the new providers already contributing and those in the process of becoming a member, this is also the case for institutions that have not received funding during the project period. From the provider’s point of view, the technical setup for data provision is the same for several existing networks (GBIF, BioCASE, GeoCASE, DNA-Bank Network / Global Genome Biodiversity Network GGBN, SYNTHESYS), so in the future, existing and new members of these networks (and other special interest networks to come) have the option to also join OpenUp! with minimal effort and additional cost. These networks will encourage members to provide multimedia objects to Europeana.

The BioCASE software suit is firmly supported by member institutions: The BGBM has a permanent half-time position in place for BioCASE provider support and another half-time permanent position for the GGBN network. BGBM also hosts the BioCASE Secretariat, which in turn is the GBIF Participant Node for the Consortium of European Taxonomic Facilities. In addition, and as a fall-back option, several members of the OpenUp! consortium have in-depth understanding of the BioCASE software (RMCA, the French GBIF Node and MNHM, Naturalis, RBGK, GBIF Secretariat) and have in the past set up installations of the provider software.

⁸ Complying with recommendation 2 from the 3rd periodic review of OpenUp!: “A section on Sustainability strategy which includes a back-up option and the proposed Memorandum of Understanding for the use of the service model presented during the review.”

2. Metadata quality control and format checking

OpenUp!, BioCASE, GeoCASE and GGBN helpdesk are supported by BGBM, MfN and RMCA. MfN is committed to sustain the BioCASE Monitor Tool, which allows for provider-level accessibility control and statistics. The Data Quality Initiative is supported by several national and international projects and will be further extended in the context of CETAF – at its core there is the OpenUp! data Quality Toolkit which relies on name services provided by RBGK for botany and SP2000/NCBN/UH for zoological names. These institutions have a long-standing tradition in providing these services for the community and are committed to continue doing so.

3. Metadata harvesting and transformation

The metadata harvesting and transformation component has been developed and regularly executed by AIT. The entire software for the component runs in a virtual server environment and is mirrored at the BGBM; staff from BGBM was also trained in the application of the software⁹. In addition, the entire component was extensively documented and the documentation is openly available. The metadatabase is mirrored at NHM, UCPH, NBGB and BGBM.

Metadata enrichment is provided by the already mentioned web services for scientific names, and by the Common Name Service set up and maintained at the NHMW. All institutions involved are committed to continuing offering these web services.

Technical partners in the network are convinced that AIT should continue to carry out the harvesting and transformation task, because of the highly professional and effective manner they have shown in the project. This also involves much communication with Europeana, where AIT can exploit contacts existing from other data providing initiatives in which they are involved. While all technical partners could take over the task in case AIT cannot or want not continue the service, they don't consider this to be part of their core activities and would do so only if it is required. Outsourcing is in this case preferred.

Of course, being an SME, AIT cannot continue to offer this service without a charge. A contribution fee schema was developed (see Appendix 3) to individually calculate fees for current and future partners, based on the number of data sets, the number of data records and the number of harvests per year the provider participates in. All but one of the participants and new data contributors have agreed to support this scheme, which is also outlined in general terms in the MoU (Appendix 2). They have declared in writing that they will sign a Service Level Agreement (Appendix 4) with AIT to that end.

4. Europeana harvesting and access to multimedia objects

The result of the harvesting and transformation process is a metadatabase in EDM format, which can in turn be harvested or accessed via an OAI/PHM interface, i.e. a standard access interface in wide use particularly in the library community. There is strong interest from the German Virtual Library to

⁹ The full and freely accessible documentation as well as the instantly available mirror at the BGBM addresses the concern about a potential single point of failure for the network infrastructure, which was voiced during the evaluation meeting.

also access data from German contributors via this interface – so we do see Europeana not as the only potential customer. However, we have confidence that Europeana will continue to exist and grow.

The access to multimedia objects is via URLs in the metadata. The providers data interface is thus also accessible from ABCD records in the BioCASE data and in fact any other client having access to the metadata or the URL itself.

Why sustaining OpenUp! ?

Natural history museums and herbaria are keen on publishing their data and having it used, because this is a main point in the justification of the rather costly long-term preservation of their collections. The fact that most of them make their metadata available under a CC-0 “no rights reserved” waiver clearly shows the tendency within the community towards open data for research and use. Europeana is one outlet for this data publication, and OpenUp! is offering this possibility using the established infrastructure for GBIF and other networks, i.e. in a very cost efficient way. Long-term motivation of the institutions will, however, depend on Europeana’s ability to reach out to new user communities for the natural history realm. Figures for increased access to institutional websites through referrals from Europeana are an encouraging sign that this is indeed already happening.

LIST OF ALL BENEFICIARIES WITH THE CORRESPONDING CONTACT NAME AND ASSOCIATED COORDINATES

FREIE UNIVERSITAET BERLIN (FUB-BGBM), Coordinator
established in Kaiserswertherstrasse 16-18, 14195 BERLIN - GERMANY,
represented by its legal/statutory representatives,
Mr. Peter Lange, Chancellor,
and/or Mr. Frank Rosendahl, Deputy of the Chancellor,
or their authorised representatives,

NATURAL HISTORY MUSEUM (NHM),
established in CROMWELL ROAD, SW7 5BD LONDON - UNITED KINGDOM,
represented by its legal/statutory representatives,
Mr. Neil Greenwood, Director of Finance & Corporate Services,
and/or Ms. Melissa Clifford-Turner, Senior Management Accountant,
or their authorized representatives,

MUSEUM FUR NATURKUNDE - LEIBNIZ-INSTITUT FUR EVOLUTIONS UND BIODIVERSITATSFORSCHUNG AN DER HUMBOLDT-UNIVERSITAT ZU BERLIN (MFN),
established in INVALIDENSTRASSE 43, 10115 BERLIN - GERMANY,
represented by its legal/statutory representatives,
Prof. Johannes Vogel, General Director,
and/or Mr. Holger Hackmann, Head of administration,
or their authorised representatives,

BOTANICKY USTAV SLOVENSKEJ AKADEMIE VIED (IBSAS),
established in DUBRAVSKA CESTA 9, 845 23 BRATISLAVA - SLOVAK REPUBLIC,
represented by its legal/statutory representatives, Dr. Ivan Jarolímek, Director,
and/or Dr. Igor Mistrík, Deputy Director, or their authorised representatives,

NATURHISTORISCHES MUSEUM (NHMW),
established in BURGRING 7, 1010 WIEN - AUSTRIA,
represented by its legal/statutory representatives,
Dr. Herbert Kritscher, Vice-Director,
and/or Dr. Christian Koeberl, General Director, or their authorised representatives,

MUSEE ROYAL DE L'AFRIQUE CENTRALE (MRAC),
established in Leuvensesteenweg 13, 3080 TERVUREN - BELGIUM,
represented by its legal/statutory representatives, Dr. Guido Gryseels, General Director,
and/or Dr. Michel Louette, Head of Department, or their authorised representatives,

NARODNI MUZEUM-NATIONAL MUSEUM NM (NM),
established in VACLAVSKE NAM 68, 11579 PRAHA - CZECH REPUBLIC,
represented by its legal/statutory representatives,
Dr. Michal Lukeš, General Director,
and/or Dr. Jana Součková, Deputy Director, or their authorised representatives,

STICHTING EXPERTISECENTRUM VOOR TAXONOMISCHE IDENTIFICATIES (ETI),
established in MAURITSKADE 61, 1092AD AMSTERDAM - THE NETHERLANDS,
represented by its legal/statutory representatives,
Dr. Peter H. Schalk, Managing Director,
and/or Dr. Wim Backhuijs, Chairman of the Board, or their authorised representatives,

ZOOLOGISCHES FORSCHUNGSMUSEUM ALEXANDER KOENIG (ZFMK),
established in ADENAUERALLEE 160, 53113 BONN - GERMANY,
represented by its legal/statutory representatives,
Prof. Wolfgang Wägele, Director, and/or Dr. Klaus Riede, Senior Researcher, LEAR,
or their authorised representatives,

INSTITUT ROYAL DES SCIENCES NATURELLES DE BELGIQUE (RBINS),
established in RUE VAUTIER 29, 1000 BRUXELLES - BELGIUM,
represented by its legal/statutory representatives, Ms. Camille Pisani, General Director,
and/or Dr. Patrick Grootaert, Head of Department Entomology, or their authorised representatives,

GLOBAL BIODIVERSITY INFORMATION FACILITY (GBIF),
established in Universitetsparken 15, 2100 Copenhagen - DENMARK,
represented by its legal/statutory representatives,
Donald Hobern, Executive Secretary,
and/or Mr. Tim Hirsch, Deputy Director and Head of Participation,
or their authorised representatives,

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Ms. Karen Laigaard, Vice President,
and/or Mr. Jørgen Honoré, University Director, or their authorized representatives,

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represented by its legal/statutory representatives,
Mr. Alasdair Macnab, Director Corporate Services,
and/or Prof. Mary Gibby, Director of Science, or their authorized representatives,

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established in KLOSTERWIESGASSE 32/I, 8010 GRAZ - AUSTRIA,
represented by its legal/statutory representatives,
Ms. Gerda Koch, Managing Director,
and/or Prof. Walter Koch, Director, or their authorised representatives,

HELSINGIN YLIOPISTO (UH),
established in YLIOPISTONKATU 4, 00014 HELSINGIN YLIOPISTO - FINLAND,
represented by its legal/statutory representatives,
Prof. Johanna Björkroth, Vice-Rector,
and/or Prof. Ulla-Maija Forsberg, Vice-Rector, or their authorised representatives,

ROYAL BOTANIC GARDENS KEW (RBGK),
established in KEW, TW9 3AB RICHMOND - UNITED KINGDOM,
represented by its legal/statutory representatives,
Mr. Andrew Garrod, Senior Project Accountant,
and/or Ms. Anna Saltmarsh, Herbarium Digital Collections Manager,
or their authorised representatives,

STICHTING NEDERLANDS CENTRUM VOOR BIODIVERSITEIT NATURALIS (NCBN),
established in DARWINWEG 2, 2333CR LEIDEN – THE NETHERLANDS,
represented by its legal/statutory representatives,
Dr. Edwin van Huis, Director, and/or Dr. René Dekker, Director of Collections,
or their authorized representatives,

NATIONALE PLANTENTUIN VAN BELGIE (NBGB),
established in DOMEIN VAN BOUCHOUT, 1860 MEISE - BELGIUM,
represented by its legal/statutory representatives,
Prof. Joannes Rammeloo, Director,
and/or Dr. Jérôme Degreef, Head Department of Cryptogamy, or their authorised representatives,

MUSEUM NATIONAL D'HISTOIRE NATURELLE (MNHN),
established in Rue Cuvier 57, 75231 PARIS - FRANCE,
represented by its legal/statutory representatives,
Mr. Bertrand-Pierre Galey, Director General,
and/or Mr. Pierre Dubreuil, Secretary General,
or their authorised representatives,

TARTU ULIKOOL (UT-NHM),
established in ULIKOOLI 18, 50090 TARTU - REPUBLIC OF ESTONIA,
represented by its legal/statutory representative,
Dr. Kristjan Haller, Vice-Rector, or his authorised representative,

SPECIES 2000 (Sp2000),
established in The Harborne Building, Uni. of Reading, RG6 6AS Reading - UNITED KINGDOM,
epresented by its legal/statutory representative,
Peter Schalk, Director (Chairman), or his authorized representative,

SOCIETY FOR THE MANAGEMENT OF ELECTRONIC BIODIVERSITY DATA LIMITED (SMEBD),
established in UNIT B19, KCR INDUSTRIAL ESTATE, KIMMAGE, DUBLIN 12 - IRELAND,
represented by its legal/statutory representatives,
Dr. Yde de Jong, Treasurer of Council,
and/or Dr. Mark Costello, Chair of Council, or their authorised representatives,

LAND OBERÖSTERREICH (Land OOE),
established in Klosterstraße 7, 4021 Linz - AUSTRIA,
represented by its legal/statutory representatives,
Dr. Peter Assmann, Direktor der Oberösterreichischen Landesmuseen,
and/or Dr. Gerhard Aubrecht, Vize-Direktor der Oberösterreichischen Landesmuseen,
or their authorised representatives.

LIST OF COMPLETED DISSEMINATION ACTIVITIES

Date	Event and location	Partners involved
2011-01-13	Internal meeting to inform the scientific staff about OpenUp!, Berlin	BGBM
2011-02-28	Networking with participants at the ICT PSP Info day at the EU about the OpenUp! project, Brussels.	MRAC
2011-03-03	Explaining OpenUp! during a Darwin2 (Collection Management System of RBINS) meeting to personnel from MRAC, RBINS, and NBGB not working for OpenUp!, Brussels	MRAC
2011-03-8/11	OpenUp! Kick-off Meeting at FUB-BGBM, Berlin	All partners
2011-03-08	SC1, Berlin	All partners
2011-03-10	TMG1, Berlin	All partners
2011-03-10	ODG1, Berlin	All partners
2011-03-11	Workshop 1: Further specification on the target user communities for OpenUp! content in Europeana	
2011-03-21/22	Networking about OpenUp! at the CETAF/EDIT-ISTC meetings, Paris.	MNHN, MRAC
2011-3-28 to 2011-04-01	During the 4D4Life (www.4D4Life.eu) meeting information on the project itself was disseminated and a poster was presented, Prague.	MRAC, NM, et al.
2011-04-4/6	Presenting an update on OpenUp! at the CETAF meeting, Geneva.	MRAC
2011-04-05	Presentation "Regional Cooperation - The OpenUp! Project" at the European GBIF Nodes meeting, Paris.	BGBM
2011-04-07	Europeana CCPA legal working group meeting, The Hague. MRAC is newly appointed member of the working group and was informed about the new plans for the Europeana Data Exchange Agreement and the long term strategy of Europeana.	MRAC
2011-04-08	Athena new data exchange agreement meeting, Brussels. MRAC was invited to participate and discussed the effects of the Europeana Data Exchange Agreement on the domain of cultural museums.	MRAC
2011-04-14	Europeana-BHL-OpenUp! Information event (presentation + discussion) for MFN employees, Berlin.	MFN
2011-05-06	Internal meeting to inform the staff about the project, Edinburgh	RBGE
2011-05-18	Oral presentation on "Sustainable infrastructures for e-taxonomy in Europe" during the Symposium on Biodiversity in the Silicon Age of the Royal Danish Academy of Sciences and Letters, Copenhagen.	BGBM
2011-05-10/12	Networking for OpenUp! at the SYNTHESYS II meeting, Paris.	MRAC
2011-05-19/20	7èmes Journées Scientifiques du CNFRA (Comité National Français des Recherches Arctiques et Antarctiques) presentation of GBIF and OpenUp!, Paris.	MNHN
2011-05-20	Europeana 2nd Collaboration Meeting, Den Haag	BGBM
2011-05-30	Disseminating OpenUp! at the African E-Flora meeting, Meise.	MRAC
2011-05-30/31	BioCASE training organized by BGBM and MRAC, Berlin	17 participants representing 14 different partner institutions
2011-06-03	Disseminating OpenUp! at the Congo River Workshop with Belgian and African institutions present, as well as UNESCO and WWF, Tervuren.	MRAC
2011-06-06	TMG2, Tervuren	Technical Management Group
2011-05-07/10	Coordination with BHL-Europe for presenting MRAC's OpenUp! dissemination activities, as well as the helpdesk to BHL-Europe partners. BHL-Annual Review Meeting at the RMCA, Tervuren.	MRAC

Date	Event and location	Partners involved
2011-05-07/10	NBGB and MRAC hosted the BHL-Europe meeting and presented OpenUp! in the outreach and dissemination session, as well as the content provider session, Tervuren.	MRAC, NBGB
2011-05-07/10	Proof of concept for a virtual exhibition "Charles Lemaire's expedition to Katanga (1898-1900)" to show complementary content from BHL-Europe and OpenUp! has been seen and complimented by the PO during the BHL-Europe meeting at RMCA. It is now available under a new URL: http://cybertaxonomy.africamuseum.be/drupal7/ , Tervuren.	MRAC
2011-06	Finalizing the implementation of the Europeana API into the museums website at http://www.africamuseum.be/collections/browsecollections/europeana . It shows MRAC's Sterna and BHL-Europe collections in Europeana and can easily be extended to the OpenUp! collection once available in Europeana. The implementation has been presented as best practice example of a Europeana API integration also for the OpenUp! project by Lizzy Komen at the BHL-Europe review meeting.	MRAC
2011-06-10	In-house BioCAsE training and update, Tervuren. MRAC personnel gave a half-day training course on BioCAsE for personnel from NM, RBINS, and Universita' degli Studi di Firenze (WP7 Objective 1 task 7.1.i & Objective 3, task 7.3).	MRAC
2011-06-21/22	Workshop on ABCD-ESE mapping, Berlin	AIT, BGBM, NHMW
2011-06-28/07-01	Some leaflets on OpenUp! were printed and delivered at the ESFRI meeting: "Marine Sciences and European Research Infrastructures", Brest.	MNHN
2011-07-13/14	BioCAsE and Helpdesk training at MRAC with Pere Roca Ristol (GBIF), (WP7 Objective 1, task 7.1.i), Tervuren.	MRAC, MNHN
2011-08-24	SC2, e-meeting	Steering Committee
2011-08-26	TMG 4, Tervuren	Technical Management Group
2011-09-01	Seminar for leading staff of the MRAC on EU project management. Lead. Presenting projects including OpenUp! and finding in house synergies at MRAC, Tervuren.	MRAC
2011-09-12/15	CETAF Meeting. Presentation: OpenUp! & BioCASE Progress Report and IPR Problems, Madrid.	BGBM
2011-09-13/16	Annual congress of the SZF Société Zoologique de France, Nice. Presentation on GBIF and OpenUp!	MNHN
2011-09-18/23	Botanikertagung 2011, Berlin. Abstract and poster.	BGBM
2011-09-20	Interview about EU projects and function, organised by NCP-Eurofed. Interview to be published on the website of Eurofed, Tervuren.	MRAC
2011-09-28/29	GBIF-D Knotenkoordinationstreffen. Presentation, Munich.	BGBM
2011-09-29	Workshop on "Akustische Methoden in der Feldornithologie" including a presentation of the Animal Sound Archive at MfN, Potsdam.	MfN
2011-10-01 and 2011-16	Seminar for leading staff of the MRAC on EU project management. Installation of a BioCAsE provider at the CEDESURK in Kinshasa within the framework of the CABIN project of MRAC and Belgium DGD that could be potentially used to link data coming from Central African scientists to OpenUp! and finding in house synergies at MRAC.	MRAC
2011-10-4/6	18th Meeting of the GBIF Governing Board (GB18), Buenos Aires	BGBM
2011-10-05	Info-day technology enhanced learning for ICT Call 8. Networking to use OpenUp! results for upcoming calls in technology enhanced learning, Luxemburg.	MRAC

Date	Event and location	Partners involved
2011-10-11	Meeting with EU National Contact point of the Walloon region specialized in SME participation to EU projects. Networking, presentation of OpenUp!. New project ideas, contact with interested SMEs, Tervuren	MRAC
2011-10-12, 15, 25, 27, 28 and 2011-11-23	Knowledge management meeting and IPR/project management subgroup meetings. Discussion on data providing and knowledge sharing with projects like OpenUp!, Tervuren	MRAC
2011-10-16/21	TDWG Annual Conference, New Orleans. Presentation and abstract.	BGBM, MRAC
2011-10-16/21	Organisation of an information meeting gathering the Belgian data providers after TDWG 2011. Latest and expected development on the BioCASE provider as well as the IPR policy of EUROPEANA were presented and discussed, New Orleans.	MRAC
2011-11-2/3	NordBIN meeting had guests from the Baltic countries representing BALTICDIVERISTY-project. One of the topics discussed at the meeting was "Common Nordic taxonomic infrastructure", which gave us a chance to join forces and request Scandinavian and Baltic common names to the OpenUp! common names service. The Uppsala meeting was also part of UH partners GBIF activities and not funded with any of our EU projects, Uppsala.	NHMW, UH
2011-11-07	Meeting with MRAC educational services. Discussion on possible EU projects, presentation of OpenUp! and expected results, implication of Educational services in the project, Tervuren.	MRAC
2011-11-08	4. Nationales Forum zur Biologischen Vielfalt. Berlin. Participation.	BGBM
2011-11-09	Monitoring and Securing Biodiversity Conference, IBISCOS. Presentation of current EU projects and of CETAF, including OpenUp!, Brussels.	MRAC, ZFMK
2011-11-14/16	EVA / MINERVA 2011 – The 8 th Jerusalem Conference on the Digitisation of Cultural Heritage, Jerusalem. Presentation and abstract.	BGBM
2011-11-15	Info-day digital preservation and access to cultural information for ICT Call 9. 3 minutes presentation on competences and future project ideas, including reference to OpenUp!, Luxemburg	MRAC
2011-11-21	Food and Agriculture. Networking with EU officer of the Food and Agriculture division, presentation of CETAF and related projects including OpenUp! during the lunch break, Tervuren.	MRAC
2011-11-29/30	Informal meeting between Project Coordinator and RBGK, Kew	BGBM, RBGK
2011-11-29/30	OpenUp! was highlighted in presentations to the visiting panel at Defra's five-yearly review of science at Kew, also open to all Kew staff. Defra (Department for Environment, Food and Rural Affairs) is Kew's sponsoring department within the UK government.	RBGK
2011-12-06	CCPA Annual General Meeting, Rotterdam. Participation, presentation on OpenUp!, and distribution of the 1 st OpenUp! Newsletter, respectively.	AIT, BGBM, MRAC, NM, RBGK
2011-12-07/08	DISH 2011 (Digital Strategies for Heritage) organized by Erfgoed Nederland (The Netherlands Institute for Heritage) and DEN Foundation (Digital Heritage Netherlands), Rotterdam	MRAC, NM
2011-12-07/09	IPBES (Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, Workshop, Bonn	ZFMK
2011-12-09	Natural Europe Review Meeting, Athens	MRAC
2011-12-14	MRAC Knowledge Management Meeting	MRAC
2011-12-16	BHL-Europe and OpenUp! social media meeting, Tervuren	MRAC
2011-12-19	WP8 staff from Prague and Project Coordinator, Prague	NM
2011-12-20/21	EUBON project preparation meeting, MFN, Berlin	MFN, MRAC
2012-01-13	Workshop on organizing content provision for OpenUp!, Berlin	BGBM, IBSAS, MFN, MNHN, MRAC, UH

Date	Event and location	Partners involved
2012-01-17	Berliner Bibliothekswissenschaftliches Kolloquium, Humboldt Universität zu Berlin	MRAC
2012-02-08/10	GBIF Training course on persistent identifiers, Madrid	GBIF, UCPH
2012-02-15	Liaison meeting with NaturalEurope representatives, Berlin	BGBM
2012-02-23/25	13. Jahrestagung der Gesellschaft für Biologische Systematik, Bonn. Presentation.	MFN, ZFMK
2012-02-26	MRAC Knowledge Management Meeting	MRAC
2012-02-29	ICT-PSP Digital Content Information Day 2012, Luxembourg	MRAC
2012-03-01/02	Consortium of European Taxonomic Facilities (CETAF) Executive Committee, Brussels.	MfN, MNHN, MRAC, NHM, NHMW, RBINS
2012-03-06	SC3 e-meeting	AIT, BGBM, IBSAS, MRAC, MfN, NHM, NHMW, NM
2012-03-06/08	Synthesis - Training "Information Networks (digitization, IT and related activities for database and collections management)", Tervuren	MRAC
2012-03-10	Royal Zoology Society of Belgium - Info-day for future Master students in Biology, Brussels	MRAC, RBINS
2012-03-13	Belgian Science Policy Office (Belspo) - Info-day on COST proposals (European Cooperation in Science and Technology), Brussels	MRAC
2012-03-19	SC4 meeting, Paris	AIT, BGBM, IBSAS, MRAC, MfN, NHM, NHMW, NM
2012-03-19	ODG2 meeting, Paris	BGBM, ETI, LANDOOE, MfN, MNHN, MRAC, NM, RBGK, UCPH, UT-NHM, ZFMK, and Greek Research & Technology Network (Natural Europe)
2012-03-19	TMG5 meeting, Paris	AIT, BGBM, ETI, GBIF, IBSAS, MfN, MRAC, NHM, NHMW, NM, RBGK, Sp2000, UH
2012-03-19	Workshop #3 - The OpenUp! Tutorial 1, Paris	AIT, BGBM, ETI, GBIF, IBSAS, LANDOOE, MfN, MNHN, MRAC, NBGB, NHM, NHMW, NM, RBGE, RBGK, RBINS, Sp2000, UCPH, UH, UT-NHM, ZFMK, and the Greek Research & Technology Network (Natural Europe)
2012-03-20	OpenUp! Content Provider meeting, Paris	AIT, BGBM, ETI, GBIF, IBSAS, LANDOOE, MfN, MNHN, MRAC, NBGB, NHM, NHMW, NM, RBGE, RBGK, RBINS, UCPH, UH, UT-NHM, ZFMK, and the Greek Research & Technology Network (Natural Europe)
2012-03-20	Project Assembly meeting, Paris	AIT, BGBM, ETI, GBIF, IBSAS, LANDOOE, MfN,

Date	Event and location	Partners involved
		MNHN, MRAC, NBGB, NHM, NHMW, NM, RBGE, RBGK, RBINS, Sp2000, UCPH, UH, UT-NHM, ZFMK, and the Greek Research & Technology Network (Natural Europe)
2012-03-21	Review meeting with EC Project Officer Th. Jaeger and technical reviewers A. Ariño and M. Dobрева, Paris	AIT, BGBM, IBSAS, MRAC, MfN, NHM, NHMW, NM
2012-03-28	Belgian Development Cooperation - Conference and Prizes of the Belgian Cooperation, Tervuren	MRAC
2012-03-30	1st Mirroring meeting, London	BGBM, NHM
2012-03-30	Workshop on Slow Sciences, Brussels	MRAC
2012-04-13/17	Fungal systematics and ecology workshop, Konnevesi	UH
2012-04-16/19	Consortium of European Taxonomic Facilities (CETAF) 31. General Meeting, Brussels	BGBM, LANDOOE, MfN, MNHN, MRAC, NBGB, NCBN, NHM, NHMW, NM, RBGE, RBGK, RBINS, UCPH, UH, UT-NHM, ZFMK
2012-04-17	IP Day Adlershof: Patente, Marken, Urheberrecht & Co, Berlin	MfN
2012-04-19/20	Journée d'étude et atelier expérimental : Ouverture et réutilisation des données « open data culturel », Aix-en-Provence	MNHN
2012-04-20	Open-GLAM Workshop on "Open Data and Cultural Heritage", Berlin	MfN
2012-04-24	MRAC Knowledge Management Meeting, Tervuren	MRAC
2012-04-24	Meeting between staff of RBGK and Brazilian partners in the Reflora digitisation project (JBRJ, Poli-USP and COPPE), Kew	RBGK
2012-05-03	Internal UH seminar, Helsinki	UH
2012-05-07/08	2nd LIBER international workshop on digital preservation, Florence	NM
2012-05-08	Inauguration of new MfN general director, Prof. Dr. Johannes Vogel, Berlin	MfN
2012-05-09	Presentation of project status at RBGK and UH and discussion on the botanical names and other plant information systems in existence at RBGK and the OpenUp! botanical names service, Kew	RBGK, UH
2012-05-10	Meeting of the Workgroup "Research Data" of the Leibniz Gemeinschaft, Berlin	MfN
2012-05-10	RBINS ICT Team, DARWIN and preparation of CETAF ISTC meeting, Brussels	MRAC, RBINS
2012-05-11	Serious Games, Louvain la Neuve	MRAC
2012-05-14/15	Consortium of European Taxonomic Facilities (CETAF) ISTC Meeting, Stockholm	MRAC
2012-05-21/23	Belgian Science Policy Office (Belspo) Biodiversity Knowledge Meeting, Brussels	MRAC
2012-05-23	Meeting to explore opportunities for synergies in the development of a UK Virtual Herbarium, Kew	NHM, RBGK
2012-05-23	Meeting on the importance of the OpenUp! project for broaden availability of museum collections data, Tartu	UT-NHM
2012-05-29	Think corner (ongoing campaign of the University of Helsinki)	UH
2012-05-31	Workshop „Von der Digitalisierungsidee zur digitalen Bibliothek – Wege für Museen, Bibliotheken und Archive in die Europeana“, Vienna	AIT
2012-06-01	Kick-off meeting on the nationally funded AGORA projects (Public data support programs), Belgian Science Policy Office	MRAC
2012-06-02	Long Night of Science, Berlin	BGBM, MfN, NM

Date	Event and location	Partners involved
2012-06-04/05	Communicating Biological Diversity, BHL-Europe International Symposium, Berlin	BGBM, MfN, MRAC, NM, NHMW
2012-06-04	10 years of EU NCP Wallonia, Louvain-la-Neuve	MRAC
2012-06-05	BHL-Europe demonstration and training, Berlin	MfN, MRAC
2012-06-06	BHL-Europe meeting final review, Berlin	MfN, MRAC
2012-06-07/08	3 rd Global BHL meeting, Berlin	MRAC
2012-06-10/14	CIDOC2012 – Enriching Cultural Heritage, Helsinki	AIT
2012-06-11	Environmental and Climate Change Call 2013, EC, Brussels	MRAC
2012-06-15	Networking event with the IOCD (International organization for Chemical Sciences in development, Belgian Science Policy	MRAC
2012-07	Discussing content provision at ZFMK, Berlin	MfN, ZFMK
2012-07-07	Meeting with Natural Europe	MRAC, Natural Europe
2012-07-16	Info day KBBE call 2013 (Food, Agriculture and Fisheries, and Biotechnology, EC, Brussels	MRAC
2012-07-17	Réunion des musées PACA (Provence - Alpes - Côte d'Azur)/journée e-Recolnat, Avignon	MNHN
2012-07-19	Inauguration Science and Culture at the Kings Palace, Brussels	MRAC
2012-07-30 -2012-08-10	DEST training	MRAC, RBINS
2012-08-10/19	5 th International Meeting on the Biology of Sphagnum, Estonia-Latvia	UT-NHM
2012-08-20	Internal Day of Science, Berlin	MfN
2012-08-23	SC5 e-meeting	AIT, BGBM, IBSAS, MRAC, MfN, NHM, NHMW, NM
2012-08-24	Meeting of the taxonomy coordinators of OpenUp! UH-partner with Swedish and Norwegian Biodiversity Information Centres, Helsinki	UH
2012-08-23/31	IOP Conference Tokyo	NM
2013-12-03/06	GEO-BON Meeting, California (USA)	MRAC
2013-12-05	Meeting of the Indian Ocean Network, Sussex	RBGK
2013-12-13/14	Belspo Brains.be, Brussels	MRAC
2013-12-14	Expeditions meeting (link to Brains national proposals), Tervuren	MRAC
2013-12-19	Expeditions meeting, Tervuren	MRAC
2013-12-20	CETAFTO DEST	MRAC
2013-01-10	EU info day on FP7 ICP call 11 on digital preservation, Luxemburg	MRAC
2013-01-15	EU info day on CIP ICT PSP call 7 on digital libraries and cloud computing	MRAC
2013-01-22	Belspo meeting Pléiades on access to satellite images for the ESFs and other Belgian Public bodies, Brussels	MRAC
2013-01-24	Networking meeting at the Union Wallonne des Entreprises, EU national contact point, Genval	MRAC
2013-02-07	Presentation of the project OpenUp! and BHL-Europe at the EU info day of the NCP, Namur	MRAC
2013-02-08	Networking meeting with the partners to submit the Brains axe 3.1 project to Belspo, Tervuren	MRAC
2013-02-11/13	EU BON Symposium, EU BON Kick Off Meeting, Berlin	BGBM, MRAC, NM, UH, IBSAS
2013-02-12	Symposium: Nature and Governance – Biodiversity Data, Science and the Policy Interface, Berlin	BGBM, MfN, NM
2013-02-15	Tagung der Deutschen Naturwissenschaftlichen Forschungssammlungen (DNFS) und des Deutschen Museumsbundes (DMB), Berlin	BGBM
2013-02-18	Working meeting with human resources and financial services	MRAC
2013-02-18/22	BioSyst.2013 EU, Vienna	BGBM, MfN
2013-02-19	Information day on the AGORA MolCOL project at RBINS, Brussels	MRAC
2013-02-21/22	Europeana Creative Kick-off Meeting	NM

Date	Event and location	Partners involved
2013-02-22	Info day on how to manage and financing schema of EU-ERA projects organized by EU NCP and green Win competence Pôle, Gosselies	MRAC
2013-02-27/28	CETAF ISTC Meeting, Tervuren	BGBM, MRAC
2013-03-01	Info day at Belspo on Strategies for federal institutions and Pioneer projects for the Brains call, Brussels	MRAC
2013-03-06	Presentation of BioCASE and ABCD standards to ICT, Tervuren	MRAC
2013-03-06/08	EU GBIF Nodes Meeting, Joensuu (Finland)	BGBM, MNHN
2013-03-07	Presentation of the Cybertaxonomy and AGORA 3D info lunch, Tervuren	MRAC
2013-03-09	Masterday in Biology at KBIN organised by the Royal Belgian zoology society	MRAC
2013-03-11	General assembly of the Belgian Committee for the international water association, Waremme	MRAC
2013-03-12	Expert meeting for the EU DG connect project Maxiculture on social, technological and financial impact of digitalisation projects in the cultural heritage domain, Brussels	MRAC
2013-03-18	Belspo discussion group on how to collaborate with the International Science Foundation, Brussels	MRAC
2013-03-28	Morning Board meeting of the Royal Belgian Zoology Society, Brussels	MRAC
2013-04-09/12	CETAF Annual Meeting, Berlin	BGBM, MfN, MRAC
2013-04-24	SC6 Meeting, Prague	AIT, BGBM, IBSAS, MfN, MRAC, NHM, NHMW, NM
2013-04-24	TMG6 Meeting, Prague	BGBM, Europeana, GBIF France, IBSAS, MfN, MRAC, NCBN, NHM, NHMW, NM, RBGK, UH
2013-04-24	Content Provider Meeting: Planning the 3 rd project year & planning for the sustainability of content provision, Prague	BGBM, ETI, IBSAS, LANDOOE, MfN, MNHN, MRAC, NBGB, NCBN, NHM, NHMW, NM, RBGE, RBGK, Sp2000, UCPH, UH, UT-NHM, ZFMK
2013-04-25	3 rd OpenUp! Project Assembly Meeting, Prague	BGBM, ETI, GBIF, IBSAS, LANDOOE, MfN, MNHN, MRAC, NBGB, NCBN, NHM, NHMW, NM, RBGE, RBGK, SMEBD, Sp2000, UCPH, UH, UT-NHM, ZFMK
2013-04-25	2 nd OpenUp! Tutorial and Outreach Workshop, Prague	
2013-04-26	2 nd OpenUp! Review Meeting, Prague	EC Evaluation Panel, AIT, BGBM, IBSAS, MfN, MRAC, NHM, NHMW, NM
2013-04-26	BHL-Europe Meeting, Prague	MfN, MRAC, NM
2013-05-06/08	Europeana Creative Co-Creation Workshop, Prague	NM
2013-05-06/08	LifeWatch Nordic Service, Iceland	UH
2013-05-13	Board meeting of the B-IWA, Brussels	MRAC
2013-05-13-14	Workshop: Allgemeine Einführung zum Arbeiten in Cumulus und zu rechtlichen Grundlagen, Berlin	MfN
2013-05-15	Visit of the Joint Research Center in Ispra, Italy	MRAC

Date	Event and location	Partners involved
2013-05-20/24	pro-IBiosphere Expert Meeting, Berlin	BGBM, MfN, MRAC, NHMW
2013-05-23	BHL-Europe e-conference	MfN, MRAC, NM
2013-05-23/24	11 th Conference on Culture and Computer Science, Berlin	BGBM
2013-05-23/24	FRB SÉMINAIRE ECOSCOPE: "Vers un réseau d'observatoires de recherche sur la biodiversité - Quels enjeux et quelles avancées ?", Paris	MNHN
2013-05-26/29	Global BHL meeting and workshop, Fés, Morocco	NM
2013-05-27	CETAF Executive Meeting, Brussels	MRAC
2013-05-28/30	EU-BON Task Force Meeting WP2, Trondheim	MRAC
2013-05-30/31	International Conference on African Digital Libraries and Archives, Ifrane, Morocco	NM
2013-06-03/28	Training in Biodiversity Information, Belgium	MRAC
2013-06-03	Presentation of Museum and project management to students, Tervuren	MRAC
2013-06-11	Vibrant meeting, Brussels	MRAC, RBINS
2013-06-13	BHL-Europe, e-conference	MRAC
2013-06-13	International Bryozoology Association Plenary Meeting, Catania	NM
2013-06-16	Oxfam trail day, Meise	MRAC, NBGB
2013-06-17	General meeting B-IWA at Aquafin	MRAC
2013-06-17/22	28th Annual Meeting of the Society for the Preservation of Natural History Collections (SPNHC), Rapid City (USA)	BGBM
2013-06-18	EU BON stake holder meeting, Brussels	MRAC, RBINS
2013-06-20	BELSP0 meeting for extra-European collaboration	MRAC
2013-07-04/05	Probing vegetation in Antwerpen	MRAC
2013-07-29/30	Meeting on EDM Transformation, WP6 Web Service, and WP2 Europeana Production Environment, Graz	AIT, BGBM, NHMW
2013-08-07	ECreative Natural History Pilot Development & Handover	MfN
2013-08-30	AGORA3D expert panel follow-up meeting	MRAC
2013-09-3/6	Lifewatch/BIH2013	MRAC
2013-09-9/15	XIV OPTIMA Meeting, Palermo	IBSAS, MNHN
2013-09-10	CETAF General Meeting, Edinburgh	BGBM, RBGE
2013-10-1/8	EU Review of the project Natural Europe, Crete	MRAC
2013-10-7/10	Participation to the GBIF Governing Board, Berlin	BGBM, MRAC
2013-10-08	Biodiversity Catalogue Workshop, Berlin	MRAC
2013-10-08/10	GBIF Governing Board Meeting, Berlin	BGBM, GBIF
2013-10-09	GBIF Science Symposium, Berlin	BGBM, GBIF, MRAC
2013-10-14	Co-organisation of B-IWA event, visit and masterclass, Vervier, Belgium	MRAC
2013-10-15	Launch of H2020 by the Walloon Region, Namur	MRAC
2013-10-18	Facilitator at the Biodiversity Conservation conference	MRAC
2013-10-25 -2013-11-03	Biodiversity Information Standards (TDWG) annual meeting and conference, Florence	BGBM, MfN, MNHN, MRAC, NHMW, NM, RBGK
2013-10-28/11-01	Digital Heritage 2013, Marseille	BGBM
2013-11-05	Training day on H2020 at NCP Wallonia, Louvain La Neuve	MRAC
2013-11-08	CETAF e-conference	MRAC
2013-11-08	EU-BON e-conference	MRAC
2013-11-08	Info session on renovation and restructuration, Tervuren	MRAC
2013-11-08	Conference of national Europeana aggregators, Berlin	AIT
2013-11-12	Training day on H2020 at NCP Wallonia, Louvain La Neuve	MRAC
2013-11-14	Launch of H2020 in Brussels organized by Belspo, Brussels	MRAC
2013-11-18	Interview by NCP Wallonia (press), Tervuren	MRAC
2013-11-20/23	Museum Computer Networking conference, Montreal	NCBN, NM

Date	Event and location	Partners involved
2013-11-21	Europeana Strategic Plan Workshops 2013, The Hague	MfN, MRAC
2013-11-21/22	National Austrian "Digital Library" conference, Graz	AIT
2013-11-22	Knowledge Management Committee meeting, Tervuren	MRAC
2013-11-28	STI-Africa meeting, Brussels	MRAC
2013-11-28	MRAC closure event for their staff	MRAC
2013-11-28/29	Zugang gestalten! Mehr Verantwortung für das kulturelle Erbe. 3. Internationale Konferenz, Berlin	BGBM
2013-12-03	Annual meeting of UT-NHM "BalticDiversity introduction to personnel of the Natural History Museum, TU", Otepää	UT-NHM
2013-12-06	Visit of Belgian GBIF with colleagues from Togo and Mauritania, Tervuren	MRAC
2013-12-09	French GBIF node meeting, Paris	MNHN, MRAC
2013-12-09	E-conference B-IWA for preparation of the Awards	MRAC
2013-12-16	SC7 meeting/teleconference	AIT, BGBM, IBSAS, MfN, MRAC, NHM, NHMW, NM
2014-01-14	Meeting to discuss collaboration between Belgium and South Africa in H2020, Brussels	MRAC
2014-01-15	Digital security day, Brussels	MRAC
2014-01-16	Belgian NCPs meeting on H2020 Societal Challenge 6, Brussels	MRAC
2014-01-16	Meeting on the EU on Co-fond and Era Nets	MRAC represented by NCP Wallonia
2014-01-17	Food security, agriculture at EU	MRAC represented by NCP Wallonia
2014-01-19	African peri urban territories, Gembloux	MRAC
2014-01-22	Infoday on ERC by Beligan NCP, Brussels	MRAC
2014-01-22	Danish Europeana Network Meeting	UCPH
2014-01-23	H2020 ICT creative industries, interaction computer/human, Societal Challenge 6, 3D modelling, Luxemburg	MRAC
2014-01-28	MRAC Knowledge Management meeting, Brussels	MRAC
2014-01-29	Belspo Digital turn expert meeting, Brussels	MRAC
2014-01-29	Union Wallonne des Entreprises, Wavre	MRAC represented by NCP Wallonia
2014-01-30	Functioning of Eurofed (EU NCP) in Belgium, Brussels	MRAC
2014-01-31	Belspo meeting on Security H2020 call, Brussels	MRAC represented by NCP Eurofed
2014-01-31	AGORA 3D meeting for sustainability, H2020 and National opportunities, Brussels	MRAC
2014-02-05	VALA 2014 conference, Melbourne	NM
2014-02-06	EU info day on Serious Gaming, Luxembourg	MRAC represented by NCP Wallonia
2014-02-06	Belspo Brain, Low carbon society, Brussels expert group, Brussels	MRAC
2014-02-07	Meeting on MRAC Helpdesk sustainability, Tervuren	MRAC
2014-02-10	EU infoday Innovation for Public services, online	MRAC
2014-02-11	Belspo Brain expert group for Digital tum, Brussels	MRAC
2014-02-12	Marie Curie Actions MCA infoday, Brussels	MRAC
2014-02-13	Report Launch and Workshop: Sizing the EU App Economy, Brussels	MRAC
2014-02-17	Belspo Brain expert groups Low carbon and Digital tum, Brussels	MRAC
2014-02-18	Farewell gathering for Boris Jacob and update on project results, Tervuren	MRAC
2014-02-20/21	3 rd OpenUp! Annual Meeting and 4 th Project Assembly, Bratislava	
2012-02-20	SC8 Meeting, Bratislava	BGBM, IBSAS, MfN, MRAC, NHM, NHMW, NM

Date	Event and location	Partners involved
2014-02-25	EU review meeting of project Succeed in Digital Libraries, Alicante	MRAC
2014-02-27	Belspo Brain calls plenary meeting, Brussels	MRAC
2014-03-20/21	Deutsche Digitale Bibliothek: Deutsches Kulturerbe auf dem Weg in die Europeana II, Berlin	BGBM, MfN

ARTICLES IN SPECIALISED MEDIA OR IN THE POPULAR PRESS, PRESENTATIONS AND POSTERS AT CONFERENCES AND WORKSHOPS

Most partner institutions have published brief information about OpenUp! on their institutional websites, e.g., the OpenUp! project is listed and described in a revised edition of **Kew's online Science Directory** (see <http://www.kew.org/science-research-data/directory/projects/OpenUp.htm>). They also distribute information on the project at regular meetings, e.g., dissemination of leaflets at the French MEDDTL (Ministry of Ecology) during different working group sessions by MNHN.

OpenUp! flyers were translated and regularly distributed at partner institutions and on national and international congresses. Introductions to the project were added to institutional websites. The project was also disseminated via social networks (Facebook, Blog, Twitter, Flickr, Pinterest). Collaboration with other EU-projects was facilitated by sharing information on OpenUp! on the Europeana website (<http://pro.europeana.eu/web/865683>). The OpenUp! project was also included in the "Akronym Datenbank" of the "GTI (Globale Taxonomie Initiative) - Nationale Kontaktstelle Deutschland" with a short description of the project (collaboration with NEFO at MfN).

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Appendices

Appendix 1: Table: numbers of records and multimedia objects

Appendix 2: Draft MoU including Cover Letter

Appendix 3: Table of contributors

Appendix 4: Service Level Agreement (separate file)

Appendix 5: Summary of DFG project “A community platform for the development and documentation of the ABCD standard for natural history collections”

APPENDIX 1: TABLE: NUMBERS OF RECORDS AND MULTIMEDIA OBJECTS

	(1) No. of multimedia objects according to BioCAsE Monitor	(2) Metadata records available for Europeana	(3) No. of multimedia objects available through Europeana	Date of count
End of project year 1	<i>(not recorded)</i>	251,118	223,342	Feb. 2012
Progress Rep.3	569,510	585,662	230,000	Aug. 2012
• WP4	81,011			
• WP5	488,499			
End of project Year 2	<i>(no record)</i>	881,156	881,156	Feb. 2013
Progress Rep.5	1,438,493	1,374,722	1,046,482	Aug. 2013
• WP4	273,144			
• WP5	1,165,349			
End of project (now)	2,159,510	1,900,877	1,904,412	April 2014
▪ WP4	421,307			
▪ WP5	1,738,203			

Explanations

Column (1) gives the objects counted using the BioCAsE Monitor Service¹⁰. These comprise all records and corresponding objects that can be harvested from the data providers' BioCAsE installations. This may include records that for some reason are not acceptable in the transformation process (e.g. lacking mandatory fields; duplicates). Also, the BioCAsE monitor data at a given point in time may already include newly available records that have not yet been harvested by the aggregator (this is the case right now). As a consequence, these numbers are usually higher than those of the records made available to Europeana (col. 2). The exception seen in Aug. 2012 results from the duplication of metadata records that had more than one multimedia object attached (ESE is not supporting this, so the metadata were duplicated for every additional multimedia object).

Column (2) gives the records made available to Europeana, i.e. the ESE/EDM records in the OpenUp! metadatabase that are ready for harvesting by Europeana, including the data enhancements made during the and transformation process. These numbers are mostly lower than in column (3), because during the project period harvesting by Europeana has been delayed several times. The numbers at a given point in time thus mostly represent a harvest done months before the reported date.

Column (3) represents the count given by Europeana itself. After a complete harvest, these numbers should be higher than in col. (2), because with the new EDM format it is possible to provide multiple multimedia objects per metadata record. The numbers given for April 2014 thus depict the situation as it should be at any time shortly after the process of aggregation has been completed and Europeana has harvested the aggregator database.

The up-to-date total number of objects ingested and displayed by Europeana can be queried under http://www.europeana.eu/portal/search.html?query=*&qf=PROVIDER:OpenUp!.

¹⁰ Glöckler F., Hoffmann J. & Theeten F. (2013): The BioCAsE Monitor Service - A tool for monitoring progress and quality of data provision through distributed data networks. Biodiversity Data Journal 1: e968. DOI: 10.3897/BDJ.1.e968

APPENDIX 2: MOU INCLUDING COVER LETTER [separate file]

Provided as PDF: OpenUp!_MoU_v10.pdf

APPENDIX 3: COST CALCULATION AND TABLE OF CONTRIBUTORS [separate file]

Provided as PDF: OpenUp-annualrate-perpartner-REPLIES.pdf

APPENDIX 4: SERVICE LEVEL AGREEMENT [separate file]

Provided as PDF: SLA-OpenUp-AIT-Europeana-gk.pdf

APPENDIX 5: DFG PROJECT SUMMARY (ABCD STANDARD)

“A community platform for the development and documentation of the ABCD standard for natural history collections (DFG)”

ABCD (Access to Biological Collection Data) is an international standard for the exchange of biological collection and observation data. Development started in 2001; in 2005 it was ratified as an XML schema as a TDWG standard (organisation for Biodiversity Information Standards, TDWG). From the outset the ABCD development was based on an XML schema and the documentation of the individual concepts is represented as XML annotations. New ABCD-versions are created periodically by consolidating and integrating user requirements collected by the coordination team at the BGBM. This method was effective in the first decade of the ABCD development. However, due to a growing and diversifying user community and the introduction of semantic technologies it is reaching certain limits. The ABCD concepts are arranged hierarchically and are referenced by their xpath from the root node. A direct use in the Semantic Web is therefore not possible. The proposed project aims to develop a platform that provides ABCD concepts in a machine-readable form, together with a versioned documentation. The dependency of the ABCD concepts from an XML schema will be resolved and the concepts will be provided as an ontology for the Semantic Web. The version 3.0 of the ABCD standards will include the concepts developed by various domain specific extensions and will be made available both as an XML schema and as an ontology in the Semantic Web.