PRO-iBIOSPHERE
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Coordination & policy development in preparation for a European Open Biodiversity Knowledge Management System, addressing Acquisition, Curation, Synthesis, Interoperability & Dissemination

SEVENTH FRAMEWORK PROGRAMME

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TABLE OF ABBREVIATIONS

AB	Advisory Board
CODATA	Committee on Data for Science and Technology
DCIP	Dissemination and Communication Implementation Plan
DL	Dissemination Leader
DOW	Description of Work
GA	General Assembly
ICP	Internal communication platform
ICT	Information and communication technology
MC	Management Committee
NCBI	National Center for Biotechnology Information
Q&A	Questions and answers
RSS	Really Simple Syndication
WP	Work packages

EXECUTIVE SUMMARY

The present document is a deliverable of the pro-iBiosphere project, funded by the European Commission's Directorate-General for Communications Networks, Content and Technology (DG CONNECT), under its 7th EU Framework Programme for Research and Technological Development (FP7).

Within the WP5 "Dissemination, communication and public awareness", one of the project tasks aims at producing every year a report on the status and progress of dissemination activities carried out and planned by the pro-iBiosphere consortium.

The document addresses the work carried out regarding the various dissemination channels, as well as dissemination events and coordination activities. It includes, the:

- Dissemination and Communication Implementation Plan (DCIP) released in M3
- Social Media Action Plan implemented in M7
- Dissemination activities performed during the period M1-M12
- Dissemination activities planned for the next reporting period M13-M24

INTRODUCTION

At the start of the project, a dissemination strategy was set up to better coordinate the dissemination activities of the different partners and to ensure that basic principles were kept. Subsequently, a Social Media Action Plan was developed to foster project awareness and community building.

In order to set up an efficient dissemination effort, different communication channels are being used, including, the:

- Development of a project's website and Wiki,
- Printing of fact sheets and posters,
- Dissemination of eNewsletters (every four months),
- Development of an online project community on social networks,
- Organisation of events,
- Publication of scientific articles, conference and workshop proceedings, lectures, etc.; and
- Presentations during international events.

All of the project's dissemination activities use different communication channels with the same scope: informing the stakeholders on the project's activities and outcomes. This approach increases the impact of the project in the biodiversity domain and beyond.

All the dissemination materials developed for the pro-iBiosphere project, as well as the working documents, any contribution to events and publications materials, have been included as annexes.

1. – DISSEMINATION AND COMMUNICATION IMPLEMENTATION PLAN

1.1– Introduction

The purpose of the pro-iBiosphere dissemination activities is to actively disseminate the project results through various outreach activities, create stakeholder engagement and communication, with the aim to increase public awareness.

Through the various dissemination activities that are planned, pro-iBiosphere strives to reach stakeholders who are interested in the project but are not able to join the envisaged meetings and workshops through the various planned dissemination activities. The dissemination activities for the pro-iBiosphere project comprise, the:

- Development of the project image, documentation and web platform
- Dissemination of the project results through outreach activities
- Stakeholder engagement and communication

The Dissemination and Communication Implementation Plan (DCIP) was prepared in M4 by Sigma Orionis and approved by the Management Committee. The DCIP is being updated on a regular basis. The latest update was done in June 2013 as a result of the release of the Social Media Action Plan. The main objectives of the DCIP are, to:

- Formalise all dissemination actions and activities planned for the project,
- Provide guidelines on the approach, and
- Set out the key means and channels to be used to ensure maximal dissemination of the results.

The strategy of communication and dissemination are further detailed in the following sections by defining the aims of the dissemination actions; describing the communication and dissemination tools to be used; specifying the structure of these tools; identifying external events relevant to the project; and defining mechanisms for information exchange with various stakeholders.

1.2- Dissemination policy

To support the project impact on e-infrastructures for biodiversity, the pro-iBiosphere project will devote a major effort to dissemination activities. Dissemination is essential to ensure that the results of pro-iBiosphere reach the widest possible group of stakeholders and hence secure a higher impact. Dissemination activities are also expected to promote a common understanding between different stakeholders on the issues related to the management of biodiversity knowledge, and to accelerate the adoption of the envisaged Open Biodiversity Knowledge Management System (i-Biosphere).

A specific dissemination policy has been set up in order to better coordinate the dissemination activities of the different partners and to ensure that basic principles are kept. All of the project's dissemination activities use different communication channels with the same scope: informing the stakeholders on the project's activities and outcomes This approach increases the impact of the project in the biodiversity domain and beyond.

The leader of WP5 - Dissemination, communication and public awareness will ensure that these activities are appropriately developed and managed throughout the project duration. To achieve this goal, a clear communication strategy following a thorough consideration of the existing relationships between objectives, targets, messages to convey, and timing of the communication have been defined.

Dissemination and promotion of pro-iBiosphere results will be implemented through large-scale communication channels that will favour the exchange of ideas, such as:

- Events (e.g. symposiums, congresses, meetings, workshops);
- Online tools (i.e. website, Wiki, email lists), social media (i.e. Facebook, Google+, LinkedIn, Twitter); and,
- Publications (e.g. articles to be produced by the consortium, press releases). The dissemination strategy is further detailed in the following sub-sections.

1.2.1 – Dissemination objectives

The purpose of a dissemination plan is to ensure information is shared appropriately with audiences on a timely basis. Ensuring intense communication activities and information sharing will foster stakeholder engagement and increase public awareness.

The objectives of the dissemination actions are, to:

- Establish and maintain mechanisms for effective and timely communication;
- Inform stakeholders of the progress of the development and encourage interactions between stakeholders; and,
- Coordinate all levels and types of communication in relation to the project

1.2.2 – Dissemination actors

1.2.2.1 - Dissemination Leader

Sigma Orionis, is the leader of the Work Package 5 "Dissemination, communication and public awareness", and, hence, responsible for monitoring all dissemination activities. Contact details of the DL are:

Mr Camille Torrenti

Sigma Orionis, Project Director

Camille.torrenti@sigma-orionis.com

As agreed during the kick-off meeting in M1, all dissemination documents prepared for the project should be sent to the Work Package (WP) leader and coordinator (Naturalis) for final approval before their publication.

1.2.2.2- Task leaders

The Task Leaders are the technical persons responsible for the design and implementation of their assigned tasks. They participate directly in the cooperation / integration activities of their task with other partners, and closely cooperate with the DL for the development of the activities and their reporting.

WP5 is divided into three tasks corresponding to the different main activities of this Work Package:

- Task 5.1 “Development of the project image, documentation and external communication web platform” deals with the development of the project image, documentation and external communication web platform (led by Pensoft).
- Task 5.2 “Dissemination of the project results through outreach activities” facilitates and reports on outreach activities (led by Sigma Orionis).
- Task 5.3 “Stakeholder engagement and communication” ensures stakeholder engagement and communication through the organisation of the project final event (led by Sigma Orionis).

1.2.2.3 - Project partners

All pro-iBiosphere partners will support the exploitation and dissemination activities. To ensure a common dissemination effort from all partners, person months were allocated to all partners for dissemination activities. According to the pro-iBiosphere Description of Work (DoW): “partners are fully committed to act such that their project can reach the highest level in terms of dissemination of the knowledge gained through the project, and more generally of the information generated by the project” (page 44).

Partners are encouraged to feed-in relevant information and participate in the dissemination efforts. During the kick-off meeting, it was agreed that partners will actively contribute to the publication of articles about the project, participate in seminars / workshops / conferences to present the pro-iBiosphere results and on-going activities.

To facilitate follow-up and reporting on the promotional activities, partners undertook, on behalf of the project on external channels (i.e. other social media groups, other websites, mailing lists), a dissemination activities table (http://wiki.pro-ibiosphere.eu/wiki/Partners%27_contributions_to_WP5). This table is on the pro-iBiosphere Wiki (see Annex 19).

1.2.3 – Dissemination target groups

Achieving a common understanding between the various stakeholders on the issues of managing biodiversity knowledge is crucial when developing a system that facilitates open access to taxonomic data. Thus, defining and categorizing the appropriate groups of people that are most likely to be interested in the project activities and achievements is an important step to increase the efficiency of the dissemination activities.

Dissemination activities are developed mainly for the pro-iBiosphere priority target groups identified below:

- Environmental/natural sciences researchers in academia, institutes, industry, consultancies, and government
- Policy and decision-makers in governmental and non-governmental organisations
- Vocational and academic teachers and students
- Citizen science projects in biodiversity

1.2.4 – Dissemination strategy

The Strategy of Dissemination and Communication includes several interconnected objectives at different phases of the project. To reach these dissemination objectives, dissemination tools have been developed in the early stages of the project. These tools facilitate ways to raise awareness on the project and provide project information to stakeholders. Disseminating activities will be maintained during the entire project period. At the end of the project, communication of the project outputs will be ensured through a specific brochure and will be presented on the occasion of the final event. This dissemination strategy along with the related tools and communication activities will enable the project to sustain its impacts and results.

In order to generate the greatest impact on stakeholders, the project must ensure that:

- The exploitation potential of project results is the highest
- The knowledge gained & information generated through the project is made available to all interested organisations through a wide dissemination
- Project 'excellence' can be reused (organisation & management, methodologies & tools)

pro-iBiosphere has strictly adhered to the Open Knowledge principles; guaranteeing stakeholders and users open access to published information through open data publishing. The papers and recommendations that will be produced by the project will therefore be freely available to all users and the public in general. Figure 1 presents the pro-iBiosphere dissemination strategy, detailing the different project dissemination channels while highlighting the open access status of data. The spaced lines picture the "open data and open access information" as described in the project DoW.

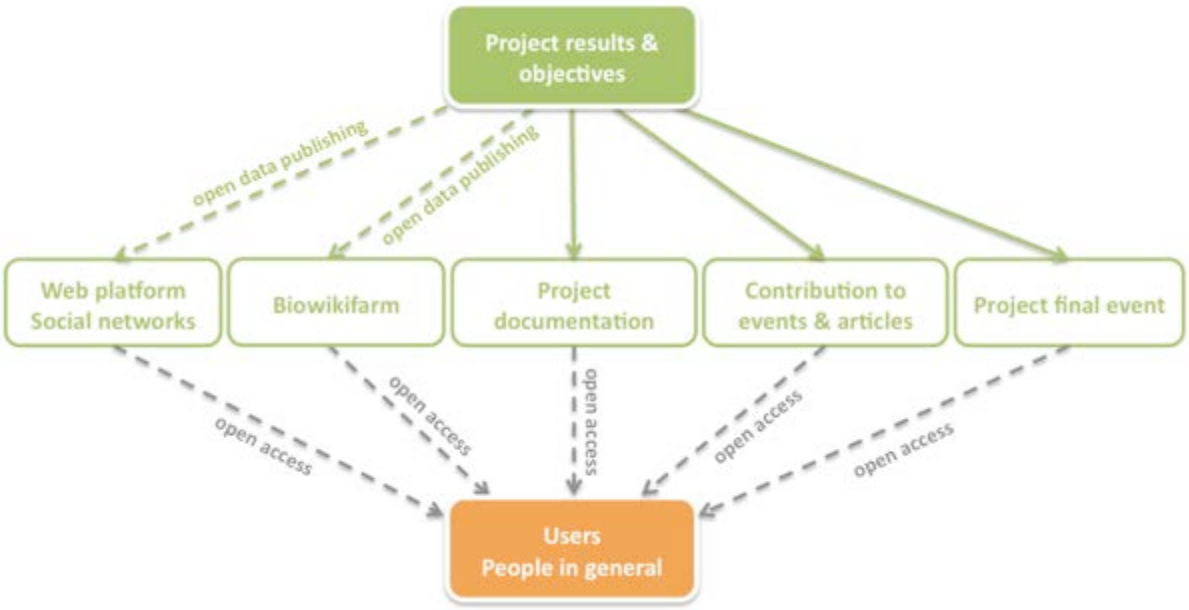


Figure 1. pro-iBiosphere Dissemination Strategy

1.2.4.1 - Dissemination channels

In order to reach out to the target audiences, pro-iBiosphere is using different channels and cooperates with other relevant national and international organisations, programmes and projects that share similar objectives. Internal promotion is ensured through the use of internal channels, i.e. directly managed and owned by the pro-iBiosphere project:

- Project website
- Project eNewsletter
- Biowikifarm
- Project social media
- Project events

External promotion will be performed through external channels, i.e. channels not owned or representing the project:

- Journals
- Mass media
- Mailing lists
- Other events
- Third parties web sites (Advisory Board)
- European Commission channels (websites, social media)
- Other project and initiatives websites and social media
- pro-iBiosphere partners websites

1.2.5 – Dissemination roadmap

The scheduled activities for dissemination differ depending on the phase of the project (see Figure 2). At the start of the project activities, the aim was to create awareness among all relevant stakeholders on the project objectives and expected results. At later stages of the project, when the first developments are available, the dissemination activities will focus on disseminating the pro-iBiosphere outputs/outcomes.

Several activities are planned in the project, to spread the "project excellence":

- Dissemination of extensive project documentation
- Advanced web-based platform, Wiki and presence on social media
- Contribution to external events and publications
- Project meetings and final event

Dissemination is based on conventional methods (i.e., through printed dissemination materials, publications in journals) and modern methods (i.e., online media such as the website, Wiki & peer-to-peer, Rich Site Summary (RSS) feeds, email alerts/eNewsletters and social media).

In order to support communication with stakeholders, different dissemination tools will be used at different stages of the project.

Figure 2. Dissemination tools to be used during the different phases of the project

1.2.5.1 - Dissemination action plan

A dissemination action plan was developed in M3 (see Table 1 and Annex 1) with the purpose to describe different dissemination activities that need to be undertaken during the project duration and their "action" on the different target audience. A complementary document entitled "Dissemination and measurement of project outcomes" was created with the purpose of providing additional information on the action plan for each project outcome, and describing their implementation in terms of timing, aim, partner in charge, resources and performance measure (see Table 2 and Annex 2). Both documents are being updated on a regular basis.

Table 1. pro-iBiosphere Dissemination Action Plan (DAP)

Types of activities	Targeted Stakeholders to be reached / involved												
	POLICY MAKERS			ENVIRONMENTAL OR NATURAL SCIENCES RESEARCHERS						VOCATIONAL AND ACADEMIC		BIODIVERSITY CITIZEN SCIENCE PROJECTS	
	Governmental organisations	NGOs	Intergovernmental platforms for biodiversity and ecosystem services	Research labs	Academia	Institutes	Industry	Consultancies	Government	Teachers	Students	EC funded projects	Other initiatives
Project Identity													
Logo & identity													
Templates													
Project documentation													
Fact sheet													
Poster													
4 pages brochure													
Press and other media													
Press releases													
Project events													
Workshops													
Final event													
Online dissemination													
Website													
eNewsletters													
Biowikifarm													
Social Networks													
LinkedIn													
Twitter													
Google+													
Facebook													
Contribution to other events / publications													

Caption
Non direct impact
Direct impact

Table 2. pro-iBiosphere Dissemination and measurement of project outcomes

	Outcome 1. Dissemination of project objectives and expectations in order to raise awareness of the project	Outcome 2. To spread project excellence	Outcome 3. To exploit project results
Audience / Whom to disseminate ?	Supporters, interested parties or stakeholders	Target groups (mostly researchers in biodiversity)	Target groups, policy makers
Aim - Why to disseminate ?	To inform potential stakeholders and the general public	To develop synergies and to involve them in project activities	To involve them in the project follow-up actions
Timing - When to disseminate ?	Early in the project	When first outcomes become available (M6)	End of the project (M22)
Methods/Activities for dissemination	Logo; templates; press release on wiki, wiki site, web site, web 2.0 services, fact sheet, project poster, mailing lists	Project meetings, Website/Wiki feed with info, social networks communities, synergies with other initiatives, participation to other events, publications of articles	Final project event 4-pages brochure Website/Biowiki update
Responsibilities (partner vs activity)	logo and templates (Sigma); press release on wiki (Sigma); wiki site (Plazi), web site (Pensoft); web 2.0 (Pensoft); poster (Pensoft)	Project meetings (resp. partners); Website & social networks (Pensoft), contributions (Sigma and all), synergies development (all)	Final project event (Sigma); 4-pages brochure and Web (Pensoft); Wiki (Plazi)
Resources - Person months	**5,2**	**6,8**	**9,5**
Measure - How do we know our performance?	Number of factsheets disseminated, number of press release disseminated	Attendees survey, website and wiki visits, number of eNewletter subscribers, social networks members, contributions, posters disseminated	Attendees survey, number of brochure disseminated, website and wiki visits, useful contacts established

1.2.6 – Dissemination procedures

1.2.6.1 – Ensuring the consistency and quality of all dissemination activities

In order to ensure the overall quality of any project dissemination material, and avoid confusion and misunderstanding of the project image, concept and developments, all dissemination activities have to follow some rules:

- Respect Intellectual Property Rights of all consortium members
- Respect the work of all consortium members
- Ensure the proper notification of all relevant parties, whose work is directly or indirectly mentioned in the proposed publication/presentation
- Avoid overlapping or duplication of publications
- Clearly make the distinction between the results suitable for dissemination and the one impacting exploitable results
- Target the right audience (in terms of events and scientific journals)

1.2.6 2 – pro-iBiosphere dissemination procedure

A procedure has been set up for the pro-iBiosphere dissemination activities to make sure that the above criteria are respected and that the project's dissemination activities are of high quality and impact. The following are considered as dissemination activities:

- Exhibition stands or demonstrations
- Project workshops
- Production of press releases
- Paper presentations in conferences
- Participation in other events
- Production of newsletters
- Production of any project dissemination material (fact sheet, brochure, poster, etc.)
- Publications in scientific journals

In each case, the DL and the Project Coordinator (PC) must approve the participation/involvement of any consortium members in such activities beforehand, according to the following procedure:

1. Submission of the proposal to the DL with copy to the PC and the relevant Work Package Leader, before the submission to an external actor.
2. Review of the content by the DL and PC. This, in order to make sure that the material does not create any conflict with the consortium and that there is no need for additional contribution from another partner.
3. The DL, the PC or the respective Work Package Leader can reject the proposed presentations if they feel the acceptance criteria are not met. In case of conflict, it is the responsibility of the DL and the PC to find a consensus.

4. After participation/presentation acceptance, the relevant partner fills in the contribution form on the website ("add event" form or "add external document" form) to publish a corresponding news and updates the "prospective partners' contribution to events and publications on the Wiki".

1.2.6.3 – General obligations towards the European Commission

pro-iBiosphere project is supported and funded by the European Commission. Hence, any communication (in particular during project events and other events) or publication material (including reports, presentations, promotional material, publications) must clearly acknowledge receipt of the European Commission funding through the display of a respective statement and the European Commission logo along with the FP7 logo while adding both logos prominently to all relevant documents.

Reports, deliverables and Guidance Notes on Project Reporting

The consortium has to provide periodic reports that include a publishable summary of such quality that the Commission can publish it right away in the public domain. It includes information on the expected final results and their wider societal implications. This text will be used on the Commission's public websites, and hence, needs to be understandable for a lay audience. Partners will need to supply a link to the project website and declare whether it is up to date. The link will be published together with general information on each funded project on the Commission's website (cf. Grant Agreement, Annex II.4.).

pro-iBiosphere publications of articles

All publications or any other dissemination relating to foreground must include the following statement to indicate that the foreground was generated with the assistance of financial support from the European Union: "*The research leading to these results has received funding from the European Union Seventh Framework Programme ([FP7/2007-2013]) under grant agreement n° 312848*" (cf. Grant Agreement, Annex II.30.).

The different dissemination activities undertaken by the project will be reported to the European Commission (i.e., the Project Officer) regularly and on the occasion of the submission of the D5.2 reports on dissemination in M12 and M24.

1.2.6.4 – General obligations towards the project

Any dissemination activity undertaken on behalf of the project and for the benefit of the project must always mention that the activity or material presented is derived from or produced by the pro-iBiosphere project. All materials must clearly display the project logo and the URL of the website. This requirement is applicable for all dissemination purposes for project events and other events (in particular for presentations), dissemination materials as well as for publications.

1.3 – Aim of the dissemination actions

The aim of the dissemination actions is to spread project excellence, exploit project results and disseminate the knowledge gained throughout the project period. The Work Package on Dissemination (WP5) ensures a structured and effective promotion of the project, including its objectives and results to external stakeholders.

The consortium includes partners who are responsible for promoting the project on a national/international level and are able to address various stakeholders, such as:

- Taxonomists, ecologists, bioinformaticians, conservationists, ethno botanists, geneticists, chemists, etc.
- Aggregators of taxonomic data (e.g., GIBIF, EOL, CoL)
- Indexing (e.g., IPNI, MOBOT)
- Other projects and initiatives (e.g., BioVel, World Flora online, ViBRANT, LifeWatch)
- Policy makers
- General public (EU projects are financed with money from EU citizens that are paying taxes and they deserve to know how their money is being used)

Project partners are the starting points for wider dissemination. They are committed to efficiently and effectively carry out specific dissemination tasks according to their role in the consortium. Partners spread information about the project itself, including their motivation, achievements and challenges.

Dissemination extends beyond the consortium members. It includes the biodiversity research and policy level stakeholders to effectively disseminate the project's results and achieve a high-impact regarding the project's main outcomes being:

1. White paper for an optimised dataflow, and descriptions of gaps
2. Work plan and roadmap for the semantic integration of biodiversity literature
3. Report on the state and quality of biosystematics documents and survey reports
4. Strategies for improved cooperation and interoperability between infrastructures
5. Strategy for improvement & interoperability of the XML schemas
6. Alternative business requirements and scenarios for a sustainable Open Biodiversity Knowledge System and recommendations with regard to achieving sustainable delivery of core biodiversity data and information
7. Draft policy on Open Access for data and information
8. Draft strategy for increased cooperation

1.4 – Mechanisms for information exchanges with various stakeholders

1.4.1 – Full support of work packages

Support of other work packages is being done through information feeding on the progress of WPs' activities, major public reports and documents released, organisation of events, participation to other events and on any activity that needs to be featured. This on-going feed of information is key for the project. It facilitates dissemination of activities and achievements, and keeps stakeholders informed on the latest updates. Information feeding is being undertaken by posting news on the project website and/or discussions on social media depending on the target audience.

1.4.2 – Interfacing with relevant national and international initiatives

In order to support the maximal exploitation of the project results, partners are interfacing with other related European programmes (in particular EC-funded projects). Most of this interfacing takes place by participating in international events or inviting other European projects (e.g. EU-BON, BioVel, ViBRANT, CReATIVE-B, BHL-Europe) and major biodiversity programmes/initiatives (e.g. LifeWatch, GBIF, EoL) to pro-iBiosphere meetings.

See chapter 3 below for complementary information on the identification of other biodiversity initiatives.

1.4.3 – Advisory Board

An Advisory Board (AB) of representatives from different projects, biodiversity platforms and various stakeholders (representing the end user community) was established at an early stage of the project as part of Task 2.1. At present, the AB consists of four members and will facilitate liaisons between pro-iBiosphere and other related (EU and non-EU funded) projects within the taxonomic and biodiversity informatics landscape, thereby creating synergies between the different projects and initiatives. The AB advises the Management Committee (MC) and General Assembly (GA) on strategic issues, like developing recommendations for improvement of the data integration and interoperability. The AB will meet with the MC and GA at least once a year. The first meeting with the AB took place in February 2013, in Leiden. A second meeting with the AB is envisaged in 2014.

1.5 – Dissemination and communication tools

1.5.1 – Dissemination materials

The aim of the dissemination materials is to (i) maximize project awareness for stakeholders and the general public and (ii) promote the project concept, objectives and outcomes.

Project documentation was developed in M4. Project dissemination materials are available online on the project website (http://www.pro-ibiosphere.eu/media/center) and can be printed for wide dissemination. The documentation includes, a:

- Project factsheet
- Poster
- Postcard

In order to disseminate the results of the project, at present (i.e., August 2013) partners are preparing nine posters that will be presented during international events. The posters will be available on the external library of the project website.

In the next months, the following documents will be designed:

- Leaflets, to announce the project final event at project events and major events related to the stakeholders' activities and at stakeholders' institutes
- A 4-page project brochure, to provide more extensive information for interested parties and, in particular as regards to project outcomes

Press releases

Press releases are sent to journalists, other projects and the European Commission. Press releases announce, major milestones that have been reached, important activities of the project, announcement of key reports, a.o.

Press releases take into account the guidelines given by the EC, i.e.:

- No longer than one A4 page
- Use present tense, third person and the active voice
- Use action verbs in bulleted lists
- Include links to the project website or other relevant information
- Give a real life example when possible
- Illustrate real world problems that the project's developments can solve

Partners have agreed that the coordinator will approve press releases before they are released to the public.

pro-iBiosphere supported articles published by partners will be available on the project website, partners' websites and announced via various newsletters.

1.5.2 – Project website

Websites constitute a key dissemination tool. They help to increase the project dissemination and impact, especially towards the wider biodiversity community and general public. The pro-iBiosphere website is the public image of the project and the prime online access point to external stakeholders. It supports online communication and visibility while making available all relevant information on the project and related in an attractive and navigation-friendly way.

The website (and the Wiki) are being used as a prime public dissemination tool. They enable users to readily collect all relevant online information content derived from the project outputs.

The website displays two kinds of communication platforms that are used both for internal usage and external information dissemination. It displays, depending on the visitor profile, the public (external) library or the private (internal, at partners' level) one, which is cohesive and compatible.

1.5.3 – Project Wiki

To facilitate easy and timely internal and external (public) project communication, pro-iBiosphere is using a Wiki web 2.0 platform.

The Biowikifarm is a shared technical platform that enables open access to information and the editing of data upon registration. It provides project partners and major stakeholders with a place to share working documents, i.e. information that is likely to be updated with several people's contributions over time.

The Biowikifarm platform is available for the partners to develop the public project Wiki, involving design, choice of additional extensions, etc.

1.5.4 – Electronic newsletters

Electronic newsletters aim at spreading the project result. They are issued every 4 months and distributed through various distribution channels (e.g. mailing lists, newsfeeds, and partners networks) and formats (e.g. HTML, PDF). They provide the latest news on the project status, links to the latest deliverables on the project website, and information on upcoming meetings. They are available on the website and through EurekAlert.org.

Pensoft is responsible for coordinating the eNewsletter process. This includes:

- Designing the eNewsletter
- Incorporating the content from the website news, events section and partners contributions
- Submitting the newsletter to the contact database

Naturalis plays an important role in liaising with partners to gather their inputs (e.g. WP Leaders, main project contributors, participants of the pro-iBiosphere events).

1.6 – Dissemination of the project through outreach activities

Within the WP5 "Dissemination, communication and public awareness", one of the project tasks aims at producing every year a progress report on the dissemination activities carried out and planned by the pro-iBiosphere project related to the contribution to the publication of articles and to presentations in seminars, workshops and conferences. The aim is to ensure that each partner successfully submits at least two articles or oral contribution over the duration of the project.

The task leader (Sigma Orionis), will consolidate all partners' contributions, share them with the MC for review, and include them in the report on dissemination, communication and public awareness (D5.2) in M12 and M24.

1.6.1 – Event calendar and participation in events

1.6.1.1 – Project events

Milestones associated with project events include the organisation of six meetings (i.e. 13 workshops in total). A final event will be organised in M22 to present the outputs of the project and its sustainability perspectives. Overall, these project events represent significant dissemination activities in the way that they enable the project partners to spread the project activities and results towards the relevant user groups in Europe, increase awareness of the project and foster possible synergies with other projects and initiatives.

These meetings will take place all along the project period in M6, M9, M14, M18 and M22. Prior to each workshop, the partner in charge drafts a concept of the aims, objectives, expected results, and target audience. The concept, agendas and list of participants are available on the pro-iBiosphere Wiki. After each event, a questionnaire/survey is submitted to all participants to assess the quality and success of project events and will be made available on the website.

1.6.1.2 – Contribution to other events

The objective of the project participation to other events is to:

- Develop synergies with other biodiversity initiatives
- Interface with key stakeholders in the field
- Build links among communities

Other priority events targeted by the pro-iBiosphere consortium are events organised by other biodiversity initiatives, concertation activities and meetings related to the e-Infrastructures area and major European Commission events.

These events will allow the project to optimise synergies with other initiatives in the field by providing input and receiving feedback from working groups addressing activities of common interest (e.g. from clusters and projects). As a result, links will be developed among communities, initiatives and projects interested in core biodiversity data, information and knowledge.

1.6.2 – Contribution to articles and publications

Outcomes of the project will be presented in scientific publications, in the form of (journals), books specialized in taxonomy, online media such as specific websites and digital documents. The aim of these publications is to reach a wide dissemination of project outcomes among communities, initiatives and projects interested in core biodiversity data, information and knowledge.

Project publications are available on the project website and reported in D5.2.1 (see Annexes 23 and 24) and D5.2.2.

2 – SOCIAL MEDIA ACTION PLAN

2.1 – Introduction

Social media tools are being used by the partners with the purpose of: (i) increasing the project online visibility while building an online community of project stakeholders, and (ii) disseminating the results of the project to the pro-iBiosphere community and to new audiences.

The social media project accounts comprise: Facebook, Twitter, LinkedIn and Google +. These tools were chosen due to the features and applications that they offer (see below). The project website is linked to these different social media. All news posted on the website are automatically published on the different social media.

These different social media tools offer project stakeholders a place to share information and news on the project. They also foster networking opportunities among researchers.

In order to increase the social media activities of the project, in M8 Sigma Orionis took the lead and drafted a "Social Media Action Plan" document. The document defines the action plan for the whole duration of the project. The plan was re-evaluated in June 2013 (M10) after the pro-iBiosphere workshops in Berlin in May 2013 (M9).

2.2 - Community management guidelines

Sigma Orionis, Pensoft & Naturalis manage and monitor all social media groups. They are responsible for:

- Monitoring all social media groups and activities
- Providing helpdesk services to the community
- Encouraging partners to contribute to discussions, content and promotion
- Ensuring the quality, regular updates and content feed of the different accounts
- Sharing guidelines and information on the social media (e.g. hashtag during conference)
- Reporting on social media activities in D5.2 - Report on dissemination, communication and public awareness produced at M12 and M24

Partners are requested to feed-in content on a regular basis and to ensure they all contribute to at least one discussion or post per month while participating to the discussions. To facilitate partners' contributions, Sigma created a Google calendar (see section 3.1.4.1 for complementary information).

2.2.2 – Best practices for groups

The guidelines below suggest ideas to generate discussions and to foster community engagement.

1. Stay active and keep your account up to date: dynamic and interactive group
2. Engage people in thought leadership decisions
3. Set guidelines for discussions (e.g. for tweets during conferences)
4. Use the @proibiosphere when twitting about the project
5. Promote and use the specific hashtag for workshops being #pib with the first three letters of the event location. For instance: #piblei for Leiden, #pibber for Berlin, #pibkew for Kew
6. Encourage members to take action: 'sign up', 'share', 'like', 'download'
7. Post regular status update (with links and images)

Ideas to generate discussions:

- Share an observation, articles
- Take interesting discussions from other groups
- Discuss a recent post of yours
- Share reports, project outcomes
- Announce upcoming project events
- Announce real time updates during events
- Announce participation to other events

Driving content from members, by:

- Contributing with content regularly
- Generating discussion with specific questions
- Including links to resources on webpages
- Including links to content in discussions
- Encouraging engagement to grow

Building relationships and maintaining them, by:

- Promoting recent articles and news
- Ensuring real time updates at conference and events
- Offering helpdesk services

2.2.3 – Comparison of the different social media groups

A research on the different features, advantages and drawbacks of the four social media tools along with the kind of social media users was undertaken by Sigma Orionis in M8. The outputs of this research were consolidated into tables facilitating the comparison between the different social media tools (see Annexes 4- 6 and Figure 3).

Major findings of the following tables are:

- More than half of these social media users are between 25 and 44 years old
- Only 2% of social media users are 65 or older
- The average gender distribution is 48.75% male, 51.25% female
- Facebook and Twitter have the same gender distribution: 40% male, 60% female

Social media	Advantages	Drawbacks
Facebook	- High number of users - Sharing media (pictures, videos) - Create events and invite users - Share functionality (posts, events)	- Used mainly for social activites (< professional) - Users concern on privacy
Google +	- Growing network - Functionalities (Google services + Hangouts, Streams) - Sharing media (pictures, videos) - Acts like a blog, though with limited capabilities (e.g. editing)	- New: users are not so familiar with it yet - Not so much used in EU projects yet
Twitter	- Short and fast communication - Used at an event (backchannelling) - Easiness to share information - Limited sharing of media	- Tweets searchability lifetime is short
LinkedIn	- Networking potential across members - Participation in group discussions	- More popular in business than in academia

Figure 3. Trade-offs of the four social media tools used by the pro-iBiosphere project

2.3 – Social Media Action Plan for pro-iBiosphere

The Social Media Action Plan for the pro-iBiosphere project consists of four phases. These phases are summarised below (see Table 3).

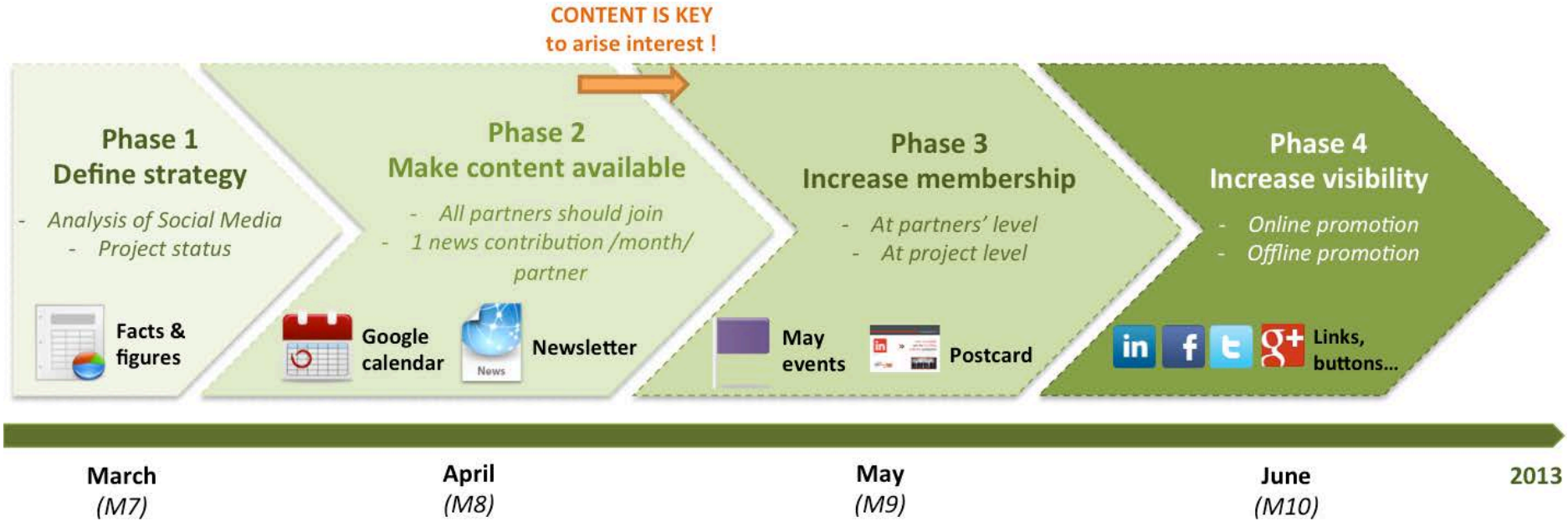
Table 3. Phases of the Social Media Action Plan

PHASE 1 - DEFINE STRATEGY	
Analysis of Social Media of projects / organisations / institutions related to pro-iBiosphere o Benchmark of other initiatives o Social Media analysis, comparison and conclusion	Analysis of Social Media at the project level o Social Media status as of to-date o Project Social Media strategy recommendations
PHASE 2 - GET CONNECTED AND MAKE CONTENT AVAILABLE	
All partners join the project Social Media groups: o Twitter group here o Facebook group here o LinkedIn group here o Google + page here	Share content 1. Each partner launches at least one discussion per month, either on: o The project Facebook group (media oriented) o The project LinkedIn group (business oriented) o The project Google + page (research oriented) o Twitter while using @proibiosphere in the tweet! 2. A Google calendar has been created to remind partners to post a related news
PHASE 3 - INCREASE MEMBERSHIP	
At partners level: Invite your contacts to join the project groups o Send them a promotional message through Facebook, LinkedIn and Google + o Send a promotional email to your network	At project level 1. Join other related groups (Biodiversity initiatives) and: o Promote the pro-iBiosphere groups (Sigma) 2. Invite people/organisations to join the pro-iBiosphere groups: o Highlight on the project newsletter (Sigma) o Send an email blast (Sigma) o Design & distribute promotional postcard (Sigma) o Add a live feed to the website (e.g. Twitterfall) and invite attendees to tweet during the workshops

	o Event survey: add a question on the project Social Media
PHASE 4 - INCREASE VISIBILITY	
<u>Online promotion</u> Add links to the project Social Media groups in all online tools o Newsletters (PENSOFT) o Emails and blast emails (ALL PARTNERS)	<u>Offline promotion</u> Add the Social Media groups URL in all communication materials o Flyers, brochures, posters (PENSOFT) o Reports, eBooks, whitepapers (ALL) o PowerPoint presentations at other events (ALL)

2.4 – Action plan timeline

Figure 4. Action plan timeline



2.4.1 – Benchmark of other projects/organisations/institutions

In order to develop a strategy on the use of social media for the pro-iBiosphere project, a comparison was made in M7 with 21 EU funded projects/platforms/organisations related to pro-iBiosphere (see Table 4).

Table 4. Comparison with other projects, platforms and organisations

	Twitter	Facebook	LinkedIn	Google +
EOL	10 012	14 226		
BHL	2 558	4 918	628	
JSTOR Plant	1 424			
GBIF	1 033		932	
CBOL	805			
TDWG	258		320	
BHL - Europe	236	348		
COL	205			
VerNet	190	194		
agINFRA	185	92		
iDigBio	175			
ViBRANT	163			
iMarine	161		295	
BioStor	153			
EUBrazilOpenBio	85		86	
EUBON	42	11	17	3
LifeWatch	1		252	
GEOSS			295	
FishBase		2 202		
KeyToNature		196		
SeaLifeBase		441		
Total use	**81%**	**43%**	**38%**	**5%**

March 2013

According to Table 4 (figures gathered in March 2013):

- 81% of these projects/initiatives/organisations own a Twitter account
- 43% of these projects/initiatives/organisations own a Facebook account
- 38% of these projects/initiatives/organisations own a LinkedIn account
- 1 initiative owns a Google + account
- 48% of these projects/initiatives/organisations own one account, either on Twitter (35%) or on Facebook (15%)
- 43% of these projects/initiatives/organisations owns two accounts, either Twitter and LinkedIn (56%) or Twitter and Facebook (40%)
- 1 initiative is present on Twitter, Facebook and LinkedIn
- 1 initiative is present in all social media

A list of other projects / initiatives / organisations (different from the 21 mentioned above) that use Facebook, Twitter, LinkedIn and Google + is available in Annex 7.

Observations that can be made on the use of social media tools by these projects/initiatives/organisations is that:

- They concentrate their efforts in one or two social media.
- They use the functionality of these tools to (i) present content differently or (ii) present different content (e.g. pictures on Facebook, tweets for events and for short updates).
- European projects mostly use Twitter and Facebook to build up a project community and to communicate with stakeholders.
- Google + is quite new, users are not yet familiar with this tool, and hence, as of today and as there are few European projects groups to follow on Google +.

2.4.2 - Targeted audience

pro-iBiosphere social media presence aims at giving visibility to the project and raising the interaction across its different dissemination channels, involving stakeholders in their development and activity. For such purpose, pro-iBiosphere ideal public is made up of:

- Environmental/natural sciences researchers
- Taxonomists, ecologists, bioinformaticians, conservationists, ethno botanists, geneticists, chemists
- Vocational and academic teachers and students
- Other projects and initiatives on biodiversity

The project will also raise the interest of a general range of people using social media like the general public, policy and decision-makers. This kind of public will be considered not as a direct target, but as an additional indicator of the overall impact and success of the project.

2.4.3 – Analysis of the social media tools at the project level

The use of the social tools by the pro-iBiosphere consortium (as of end of March 2013) is as follows:

Table 5. pro-iBiosphere use of social media tools as of end of M7

	Membership	Content	Feed from website
Twitter	50 followers	76 tweets	Yes
Facebook	26 likes	52 discussions	Yes
LinkedIn	19 members	1 discussion	No
Google +	11 persons	19 posts	No

- Membership was low (less than 50 contacts)
- Content was only based on website feeds resulting in:
  - Low number of discussions/debates
  - Low engagement from stakeholders
  - Poor content on LinkedIn

The strategy that was followed from April 2013 involved (i) specifying the particular use of each social media tool, and (ii) adapting the content of each social media to the targeted users (see above for additional information on this).

2.4.4 – Use of the project social media tools

FACEBOOK

Address: www.facebook.com/proibiosphere

Type of page: Company, organisation or institution

Category: Internet/software

About: pro-iBiosphere will prepare the ground for an integrative system for intelligent management of biodiversity knowledge

Description: The pro-iBiosphere project has been launched for a period of two years (September 1st, 2012 to August 31st, 2014), with the goal of addressing technical and semantic interoperability challenges and preparing the ground for the creation of a system for intelligent management of biodiversity knowledge, which will improve the present system of taxonomic literature.

The pro-iBiosphere project involves major European biodiversity organisations, including natural history museums, botanic gardens, and specialists in mark-up, dissemination and publishing. pro-iBiosphere is co-funded by the European Commission within the Seventh Framework Programme – e-Infrastructures, under grant agreement no. 312848

Login	Using partners' own Facebook account.
Use	pro-iBiosphere will try to engage users posting images (in particular following project meetings and events) and articles on Facebook (and Google +). Event pages can be created to raise awareness and invite stakeholders.

TWITTER

Address: https://twitter.com/proibiosphere

Profile description: Coordination and policy development in preparation for a European Open Biodiversity Knowledge Management System

Login	Only social media managers can log in and post on the project profile.
Use	Twitter enables only short messages (140 characters), and has simple rules of interaction: mentions of other users [**@**]; retweet [**RT**] (sharing other users tweets); hashtags [**#**] (keywords). When posting the consortium members must always use the hashtag @proibiosphere. In case of a project event, any comment should be posted using its own account and referred to the event specific hashtag (#piblei or #pibber).

NB: The account is **connected to Facebook** through the dedicated app, in order to let directly appear tweets on Facebook page too.

LINKEDIN

Address: www.linkedin.com/groups/PRO-iBiosphere-4682845

Group type: discussion group; networking group

Group profile: Biodiversity core data and information constitutes an important source of knowledge for many disciplines. In order to facilitate access to this knowledge, technical and semantic interoperability barriers need to be addressed. The aim of pro-iBiosphere is to prepare, through a coordination action, the ground for an integrative system for intelligent management of biodiversity knowledge.

Once it becomes operational, the European Open Biodiversity Knowledge Management System will play a major role in facilitating the synthesis of core biodiversity data by creating an authoritative framework including, discovery of new species, naming of specimens and species, identification tools, descriptions, and various other basic types of information.

It will also facilitate the acquisition of high quality biodiversity data from various sources, including legacy data; the curation of the data; and at the same time it will optimise the delivery of those data to the various users. A system that facilitates open access to taxonomic data is essential because it will allow a sustainable provision of high quality data to partners and users, including e-science infrastructure projects as well as global initiatives on biodiversity informatics.

Login	Using partners' own LinkedIn account.
Use	Members participate to the discussion **with their own profile.** Suitable content and actions: **Q&A**; project achievements sharing; networking, information on EC programmes, open questions.

GOOGLE+

Address: https://plus.google.com/u/0/108695805977454304422

Group type: page

Category: Internet software

Login: Only social media managers can log in and post on the project profile

History description: Coordination and policy development in preparation for a European Open Biodiversity Knowledge Management System, addressing Acquisition, Curation, Synthesis, Interoperability and Dissemination

Login	Only social media managers can log in and post on the project page.
Use	It is not possible to directly post into the Google + page. To contribute, either directly post a news on the website that will be posted into the project page or send the news to Google + managers. See Facebook for the kind of content.

The strategy and use of social media tools for the project is presented below.

Table 6. pro-iBiosphere use of social media tools

	STRATEGY	CONTENT MANAGEMENT	ACCOUNT ACCESS
Twitter	- Creating interest - Show on-going activity - Announcements - Events (questions, feedbacks…) - Direct interaction	- Short and immediate communications - Event back channelling - Project & industry news	Tweet using @proibiosphere Placing it first in the tweet!
Facebook	- Events promotion - Media sharing - Interaction with groups	- Photos and videos - Tagging - Events creation - Project news	Everyone can post on the group using its own account
LinkedIn	- Networking - Exploitation (business) - More technical / focused level of discussion	- Major project outcomes - EU related news - Research progression & outcomes - Active project-centered discussions	Everyone can post on the group using its own account
Google +	- Blogging - Sharing media - Events promo - SEO	- Media - Research progression and outcomes - Hangouts	Only managers can post on the project page

2.4.5 – Type of content delivered by the project

The contents to be delivered through social media include project specific communication (e.g. news and updates, events, events live reports) and related themes (e.g. articles, reports, studies, events, partners' other activities). Contents are in the shape of text, media (e.g. photos, videos), or a combination of the two.

In order to facilitate content sharing among all project dissemination channels, the website was linked with Twitter and Google + so that all news posted on the website will be directly posted into both social media. As regards to Facebook, with the recent launch (June 12, 2013) of the hashtag function, he content of both social media accounts has been linked, hence, all project tweets are also being displayed on the Facebook project page. Figure 5 below describes the links between the project website and the four project social media tools.

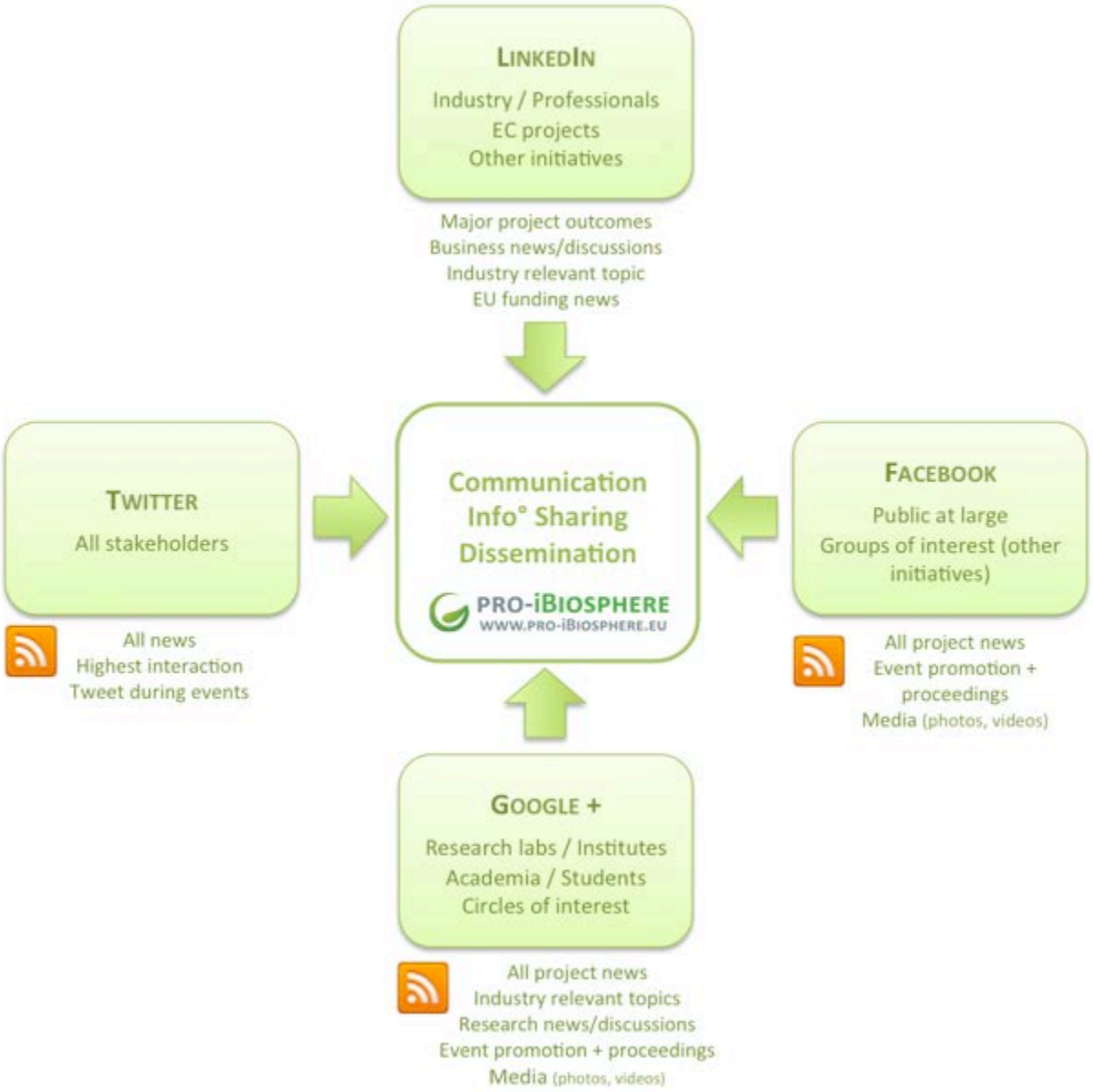


Figure 5. pro-iBiosphere use of social media tools

3 – DISSEMINATION ACTIVITIES PERFORMED DURING THE FIRST REPORTING PERIOD

3.1 – Dissemination and communication tools

The pro-iBiosphere graphical identity includes fonts, colours and texts directly derived from the project logotype designed during the project preparation. By following the graphical identity and using templates with a harmonized "pro-iBiosphere design", it is expected that the project image will be better disseminated and thus the overall impact enhanced.

The project logotype represents the image of the project and its identification while conveying its modern and innovative character. It is being used in the heading of the documents produced during the project and for communication activities (e.g. fact sheet, poster, brochure, web site).

Before the start of the project, several versions of the project logo were designed by Pensoft and Sigma Orionis, and sent to the consortium so that partners could select one of the logos by voting on Doodle Pool. The final pro-iBiosphere logo was selected in accordance with several criteria and mainly, in order to reflect the maximum possible relevance to the pro-iBiosphere objectives.

Figure 6. pro-iBiosphere project logo

Templates were designed following the creation of the logo in M1; they comprise templates for reports, deliverables, and PowerPoint presentations to ensure a consistency of all project documents and also to allow members of the consortium to save time and effort since no further design work will be necessary. All these templates are available on the website for all partners to download (see Annexes 8 - 10).

In M11, partners jointly agreed to modify the disclaimer of deliverables to correspond to the policy of pro-iBiosphere encouraging open access. The present disclaimer includes the terms of the Creative Commons Attribution License 3.0 (CC-BY), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited. The deliverable template has hence been updated accordingly and shared with all partners on the project website.

3.1.1 – Project documentation

3.1.1.1 Press release

During the first year of activities, the project has disseminated three press releases.
The consortium disseminated the first press release announcing the launch of the project in through partners' contacts by email and through EurekAlert (see http://www.eurekalert.org/pub_releases/2012-11/pp-tae112812.php and Annex 19).
The remainder of press releases were produced in M12, after achievement of key deliverables on D3.2.2 and D2.3, they will be widely disseminated through EurekAlert and other identified websites (see Annex 29).

All press releases are available on the project website in the "press releases" section: http://www.pro-ibiosphere.eu/media/center/3693

3.1.1.2 Fact sheet

The fact sheet is an overview of the project printed on a three-fold format introducing the pro-iBiosphere project and presenting the context, objectives and consortium of pro-iBiosphere. A draft version was produced by Pensoft and submitted to the partners in M2. The final version is available on Annex 2 the project website (http://www.pro-ibiosphere.eu/media/center).

The fact sheet is being distributed during meetings, conferences and other promotion activities such as by electronic means (e.g. websites, social media). As of end of July 2013, 500 copies of the fact sheet have been printed and disseminated to stakeholders.

3.1.1.3 Poster

In December 2013, three promotional posters were designed by Pensoft to raise awareness about the project. 10 of these posters were printed and displayed during the pro-iBipshere workshops that took place in May 2013. By the end of the meeting, the posters were distributed among the participants that were interested in promoting the project in their home institutions.
For the pro-iBiosphere meeting that will take place in October 2013, additional posters will be printed.

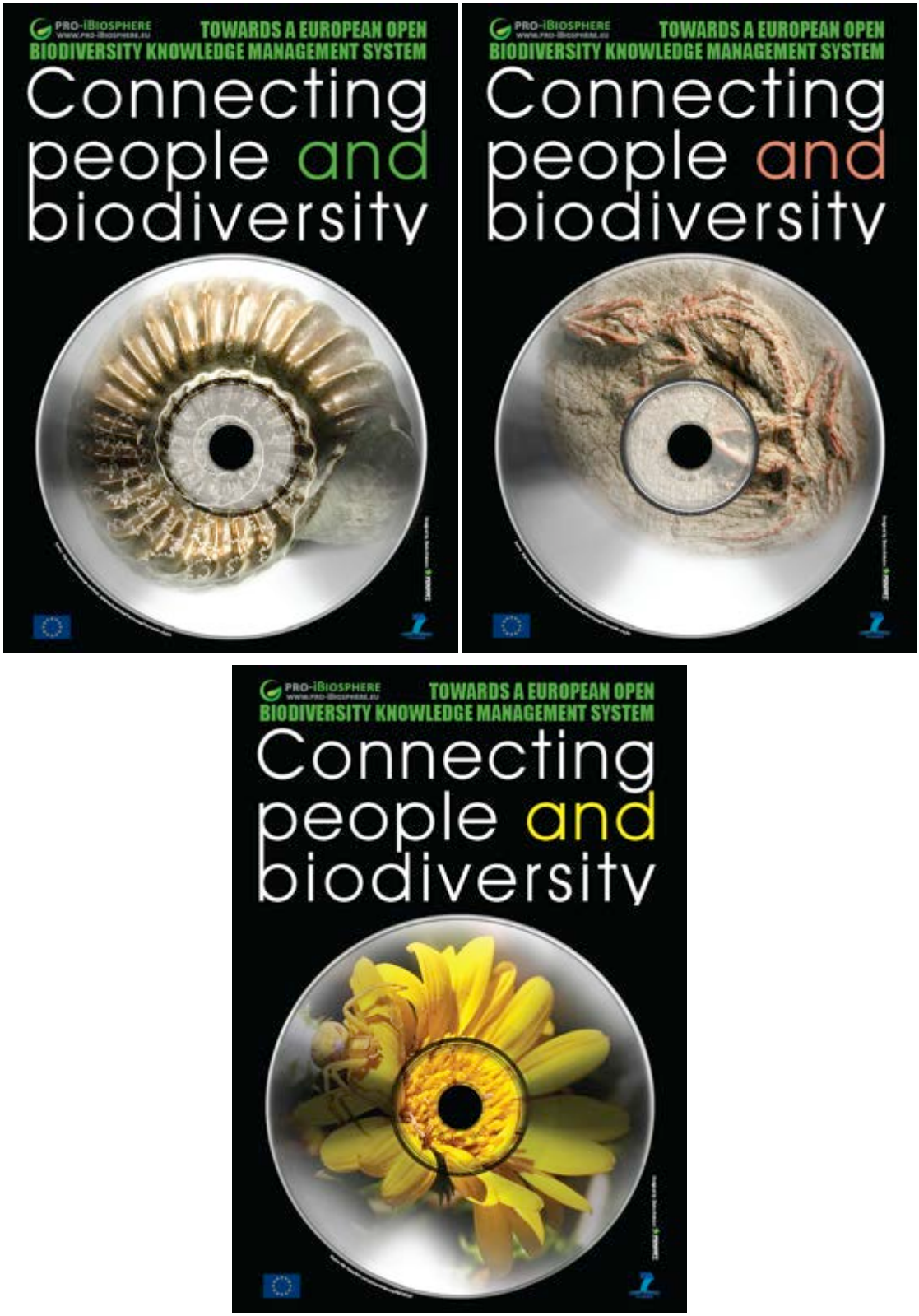


Figure 7. pro-iBiosphere posters

3.1.1.4 Social media postcard

In May 2013 a postcard was designed by Sigma Orionis to promote the different social media tools. The postcard was disseminated to participants of the pro-iBiosphere workshops that took place in May 2013. The postcard is available for download on the website in the media section and will be distributed along with the other project dissemination materials on the occasion of future project events (see Figure 8).

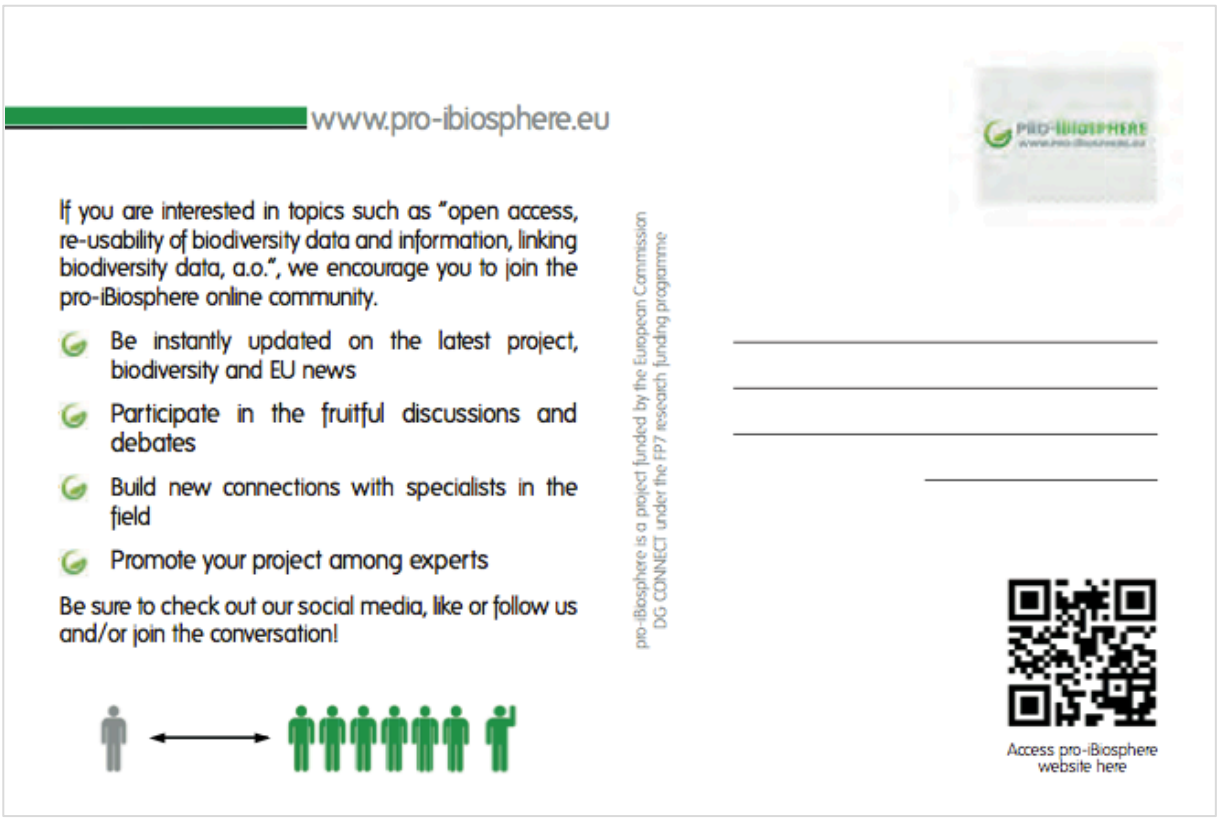


Figure 8.pro-iBiosphere social media postcard (front and back side)

3.1.2 – Project website

The website was designed by Pensoft and made available in M4 through and explicit domain name: www.pro-ibiosphere.eu. It is being updated on a regular basis, as key milestones are reached, with information and news on project activities and on the biodiversity field (see Figure 9).

In order to broadcast project news to a broader community and to reach different audiences, each partner actively contributes to the dissemination activities of the project by supplying information that are posted on the website. Each partner is committed to feed the website with at least one news a month on project activities (including pilot activities, Open Access, planned workflows, participation in other international meetings). The partners responsible for organising workshops are committed to add announcement of their event on the project website (with link to the corresponding Wiki page containing all event information as stated in subheading 5.2.2 - Biowikifarm section, using the dedicated online form on the private section.

As a major dissemination tool, the pro-iBiosphere website provides comprehensive information about the initiative so that any visitor can understand the project context and objectives. Namely, the website sections outline is as follow:

- **Homepage:** introducing the project context and the consortium members
- **The project:** introducing the rationale and the aim of the project
- **Main outcomes:** introducing the project objectives and the target groups
- **Partners:** presenting the different project partners
- **Work Packages:** describing the different work packages and related tasks
- **Results:** a place where all pro-iBiosphere deliverables as well as all scientific publications are listed and made available
- **Media Center:** a place where all dissemination materials and tools are publicly available to download (fact sheet, logo, press releases)
- **News:** introducing the project news and the biodiversity research news
- **Links:** URL links to websites of interest and useful websites
- **Events:** specific section to display the upcoming project events and other biodiversity events
- **Contacts:** a listing of all consortium members with the corresponding direct contacts and emails
- **Feedback:** enabling visitors to express their feedbacks through a simple and convenient online form
- **Training sessions:** enabling visitors to submit their participation to training sessions organised by the project

The website also comprises different links and tools on its homepage such as:

- RSS feeds links to enable visitors to subscribe and receive project news, project events announcements and project results releases directly in their mailbox
- A link to the eNewsletter subscription form
- Links to the different project social media accounts: Facebook, Twitter, LinkedIn and Google+
- The tweets from the pro-iBiosphere Twitter account (@proibiosphere)
- A login button to access the “Internal Communication Platform (ICP)” (partners’ private area)

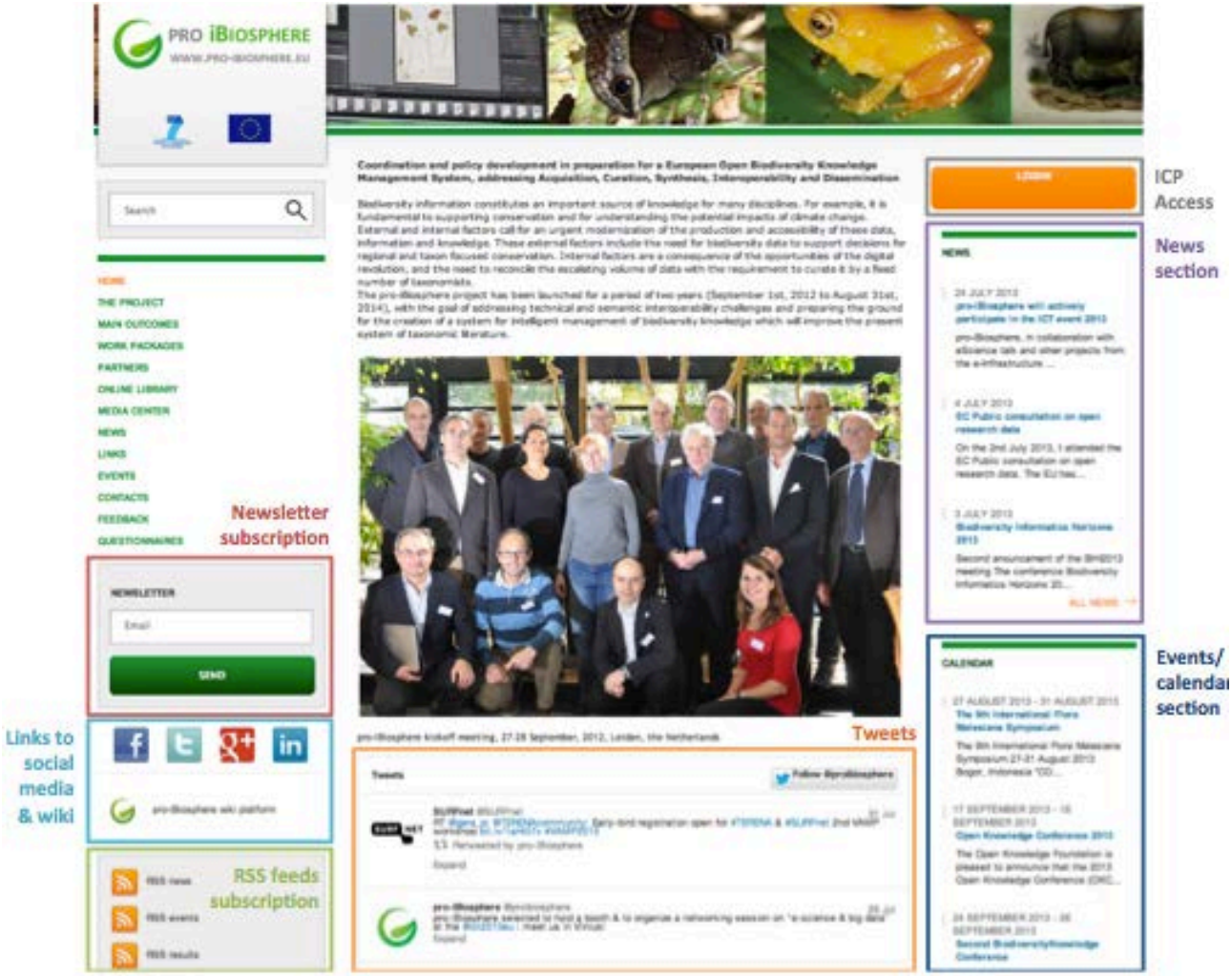


Figure 13. Homepage of pro-iBiosphere website

Pensoft is responsible for liaising with the consortium partners, making sure that the content of the website is regularly updated with news and information on the project developments. To make the website more lively and so as to display the latest project developments and activities, a “News” and a “Calendar” section have been implemented on the homepage so that visitors can easily spot and access the latest project information. In addition, with the purpose to efficiently disseminate the project development in due time, different contributions buttons have been added on the private area of the website linking to specific forms to enable partners to easily contribute to news, documents sharing (external and internal) and events announcements. These tools are expected to increase project impact through active contribution and participation of project partners in feeding the website with content.

News section of the website

There are two main types of news available on the website: (i) project news corresponding to information on project activities, publications (generated through the “add external publication” form, main project outcomes and (ii) other news providing relevant information on biodiversity research, other initiatives and projects, external events (see Figure 10).

Figure 10. News section of pro-iBiosphere website

Online library section of the website

A public library is accessible for the community containing all public deliverables, reports and project publications (see Figure 15). Each partner can upload documents publicly by filling in specific forms in the internal (private) part of the website. The forms are rather straightforward as the following basic information needs to be completed: author(s) of the publication/deliverable), year of publication, title/subtitle, and standard bibliographic information (journal's name, volume, pages, if it is a journal paper) or web link to the document, if stored on an external web platform. Only abstract and links to the original source is provided for copyright protected articles.

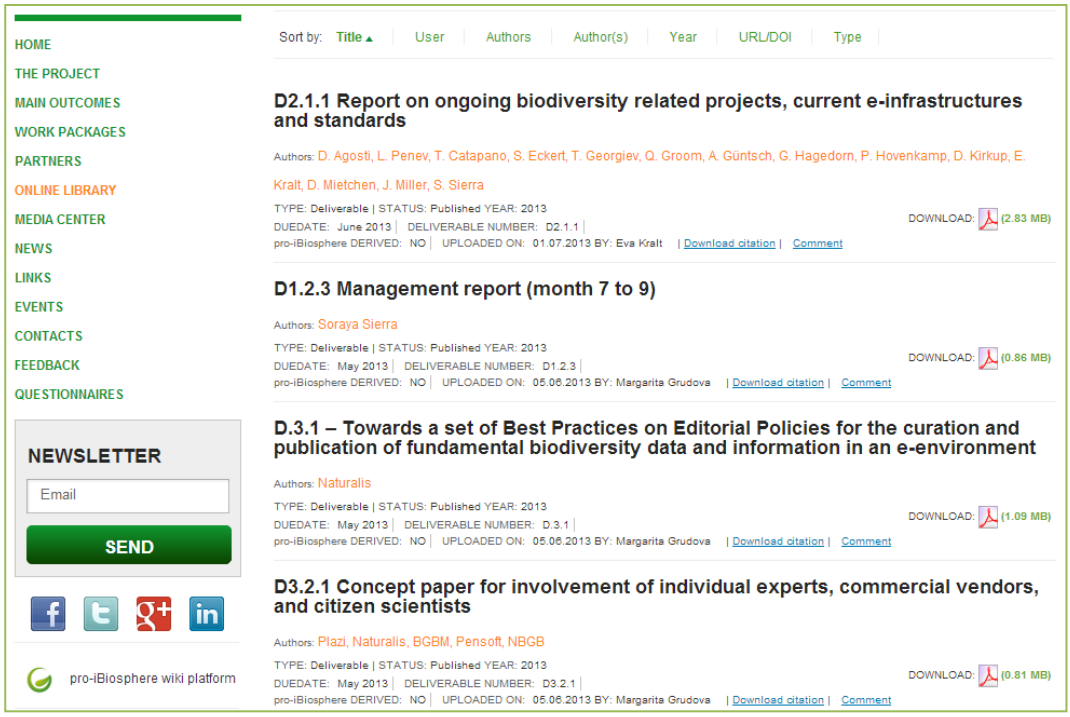


Figure 11. Online library of pro-iBiosphere website

Events section of the website

A list of events is available on the events section of the website displaying project events such as announcements of: (i) upcoming project events with link to the pro-iBiosphere Wiki page for further information; and (ii) other (external) biodiversity events of interest, European Commission e-Infrastructure events and, in particular, events to which the project participated in (generated through the "add event" form) with the attached annexes (presentation, agenda); see Figure 12.

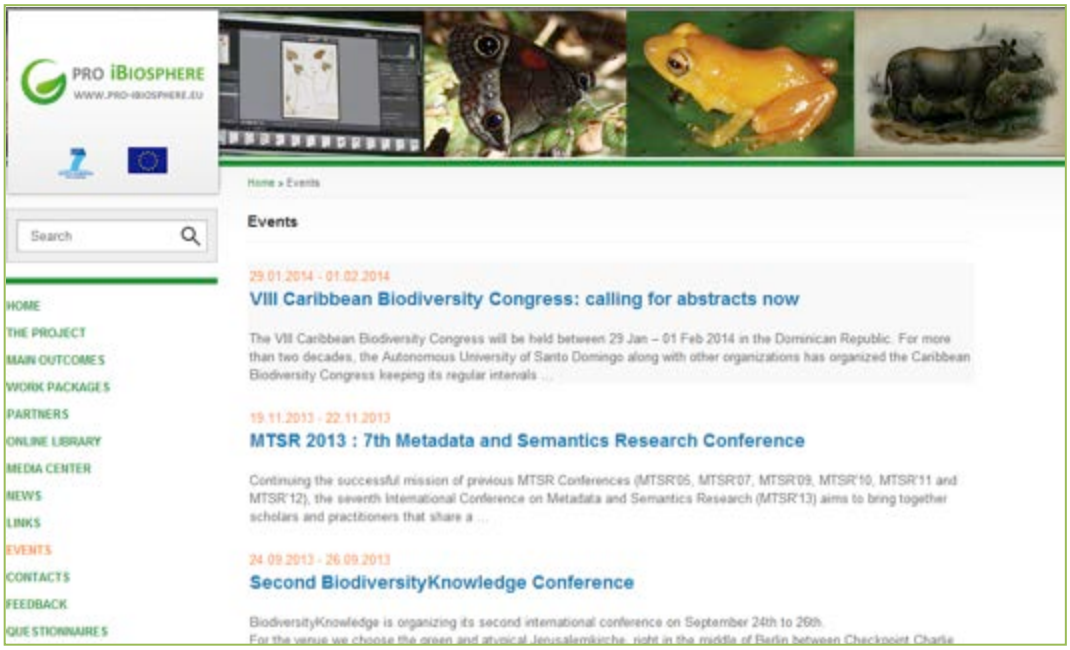


Figure 12. Events section of the website

News and events will be provided by each partner through filling in the specific forms on the private section of the website. Each partner, as part of its involvement in dissemination activities and in the project in general, is committed to contribute to the news and event section by providing its inputs through its organisation activities, participation and contacts with other biodiversity initiatives and sharing its knowledge and references on the biodiversity news.

Sustained efforts undertaken all along the project period will be planned in order to ensure a wide and efficient visibility of the pro-iBiosphere web platform on the web.

As mentioned above, the project website comprises two different user accesses, a public section openly available to all and a private section for partners and selected stakeholders (AB members for instance), so-called "ICP". These two sections are further detailed below.

3.1.2.1 Public section

The website of the project is intended be the front end, i.e. the public image of the project. The site will allow users to readily collect online information about the project and its outcomes, which will be of interest to stakeholders.

Due to the presence of native UK English speakers in the consortium, UK English was chosen as the official language for the project. Pensoft Is in charge of updating the detailed content of the site throughout all the operational phases of the project. The authors of news send their work to Naturalis for approval. Pensoft then updates this on the website.

The list below includes proposals for items to be published on the website description of the project including a summary, a standard pro-iBiosphere presentation and the fact sheet

- Presentation of the project partnership (with links to partners' websites)
- News and publications
- Calendar with upcoming events
- A contact section
- A useful links section
- Communication of public documents

3.1.2.2 Restricted section

The website is, in complement with the pro-iBiosphere Wiki, a useful instrument for cooperation among the partners of the project. It therefore, allows partners to have a private access as a collaborative work environment named 'Internal Communication Platform' (ICP) where members of the consortium share the main project documents and project knowledge among them in the implementation of the various work packages".

The access is granted upon request of a login and password. All partners received their login in M3 to access it (see login page below in Figure 13). As of end of July 2013, 43 users have a personal account and access to the project's ICP (see the list of ICP users in Figure 14).

A user guide for the project website was prepared by Pensoft and sent to all partners at M3 under the name "Guidelines for use of the ICP containing the description of all the website sections, features and tools" (see Annex 14).

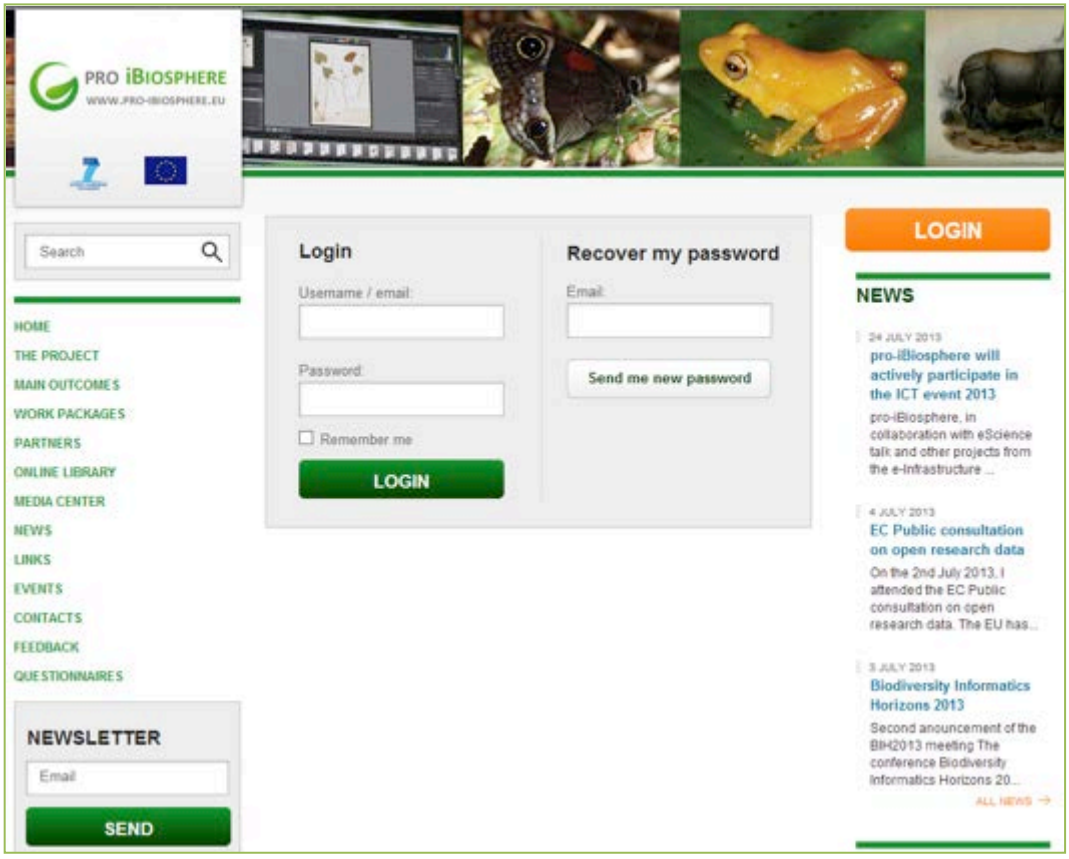


Figure 13. Access to the ICP of the project

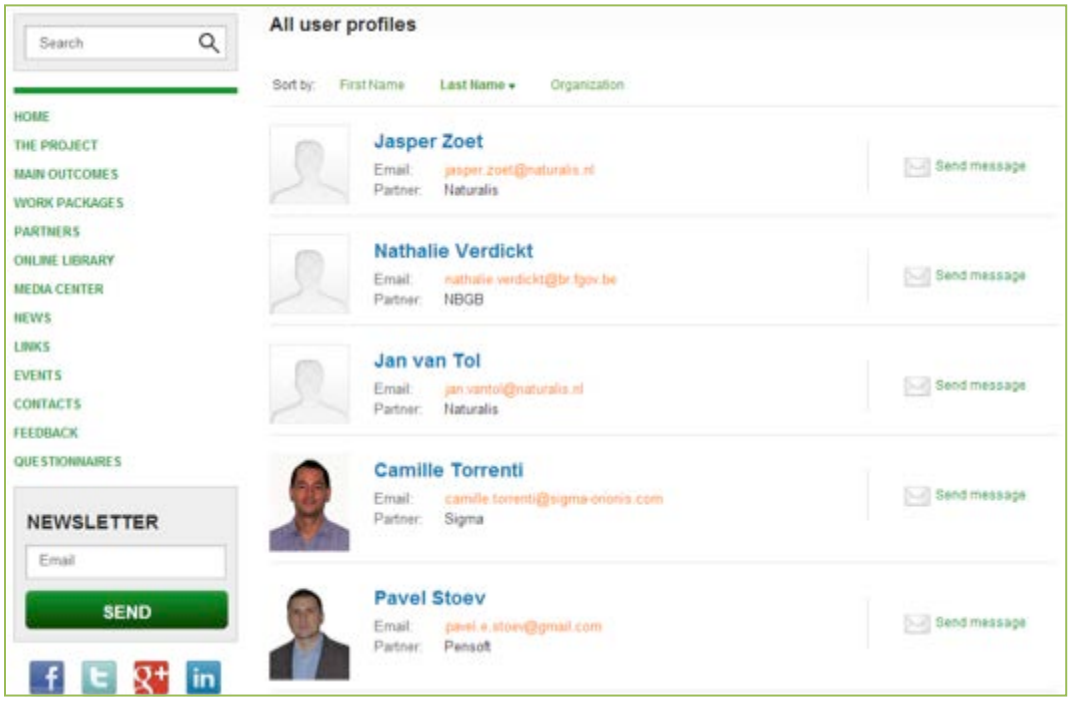


Figure 14. List of ICP users

Communicating with partners and stakeholders

The ICP allows users to send emails through the website (see Figure 15 below). One of the advantages of this feature is that it allows the project to gather all-important communication while saving all emails sent through the platform. Another advantage is that it offers the possibility to send emails to targeted lists. At present there are 13 different lists available, comprising:

- Administration
- Advisory Board
- All pro-iBiosphere partners
- Calendar editors
- Leaders
- Pilots
- Task leaders
- One list for each Work Package: WP1, WP2, WP3, WP4, WP5, WP6

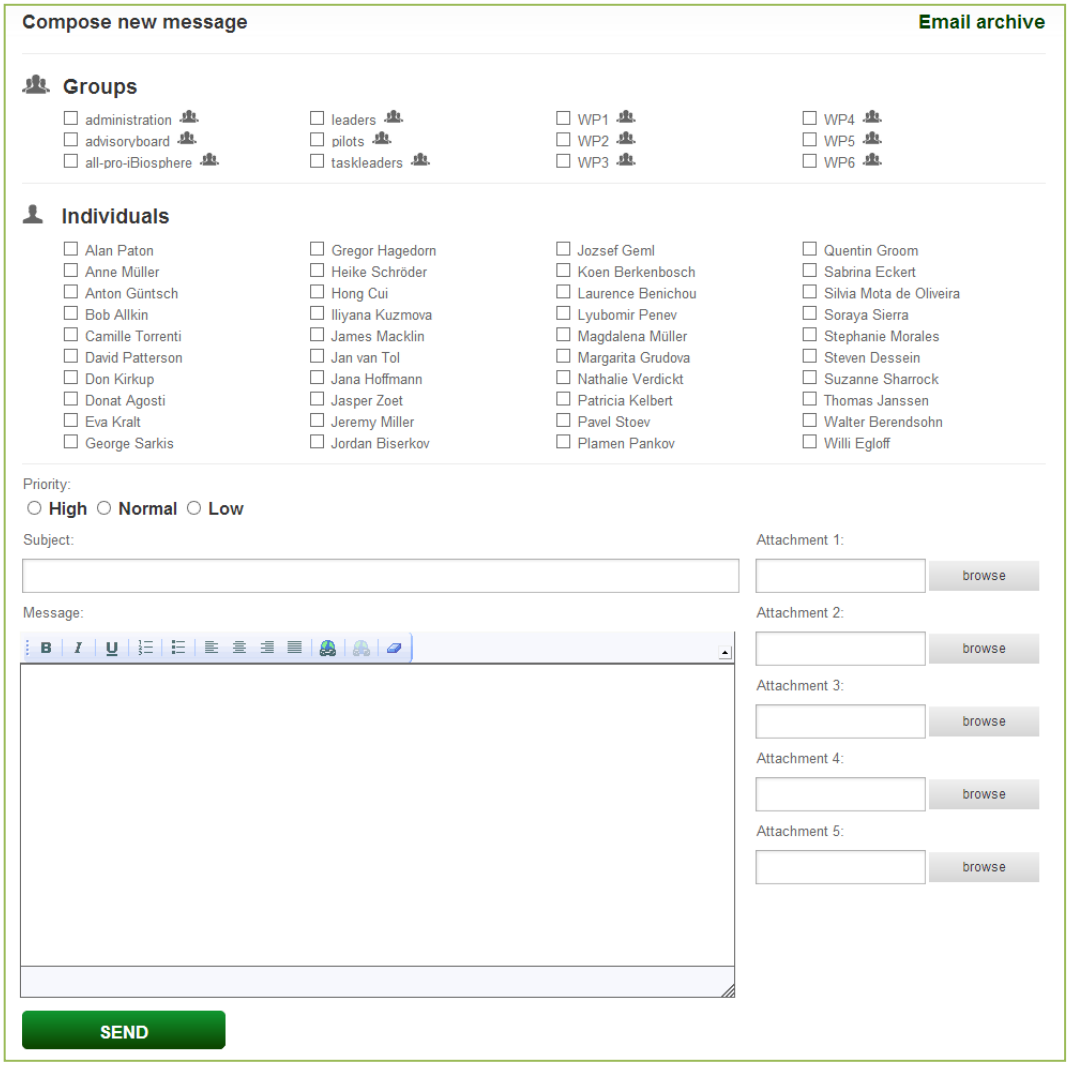


Figure 19. Email sending feature of the project website

Sharing documents among members

The ICP is being used by partners' as a repository section (see Figure 16) where they can place reports, documents in a final status (working documents are rather shared on the project Wiki), the following items are available on the internal library:

- The documents log and in particular, project templates
- Administrative documents
- Project dissemination documents / outreach materials
- The contribution to events and publications form
- Project deliverables and reports

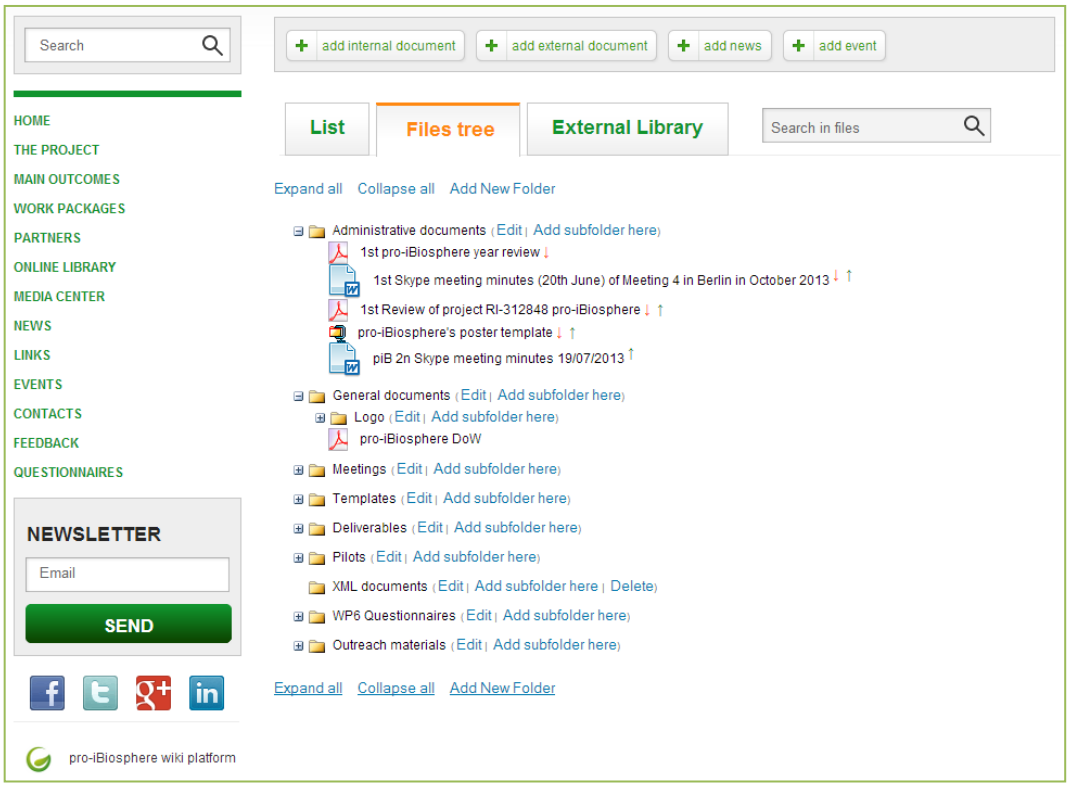


Figure 16. Internal Library of the project website

Internal events calendar

Users have the possibility to see the calendar of project events and milestones (Figure 17) to follow-up on the activity and outcomes of the different tasks and work packages.

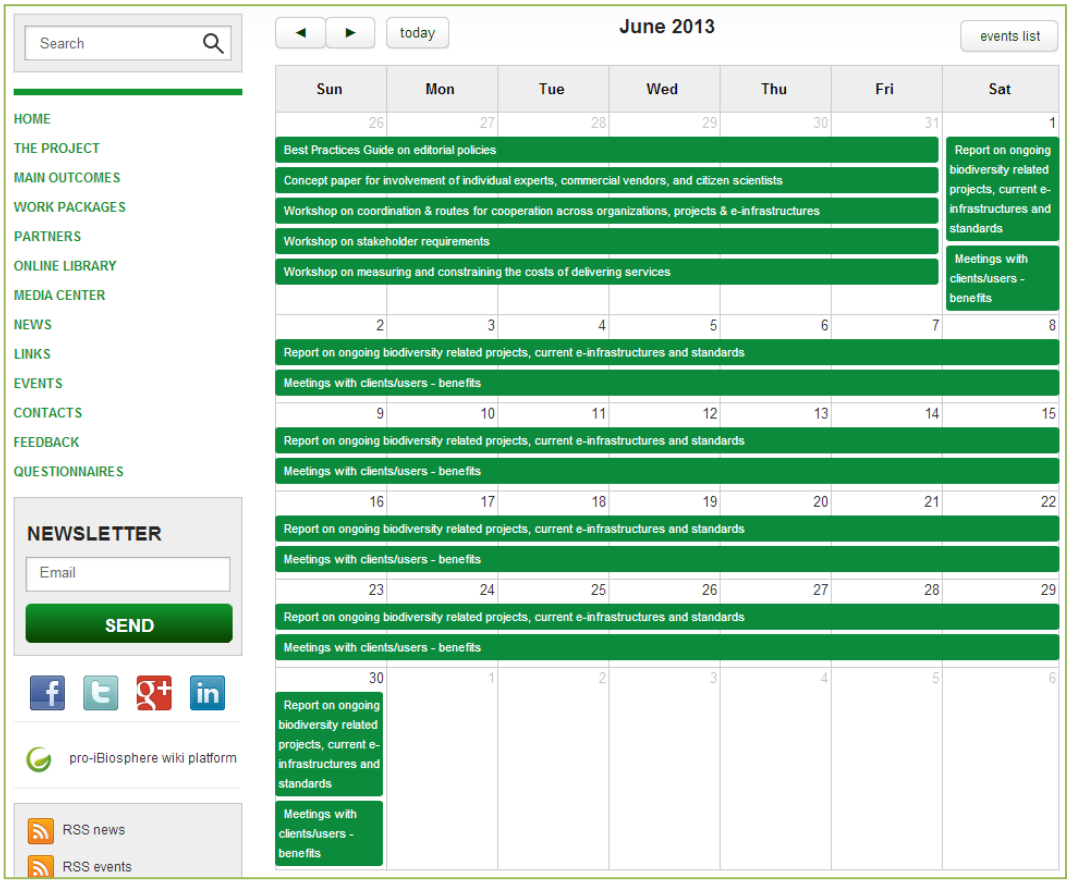


Figure 17. Internal events calendar

3.1.2.2 Website statistics

Since the website launch in M2, there have been until end of July 2013 a total of 11 192 total visitors of pro-iBiosphere website representing on average 12 400 visitors per month. The series of figures below from 18 to 20 picture the evolution of visitors per month, the new versus returning visitor, the source of traffic, the views per page and the country of origin of visitors. Following the launch of the website, the number of visitors rose by 109% on average in the first four months. Then, the first series of project workshops was organised in M6 (Leiden, February 11 to 13, 2013) increasing project awareness among the community and reaching the highest number of visitors of the overall reporting period (2050 in M6). Then, the number of visitors stabilized to around 1 381 visitors per month (M8 to M11). This stabilization is pictured in Figure 18 below where it can be noticed that the number of returning visitors is higher than the one of new visitors (58% versus 42%).

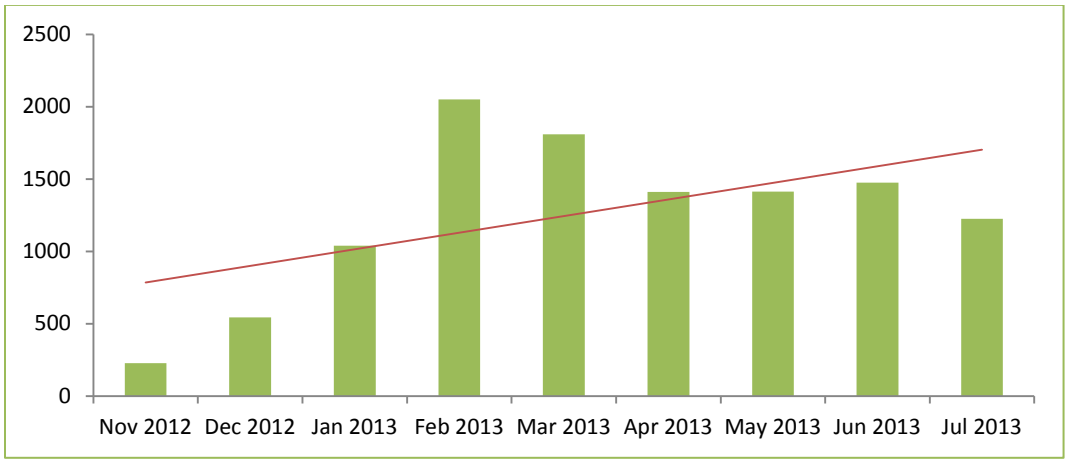


Figure 18. Monthly visits to pro-iBiosphere website

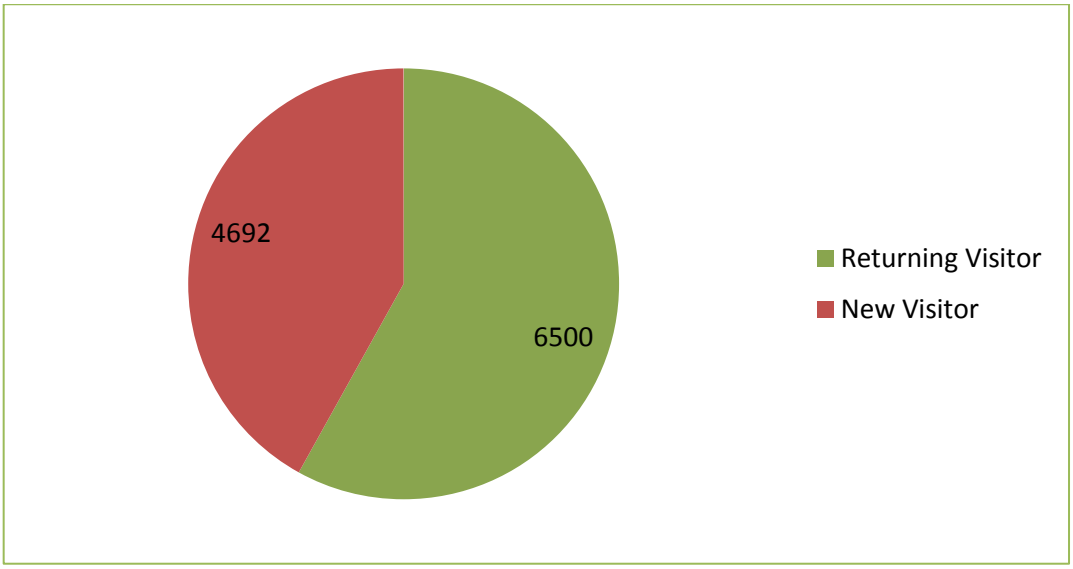


Figure 19. New vs. returning visitors to pro-iBiosphere website

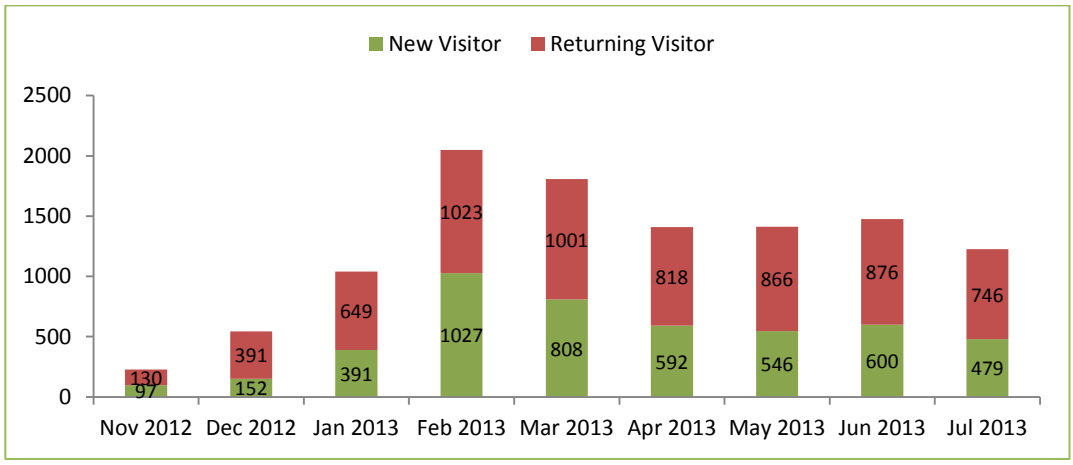


Figure 20. New versus returning visitors graph

Figure 21 and 22 depict the source of traffic from other websites and search engines show that the majority of visitors (around 60%) that reach pro-iBiosphere website directly access the website either with the website address or through another project tool (social media account, Wiki) or promotion (RSS news, social media). 24% of visitors visit the website through a project partner website illustrating the effort of partners to disseminate project information through their organisation. As a result, the majority of visitors reaching the project website are project stakeholders having an interest in the project while being aware of the project (returning visitors) or having heard of the project through other dissemination channels (social media, Wiki, news feed, other websites). This fact is confirmed while analysing the average time spent on the website and the number of pages views: visitors spend around 3 minutes 24 seconds on average on the website while visiting around five pages. In Figure 23, if the homepage views is not taken into account (as all visitors reach this page, this is indeed the most viewed one), 58% visitors visit the news section, 16% the events section, 10% the partners sections and 8% the project section.

The news section and events section being the ones regularly updated, returning visitors are more likely to visit these sections to look for the latest information on the project

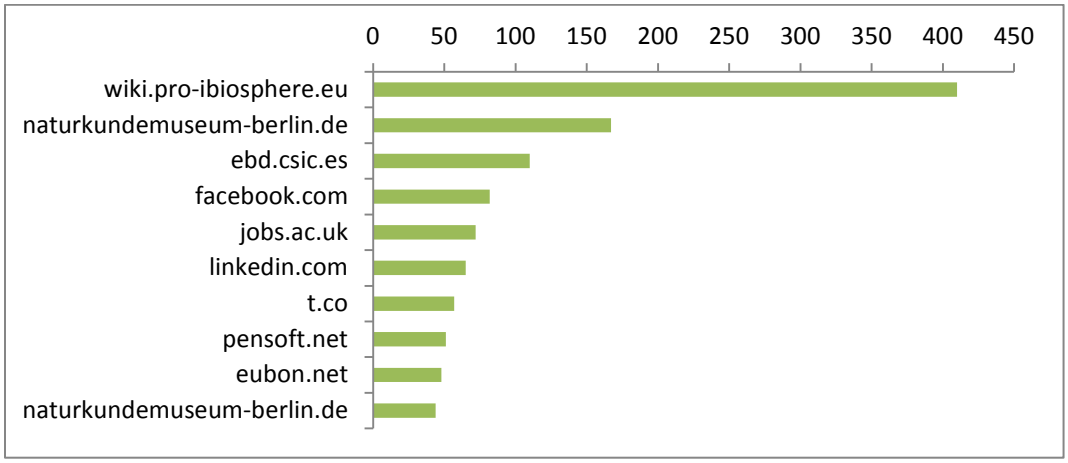


Figure 21. Visits from other websites

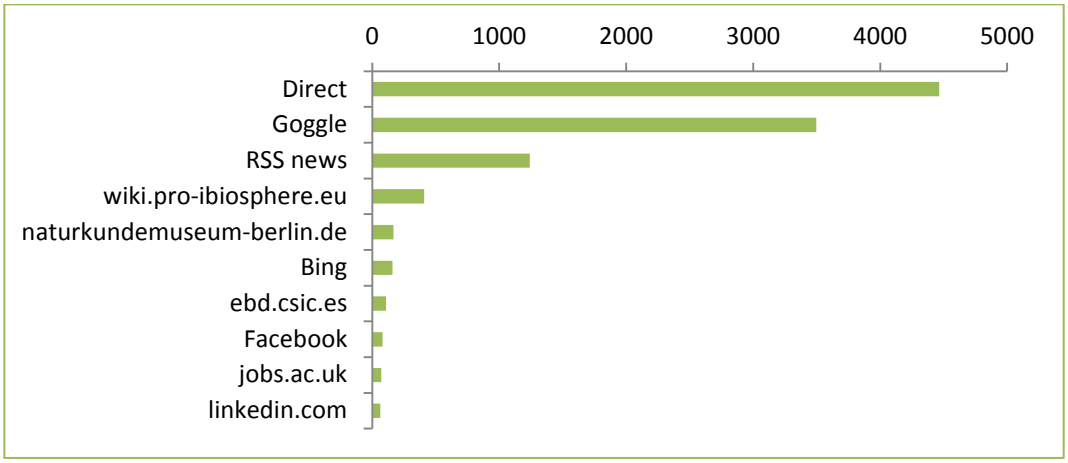


Figure 22. Visits from search engines

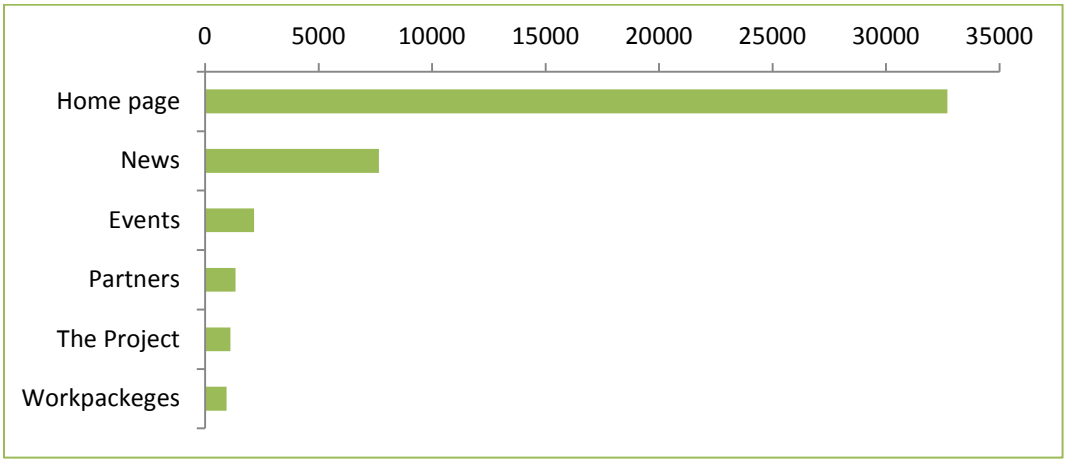


Figure 23. Views by page

A large majority of visitors of pro-iBiosphere website are located in Europe (more than 80%), whereas a minority is located in the USA (3%) as displayed in Figure 24. As the platform is intended to have an international reach, the project must ensure to further disseminate its results and increase its awareness overseas by participating in events outside of Europe and liaising with extra-European international initiatives.

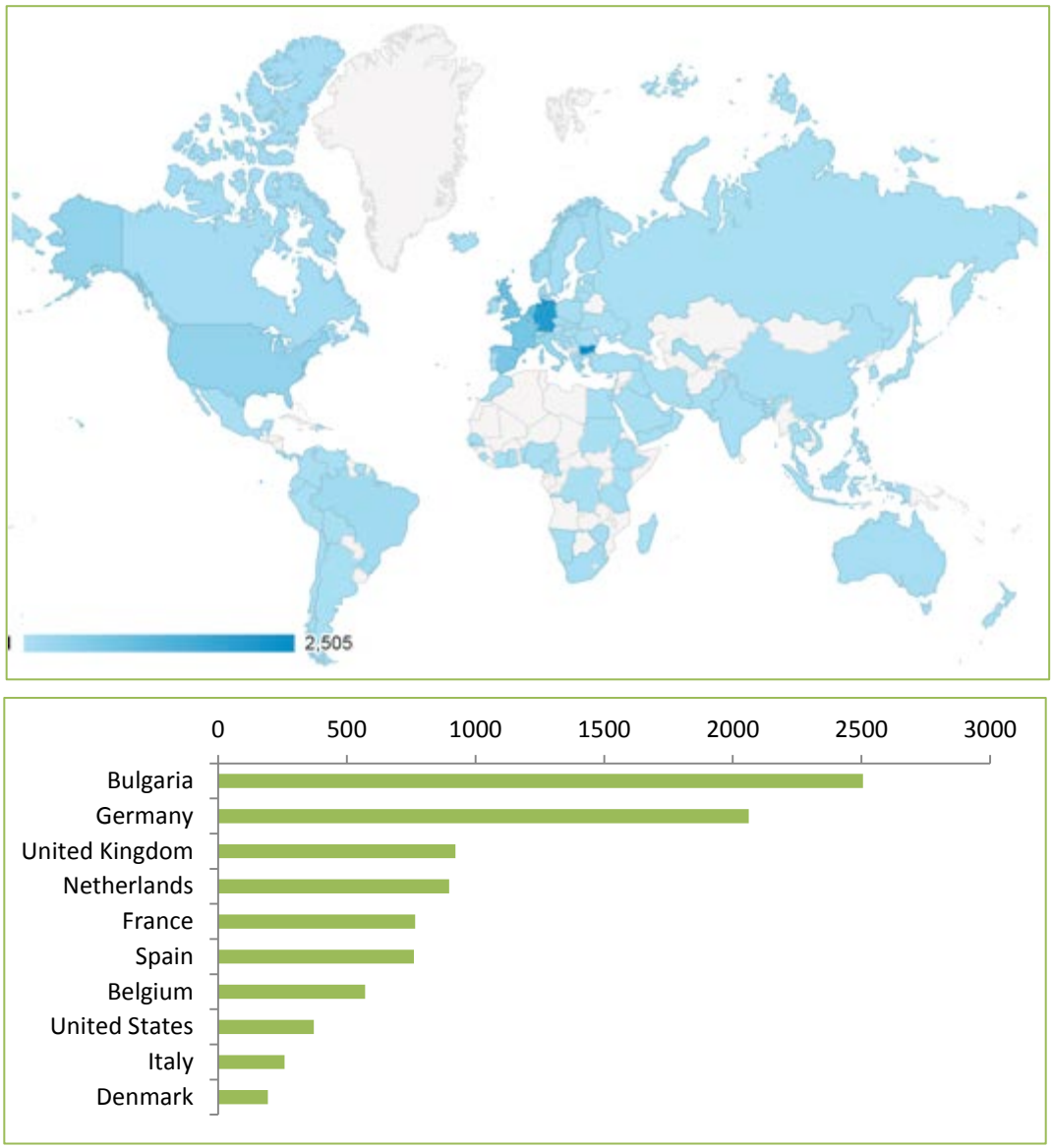


Figure 24. Visits by country

From October 2012until end of July 2013, there have been 61 news posted on the website, corresponding to an average of six news per month (see Figure 25). 64% of the news posted corresponds to “other news” and 36% of total news is project news. As it can be seen on the graph below, the contributions to news has been more intensive and steady in the last 6 months of the project and, in particular following the different discussions on social media held from M7.

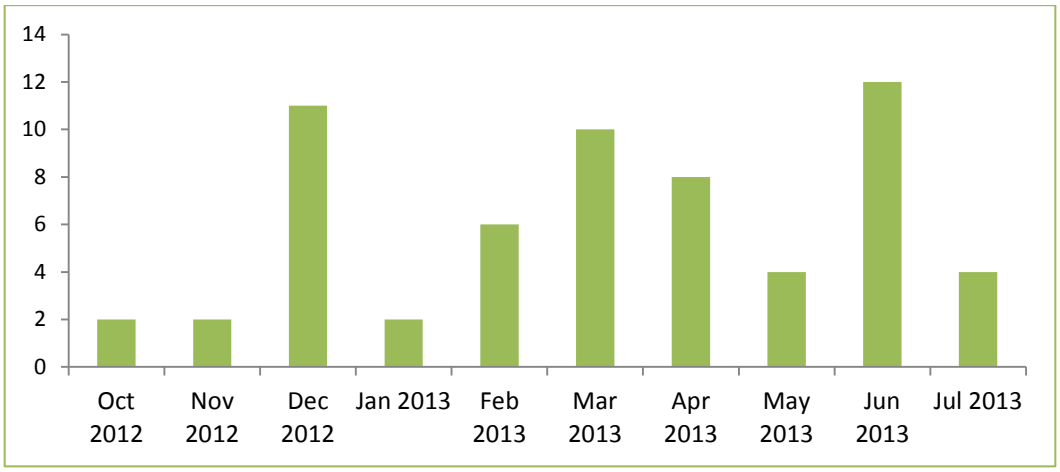


Figure 25. Total number of website news per month

3.1.3 – Project Wiki

Plazi created the project Wiki in M2 (see Figure 26). A login and password have been distributed to all partners to log into the platform. Users without a login can access the public documents but cannot edit them as the edit feature is only granted upon registration and with a login and password. In order to facilitate drafting and sharing of documents that are not ready to be released to the public, the pro-iBiosphere Wiki (http://wiki.pro-ibiosphere.org) uses separate accounts for public documents and information and internal project documents and reports that are only accessible with a login and be invisible for other users. Plazi created a help page on the Wiki to explain partners the basic steps in using the Wiki while presenting them the main functionalities so as to enable them to easily contribute (http://wiki.pro-ibiosphere.eu/wiki/Help:Contents and Annex 15).

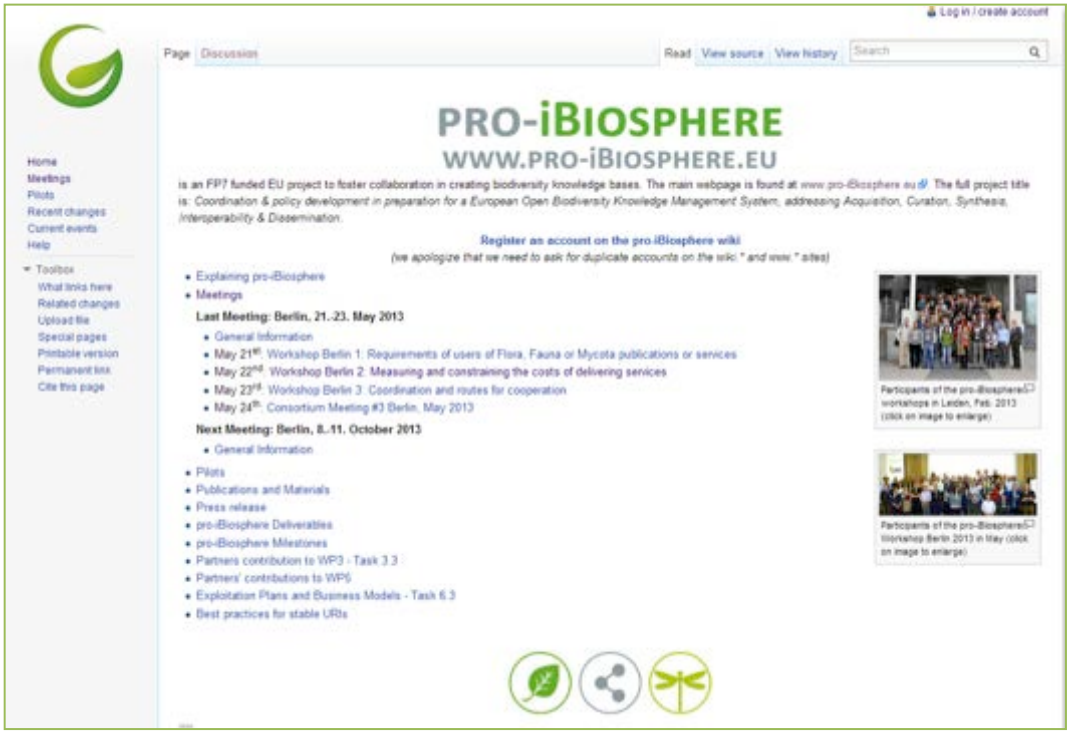


Figure 26. pro-iBiosphere Wiki homepage

The pro-iBiosphere Wiki platform has been used to prepare project events and share information and comments such as, the:

- Tentative agenda
- List of potential speakers
- Concept and objectives
- List of prospective attendees
- Directions and public transports information
- Venue and hotels information

The project Wiki has been widely used to organise project events while providing participants with complementary, detailed and latest information and to share working documents between partners as regards to the updates of project pilots and work

packages contributions (tables to be updated, such as, for deliverables and milestones status, dissemination follow-up, exploitation plans inputs and etc.).

On the homepage, the different links to the working documents are displayed. At present, they comprise links to the:

- Introduction of the pro-iBiosphere project
- Meetings (Last meeting information and upcoming meetings information)
- List of pilots and their status
- List of publications and materials
- Press release
- List of project Deliverables and Milestones
- Partners contribution to WPs and tasks
- Best practices for stable URIs

The pro-iBiosphere Wiki also enables partners to upload documents to be shared with the public and /or among them on the Wiki.

3.1.3.1 Wiki statistics

Since the Wiki launch in M2, there have been until end of August 2013 a total of 21 717 total visitors of pro-iBiosphere wiki. Figure 27 picture the evolution of visitors per month. The number of visitors remained relatively constant in the period (November 2012 to July 2013) with, on average, 2 715 visitors per month. The rise at M8 and M9 correspond to the organisation of the second series of project workshops organised in M9 (Berlin, May 11-15, 2013), reaching the highest number of visitors of the overall reporting period (5 981 in M9). Comparing to the first series of project workshops, the project Wiki has been further used by partners to share information for each workshops (agenda, attendees, concept and objectives). Then, in the last quarter, the number of visitors stabilized to around 2 077 visitors per month (M10 to M12).

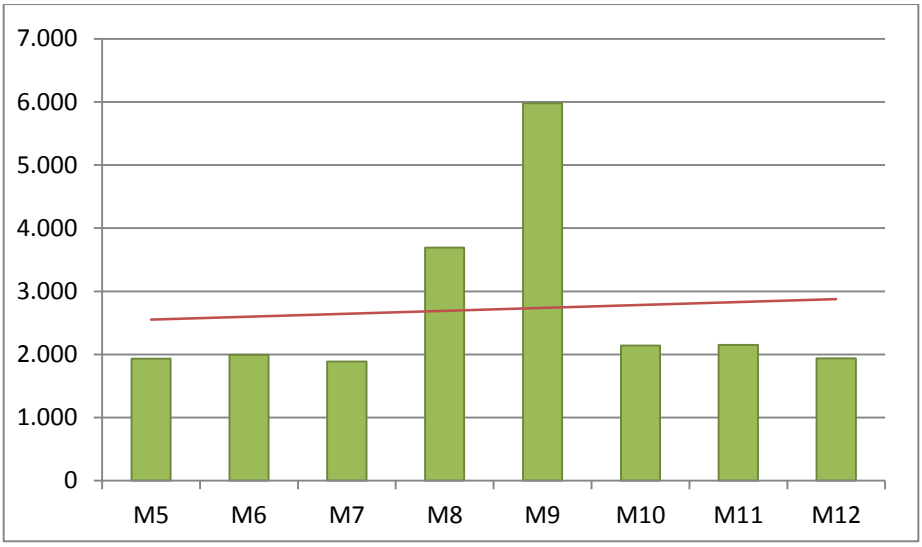


Figure 27. Monthly visits to pro-iBiosphere website

3.1.4 – Social Media

Pensoft created the different pro-iBiosphere social media accounts in M2, in the following social media:

- LinkedIn: www.linkedin.com/groups/PRO-iBiosphere-4682845
- Facebook: www.facebook.com/proibiosphere
- Google+: plus.google.com/108695805977454304422/posts
- Twitter: twitter.com/proibiosphere

A list of other social media accounts from other biodiversity projects/initiatives in which the project should contribute/participate and insures linkages has been drafted by Sigma Orionis and shared with partners in M2 (see Annex 7). This final list has been placed into the pro-iBiosphere Wiki to be updated by partners on a regular basis with new projects and initiatives accounts. This list has been used by the project partners to post promotional discussions about pro-iBiosphere whenever possible while following those initiatives on Twitter.

Since the beginning of the project, the main focus has been to build up and increase the pro-iBiosphere community on social media while providing information on the project aim and activities to increase project awareness among stakeholders. All partners have been asked to join the different pro-iBiosphere social media groups and pages and to promote the different project social media to their contacts while inviting them to join the pro-iBiosphere community.

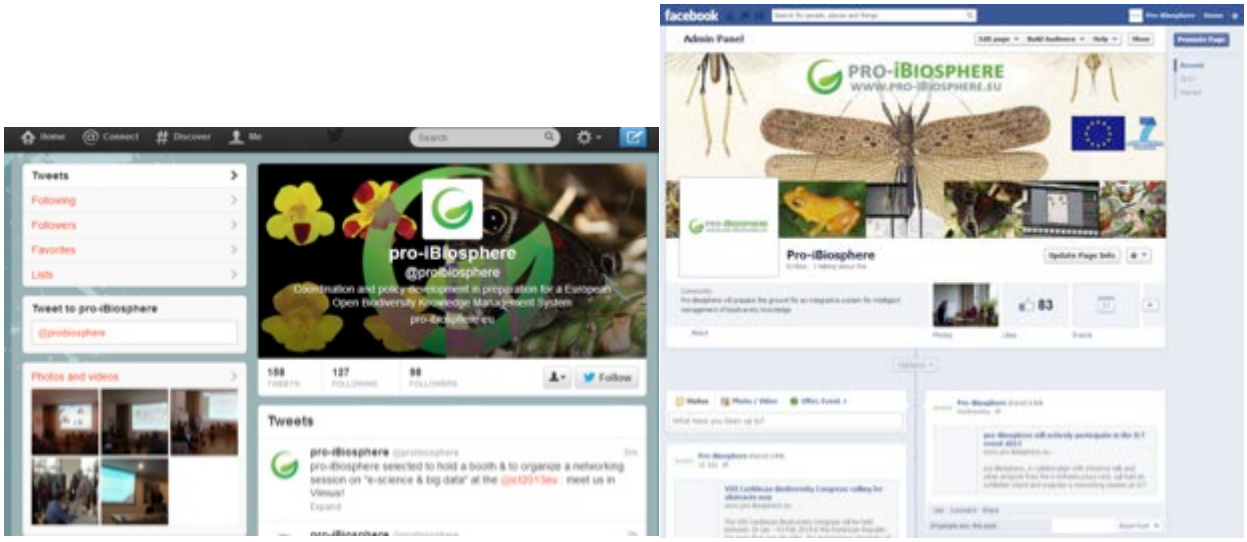


Figure 28. pro-iBiosphere Twitter and Facebook accounts

Figure 29. pro-iBiosphere LinkedIn and Google+ accounts

3.1.4.1 – Activities undertaken over the reporting period

From M7, following the low membership and availability of content on social media groups, a Social Media Action Plan (see above) was drafted and the following activities performed by the project and all partners.

Google calendar

Sigma Orionis created in M9 a Google calendar of project milestones and deliverables listing all project milestones, deliverables and participation to other events that can be reported to the social media. In M10, Sigma shared the calendar content (.ics file containing calendaring and scheduling information) with all partners so that they can upload and integrate the project calendar directly into their own calendar (on their computer or on Google calendar). The aim of this tool is to enable partners to closely follow-up their project activities and to contribute to posting discussions on project social media and news on the website related to the different project activities and latest achievements.

Promotion of social media groups/pages

In M8 - Promotional discussions on pro-iBiosphere social media groups (see Figure 30 and 31 below) have been posted on the other initiatives groups and pages on Facebook (14 groups) and LinkedIn (10 groups) and all other initiatives Twitter accounts have been followed by the project (see Annex 16 for the follow-up list of promotion on other social media groups).

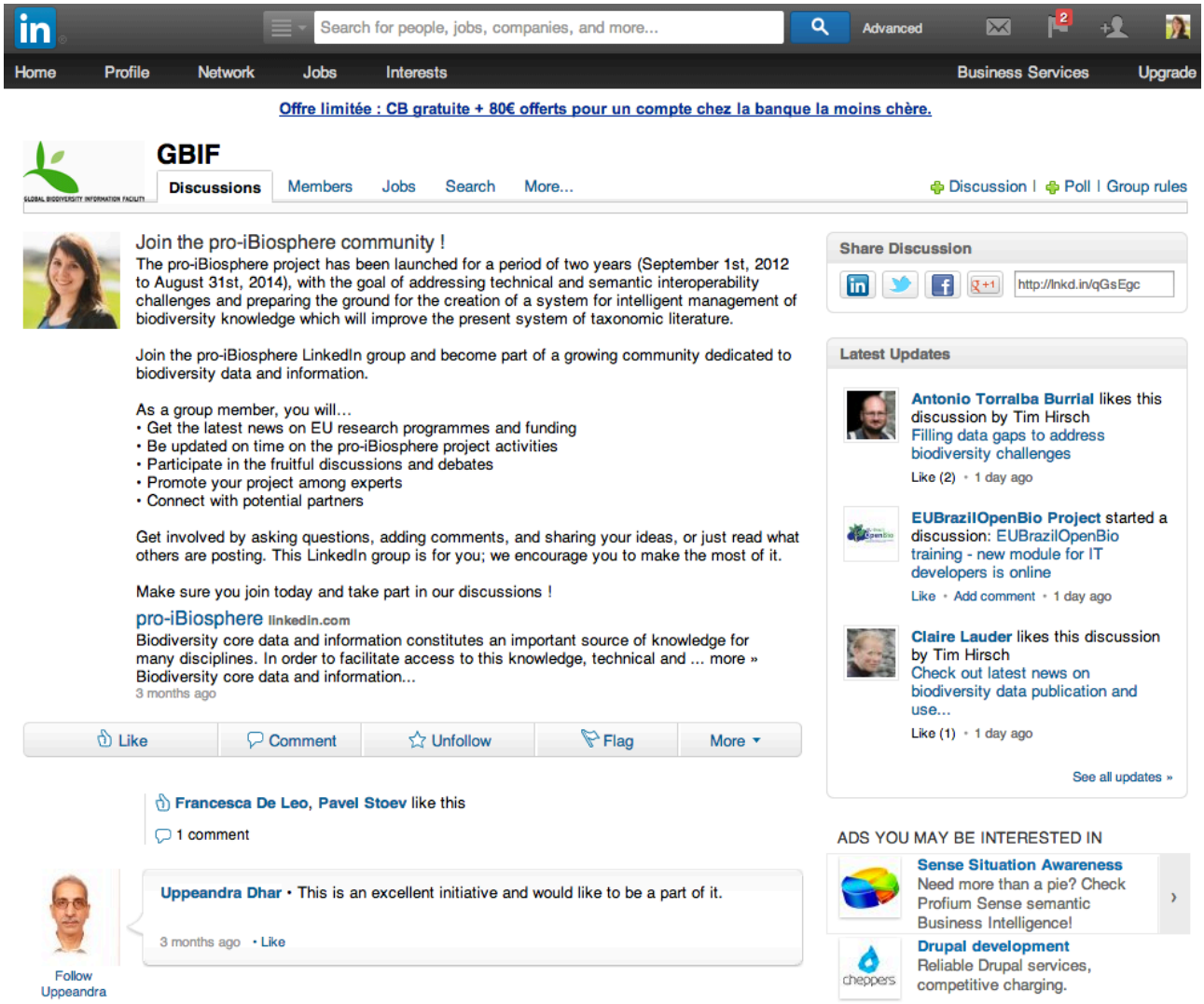


Figure 30. Promotion of pro-iBioshere project on LinkedIn (example)

Figure 31. Promotion of pro-iBioshere project on Facebook

In M8 – A post promoting the project social media groups/pages was posted on the project website and disseminated via the pro-iBiosphere newsletter.

In M9 - On the occasion of May series of workshops (May 21-23, 2013), several promotional activities and tools have been developed:

i. Sigma designed a specific project social media postcard which have been printed and distributed during the May workshop and will be used to promote social media on the occasion of other workshops (see above)
ii. Pensoft added a live Twitter stream to the website to display the workshops tweets. Workshops delegates have been invited to join the workshops tweets and discussions while using the hashtag #pibber (see above in the community management guidelines section). After the workshop, this stream has been replaced by the tweets from pro-iBiosphere Twitter account (@proibiosphere)
iii. A specific question on project social media has been added to the event survey
iv. A promotional email sent to partners to disseminate to their contacts (see Figure 32)

Join the pro-iBiosphere community!

The pro-iBiosphere project has been launched for a period of two years (September 1st, 2012 to August 31st, 2014), with the goal of addressing technical and semantic interoperability challenges and preparing the ground for the creation of a system for intelligent management of biodiversity knowledge which will improve the present system of taxonomic literature.

If you are interested in topics such as "open access, re-usability of biodiversity data and information, linking biodiversity data, a.o.", we encourage you to join the pro-iBiosphere online community. It will enable you to interact with the pro-iBiosphere project and the main stakeholders in the field, while getting real time access to the latest news, events and project activities information.

Be sure to check out our social media, *like* or *follow* us and/or *join the conversation*!

Facebook - like us here
- Access information on current biodiversity research developments
- Find out and contribute to the latest reviews and feedbacks
- Discover our project events latest pictures and videos

Twitter - follow us here
- Be instantly updated on the latest project, biodiversity and EU news
- Get involved in the discussions during project events
- Follow other key biodiversity initiatives and players

LinkedIn - join us here
- Get the latest news on EU research programmes and funding
- Participate in the fruitful discussions and debates
- Promote your project among experts

Google+ - join us here
- Access interesting content shared by the project (media, links)
- Build new connections with specialists in the field
- Interact with the project and experts and share your opinion

Looking forward to meeting you soon on these social media groups.

Best regards,

- The pro-iBiosphere partnership -
www.pro-ibiosphere.eu

PRO-iBIOSPHERE
WWW.PRO-iBIOSPHERE.EU

Figure 32. pro-iBiosphere social media groups promotional message

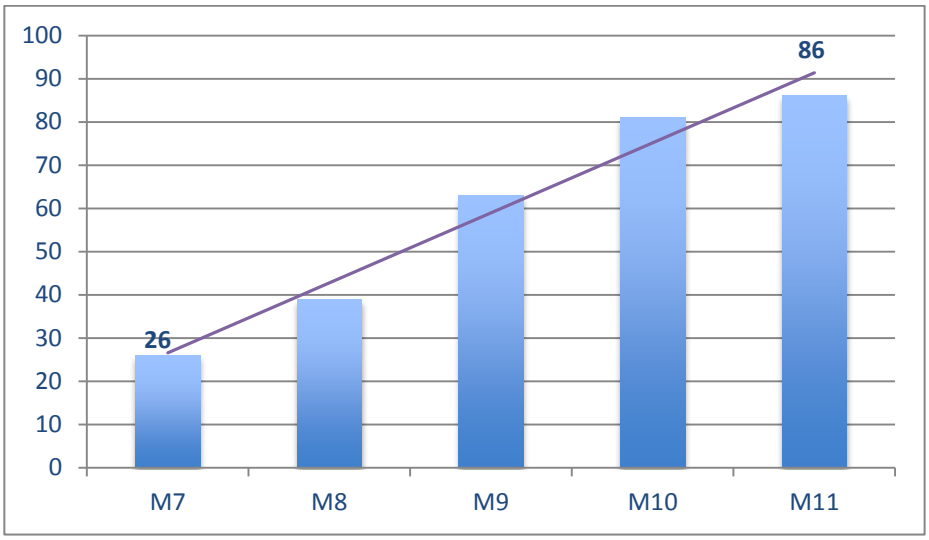
Other promotional activities (such as an email blast, the dissemination of the social media postcard and the use of Twitter on the occasion of upcoming project events) will be undertaken in the next reporting period.

3.1.4.2 – Social Media statistics

Since there has been a stronger engagement of project partners in posting news on the website, as Facebook, Twitter and Google + are linked to the website via the feed functionality, the number of discussions, tweets and posts increased as well. The statistics (as of end of July 2013) presented highlight the results of the efforts displayed since M7 to promote the project social media and to better involve pro-iBiosphere community (partners, stakeholders) to rise membership while ensuring content is available in these different dissemination channels.

FACEBOOK

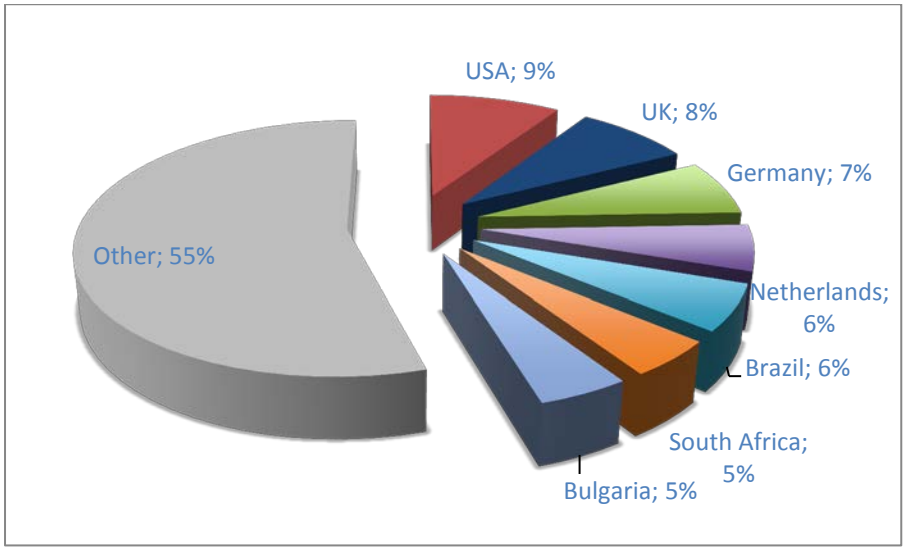
A total of 86 people "liked" the pro-iBiosphere page on Facebook (prior to the release of the Social Media Action Plan the total number consisted of 26 likes). Between March 2013 and July 2013, following the promotional strategy launched from M8, the number of likes increased to 231%. This means an increase of 36,5% over the last 4 months (see Figure 33).



July 2013

Figure 33. pro-iBiosphere Facebook page total likes

The community of Facebook fans is quite diverse in terms of location as shown in Figure 34 as 9% of members are located in the USA, 6% in Brazil, and 5% in South Africa. This is one of the advantages of Facebook being the large reach of people and hence offers growth perspectives and project awareness and reaches opportunities outside of Europe.



July 2013

Figure 34. pro-iBiosphere Facebook page "fans" location

TWITTER

There are currently:

- 159 tweets from the project. ,
- 159 Twitter accounts followed by the project
- 100 Twitter accounts followed by pro-iBiosphere (see Figure 35 below)

Since March 2013, the number of followers rose from 50 to 100 representing an increase of 100%.

In order to encourage awareness of the project, its activities and updates and of the project Twitter account, partners and stakeholders have been encouraged to systematically use @proibiosphere when twitting about the project.

Figure 35. pro-iBiosphere Twitter account followers

LINKEDIN

There are currently:

- 56 members on the LinkedIn project group. It represents an increase of 195% since the implementation of the Social Media Action Plan from M7 (in M7 the membership was of 19 members as pictures below in Figure 36).
- 12 discussions (in M7 there was only one), which corresponds to a rise of 92%. However, when looking at the ratio of discussions per month, there are, on average, only two discussions per month posted on LinkedIn. In order to keep boosting group membership, the number of discussions posted per month and promotion of this social media group should be enhanced to encourage community building and discussions posted by non-partners group members.

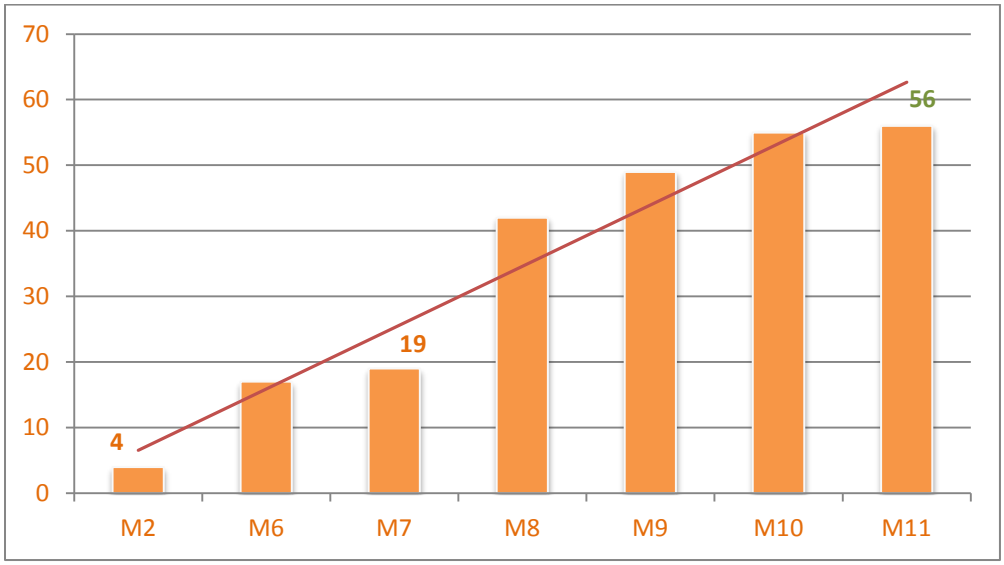


Figure 36. pro-iBiosphere number of LinkedIn group members

As pictured in Figure 37, LinkedIn members are mostly located in Europe with members from Germany accounting for 14% of total membership, followed by Netherlands (9%). These members are mostly involved in research organisations (54% of them) as shown in Figure 38 and 39, while 25% of total members actually do research activities and 14% are involved in programme and project management activities. 3% of members are from Computer Software industries and 5% of members are involved in ICT activities and 5% are entrepreneurs.

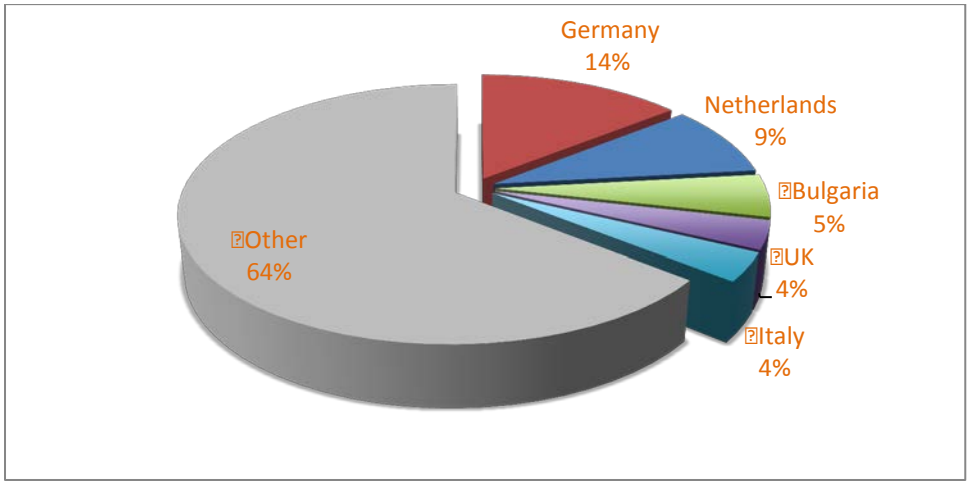


Figure 37. pro-iBiosphere LinkedIn group members' location

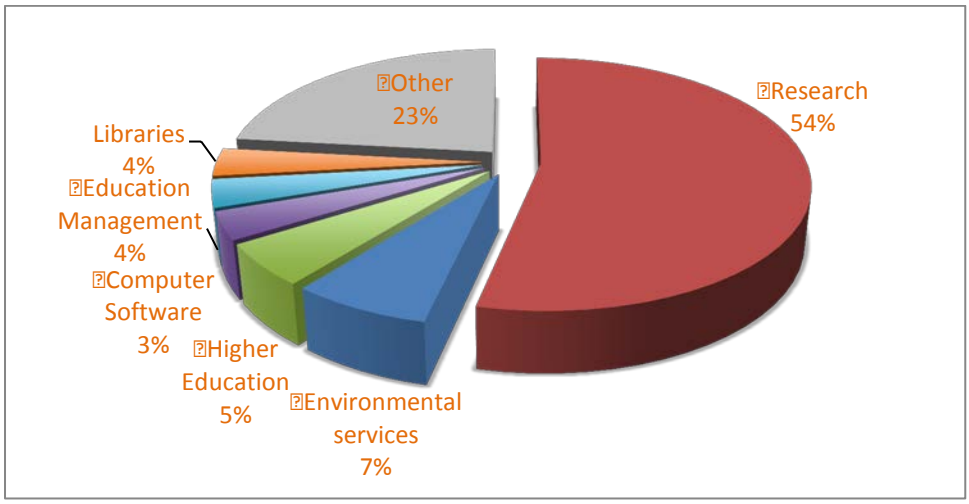


Figure 38. pro-iBiosphere LinkedIn group members' location

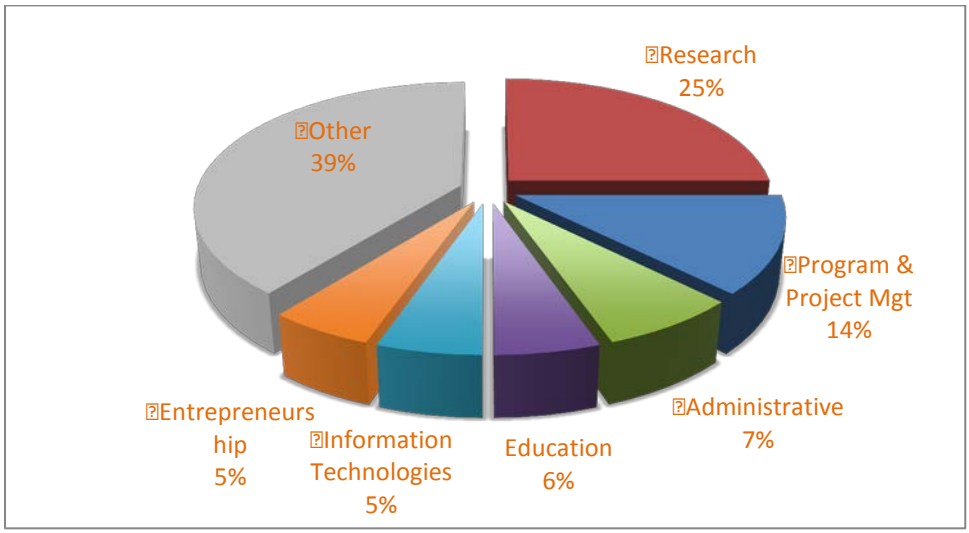


Figure 39. pro-iBiosphere LinkedIn group members' location

GOOGLE +

Google + statistics display:

- 30 “members”, representing an increase of 173% of “membership” (in M7 there were a total of 7 members).
- 52 posts appear on pro-iBiosphere Google + page, demonstrating a growth of 174% (in M7 there were 19 posts).

Table 7 gives further information on the content shared in pro-iBiosphere Google+ page.

Table 7. pro-iBiosphere Google + page statistics

	Total		
	Total	Original	Reshared
Posts	52	51	1
Location	0	0	0
Photos	17	17	0
GIFs	0	0	0
Videos	0	0	0
Links	49	48	1
Comments	0	0	0
per post	0.00	0.00	0.00
+1's	1	1	0
per post	0.02	0.02	0.00
Reshares	1	1	0
per post	0.02	0.02	0.00

3.1.5 – Project eNewsletter

A specific online subscription form with a link on the homepage has been added to the website so as to enable any interested party to receive eNewsletters.

In the reporting period, 3 newsletters have been sent to the project dissemination database at the beginning of M5 and M10 (see Annexes 17, 18 and 30).

Sigma Orionis, with the help of project partners, consolidated all project contacts including:

- Participants of project events
- Contacts from other initiatives
- Experts identified during the preparation of the project
- Partners' contacts

Pensoft created a mailing list containing all these 350 contacts at M9: dissemination@pro-ibiosphere.eu. This mailing list will be used to disseminate project eNewsletter and as a major dissemination channel to communicate with stakeholders regarding project activities, progress, events, outcomes. The list is being updated on a regular basis with new contacts following project activities (such as events, contribution to other events, synergies, etc.), in particular participants of project workshops will be systematically added to this list as it has been done following May series of workshops.

3.1.6 – Helpdesk services

Stakeholders can contact the project through different channels:

- The project website through the use of the feedback section (see Figure 40 and www.pro-ibiosphere.eu/feedback/)
- Social media accounts such as LinkedIn and Twitter
- The newly created info@pro-ibiosphere.eu email address (see below)

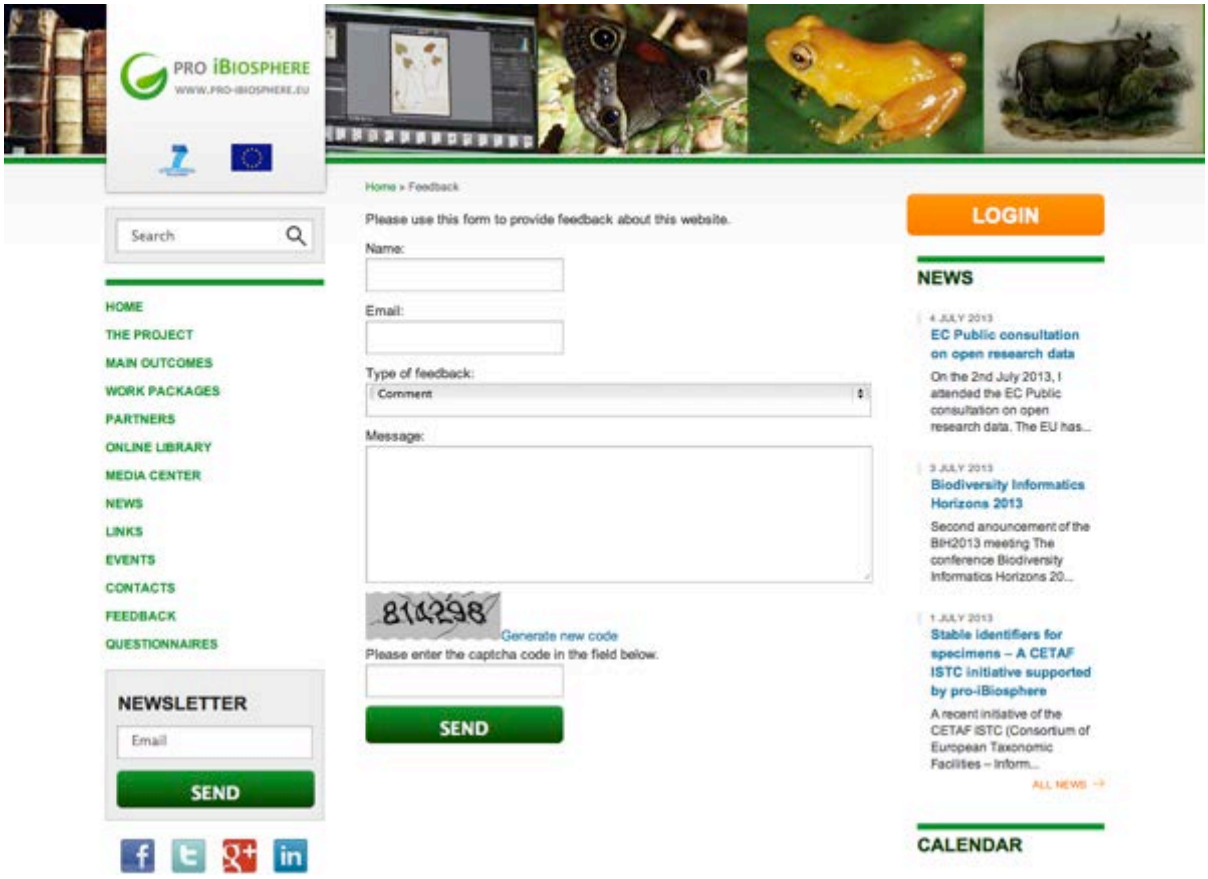


Figure 40. Feedback section of the pro-iBiosphere website

In M10, Pensoft created a specific contact email address: info@pro-ibiosphere.eu to enable project stakeholders to easily contact and connect with the project. Naturalis and Sigma Orionis will receive messages sent to this email address and can deliver helpdesk services to project stakeholders while providing them with guidance and information on project activities, synergies opportunities, etc. Since then, this email, appear in all dissemination materials (fact sheet, posters, articles and press releases), news posted on other initiatives and presentations.

Helpdesk services to the pro-iBiosphere community have been delivered as of today mainly through the website and through LinkedIn as the info@ contact email is brand new.

3.2 – Dissemination of the project through outreach activities

Until now, the project has organised a total of six workshops and contributed to 13 external events (see Annex 22) and two publications (see Annexes 23 and 24).

Concerning the partners' contributions to events and articles, 6 out of 8 partners contributed, in the first project period, in at least 1 contribution out of 2 as initially planned and agreed in the project DoW (see Table 8).

Table 8. Follow-up of partners' contributions (per August 2013)

Partner	Other events	Publications
FUB-BGBM	1	-
MfN	*2 (prospective)*	-
Naturalis	5	-
NBGB	3	-
Pensoft	2	1
Plazi	1	2
RBGK	1	-
Sigma Orionis	*1 (prospective)*	-
TOTAL	**13**	**2 (1 in common)**

For partners' contributions related materials (presentations delivered, events agenda, articles, etc.) see Annexes 22 - 24.

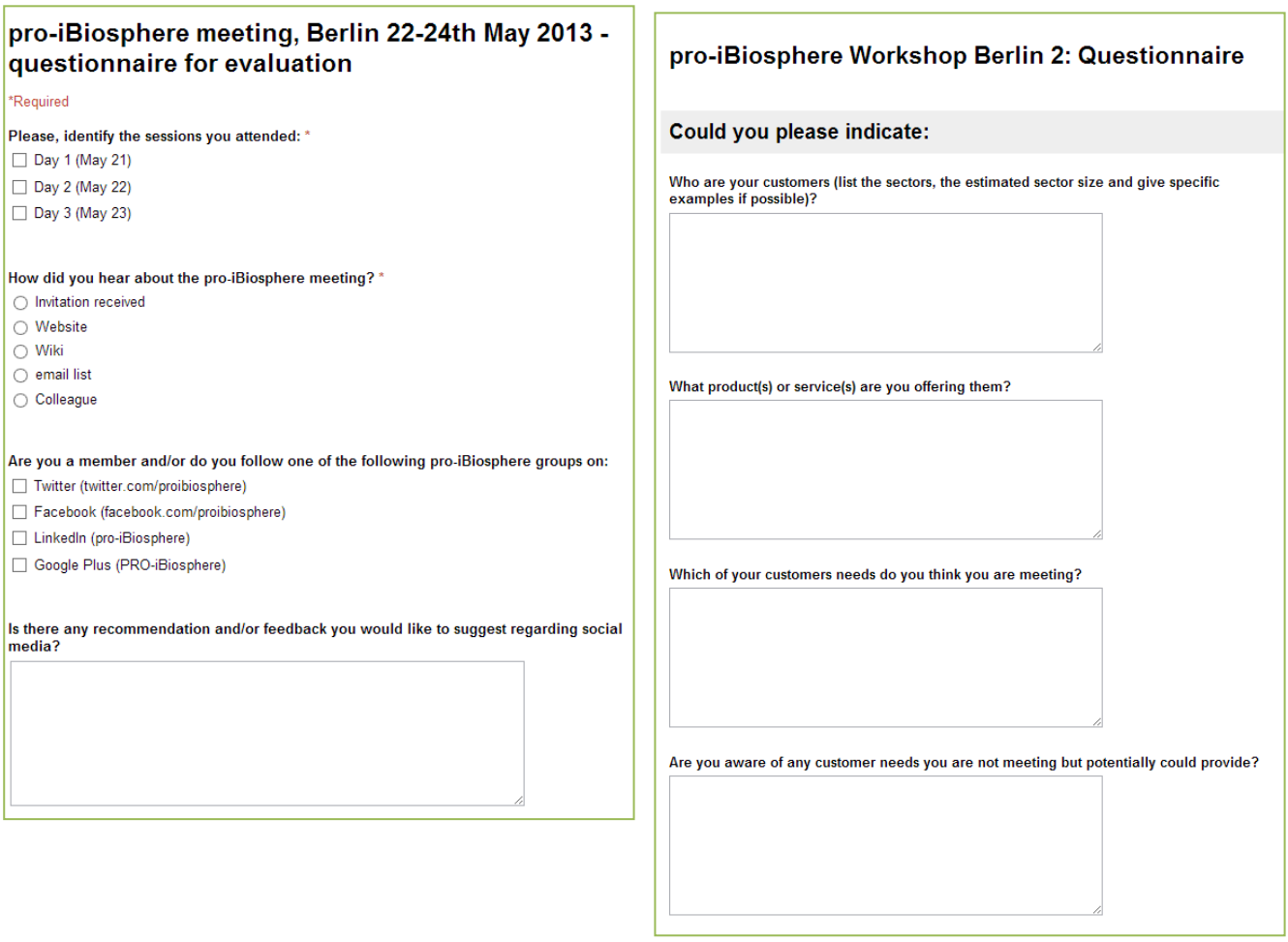
3.2.1 – Project meetings and final event

During the reporting period, the project organised two series of meetings:

- Meeting #2 in Leiden from February 11-13, 2013: 3 workshops – **more than 100 participants**
- Meeting #3 in Berlin from May 21-23, 2013: 3 workshops – **more than 65 participants**

Event survey

An event survey template is available on the website. This allows participants to evaluate event success and participants' satisfaction (see Figure 41).



pro-iBiosphere meeting, Berlin 22-24th May 2013 - questionnaire for evaluation

*Required

Please, identify the sessions you attended: *
- ☐ Day 1 (May 21)
- ☐ Day 2 (May 22)
- ☐ Day 3 (May 23)

How did you hear about the pro-iBiosphere meeting? *
- ○ Invitation received
- ○ Website
- ○ Wiki
- ○ email list
- ○ Colleague

Are you a member and/or do you follow one of the following pro-iBiosphere groups on:
- ☐ Twitter (twitter.com/proibiosphere)
- ☐ Facebook (facebook.com/proibiosphere)
- ☐ LinkedIn (pro-iBiosphere)
- ☐ Google Plus (PRO-iBiosphere)

Is there any recommendation and/or feedback you would like to suggest regarding social media?

pro-iBiosphere Workshop Berlin 2: Questionnaire

Could you please indicate:

Who are your customers (list the sectors, the estimated sector size and give specific examples if possible)?

What product(s) or service(s) are you offering them?

Which of your customers needs do you think you are meeting?

Are you aware of any customer needs you are not meeting but potentially could provide?

Figure 41. pro-iBiosphere events questionnaires

3.2.2 – Event calendar and participation in events

To ensure the overall project dissemination effort is maximized, an "add event" form (see Figure 42) was been added to the website. This allows partners' to report online their contribution, and generates news exposing the project activities and participation to other events. All partners' presentations have been added to the pro-iBiosphere website in the documents section: www.pro-ibiosphere.eu/library.

Figure 42. "Add event" form on the project website

For more efficiency and in order to maximize the project impact, the list of events is available on the pro-iBiosphere Wiki page (http://wiki.pro-ibiosphere.eu/).

In total, project partners participated in 13 events over the first project period (Sep. 2012 to Aug. 2013). 3 of these events took place overseas (China, Austria, Taiwan, the United States) and 3 events were organised by the European Commission. In the case of non-EC related events, project partners disseminated the project by delivering a presentation (event agendas and presentations are available in Annex 22). The list of events contributions per quarter is available in Tables 9 - 11.

Table 9. Partners' contributions to events - M1 to M4

	FIRST QUARTER: SEP. TO DEC. 2012			
Date	22-23 Oct., 2012	22-26 Oct., 2012	20 Nov., 2012	Nov. 30, 2012,
Place	Leiden, the Netherlands	Beijing, China	Leiden, the Netherlands	Meise Belgium
Event name	**Flora of the Guianas Biennial meeting and seminars**	**2012 TDWG annual conference**	**Naturalis Colloquium**	**Annual meeting on plant ecology and evolution**
Type	Seminar	Conference	Colloquim	Conference
Short description	A biennal meeting to assess the progress made the Flora of the Guianas and the actions that need to be taken during the next 2 years.	Biodiversity Information Standards, main theme: "Toward an International Infrastructure for Biodiversity Information"	The colloquim offers an opportunity for scientists (also visiting scientists from abroad) to get together to discuss their projects/research activities and present their progress and/or achievements, a.o.	A meeting of the Royal Botanical Society of Belgium to bring together botanists from Belgium and surrounding countries
Level	International	International	National	International
Partner	**Naturalis**	**Pensoft**	**Naturalis**	**NBGB**
Website/ contact	Sylvia.MotaDeOliveira@naturalis.nl	www.tdwg.org	Nicole.devoogd@naturalis.nl	http://www.br.fgov.be/RESEARCH/MEETINGS/ampee1.php

Table 10. Partners' contributions to events - M5 to M8

	SECOND QUARTER: JAN. TO APR. 2013		
Date	Feb. 18 to 22 Feb. 2013	6 - 7 March 2013	Mar. 19-20, 2013
Place	Vienna, Austria	Brussels	Brussels
Event name	BioSyst.EU 2013 Global systematics!	**10th Concertation Meeting on e-Infrastructures**	**Towards a Roadmap for Research Infrastructures on Biodiversity and Ecosystem research in Europe**
Type	Conference	Meeting	Workshop
Short description	Scientific enhancement, systematics, micro- and macro-organisms	This meeting focuses on the 7th Framework Programme and debates issues related to an e-infrastructures activity during Horizon 2020.	To develop synergies between ESFRI research infrastructures (RI), existing research infrastructures implemented as Integrating Activities (IA), Integrated Projects (IP) and Joint Programming Initiatives (JPI) which are relevant to Biodiversity and Ecosystem research.
Level	International	European	European
Partner	**Pensoft**	**Naturalis**	**Naturalis**
Presentation title			
Website/contact	Gerry Schneider: gerry.schneider@univie.ac.at http://biosysteu.univie.ac.at/		Wouter Los (LifeWatch) : w.los@uva.nl

Table 11. Partners' contributions to events - M9 to M12

	THIRD QUARTER: MAY TO AUG. 2013					
Date	May 12, 2013	May 20, 2013	June 4-5	June 10, 2013	June 23-28	August 27-31, 2013
Place	University of Kansas, Lawrence, USA	Online	Edinburgh	Brussels	Taiwan	Bogor, Indonesia
Event name	**Symposium of the biodiversity research group**	**On LineWorld Flora Technical group**	**Hackathon meeting (semantic web)**	**National Botanic Garden of Belgium**	**19th International Congress of Arachnology**	**9th International Flora Malesiana Symposium**
Type	Lecture	Meeting	Meeting	Lecture	Congress and Symposium	Symposium
Short description		Discussion of pro-iBiosphere in relation to the Online World Flora at a Technical group meeting of the Online World Flora (Response to Target 1 of the Global Strategy for Plant Conservation of he Convention on Biological Diversity)		Part of the Garden's regular lunchtime seminar series.	Some topics discussed in this conference include Asia as a gold mine for arachnologists or spider enthusiasts along with a brief report on the history and present situation of spider taxonomy in Asia	Exchange of knowledge, ideas, and opinions on plant systematics between botanists
Level	International / students	International	International	National	International	International
Participant		10 participants			231 participants	
Partner	**Plazi**	**RBGK**	**FUB-BGBM**	**NBGB**	**Naturalis**	**RBGK, BGBM**
Website/ contact	agosti@amnh.org	a.paton@kew.org	Proceedings: http://stories.rbge.org.uk/archives/3846	http://prezi.com/lwnu6cb0tp7z/present/?auth_key=r971cgc&follow=zp3-pi_naqoq&kw=present-lwnu6cb0tp7z&rc=ref-31552629		http://www.fm9.biologi.lipi.go.id

3.2.3 – Contribution to articles and publications

As for the event calendar, a target list of scientific journals has been prepared by the DL, and the pro-iBiosphere "add external document" form enables partners to report any paper publication and to disseminate the corresponding information on the news section of the website (see Figure 43 below).

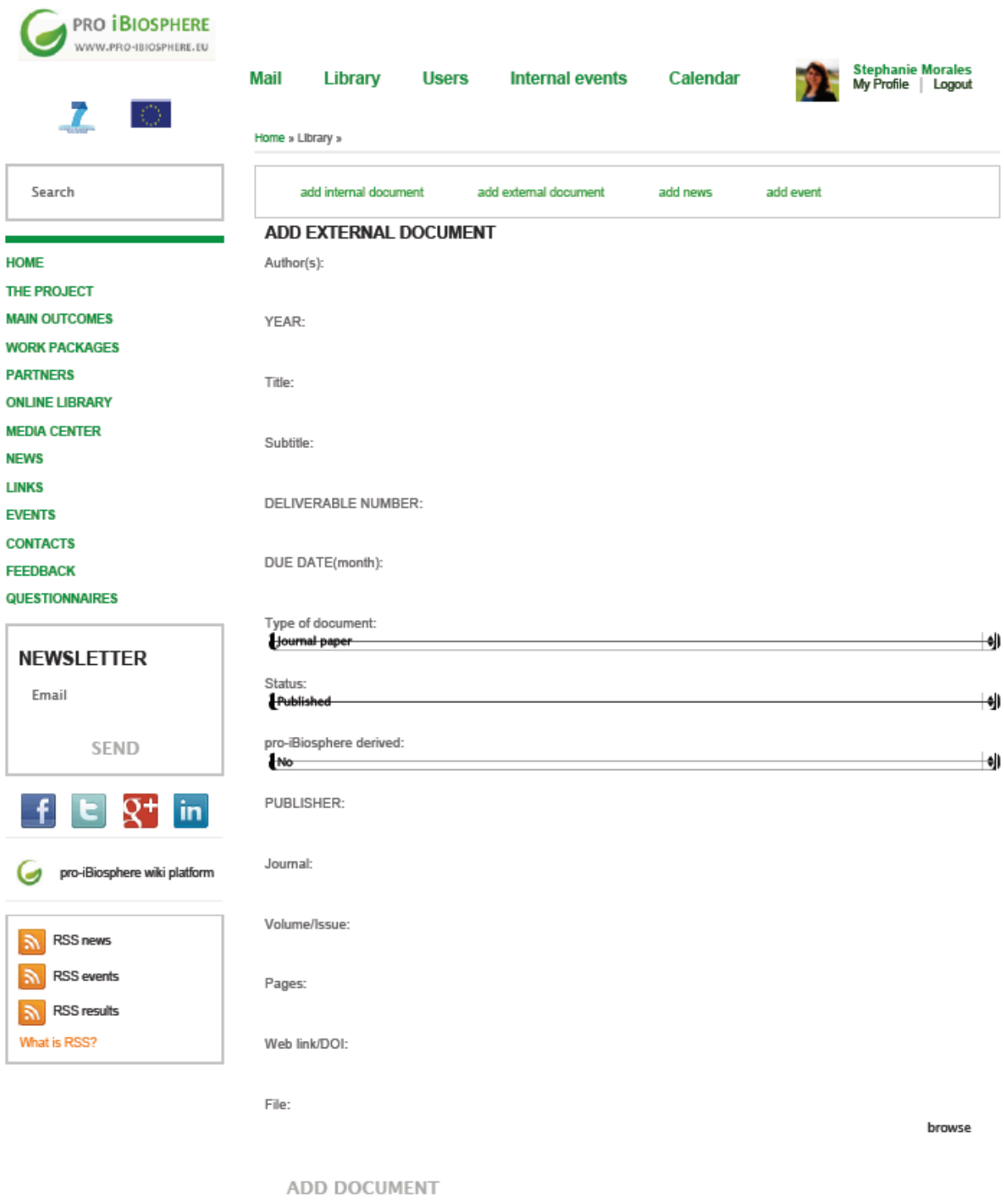


Figure 43. "Add external document" form on the project website

Two articles have already been published in the first project period (see Table 12):

- "Implementation of TaxPub, an NLM DTD extension for domain-specific mark-up in taxonomy, from the experience of a biodiversity publisher" in the National Center for Biotechnology Information (NCBI) website: http://www.ncbi.nlm.nih.gov (full text available in Annex 23)
- "An appraisal of megascience platforms for biodiversity information" in MycoKeys Journal: www.pensoft.net/journals/mycokeys (full text available in Annex 24)

More publications are foreseen in journals and books specialized in taxonomy but also through online media such as specific websites and through the use of digital documents. All relevant articles published by consortium members are available on the pro-iBiosphere website.

Table 12. Partners' contributions to publications

Partner	Date	Title	Authors	Journal / Website / Magazine	Type	Level	Link
Accepted publications							
Pensoft, Plazi	October 2012	**Implementation of TaxPub, an NLM DTD extension for domain-specific markup in taxonomy, from the experience of a biodiversity publisher.**	Penev L, Catapano T, Agosti D, et al.	*Journal Article Tag Suite Conference (JATS-Con) Bethesda (MD): National Center for Biotechnology Information (US)*	Journal (online)	International	http://www.ncbi.nlm.nih.gov/books/NBK100351/
Pensoft, Plazi	December 2012	**An appraisal of megascience platforms for biodiversity information**	Dagmar Triebel, Gregor Hagedorn, Gerhard Rambold	*MycoKeys*	Journal (online)	International	http://www.pensoft.net/journals/mycokeys/article/4302/an-appraisal-of-megascience-platforms-for
Submitted publications							

3.3 – Impact of all dissemination activities

Dissemination activities are key to enhance the impact of the pro-iBiosphere project results and to ensure project awareness among its stakeholders. The dissemination strategy as defined in chapter 1 above (through the drafting of the DCIP) details the project tools to be developed and disseminated and the different channels to be used by the project to maximize its impact to the relevant audience. The impact of the related project dissemination activities can be measured as detailed in Table 13.

Further impact of dissemination actions is foreseen in the next reporting period and will be reported at M24, as dissemination activities are closely linked to the other Work Package activities; to the availability of project outcomes, the organisation of project meetings and participation in other events.

Table 13. Impact of the different dissemination activities of pro-iBiosphere project

Types of activities	**Impact measurement** (for the reporting period)	**Quantitative results** (end of August 2013)
PROJECT DOCUMENTATION	**Flyers/brochures/postcards** Number of copies printed and disseminated through project and external events and project partners' network	500 of each
	Posters Number of copies printed and disseminated through project and external events and project partners'	10 posters
SOCIAL MEDIA	**LinkedIn** – Number of members – Constituency of members	56 • Research: 54% • Environmental services: 7% • Higher Education: 5% • Computer software: 3% • Education Management: 4% • Libraries: 4%
	– Number of discussions	12
	Twitter - Number of tweets - Number of followers - Number of following	159 100 127
	Facebook - Number of likes - Number of posts - Number of photos - Number of links	86 126 107 63
	Google + - Number of +1 - Number of posts - Number of pictures - Number of links	30 52 17 49

WEBSITE	- All visits - Average number of visits per month - Number of returning visitors - Number of new visitors - Average visit duration - Number of pages per visit - Visits by country - ICP users	11 192 1 244 6 500 4 692 3 minutes 24 seconds 5,07 Europe > 81%; US: 3% 43
WIKI	- All visits - Average number of visits per month	21 717 2 715
NEWSLETTER	- Number of newsletter sent - Size of the database / dissemination list	3 + 400 contacts
SYNERGIES / INTERLINKING WITH OTHER INITIATIVES	- Number of initiatives with which linkages have been established - Number of AB members	More than 40 5
CONTRIBUTION TO EVENTS AND PUBLICATIONS	- Number of contributions to external events - Number of articles published	12 2
HELPDESK SERVICES	- Number of helpdesk requests received on the website and/or LinkedIn	9 requests received and treated

4 – DISSEMINATION ACTIVITIES PLANNED FOR THE SECOND REPORTING PERIOD

4.1 – Dissemination and communication tools

4.1.1 – Project documentation

pro-iBiosphere flyers and posters will be prepared on the occasion of upcoming events such as:

- BIH2013 (to be held in M13)
- ICT 2013 (to be held at M15)
- The project final event, to be held in Brussels / Leiden, Netherlands at M22.

In August 2013 partners developed 3 posters promoting the pilot activities. The posters are available on the following links:

Pilot 1: Chenopodium vulvaria L.

Title of the poster: Tracking biogeographical change from its footprints in botanical literature

Link: http://figshare.com/articles/Tracking_biogeographical_change_from_its_footprints_in_botanical_literature/766340

Pilot 2: Common Registration Model

Title of the poster: A common automated, pre-publication registration model for higher plants (International Plant Names Index, IPNI), fungi (Index Fungorum, MycoBank) and animals (Zoobank).

Link: http://pro-ibiosphere.eu/media/center/4366

Pilot 3: Cybertaxonomy

Title of the poster: Interoperability model between PLAZI and the EDIT CDM platform

Link: http://wiki.pro-ibiosphere.eu/w/media/9/9d/PosterRome_Cybertaxonomy_BGBM.pdf

Partners involved in other pro-iBiosphere pilots plan to design additional posters in the next reporting period.

4.1.1.1 Four-pages brochure

In order to ensure the sustainability of the project while maintaining and encouraging the network activities after the project conclusion at local, national and European scale, Pensoft will design in M22 a 4-pages brochure when most project outcomes will be available. It will contain the project results and will be used as a dissemination tool (as has been the case with the brochure made at the start of the project).

4.1.1.2 Press releases

Additional press releases will be prepared by partners in order to announce achievement of milestones and key deliverables. They will be disseminated through project dissemination channels, partners' organisations and external dissemination channels (e.g. other initiatives websites, EurekAlert, European Commission websites).

4.1.2 – Project website

The pro-iBiosphere website will be constantly updated to make sure the project developments are reported in real time. News will be posted on a regular basis according to the news calendar prepared for this purpose.

Around 40 short news either on project activities (events, pilots, contribution to events and articles) and on the industry in general (new projects, other events, biodiversity research highlights) will be prepared and posted on the website. -

4.1.5 – Other communication tools

It is expected that helpdesk services will increase and that the project will develop further synergies and contacts with new stakeholders thanks to the newly created “info@pro-ibiosphere.eu” contact email address. This tool intends to be the major point of contact with the project and will be systematically added to all project dissemination tools whenever possible.

4.2 – Dissemination of the project through outreach activities

4.2.1 – Event calendar and participation in events

The project plans to participate in 4 external events in the coming months (see Table 14).

*pro-iBiosphere, in collaboration with e-ScienceTalk (supporting the dissemination of e-Infrastructure projects) and other projects from the e-Infrastructure Unit such as CHAIN-REDS and ei4Africa prepared and submitted proposals to the call for networking sessions and the call for exhibition booth (see Annexes 25, 26 and 27). Following the release of the results in July 2013 (M11), pro-iBiosphere will participate to an exhibition stand on "e-Infrastructures at work and the future of research" in collaboration with these projects and will co-organise a networking session on the theme "What does the future hold for e-science and big data?" that will be held on November 6, 2013.

This active participation of the project in ICT2013 will represent a great opportunity for project partners to disseminate project information and latest results to delegates with common or similar topical interests and to develop synergies with other FP7 initiatives.

Table 14. Partners' participation to future events

	NEXT REPORTING PERIOD: PROSPECTIVE EVENTS							
Date	Sep. 2013	Sep. 3-6, 2013	Sep. 17-20, 2013	Sep. 17-19, 2013	Sep. 18-20, 2013	24-26 September 2013	Oct. 28- Nov. 1, 2013	Nov 6-8, 2013
Place	Edinburgh	University of Sapienza, Roma, Italy	Brussels, Belgium	Oxford, UK	Madrid, Spain	Berlin, Germany	Florence, Italy	Vilnius, Lithuania
Event name	**CETAF – ISTC Meeting**	**Biodiversity Informatics Horizon Conference 2013**	**3rd European Conference for the Barcode of Life**	**14th Workshop of the Genomic Standards Consortium**	**Workshop on Strengthening the cooperation between the US & the EU in the field of Environmental Research Infrastructures & e-infrastructures meeting**	**Second BiodiversityKnowledge Coference: "Towards a future Network of Knowledge on biodiversity & ecosystem services in Europe"**	**TDWG Annual Meeting 2013**	**ICT event 2013**
Short description		The purpose of the conference is to review Biodiversity Informatics in the context of the LifeWatch vision, the decadal priorities for biodiversity informatics expressed in the BMC Ecology Whitepaper (in press) and the EC roadmap workshop on biodiversity infrastructures (took place 19-20 March 2013)	The conference is an opportunity for scientists, who are involved in any aspect of DNA barcoding, to get together to discuss their research.	The goal of this meeting is to bring together founding members of of the GOs Network with core members of the GSC.		The objective of this second conference is to discuss and finalize the recommended design of a future Network of Knowledge (NoK) on biodiversity and ecosystem services in Europe.	Virtual Communities for Biodiversity Science	The event will focus on Horizon 2020 - the EU's Framework Programme for Research and Innovation for 2014-2020.
Type	Meeting	Conference	Conference	Workshop	Workshop	Conference	Conference	Exhibition and Conference
Partner	**BGBM?**	**Pensoft, BGBM, Plazi, NBGB, RBGK, Naturalis, MfN**			**Naturalis?**	**BGBM, RBGK?**	**BGBM, Pensoft, NBGB, Plazi, RBGK, MfN**	**Sigma, Pensoft,Plazi, RBGK**
Level	International	International	International	International	International	European	International	European
Website/ contact		Dave Roberts dmr@nomencurator.org http://www.biovel.eu	http://ecbol3.myspecies.info/	http://gensc.org/gc_wiki/index.php/GSC_14 mail: gensc-developers@lists.gensc.org		http://www.biodiversityknowledge.eu/conferences/second-conference-berlin-september-2013	http://www.tdwg.org/conference-2013/	http://ec.europa.eu/digital-agenda/en/ict-2013

4.2.2 – Contribution to articles and publications

In a similar way, the target list of scientific journals (see Annex 29) will be regularly updated to make sure the project impact is enhanced in the most relevant media. The current target list includes:

- Biodiversity Data Journal (Pensoft)
- Biodiversity Informatics (Oxford Journals)
- BioMed Central
- The Committee on Data for Science and Technology (CODATA)'s Data Science Journal (*International Council for Science)*
- F1000 Research
- Frontiers Journal Series (online journals)
- Geoscience Data Journal
- GigaScience?
- Hindawi publishing
- Mendeley
- Pensoft Journals (PhytoKeys, MycoKeyS)
- Taxonomic Literature II (TL-2 - Smithsonian Libraries)
- Wiley Online Library

A number of paper publications are expected to be released in the coming period and will be disseminated on the project website (news section) and on upcoming eNewsletters.

4.3 – Final project event

During the next reporting period, Sigma Orionis (the Task leader) will plan and organise an open (registration free) event (probably in Leiden, in June 2014, the exact location needs to be confirmed). Sigma will take care of the event concept, agenda, invitation of speakers, promotion, i.e., in close liaison with all project partners.

The aim of the meeting is to present the outputs of the project and its sustainability perspectives to a targeted audience of 60 selected stakeholders (i.e. European or global stakeholders likely to take the best advantage of project outputs and to consider a possible involvement in the sustainability phase of the project). The outputs will be reported in detail in the D5.2.2 deliverable.

Further progress is expected to happen in the next reporting period as regards to the organisation of the final project event.

CONCLUSIONS

The dissemination activities of the project are running smoothly. The appropriate actions have been undertaken to ensure project awareness and involvement of the stakeholders' community (in particular through the use of social media).

Several dissemination activities were undertaken and various tools were developed. All project partners have been actively involved in the dissemination of the project results by providing content and promoting the project among their organisation and various contacts/network.

It is expected that in the next project period, project partners will continue their efforts to widely disseminate the project results and activities while the project continues to outreach to contacts and create synergies with major stakeholders and initiatives. These dissemination activities add to the purpose of paving the way for the pro-iBiosphere project to be a leading initiative in the field of biodiversity data.

ANNEXES

Annex 1 - Dissemination action plan

	Targeted Stakeholders to be reached / involved												
Types of activities	POLICY MAKERS			ENVIRONMENTAL OR NATURAL SCIENCES RESEARCHERS						VOCATIONAL AND ACADEMIC		BIODIVERSITY CITIZEN SCIENCE PROJECTS	
	Governmental organisations	NGOs	Intergovernmental platforms for biodiversity and ecosystem services	Research labs	Academia	Institutes	Industry	Consultancies	Government	Teachers	Students	EC funded projects	Other initiatives
Project Identity													
Logo & identity													
Templates													
Project documentation													
Fact sheet													
Poster													
4 pages brochure													
Press and other media													
Press releases													
Project events													
Workshops													
Final event													
Online dissemination													
Website													
eNewsletters													
Biowikifarm													
Social Networks													
LinkedIn													
Twitter													
Google+													
Facebook													
Contribution to other events / publications													

Caption

Non direct impact

Direct impact

Annex 2 - Dissemination and measurement of project outcomes

pro-iBiosphere - Dissemination & measurement of project outcomes

	Outcome 1. Dissemination of project objectives and expectations in order to raise awareness of the project	Outcome 2. To spread project excellence	Outcome 3. To exploit project results
Audience / Whom to disseminate?	Supporters, interested parties or stakeholders	Target groups (mostly researchers in biodiversity)	Target groups, policy makers
Aim - Why to disseminate	To inform potential stakeholders and the general public	To develop synergies and to involve them in project activities	To involve them in the project follow-up actions
Timing - When to disseminate	Early in the project	When first outcomes become available (M6)	End of the project (M22)
Methods/Activities for dissemination	Logo; templates; press release on wiki, wiki site, web site, web 2.0 services, fact sheet, project poster, mailing lists	Project meetings, Website/Wiki feed with info, social networks communities, synergies with other initiatives, participation to other events, publications of articles	Final project event 4-pages brochure Website/Biowiki update
Responsibilities (partner vs activity)	logo and templates (Sigma); press release on wiki (Sigma); wiki site (Plazi), web site (Pensoft); web 2.0 (Pensoft); poster (Pensoft)	Project meetings (resp. partners); Website & social networks (Pensoft), contributions (Sigma and all), synergies development (all)	Final project event (Sigma); 4-pages brochure and Web (Pensoft); Wiki (Plazi)
Resources - Person months?	**5,2**	**6,8**	**9,5**
Measure - How do we know our performance?	Number of factsheets disseminated, number of press release disseminated	Attendees survey, website and wiki visits, number of eNewletter subscribers, social networks members, contributions, posters disseminated	Attendees survey, number of brochure disseminated, website and wiki visits, useful contacts established

Annex 3 - Table of other biodiversity projects and initiatives

EU funded projects on biodiversity July 2013

Project	Website	Description
4D4Life	www.4d4life.eu	Distributed Dynamic Diversity Databases for Life
agINFRA	www.aginfra.eu	A data infrastructure to support agricultural scientific communities promoting data sharing and development of trust in agricultural sciences
ANAEE	www.anaee.com	Structuring Infrastructures for the ANAlysis and Experimentation on Ecosystem
Biodiversa2	www.biodiversa.org	Cooperation and shared strategies for biodiversity research programmes in Europe
BiodiversityKnowledge	www.biodiversityknowledge.eu	BiodiversityKnowledge is an initiative by researchers & practitioners to help all societal actors in the field of biodiversity & ecosystem services to make better informed decisions
BIOFRESH	www.freshwaterbiodiversity.eu	To build a global information platform for scientists and ecosystem managers with databases of global freshwater biodiversity
BioVeL	www.biovel.eu	Virtual e-laboratory that supports research on biodiversity issues using large amounts of data from cross-disciplinary sources
CReATIVE-B	creative-b.eu	Coordination of Research e-Infrastructures Activities Toward an International Virtual Environment for Biodiversity
EBONE	www.ebone.wur.nl	The project has developed a system or data collection that can be used for international comparable assessments.
EDIT	www.e-taxonomy.eu	Network of excellence gathering 28 major institutions devoted to knowing the living world better with the support of the EC
EMBRC	www.embrc.eu	European Marine Biological Resource Centre
EUBrazilOpenBio	www.eubrazilopenbio.eu	EU-Brazil Open Data and Cloud Computing e-Infrastructure for Biodiversity
EUBON	http://www.eubon.eu/	Assessing global biological resources: the European contribution to the Global Earth Observation Biodiversity Observation Network (GEO BON)
EXPEER	www.expeeronline.eu	Distributed Infrastructure for EXPErimentation in Ecosystem Research
FishBase	www.fishbase.org	A global encyclopaedia of fishes
i4Life	www.i4life.eu	Establishing of a virtual research community interlinking and harmonizing the taxonomic catalogues to create an enhanced list of the entire set of organisms
iMarine	www.i-marine.eu	Hybrid Data Infrastructure service & Virtual Research Environments
INCREASE	www.increase-infrastructure.eu	An Integrated Network on Climate Change Research Activities on Shrubland Ecosystems
INTERACT	www.eu-interact.org	International Network for Terrestrial Research and Monitoring in the Arctic
JERICO	www.jerico-fp7.eu	Towards a Joint European Research Infrastructure Network For Coastal Observatories
KNEU	www.biodiversityknowledge.eu	Developing an open networking approach to boost the knowledge flow between biodiversity knowledge holders and users in Europe

LifeWatch	www.lifewatch.eu	E-Science European Infrastructure for Biodiversity and Ecosystem Research
MARBEF	www.marbef.org	Marine Biodiversity and Ecosystem Functioning EU Network of Excellence
PESI	www.eu-nomen.eu/pesi	A Pan-European Species directories Infrastructure
SYNTHESYS	www.synthesys.info	Produce an integrated European resource for research users in the natural sciences.
TESS	www.tess-project.eu	Design of a transactional environmental decision support system, linking central policy planning to local livelihoods
ViBRANT	www.vbrant.eu	To set up the means, tools and infrastructure to produce a more rational and a more effective framework for European biodiversity research

Other biodiversity projects and initiatives

Project	Website	Description
Barcode of Life (BOL)	www.barcodeoflife.org	Identifying Species with DNA Barcoding
Belgian Biodiversity Platform	www.biodiversity.be	The Belgian Biodiversity Platform is a science-policy interface offering a privileged access to primary biodiversity data and research information
Biodiversity Heritage Library	www.biodiversitylibrary.org	Consortium of natural history and botanical libraries that cooperate to digitize and make accessible the legacy literature of biodiversity
Biodiversity-CHM	http://en.biodiversiteit.n	The Netherlands Biodiversity Portal aims to provide access to a maximum of biodiversity information related to the Netherlands
Biodiversity International	www.bioversityinternational.org	Research-for-development organization working with partners worldwide to use & conserve agricultural & forest biodiversity forproductive and resilient ecosystems
Biodiversity in Good Company	www.business-and-biodiversity.de	To create space for innovation & investment in order to pave the way for ecologically sound technologies, products & services to be successfully introduced into the marketplace
BHL-Europe	www.bhl-europe.eu	Brings together existing EU digital collections of biodiversity literature and will provide access by a multilingual web portal
BioNET	www.bionet-intl.org	International initiative dedicated to promoting the science & use of taxonomy
BioStor	www.biostor.org	BioStor provides tools for extracting, annotating, and visualising literature from the Biodiversity Heritage Library
BISE	www.biodiversity.europa.eu	Biodiversity Information System for Europe is a partnership between the EC & the EEA. It is a single entry point for data & information on biodiversity in the EU
CBD	www.cbd.int	The conservation, the sustainable use of the components of biological diversity, the fair and equitable sharing of the benefits arising out of the utilization of genetic resources
CETAF	www.cetaf.org	Networked consortium formed to promote training, research and understanding of systematic biology and palaeobiology

DIVERSITAS	www.diversitas-international.org	International research programme aiming at integrating biodiversity science for human well-being
Dryad	www.datadryad.org	International repository of data, governed by a consortium of journals, underlying peer-reviewed articles in the basic and applied biosciences
ELIXIR	www.elixir-europe.org	Pan-European research infrastructure for biological information managing and safeguarding the massive amounts of data being generated every day by publicly funded research.
Endowment Fund for Biodiversity (FDB)	www.fdbiodiversite.org/en	The FDB is intended for businesses & the general public to develop actions for the preservation of animal & plant species, and actions to inform & education
eMonocot	www.e-monocot.org	eMonocot aims to create a global online resource for monocot plants.
Encyclopedia of Life (EoL)	www.eol.org	To increase awareness & understanding of living nature in an Encyclopedia of Life that gathers, generates & shares knowledge in a digital resource
ERMS	www.marbef.org	European Register of Marine Species
European Info® System for Alien Species		To facilitate enhanced knowledge gathering and sharing and providing support to a European Invasive Alien Species (IAS) information system
Flora of North America	www.floranorthamerica.org	Information on the names, taxonomic relationships, continent-wide distributions, and morphological characteristics of all plants found in North America north of Mexico
GBIF	www.gbif.org	GBIF promotes and facilitates the mobilization, free and open access, discovery and use of biodiversity information via the Internet.
GBRCN	www.gbrcn.org	Global Biological Resource Centre Network
GEOSS	www.earthobservations.org/geoss.shtml	Global Earth Observation System of Systems
Global Names US project		
IAPT	www.iapt-taxon.org	To promote all aspects of botanical systematics and its significance to the understanding and value of biodiversity
iDigBio	www.idigbio.org	Integrated Digitized Biocollections, the National Resource for Advancing Digitization of Biodiversity Collections (ADBC) funded by the US National Science Foundation
Index Fungorum	www.indexfungorum.org	International project to index all formal names in the Fungi Kingdom
IPBES	www.ipbes.net	IPBES is an interface between the scientific community and policy makers that aims to build capacity for and strengthen the use of science in policy making
IPNI	www.ipni.org	Database of the names and associated basic bibliographical details of seed plants, ferns and lycophytes

MycoBank	www.mycobank.org	On-line database aimed as a service to the mycological and scientific society by documenting mycological nomenclatural novelties and associated data
Nordic LifeWatch		Aiming at creating the e-science infrastructure for Biodiversity and Ecosystem Research. Funded by NordForsk
Pl@ntNet	www.plantnet-project.org	Plant Computational Identification & Collaborative Information System
Plants2020 (GSPC)	www.plants2020.net	A toolkit to support national and regional implementation of the Global Strategy for Plant Conservation
Species 2000	www.sp2000.org	Federation of database organisations working closely with users, taxonomists and sponsoring agencies to create a validated checklist of all the world's species
SynBioSys	www.synbiosys.alterra.nl	An information system for the evaluation and management of biodiversity among plant species, vegetation types and landscapes
TDWG	www.tdwg.org	Affiliated with the International Union of Biological Sciences & focusing on the development of standards for the exchange of biological/biodiversity data
TRY Initiative on Plant Traits	www.try-db.org	Quantifying and scaling global plant trait diversity
UNEP World Conservation Monitoring Centre (UNEP-WCMC)	www.unep-wcmc.org	Providing authoritative, relevant & timely information for countries, MEAs, organizations and companies to use in the development & implementation of their policies & decisions
VertNet	www.vertnet.org	Harnessing new technologies to meet the needs of both interdisciplinary science and research relevant to a changing world
ZooBank	www.zoobank.org	Open access website intended to be the official registry of zoological nomenclature. 1.5 million species entered

Annex 4. Social Media main features and applications

TWITTER

Direct messages

Besides short messages, Twitter also allows to send private messages. These are called direct messages or DMs and can basically be described as Twitter's version of email. Send a direct message by either visiting that person's profile and clicking the "message" link on the right-hand side of the user's profile, or by beginning your tweet with D USERNAME and then including your message.

NOTE: you can only DM people if you follow them and they follow you back, and you're still only allowed 140 characters per message

Favorites

Use the Twitter "Favorites" feature as a list of project testimonials. When you hover your mouse over an individual tweet in your Twitter stream, a few options appear, including the option to "Favorites" the tweet. When you click the little star that appears, it turns yellow, and that tweet gets added to your "Favorites" tab. The next time someone asks about your project, send him the link to your Favorites page!

Adding and following content

There are numerous tools for adding content, monitoring content and conversations including Twitvid (video sharing), TweetDeck, Salesforce.com, HootSuite, and Twitterfeed.

Live feed / Twitter stream displayed during events

In order to motivate delegates to join the Twitter discussions and to demonstrate what's happening in parallel on Twitter, you can display the live feed on site (through the website). There are a number of tools that can allow this (Twitterfountain, Visibletweets.com, Tweetwally.com, Twitterfall).

Post-conference review

You can create a post-conference review, using Storify or TweetArchivist. It can be used as a kind of « event feedback / comments » and to analyse tweets, such as most used word, topic or contributors.

FACEBOOK

Photo Album

Facebook allows you to upload an unlimited number of photos to your account. Photos can be made into photo albums, shared with contacts, or posted on your wall.

Videos

During the time that Facebook released its platform, it also released an application of its own for sharing videos Facebook Video can support up to 1080p format and even 4K resolution. Users can upload videos, or add videos through Facebook Mobile. Videos cannot be placed in categories, whereas photos are sorted by albums.

Events

This is a useful place to invite a large group of contacts for corporate events.

Insights (analytics)

Insights allow you to see the analytics behind the engagement on your page. You can measure likes, reach, the number of people talking about your page, and the number of check-ins at your business. You can see the increase in likes your page has, as well the number of "Friends of Fans."

This number is important because you can see the potential number of people who can see your content through your current fans. Remember, when a fan likes, comments, or shares some of your content, that interaction is visible to their friends.

Connection to applications

You can connect various apps to your group page. A few of these apps include Pinterest, Instagram and Twitter. These apps allow you to connect your social media accounts, and other applications that may be useful for your group.

File-Sharing

You can upload files from your computer to Groups and also share files to Facebook Groups using Dropbox's cloud-based storage system. This enables people to upload files that they already have stored in the cloud to Groups — as long as they are stored in Dropbox.

Group Messages

You can message people in a group.

NOTE: Anyone in a conversation started in a group can add other people to the conversation, whether those people are in the group or not. Anyone added will also see all previous messages in the conversation.

LINKEDIN

SlideShare

You can use this application to bring in presentations uploaded to SlideShare. It gives a chance to show the project expertise visually. Also, you can embed video or audio into your SlideShare presentation that will automatically play when someone visits your LinkedIn Profile. This can certainly be an effective way to make your profile stickier. Most likely, if the visitor hears your voice they will scroll down to this part of your profile.

Pools

The LinkedIn Polls application allows you to essentially conduct your own research, either simply within your own network or to a more targeted audience of professionals, which is a paid resource. You must make sure that your poll is simple to understand and that your questions are compelling. Otherwise, you may not get much response.

Announcement

LinkedIn Groups are powerful in that LinkedIn allows group managers to send out an announcement to all of its members at most once a week. This should not be used every week, nor should it be used for purely self-promotional means as the community could perceive sending out announcements in this manner as spam.

Group Statistics

This information enables to figure out if a LinkedIn Group you own is active or not, but it's also a way to gain insights for generating leads from LinkedIn. LinkedIn Group Statistics provides information on the number of group members, how active those members are and also gives you other key insights about the group's members such as locations, seniority, function, and industry.

GOOGLE +

Direct Connect

Google+ Direct Connect lets you quickly navigate to a Google+ page (and even add that page to your circles) when using Google Search. For example, if you searched for the query '+youtube' or '+pepsi,' you could be immediately taken to the YouTube Google+ page, or the Pepsi Google+ page, and given the option to add the page to your circles. Google is still experimenting with Google+ Direct Connect and it won't work for every Google+ page.

Additionally, some users won't have access to Direct Connect. As time goes on, Google will make Direct Connect more widely available.

Circles

Users can share what they want with whom they want by organizing their co-workers and other contacts into circles, such as those for different teams, projects, special-interest groups, and customers.

Hangouts

Users can communicate face-to-face with others in multi-way video rooms called hangouts without complicated audio and video setup. Hangouts provide screen sharing and integrate with Google Drive files for collaborative document editing.

Streams

Users can find and engage with content that's shared with them in their streams.

Photo Albums & Videos:

Similarly to Facebook, Google+ gives you the option to upload and share photo albums and videos. What is different about Google + photo sharing options is that it gives you the opportunity to upload a whole photo album straight linked to a post, as opposed to just one image allowed in Facebook.

Blog functionality

Google+ is closest to the functionality of a blog, even though the editing possibilities are limited. But it allows to write a story, and later on to add or change it, for example following a meeting or input. These contributions can be made private, open to groups or the public. It could be used to share a short summary of an event that might also be published on the project website.

Annex 5. Comparative table of the 4 social media tools used by the project

Social media	Type	Launch	Rise (US) Jul. 2011 - 2012	Brand management	Exposure	Traffic to website	Search Engine Optimisation
Facebook	*Social network*	**2004** Public: 2006	**-4%**	++ Engaging people who want to share their opinion	+ Need for advertisement and to grow brand presence	++ Increase of sharing --> traffic and exposure	+ Can help to gain insight about user intent
Google +	*Social network*	**2011**	**80%** (from Sep. 2011) Going to play an important role in social marketing	++ Brand management & promotion Place people in relevant groups (circles)	++ Google searches: Google + pages near the top	+ Content heavily shared Add +1 to website --> top Search Engine Research Page (SERP)	++ Significant SERP increase Google profile quickly climbs the SE rankings
Twitter	*Microblog*	**2006**	**13%**	++ Use keyword and brand search monitoring Customer service	++ Web site integration Branding and PR management	++ Large potential	+ Tweets will rank high in search results and profile page rank high for username
LinkedIn	*Professional social network*	**2003**	**0%**	+ Stakeholder engagement Expertise in the field Credibility & authority	++ Effective for demonstrating your professional prowess	- Unlikely to drive any significant traffic to the website	+ Group pages can rank well

Social media	Communication	Networking	Content & info	Sharing media content	Events feature	Control of content visibility	Other features
Facebook	++ Deepening connection: chat, event alerts, status updates & email system Facebook limits wall posts to 420 characters	- Used mainly for social rather than professional activity	++ Sharing articles, videos, pictures	+ Sharing photos and videos	Yes	+ Set up both private & public groups	
Google +	++ Google+ gives you a lot more sharing space	+	+ Additional information channel for info updates	++ Opportunity of linking Google's services (YouTube…) through the G+ social layer	No	++ More control over who sees which posts and updates -->tailoring message	++ **Hangouts**: chat in real time with circles **Streams**: way to filter the content you see **Posts** are searchable -> more open and visible via the search engine results
Twitter	++ Instant communication Amount, speed and easiness to share information Source of media	- Not the main aim but it is possible via personal msg	++ Breaking news and information stream Short notes	- Only via links	No		+ Easy to identify experts and most active actors in the field
LinkedIn	+ Submitting news/articles of interest and answering questions	++ Search for people Create relationships: group sharing…		- Only via links	Yes		

Source: GlobalWebIndex – data from December 2012

Annex 6 - Comparative table of the four social media in terms of users

Social media	# Users	Demographics	Geographical coverage
Facebook	903 000 000 Not present in 6 countries	- 37,3 y.o. -> getting younger - 21 mn/month - 60% female	50.1% U.S. 17.1% U.K. 4.1% Australia 3.4% Brazil 2.9% Canada 2.9% India
Google +	343 000 000	- 40,5 y.o. --> getting older - 405 mn/month - 60% female	28% Asia 26% Europe 24% North America 15% South America 5% Africa 1% Oceania
Twitter	288 000 000	- 44,2 y.o. - 17 mn/month - 50% male	43% North America 22% Europe 22% Asia 11% Latin America 4% Africa 3% Middle East 2% Oceania
LinkedIn	200 000 000	- 28 y.o. - 3 mn/month - 71% male - Technical: engineers and developers	31.49% U.S. 13.69% India 5.43% Brazil 3.88% U.K. 2.46% Canada (43% others)

Source: GlobalWebIndex – data from December 2012

Annex 7 - Other biodiversity initiatives - social media accounts (from the project Wiki page)

LinkedIn

- CReATIVE-B [1]: Toward a Global Virtual Environment for Biodiversity Research
- D4Science.org [2]: Hybrid Data Infrastructure service & Virtual Research Environments
- EUBrazilOpenBio Project [3]: Open Data and Cloud Computing e-Infrastructure for Biodiversity
- FP7 Information and Communication Technologies (ICT) [4]
- FP7 International Cooperation [5]
- Framework Programme Seven (FP7) [6]
- GNSS for Global Environmental Earth Observation (GEEO) and GEOSS [7]: Global Earth Observation System of Systems
- Global Biodiversity Information (GBIF) [8]: International biodiversity
- Ideal-ist [9]
- iMarine Project [10]: Data e-Infrastructure Initiative for Marine Living Resources

Facebook

- agINFRA [11]: A Data Infrastructure for Agriculture
- Biodiversity Heritage Library [12]: Biodiversity Heritage Library provides free & open access to legacy biodiversity literature online.
- Biodiversity Heritage Library for Europe (BHL-Europe) [13]: Biodiversity in Europe
- Biodiversity Informatics Training Curriculum [14]: Activities and events related to the development of a global, online training 'curriculum' for biodiversity informatics
- Botanic Gardens Conservation International (BGCI) [15]: BGCI is an international network of botanic gardens working together for plant conservation and sustainability.
- Encyclopedia of Life (EoL) [16]: Knowledge about life on Earth
- EUBON [17]: Building the European Biodiversity Observation Network
- ExpeER [18]: Brings together existing highly instrumented European infrastructures in the field of ecosystem research to improve their research capacity and to encourage their wider use.
- FishBase Project [19]: Free global and public resource on all fish species of the world
- INTERACT [20]: International Network for Terrestrial Research and Monitoring in the Arctic
- iplant Collaborative [21]: Community of biologists, computer scientists, and educators working together to build tools to solve problems in plant science
- KeyToNature [22]: Interactive educational tools for the identification of organisms.
- SeaLifeBase [23]: Information resource on all non-fish marine metazoans
- VerNet [24]: Distributed Databases with Backbone (Funded by the National Science Foundation)
- United Nations Decade on Biodiversity [25]: The Decade coincides with and supports the implementation of the Strategic Plan for Biodiversity 2011-2020 adopted by the Conference of the Parties.

Google +

- EUBON [26]: Building the European Biodiversity Observation Network

Annex 8 - Deliverables template

Project Acronym:	**pro-iBiosphere**
Project Full Title:	**Coordination & policy development in preparation for a European Open Biodiversity Knowledge Management System, addressing Acquisition, Curation, Synthesis, Interoperability & Dissemination**
Grant Agreement:	**312848**
Project Duration:	**24 months (Sep. 2012 - Aug. 2014)**

Dx.x.x Title

Deliverable Status:	Draft or Final
File Name:	**pro-iBiosphere_WPx_Organistaion_Dx.x.x_V1.0_DDMMYear.pdf**
Due Date:	Month Year **(MX)**
Submission Date:	Month Year **(MX)**
Dissemination Level:	**Public**
Task Leader:	First Name Last Name **(Organisation)**
Authors:	First Inital. LastName **(Organisation)**

PRO-iBIOSPHERE
WWW.PRO-iBIOSPHERE.EU

Consisting of:

Naturalis	Stichting Nederlands Centrum voor Biodiversiteit Naturalis	Netherlands
NBGB	Nationale Plantentuin van België	Belgium
FUB-BGBM	Botanischer Garten und Botanisches Museum Berlin-Dahlem	Germany
Pensoft	Pensoft Publishers Ltd	Bulgaria
Sigma	Sigma Orionis	France
RBGK	Royal Botanic Gardens Kew	United Kingdom
Plazi	Plazi	Switzerland
Museum für Naturkunde	Museum für Naturkunde Berlin	Germany

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Table of Contents

Executive summary

The present document is a deliverable of the pro-iBiosphere project, funded by the European Commission's Directorate-General Information Society and Media (DG INFSO), under its 7th EU Framework Programme for Research and Technological Development (FP7).

Annex 9 - PowerPoint presentations template

Annex 10 - Letters template

Title First Name Family Name
Position
Organisation
Phone + xxx | Fax + xxx
contact email

Title First Name Family Name
Position
Organisation

City, 21 August 2013

Dear XXX,

Yours sincerely,

First Name Family Name.
Position - Organisation
On behalf of the pro-iBiosphere project

Annex 11 - pro-iBiosphere press release

Press Release --- Press Release --- Press Release --- Press Release --- Press Release --- Press Release --- Press Release

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Coordination & policy development in preparation for a European Open Biodiversity Knowledge Management System, addressing Acquisition, Curation, Synthesis, Interoperability & Dissemination

Toward an European Open Biodiversity Knowledge Management System
Making high quality biodiversity knowledge open, accessible and re-usable

Press Release

FOR IMMEDIATE RELEASE

Leiden, the Netherlands - October 29th, 2012

A consortium consisting of major European biodiversity organizations, including natural history museums, botanic gardens, companies and biological societies, announce the launch of pro-iBiosphere. This EU e-Infrastructure coordination project is targeting the preparation of the European Open Biodiversity Knowledge Management System.

During its two-year duration, pro-iBiosphere aims to prepare (= pro), through a coordination action, the ground for an integrative system (= sphere) for intelligent (= i) management of biodiversity (= bio) knowledge. Once it becomes operational, the European Open Biodiversity Knowledge Management System will play a major role in facilitating the synthesis of core biodiversity data. It will create an authoritative framework including discovery of new species, naming of specimens and species, identification tools, descriptions, and various other basic types of information. It will also facilitate the acquisition of high quality biodiversity data from various sources, including legacy data; the curation of the data; and at the same time it will optimize the delivery of those data to users.

Biodiversity science encompasses multiple disciplines (e.g., taxonomy, ecology, genomics, etc.) each with its own language, tools and data, to study the diversity of life in our planet and the environments it lives in. Motivated by the urgent modernization of the production and accessibility of these high quality biodiversity data, information and knowledge, the goal of pro-iBiosphere is to:

1. Allow to streamline core biodiversity data mobilization,
2. Facilitate semantic interoperability with services in general,
3. Provide strategies to sustain useful workflows and pipelines,
4. Help to make core biodiversity data and information accessible to various stakeholders,
5. Define the optimal legal framework and policies for the system to work.

Workflows are highly dependent on data availability. The task of matching suitable data to workflows can be made easier through the use of consistent data governance and semantic presentation approaches across the many potential sources of biodiversity data at the international level.

«*There is no doubt that we are entering an era where we will be overwhelmed by data. Information sciences are surely the key to being successful in this situation. The pro-iBiosphere activities represent an exciting and potentially important advance in the provision of key infrastructure to support the European biodiversity research community*», says Dr. Vincent S. Smith, coordinator of the EU FP7 ViBRANT project at the Natural History Museum London (NHM).

pro-iBiosphere is an integrated project under the 7th Framework Programme (grant agreement no. 312848), to strengthen the development of a consistent and dynamic European policy for research infrastructures including the data produced by this infrastructure. The €1.3M coordination and support action brings together a complementary blend of partners representing scientific and technological expertise in the domains of biodiversity science and informatics. Participants in the project include: NBGB (Belgium), PENSOFT (Bulgaria), SIGMA (France), FUB-BGBM (Germany), MFN (Germany), Naturalis (the Netherlands), Plazi (Switzerland) and RBGK (UK). The project is supported by a distinguished scientific advisory board comprised of experts in the field of publishing, e-taxonomy and global infrastructures.

For more information please contact:
Dr. Soraya Sierra
Project leader EU FP7 pro-iBiosphere project
soraya.sierra@naturalis.nl
www.pro-iBiosphere.eu
http://wiki.pro-ibiosphere.eu

Annex 12 - pro-iBiosphere fact-sheet

PROJECT PARTNERS

Naturalis Biodiversity Center (Naturalis)
the Netherlands

National Botanic Garden Belgium (NBGB)
Belgium

Freie Universität Berlin (FUB-BGBM)
Germany

Pensoft Publishers Ltd (Pensoft)
Bulgaria

Sigma Orionis (Sigma)
France

Royal Botanic Garden Kew (RBGK)
United Kingdom

Plazi (Plazi)
Switzerland

Museum für Naturkunde – Leibniz-Institut für Evolutions- und Biodiversitätsforschung an der Humboldt-Universität zu Berlin (MfN)
Germany

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Project acronym: Pro-iBiosphere

Project number: 312848

Call (part) identifier: FP7-INFRASTRUCTURES-2012-1

Funding scheme: Coordination and support action

Total Cost: 1,323,277 €

EC Contribution: 1,179,912 €

Duration: 2 years

Start Date: 1 September 2012

Consortium: 8 partners from 7 countries

Project Coordinator: Jan van Tol

Project Manager: Soraya Sierra

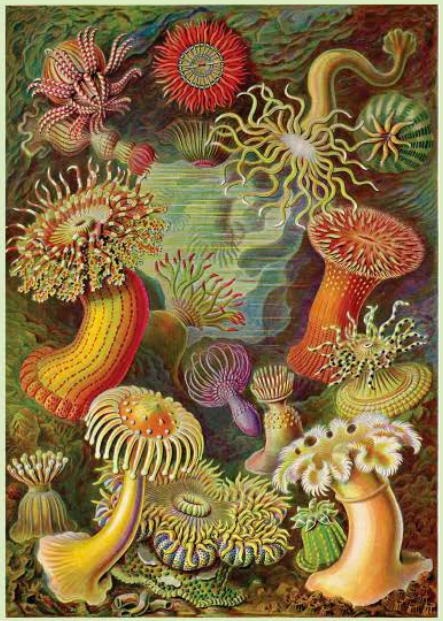
E-mail: Soraya.Sierra@naturalis.nl

Project Web Site: www.pro-ibiosphere.eu

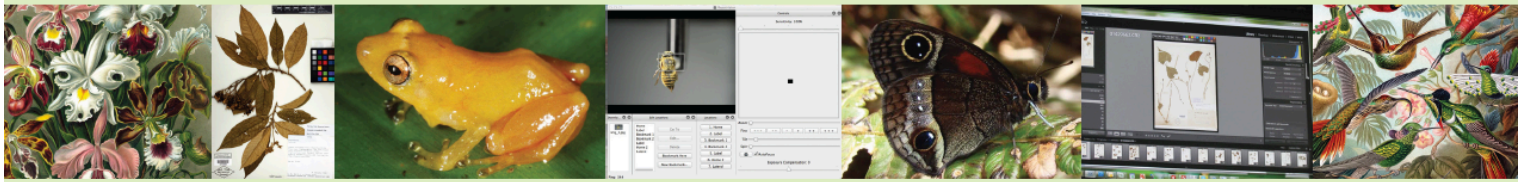
Key Words: Biodiversity, data mobilization, floras, faunas, interoperability, legacy literature, technical and semantic interoperability, sustainability, systematics, taxonomy ,

Photos credits: ZooKeys, PhytoKeys
Cover image: Ernst Haeckel. *Kunstformen der Natur.* Plate 49

Coordination and policy development in preparation for a European Open Biodiversity Knowledge Management System, addressing Acquisition, Curation, Synthesis, Interoperability and Dissemination



SEVENTH FRAMEWORK PROGRAMME

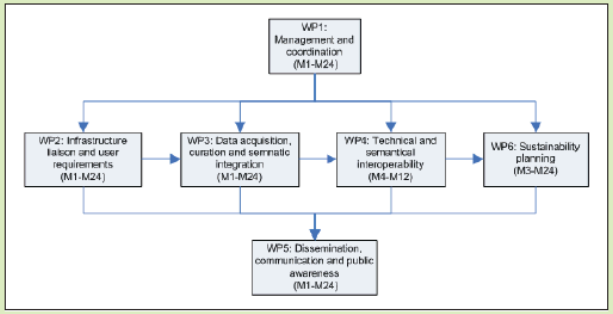


Project objectives

- Prepare the ground for an integrated European Open Biodiversity Knowledge Management System.
- Adapt current and provide new methods of acquisition, curation, and dissemination of biodiversity data to synthesize distributed biodiversity knowledge.
- Improve methods and workflows for semantic mark up and linking between various elements of the biodiversity literature.
- Promote and monitor the development and adoption of common mark up standards and specifications for biodiversity knowledge.
- Provide the community with technical solutions for enhancement and use of biodiversity data.
- Analyze and evaluate business models for supporting Open Science to achieve sustainable delivery of biodiversity information.
- Develop recommendations on licensing and intellectual property rights to improve sharing of biodiversity data.
- Increase cooperation between the major biodiversity projects, initiatives and platforms at European and global levels.

Expected results

- Strategy for increased cooperation between producers and aggregators of biodiversity data and electronic registries of biological names.
- Policies on Open Access for data and information.
- Strategy for improvement and interoperability of the XML schemes for markup of taxonomic literature.
- Evaluation and promotion of alternative business plans to strengthen Open Science e-infrastructures.
- Policy recommendations to achieve sustainable management of biodiversity information.



Pilot studies

Pilot studies will be conducted to facilitate the implementation of an Open Knowledge Biodiversity Management System:

- Interoperability model between taxonomic content management platforms, taxon treatment repositories and electronic registers.
- Interoperability model between taxon treatments from both legacy and prospective literature from three organismic domains (fungi, plants and animals).
- Common query/response model for automated registration of higher plants (International Plant Names Index, IPNI), fungi (Index Fungorum, MycoBank) and animals (ZooBank).
- Revision of a tool (CharaParser) that generates identification keys by reusing morphological characters from published species descriptions.

Annex 13 - pro-iBiosphere poster sessions templates

BIH2013

Title

Contact

Name SURNAME
Organisation
email

Section title

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info@pro-ibiosphere.eu

Join us on social networks !

Annex 14 - Internal Communication Platform guidelines for use

Coordination and policy development in preparation for a European Open Biodiversity Knowledge Management System, addressing Acquisition, Curation, Synthesis, Interoperability and Dissemination

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pro-iBiosphere

Guidelines for use of the Internal Communication Platform (ICP)

Prepared by
PENSOFT PUBLISHERS
November 2012

SEVENTH FRAMEWORK PROGRAMME

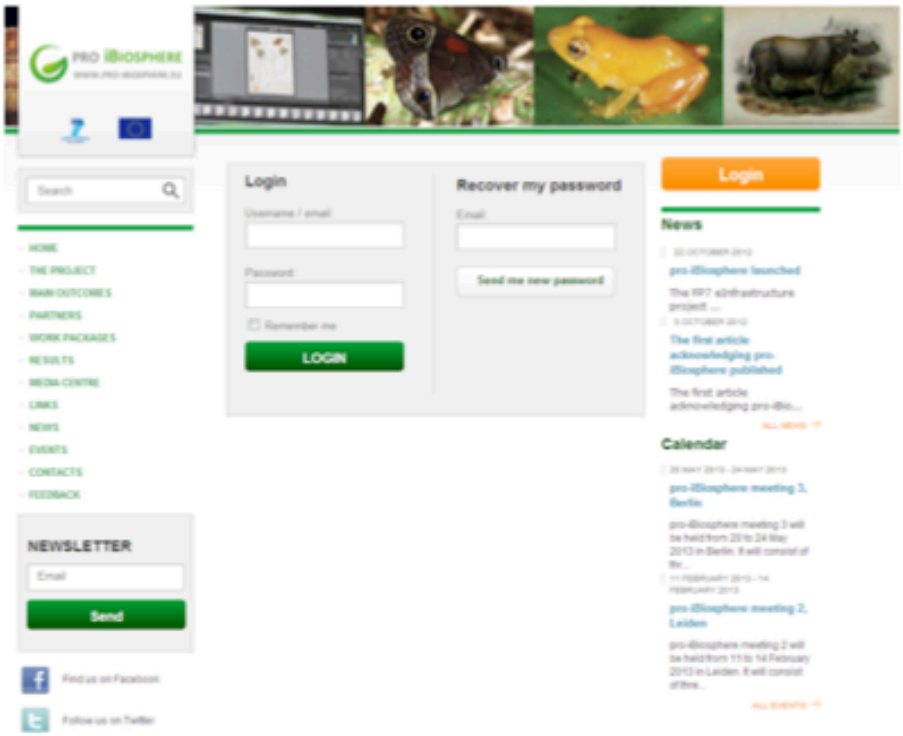
Contents

- ✓ Log in
- ✓ User profile
- ✓ Mail
- ✓ Library
  - Internal Document Library
  - External Document Library
- ✓ News
- ✓ Events and Calendar
- ✓ Internal Calendar
- ✓ Media Centre
- ✓ RSS Feeds
- ✓ pro-iBiosphere in the social networks

This document is intended to facilitate the use of the ICP by the pro-iBiosphere consortium members and describes its main functionalities. Should you have any questions related to the ICP or the project website as a whole please contact Pavel Stoev: projects@pensoft.net or Margarita Grudova manager.projects@pensoft.net

Log in

All project members have been registered in the ICP of pro-iBiosphere by the website administrator (Pavel Stoev). Each user will be registered in the ICP with unique account and will be sent username and password for access to the ICP. To login the ICP please click on the Login button in the upper right corner of the website www.pro-ibiosphere.eu

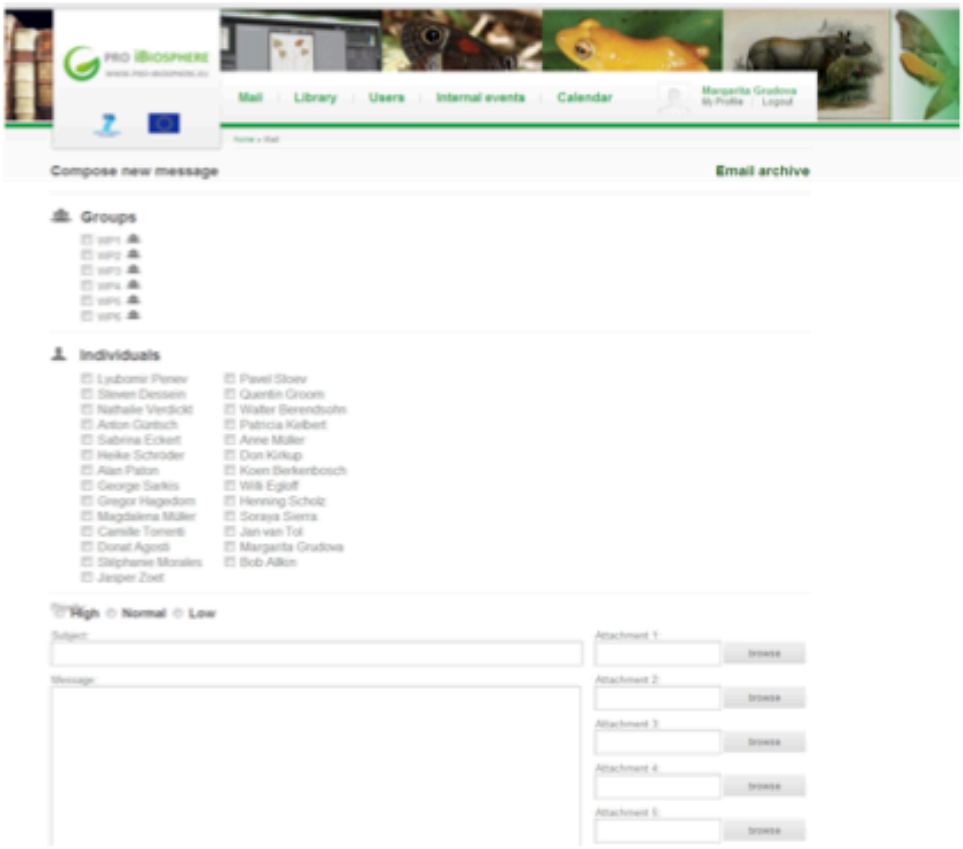


User profile

Each user can change his/her password or other personal information from My profile popup window. Please add your profile photo and complete the empty fields, providing also information about your involvement in the different work packages.

Mail

In order to send email via the ICP, click on "Mail" button. Users can send emails to one or more project participants after logging into the system. The individual participants are listed on the left hand side of the screen. Select recipients by ticking the box next to their names. The recipients are also divided into groups based on their involvement in the different work packages. To send a group email please tick the box next to the group. Prior doing that, make sure that all individuals you want to contact have been included in the respective group by clicking the group icon. This is the view that you get:



You can send an email to several groups and individuals at the same time by selecting the respective check boxes. By clicking on the "Email archive" button in the upper right corner all emails sent through the ICP will appear in chronological order. Sorting the emails by subject / date / sender / group facilitates the search of a given email in the archives. Please use the **pro-iBiosphere-all** mailing group to send messages aimed for the whole consortium.

We recommend using the ICP Mail for announcements, reminders and other important messages. It is important to remember that "Reply" or "Reply-to-all" emails that are sent from your mailing software in response to an email coming from the ICP Mail will not be archived on the pro-iBiosphere website, although they will be received by all members of the respective ICP group(s). If you wish to document your response in the ICP, you should also use the ICP email system. However, we do not expect you to use the ICP for regular email communication.

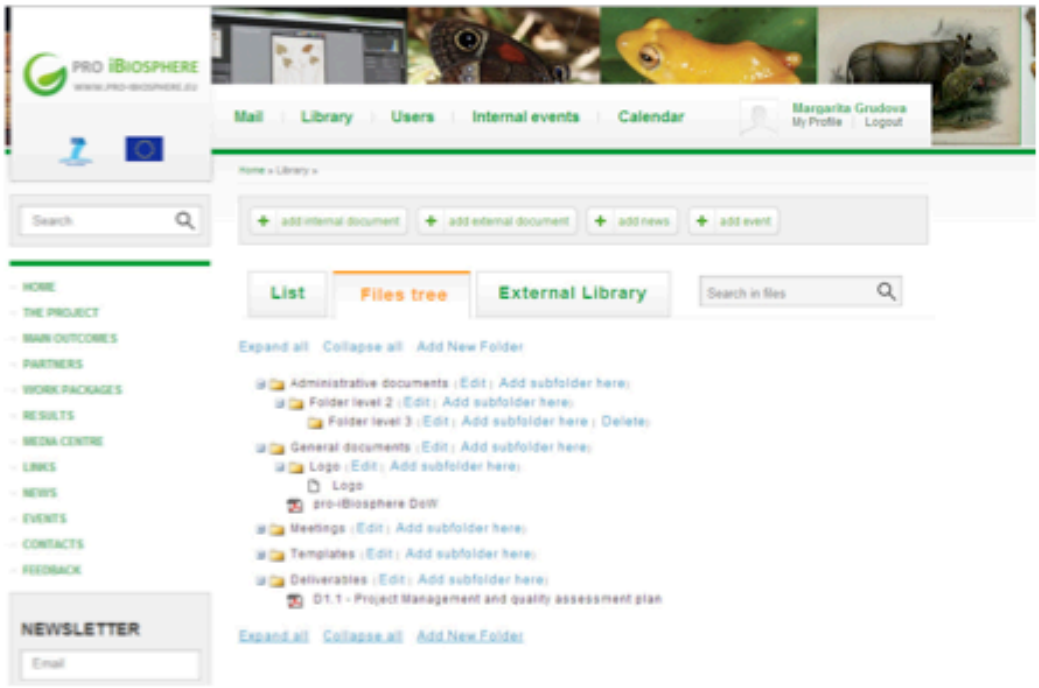
Should you wish to remove a message from the ICP system (i.e., email sent in error or containing wrong information), please contact the website administrator.

There is no limit to the length of an email, but the maximum size of an attachment is 10 MB. One may attach up to 5 files to a message.

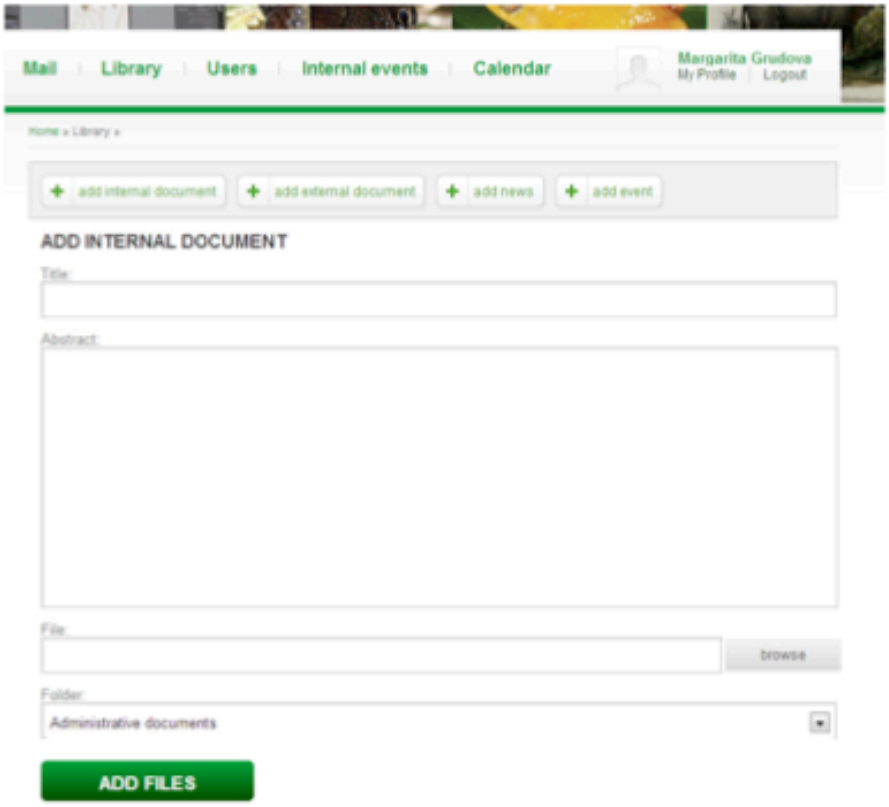
Library

There are two types of libraries storing the documents resulting from the project activities: (1) internal, which is visible to all registered users at the ICP after login; and (2) external, which is visible to all users visiting the website. To see all internal documents you need to click on the Library button.

Internal Document Library
All internal documents related are stored in the Internal Document Library.
The view you will get is:



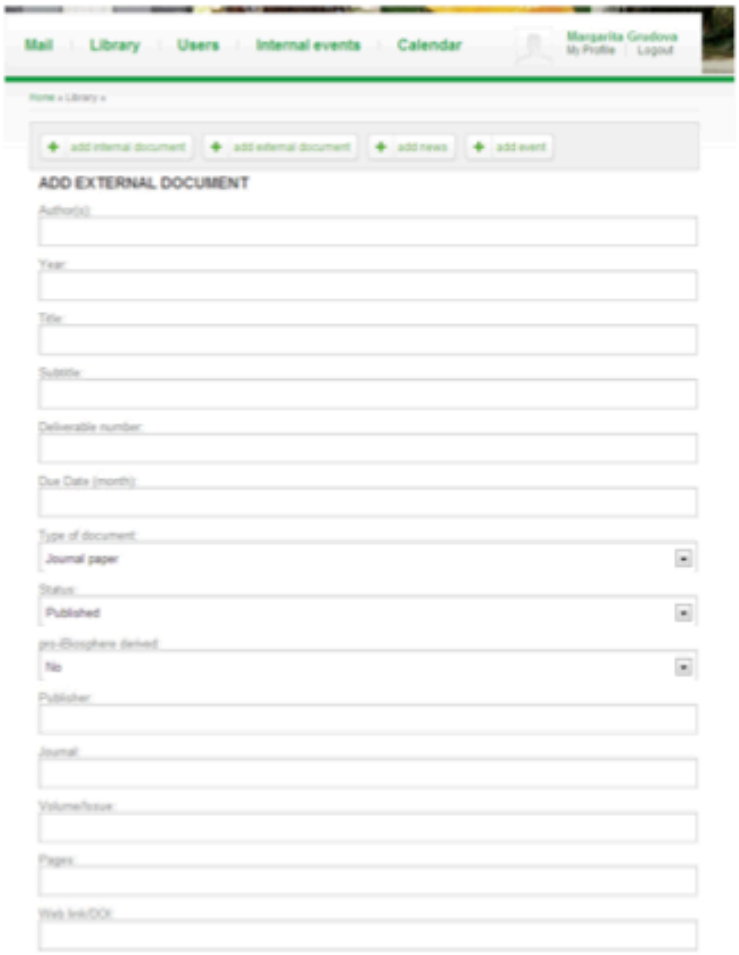
Every user can upload files in the internal library. This can be done by pressing the button "ADD INTERNAL DOCUMENT". The view you will get is:



All you need to do is fill in the document's title, describe briefly what is the document about and choose a folder (e.g. Administrative documents, General documents, Meetings, etc.) where you would like to put it in. There is a possibility of creating new folders or subfolders within a given folder.

External Document Library

Publications and other information (deliverables) that are open to public can be uploaded on the Results section of the website. This could be done by pressing the button "ADD EXTERNAL DOCUMENT". The view you will get is:



While uploading external documents, the following basic information need to be completed: Author(s) (of the publication / deliverable), year of publication, Title / Subtitle, and standard bibliographic information (journal's name, volume, pages, if it is a journal paper) or web link to the document, if stored on an external web platform.

News

All project members are encouraged to post information that would be of interest for the general public and the consortium in particular. This could be article alerts, forthcoming meetings, and other relevant to pro-iBiosphere activities. To do that please click first on LIBRARY and then on ADD NEWS buttons. The view you will get is:

You will be able to attach up to 3 files and an image. Outdated news can be deleted by the person who uploaded them or by the administrator of the website. Please keep in mind that all posted news go automatically to Facebook and Tweeter profiles of pro-iBiosphere (and to their users) and to all RSS feed subscribers.

Events and Calendar

Information about forthcoming meetings, workshops, seminars, training courses, etc. can be posted on the website by clicking on LIBRARY / ADD EVENT buttons.

The view you will get is:

All project participants are encouraged to submit information on meetings, or other events related to the project to the members of these two groups. You will need to choose a date from the calendar of upcoming events and to complete the fields Title and Text. It is also possible to attach documents (venue location, agenda, list of participants, etc.). This information will become visible on the project homepage.

Internal events

The Internal Events module helps you keep track of every main activity in the project providing the following concise information: title, due date, nature, description, participants and contact information (responsible person and email address).

Media Centre

To comply with the FP7 guidelines a Media Centre folder has been created on the main page of the site. The following types of documents related to the project can be uploaded there (only via the website administrator): flyers, brochures, posters, presentations, press releases, logos, newsletters, etc.

Please contact Pavel Stoev (projects@pensoft.net) or Margarita Grudova (manager.projects@pensoft.net) if you want to get documents uploaded on the Media Centre.

RSS Feeds

We highly recommend subscribing to the RSS feeds of pro-iBiosphere. RSS (Really Simple Syndication, Rich Site Summary) is a XML-based tool which enables you to subscribe for updates – news, events, new publications on the pro-iBiosphere webpage. It is worth installing your RSS reader in a way so that it opens automatically when you switch on your computer.

pro-iBiosphere in the social networks

We highly recommend those of you having Facebook, Gmail, LinkedIn or Tweeter accounts to join the community of **pro-iBiosphere** in these social networks.

Annex 15 - Help page on the project Wiki

Help:Contents

Please add questions as well as pointers to helpful pages on using the wiki here.

How to use the wiki

In many cases it is sufficient to simply look at existing pages and repeat what you see there. The most important hints are:

- Paragraphs are separated by an empty line.
- Headings are surrounded by multiple "=", the first of which must start at the start of a new line.
- List elements (like this list) start with 1-several "*" (unnumbered) or "#" (numbered list), the first of which must start at the start of a new line. "**" or "##" indicate a second level list, "***"/"###" a third level list, etc.
- Surround text by double apostrophes (2x ' = *) for italics, triple apostrophes for bold.*
- Link external pages in the web by surrounding "URL displaytext" with single square brackets (i.e. type "[http://example.org/path/object displaytext]").
- Link internal pages in the wiki by sourrounding Page-name | displaytext with double square brackets (i.e. type "[[Main page|See also the start page]]").
- Images must first be uploaded (see Toolbox, Upload file in the left hand side bar). Like for pages, avoid names like "image 1" and choose a long and descriptive name instead. Images are available to all pages, not nested in a single page and each name can only be used once. Once uploaded, you refer to the image name, including the "File:" in double square brackets, add a vertical bar, the desired width in pixel, etc. Many more options exist, see [Wikipedia: Visual file markup [1]].

Please feel free to edit this very brief starter should something be misleading or missing! Please feel free to ask questions here as well!

In general the Help pages of the English Wikipedia [2] (which uses the same software) provide detailed help, see especially:

- Cheatsheet [3]
- Tutorial: Editing [4]
- Tutorial: Formatting [5]
- Tutorial: Links [6] (Ignore the "Wikipedia" in it)
- more technical, but sometimes useful: User's Guide [7]

Limiting visibility of pages to signed-in users

> ***Preface:** This function prevents that Google accidentally indexes a page and users find it without the authors intending to make that possible. It is not meant for strictly confidential information, which should not be put on the wiki at all.*

Pages that start with the page name "Internal:" are visible only to signed-in users. Simply create a new page that starts with this string or move (= rename, see below) an existing page to a name starting with this string. To make a page public, move (= rename) it such that the prefix "Internal:" is removed.

> Move = rename a page (move and rename are considered synonyms): You always rename the current page. If you are on a page you want to rename, go to the page menu (the downwards-pointing triangle on top of the page,left of the SEARCH field) and select "Move". Now in the field "To new Title": add the name. Click on the button "Move Page".
>
> Note: Make sure that the page name starts with `"Internal:"`. The colon is required, `"Internal"` will not work.

Creating new pages

> ***Preface:*** *Pages and Mediafiles must have full, self-contained titles. Since they can be linked from anywhere, you may have to repeat some information in the title = name of a page, even if for the moment you consider it a subpage. Please consider that the same information may be found by users using a search engine and displayed out of context. The only information that can be consistently omitted is a reference to pro-iBiosphere.*

Three main methods exist to create new pages:

1. On an existing page add a link which refers to a non-existing page that you desire to link from there. It is always good practice to have no unconnected pages. Once you save the existing page, the link will be shown in red. Click on the link and start typing or copying the content of a new page.
2. Search for a page in the search box on the top right. If no page exists already, you are given the option to create a new one (= red link with your new page title at the bottom of the search).
3. As a convenience, you can also create a new page here:

Inserting text created in editors (text editor, Microsoft Office, Open/LibreOffice)

Plain text editor: In general such text can simply be copied using the clipboard. A routine problem is that the wiki considers simple new lines as part of a paragraph, only an empty line creates a new paragraph. If you text uses single line breaks to indicate paragraphs, please replace single with double paragraph signs (\n -> \n\n, \r\n -> \r\n\r\n, ^p -> ^p, etc., depending on your editor). Alternatively, if your text relies on short lines, you can use <br/> at then end of lines to force new lines.

Word processor: For simple, short texts, inserting via clipboard and adding the few lost formats is quickest. For longer text, both for Microsoft Word and Libre/OpenOffice, plugins are available.

- MS Word: http://www.microsoft.com/en-us/download/details.aspx?id=12298 - this may or may not work. Select "Save As" in a Word document See also http://en.wikipedia.org/wiki/Help:WordToWiki
- LibreOffice: Works perhaps more reliable. Note that the command is under "File, export as", not "save as". Older versions create a text file, from which the text can be copied to a wikipage using the clipboard. Some newer methods also offer to directly save a file into a mediawiki (not yet tested, your additions to the help are welcome!).

Your topic here...

Please Feel free to add new topics, or ask questions under new headings at the end.

References

[1] http://en.wikipedia.org/wiki/Help:Visual_file_markup
[2] http://en.wikipedia.org
[3] http://en.wikipedia.org/wiki/Wikipedia:Cheatsheet
[4] http://en.wikipedia.org/wiki/Wikipedia:Tutorial/Editing
[5] http://en.wikipedia.org/wiki/Wikipedia:Tutorial/Formatting
[6] http://en.wikipedia.org/wiki/Wikipedia:Tutorial/Wikipedia_links
[7] http://meta.wikimedia.org/wiki/Help:Contents

Annex 16 - Follow-up of promotion on other social media groups

Promotion on other biodiversity initiatives' social media groups *May 2013*

Promotion #1 -"Join pro-iBiosphere groups": Messages posted on...

10 LinkedIn groups **14 Facebook pages/groups**

Name	URL/email	Online	Online
LinkedIn biodiversity initiatives			
ALTER-Net	http://www.linkedin.com/groups/ALTERNet-LongTerm-	Here	02/05/13
Atlas of Living Australia	http://www.linkedin.com/groups?home=&gid=3458431	Here	02/05/13
BioFresh	http://www.linkedin.com/groups/Freshwater-biodiversity-	Here	02/05/13
BHL	http://www.linkedin.com/groups/Biodiversity-Heritage-Library-	Here	02/05/13
CReATIVE-B	http://www.linkedin.com/groups?gid=4326402	Here	02/05/13
EU-BON	http://www.linkedin.com/groups/EUBON-	Here	02/05/13
EUBrazilOpenBio Project	http://be.linkedin.com/in/eubrazilopenbio	Not possible to post	
GBIF	http://www.linkedin.com/groups?home=&gid=55171&trk=anet	Here	02/05/13
GfG2 / GEOSS	http://www.linkedin.com/groups?home=&gid=3787047&trk=an	Here	02/05/13
LifeWatch	http://www.linkedin.com/groups?home=&gid=1516417&trk=an	Here	02/05/13
TDWG	http://www.linkedin.com/groups?home=&gid=993557&trk=ane	Here	02/05/13
Facebook			
AgINFRA	https://www.facebook.com/pages/AgINFRA/213142472092927	YES	02/05/13
BHL	https://www.facebook.com/BioDivLibrary	YES	02/05/13
Biodiversity Heritage Library for Europe (BHL-Europe)	https://www.facebook.com/pages/BHL-	YES	02/05/13
Biodiversity Informatics Training Curriculum	http://www.facebook.com/groups/BiodiversityInformatics	YES	02/05/13
BGCI	https://www.facebook.com/BGCIeducation	YES	02/05/13
Encyclopedia of Life (EOL)	https://www.facebook.com/encyclopediaoflife	YES	02/05/13
EU-BON	https://www.facebook.com/pages/EU-BON/136503689835379	YES	02/05/13
EU-Interact	https://www.facebook.com/InteractArctic	YES	02/05/13
Experimentation in Ecosystem Research	https://www.facebook.com/pages/Experimentation-in-	YES	02/05/13
FishBase Project	https://www.facebook.com/FishBase	YES	02/05/13
KeyToNature	https://www.facebook.com/pages/KeyToNature/114237581923	YES	02/05/13
SeaLifeBase Project	https://www.facebook.com/pages/The-SeaLifeBase-	YES	02/05/13
United Nations Decade on Biodiversity	https://www.facebook.com/UNBiodiversity	YES	02/05/13
VerNet	https://www.facebook.com/VertNet	YES	02/05/13
Google plus			
EU-BON	https://plus.google.com/105285222457665319373/posts	Not possible to post	

Annex 17 - Electronic newsletter #1

PRO iBiosphere web site

PRO iBIOSPHERE
WWW.PRO-IBIOSPHERE.EU

Subscribe to this service

NEWSLETTER

Issue 1

(September/December 2012)

In this Issue:

Improving technical cooperation and interoperability at the e-infrastructure level
21.12.2012
There is an increasing demand for biodiversity data, information and knowledge by the public and stakeholders. For this information to be widely available the existing technical barriers for interaction of e-infrastructures have to be opened. The pro-iBiosphere project has been launched for a period of two years (September 1st, 2012... more

Semantic enhancement of biodiversity literature: the Biodiversity Heritage Library contribution to pro-iBiosphere
21.12.2012
In the field of biodiversity, the traditional workflow for producing core taxonomic information, such as Floras and Faunas, has not changed much over the years. The process is time-consuming process usually performed by individual specialists. Legacy (i.e. existing) literature is still the foundation and starting point for taxonomic studies. This... more

Calling all users past and present of Floras and Faunas information!
21.12.2012
If you have used Floras or Faunas (hard copy or online) at any point in your work, research or leisure we'd love to hear from you. Perhaps you have used them in the past to try and identify species, to piece together the geographical distribution of particular taxa, to compile... more

Science from Recycled Data
21.12.2012
My PhD research programme is all about cladistic data congruence, compatibility, convergent evolution and phylogenetic tree-to-tree distance measures, while in parallel I work on a Panton Fellowship on data mining. The latter is about the mining of data direct from the literature and encouraging a culture of openness and data... more

European Journal of Taxonomy
21.12.2012
Journals not only disseminate information, they also provide a mechanism of quality control and certification for the results published. Species names and descriptions are the primary metrics in quantifying biodiversity, including communicating information about food and agriculture, ecologically important species, pests, and pathogens, and species of popular and conservation interest.... more

Global Names Project
21.12.2012
Wouldn't it be lovely, when writing a paper, or compiling data, for the computer to tell you if you have spelled the name correctly, or that that the name has been superseded because of some taxonomic activity. Wouldn't it be nice to read documents and databases, have older names replaced... more

Disseminating High Quality Information on Alien Plants

21.12.2012

There are several important requirements for providing information on alien species. The information needs to be up-to-date, reliable and comprehensive, while its publication needs to be available to a wide range of stakeholders, clearly written and well illustrated. Traditional print media cannot fulfill all of these roles, but internet publication... more

Bringing big data to biodiversity

21.12.2012

On 1st December 2012, 30 research institutions from 15 European countries, Brazil, Israel and the Philippines, and more than 30 associated partners started EU BON - "Building the European Biodiversity Observation Network". This €9 million, EU-funded research project aims to advance biodiversity knowledge by building a European gateway for biodiversity... more

Annex 18 - Electronic newsletter #2

PRO iBiosphere web site

PRO iBIOSPHERE
WWW.PRO-IBIOSPHERE.EU

Subscribe to this service

NEWSLETTER

Issue 2

(January/April 2013)

In this Issue:

The first SPREE newsletter is now available

22.04.2013

SPREE is a three-year EU (FP7) funded research project launched in July 2012. Its overarching goal is to bring the European community closer to achieving a truly sustainable and prosperous economy characterized by efficient use of resources. The project focuses on the concept of Servicizing which represents the shift from... more

A new article provides a decadal view on the importance and future of biodiversity informatics

19.04.2013

A new article "A decadal view of biodiversity informatics: challenges and priorities" published by BMC Ecology focuses on the challenges and perspectives for biodiversity informatics after a decade of development. The authors Alex Hardisty and Dave Roberts alongside 77 contributions from the biodiversity informatics community share experience and set future... more

The "ICT2013 – Create, Connect, Grow" event held in Vilnius - call for proposals

18.04.2013

Europe's most visible forum for ICT research and innovation, namely ICT2013, will take place from November 6 to 8th, 2013 in Vilnius, Lithuania. This event will bring together Europe's best & brightest in ICT research, with businesses old & new, web start-ups and digital strategists to chart a path for Europe's... more

The 3rd BioVel newsletter is now available

18.04.2013

The newest newsletter of the BioVel project is now available, offering a range of biodiversity related news, including brief coverage of the EU BON Kick-off and International Symposium Workshop in February, 2013. Among the other stories covered are: Letter from Alex Hardisty, Project Coordinator Running Workflows Just Got a Whole Lot Simpler Friends... more

"Bee" a taxonomist!

09.04.2013

I am working as a postdoctoral researcher at the Naturalis Biodiversity Center on bee systematics and bee identification. At present, my morphological studies focus on wing shape analyses using geometric morphometrics. During the pro-iBiosphere workshop and training on "e-platforms and e-tools for taxonomy" (http://wiki.pro-ibiosphere.eu/wiki/Workshops_Leiden_February_2013) that took place in February 2013... more

Join the project community!

29.03.2013

Looking for even more ways to interact with the pro-iBiosphere project and the main stakeholders in the field, while getting real time access to the latest news, event and project activities information? Be sure to check out our social media, follow us and join the conversation! Facebook - like us here - Access... more

BiodiversityKnowledge Side Event - IPBES Plenary January 2013

20.03.2013

The first meeting of the Platform's plenary (IPBES-1) took place in Bonn Germany from 21 to 26 January 2013. BiodiversityKnowledge together with SPIRAL, EBONE and EUBON - organized a side event on Regional support approaches to IPBES – Europe as showcase. This side event aimed to outline the importance of... more

Research Data Alliance (RDA) is now launched

20.03.2013

The Research Data Alliance (RDA) has been recently launched. Its First Plenary took place between 18-20 March, 2013 in Gothenburg, Sweden. The hot topic of the Plenary was the RDA vision towards open access data without barriers. The 3 days of meetings and working sessions brought the research data community together... more

BiodiversityKnowledge Second Conference in Berlin, September 24-26

20.03.2013

BiodiversityKnowledge is organizing its second international conference on September 24th to 26th 2013.For the venue we choose the green and atypical Jerusalemkirche, right in the middle of Berlin between Checkpoint Charlie and the Jewish museum.The objective of this second conference is to discuss and finalize the recommended design of a future... more

ALTER-Net Conference in Ghent, April 15-18

20.03.2013

We kindly invite you to attend the BiodiversityKnowledge side event on the first day of the ALTER-Net Conference "Science Underpinning the EU 2020 Biodiversity Strategy". The primary focus of the conference will be the objectives and targets of the EU's 2020 Biodiversity Strategy, which should be realized by the end... more

New "LinkOut" tool by National Center for Biotechnology Information (NCBI) providing easy link to PubMed and GenBank data

18.03.2013

A new "LinkOut" feature introduced by the National Center for Biotechnology Information (NCBI) NCBI's allows the easy linking to content on PubMed and GenBank. Dryad has already introduced the feature benefitting from easy and fast linking of associated content to the two resources. PubMed and GenBank, from the National Center for Biotechnology Information (NCBI), are... more

pro-iBiosphere participated in the the European Commission's 10th e-Infrastructure Concertation Meeting

13.03.2013

The 10th e-Infrastructure Concertation Meeting (March 6-7, 2013 - Brussels) was organised by the European Commission (e-Infrastructure Unit, DG CONNECT) with the support of the e-ScienceTalk project. The main aim of the meeting was to bring EU funded infrastructure projects together to discuss issues related to the completion of the... more

Thank you pro-ibiosphere

08.03.2013

By Siti-Munirah, M.Y. (sitimunirah@frim.gov.my) Forest Research Institute Malaysia I am a Research Officer and a young botanist at the Kepong Herbarium (KEP), Forest Research Institute Malaysia (FRIM), Kuala Lumpur, Malaysia. At present, I'm working for the Flora of Malaysia project, revising families for the Flora of Peninsula Malaysia, such as, Lythraceae,... more

Evaluation of pro-iBiosphere workshops

01.03.2013

The pro-iBiosphere workshops that took place on the 11th to 14th of February 2013 aimed to get taxonomists and IT developers together to discuss digital tools for taxonomy; the digital mobilization of legacy literature and developments towards the next generation of digital taxonomic literature. In a packed agenda, which included an intense... more

pro-iBiosphere Management Meetings in Leiden

27.02.2013

On Friday the 15th of February 2013, meetings with the pro-iBiosphere Advisory Board (AB) and Consortium members took place. At present, the AB is composed of four members from major global biodiversity initiatives with interests from the users' and the developers' side. AB members will meet at least once per year... more

The Future of Botanical Monography: Report from an international workshop, 12–16 March 2012, Smolenice, Slovak Republic

21.02.2013

Monographs are fundamental for progress in systematic botany. They are the vehicles for circumscribing and naming taxa, determining distributions and ecology, assessing relationships for formal classification, and interpreting long-term and short-term dimensions of the evolutionary process. Despite their importance, fewer monographs are now being prepared by the newer generation of... more

Data paper describes Antarctic biodiversity data gathered by 90 expeditions since 1956

20.02.2013

Huge data encompassed into a unique georeferenced macrobenthic assemblages database A new peer-reviewed data paper offers a comprehensive, open-access collection of georeferenced biological information about the Antarctic macrobenthic communities. The term macrobenthic refers to the visible-for-the-eye organisms that live near or on the sea bottom such as echinoderms, sponges, ascidians, crustaceans.... more

EU BON: Working towards integrated and comprehensive global biodiversity data

12.02.2013

The European Union funded EU BON "Building the European Biodiversity Observation Network" project now holds its official Kick-off Meeting, taking place from 13 to 15 February 2013 in Berlin. An International Symposium "Nature and Governance – Biodiversity Data, Science, and the Policy Interface" precedes the kick-off (11-12 February 2013), to... more

International biodiversity data symposium to mark the kickoff of the EU BON project

12.02.2013

EU BON (2012) stands for "Building the European Biodiversity Observation Network". This European research project, financed by the 7th EU framework programme for research and development (FP7), started activities on the 1st of December 2012 and will continue for 4.5 years. EU BON seeks ways to better integrate biodiversity information... more

Biodiversity exploration in the 3D era

06.02.2013

Taxonomy – the discipline that defines and names groups of organisms – is a field of science that still employs many of the methods used during the beginnings of the discipline in the 18th century. Despite the increasing use of molecular information to delineate new species, the study of the... more

Annex 19 - List of other dissemination activities

Partner	Date & Place	Dissemination activity description	Format	Number of contacts / participants	Level	Language	Source /Contact
OTHER DISSEMINATION ACTIVITIES							
	29/10/2012	Raising awareness of the project and attracting potential contributors	News & press release shared on the "Besafe" project website		International	English	http://www.besafe-project.net/news.php?n=39
BGBM	2/11/2012		Email sent to the mailing list Bioinfo		French +- International	English	sfbi@bioinfo.fr
Plazi	6/11/2012		Email sent to "TDWG Structure of Descriptive Data" mailing list		International	English	TDWG-SDD@USOBI.ORG
Plazi	6/11/2012		Email sent to "TDWG Content" mailing list		International	English	tdwg-content@lists.tdwg.org
Plazi	6/11/2012		Email sent to "Open Science" mailing list		International	English	open-science@lists.okfn.org
NBGB	7/11/2013		Press release/email sent to Taxacom mailing list		International	English	http://mailman.nhm.ku.edu/pipermail/taxacom/2012-November/076384.html
Plazi	15/11/2012	Promoting training activities of the project (ie. Workshop on e-platfroms and e-tools for taxonomy, 12 Feb. 2013, Leiden)	Facebook post		International	English	http://www.facebook.com/groups/BiodiversityInformatics/
Naturalis	26/11/2012	Promoting project activities and workshops that will take place form 11-14 Feb. 2013, Leiden)	Email sent to Flora Malesiana mailing list		International	English	fm-info@lists.floramalesiana.org
Naturalis	28/11/2012	Raising awareness of the project and attracting potential contributors	Press release published in EurekAlert		International	English	http://www.eurekalert.org/pub_releases/2012-11/pp-tae112812.php
Naturalis	8/1/2013	Communication on the release of the 1st newsletter of pro-iBiosphere	Email sent to the Naturalis mailing list		National	English	Johan.Mols@naturalis.nl
Plazi	6/3/2013	Promoting the pro-iBiosphere May workshop on Flora Malesiana	Individual emails sent to >100 persons		International	English	agosti@amnh.org
Naturalis	12/3/2013		Email sent to Flora Malesiana mailing list		International	English	fm-info@lists.floramalesiana.org
Naturalis	12/3/2013	Promoting the pro-iBiosphere May workshop on GBIF March newsletter	Email sent to German GBIF Nodes		National	English	m.gleisberg@bgbm.org
MfN	17/06/2013	German Systematic Association Email List/ Young Systematists MfN's PR department	Email promoting pro-iBiosphere social media	**300 contacts**	National	English	
Plazi, Pensoft, NBGB and BGBM	3-6/09/2013, Rome	Disscussion of the pilots projects of pro-iBiosphere in relation to the context of the conference: Biodiversity Informatics Horizon 2013.	Email sent to "BIH2013"organiser 8 August 2013 for the presentation of pilots posters (awaiting approval)	**150 leaflets have been sent to Rome for promotion purposes**	International	English	

Annex 20 - Tweets during meeting #2 in Leiden - #piblei

Results for **#piblei**

Tweets Top / All / People you follow

nicky nicolson @nickynicolson 24 hrs
#piblei Slides for the IPNI-PhytoKeys integration talk here: slideshare.net/nickyn/ipni-ph…
View media

nicky nicolson @nickynicolson Feb 15
#piblei Graph DB engine used at RBG Kew is called #neo4j
Expand

Dave Roberts @vibrant_manager Feb 15
Did anyone at #piblei see how Rich got Zoobank to resolve a DOI? I cant get it to work. I've sent him an email, but I guess he's en route
Followed by Digital Agenda
Expand

Peter Desmet @peterdesmet Feb 14
What is the status on the e-Biosphere 2013 meeting? Hinted at here gbif.org/communications…, but nothing online. #piblei (thx @aaik)
Expand

William Ulate @WUlate Feb 14
Nicky: Versioning = name_id+classification+state. Allows to see a version of a concept (change over time) & compare classifications #piblei
Expand

Donat Agosti @myrmoteras Feb 14
#piblei usecase: taxonomic validation services; indexing; content synchrony and curation
Followed by pro-iBiosphere
Expand

Donat Agosti @myrmoteras Feb 14
#piblei taxonomic reconciliation at the very early phase of data collection and publishing
Expand

pro-iBiosphere @proibiosphere Feb 14
#piblei R. Mounce talk - c.66.000 phylogenetic papers have been published pic.twitter.com/dDT9ulpe
View photo

Donat Agosti @myrmoteras Feb 14
#piblei turning a hamburger into a cow. But there is some horse in it, ie publishers cheat in making the pdfs. Machines struggle...
Expand

GettingInspired by @Getting_Data Feb 14
#piblei trust: reputation? metrics of content? validation? curation? aggregation mechanisms... goo.gl/fb/g11F1
Followed by Jari-Pekka Raitamaa
Expand

Alex Hardisty @AlexHardisty Feb 13
Where's the consumption? RT @myrmoteras #piblei RDF the uncharted future of biodiversity publishing
Followed by Silvana Muscella
Expand

Ross Mounce @rmounce Feb 13
Here's the CrossRef DOI cost information page btw #piblei crossref.org/02publishers/2...
Followed by Neelie Kroes and 1 other
Expand

William Ulate @WUlate Feb 13
Paying few money Microwork Sourcing users feel their work is less valued than when the users don't get paid at all! Chamberlain #piblei
Expand

William Ulate @WUlate Feb 13
Slides from my talk at #piblei "The #BHL Way to Content" slidesha.re/V95kSw
View media

Aaike De Wever @aaik Feb 13
Sounds fair RT @WUlate: Request from the floor at #piblei for #BHL: Generate doi identifiers for legacy literature articles that have no doi
Expand

Roderic Page @rdmpage Feb 13
Identifiers wars revisited :(#piblei
Expand

Ross Mounce @rmounce Feb 13
.@dshotton #piblei get your publisher to tell CrossRef they want their citations to be open opencitations.wordpress.com/2013/01/03/ope...
View summary

Ross Mounce @rmounce Feb 13

.@dshotton #piblel get your publisher to tell CrossRef they want their citations to be open opencitations.wordpress.com/2013/01/03/ope...

View summary

Ross Mounce @rmounce Feb 13

.@dshotton #piblel Links are vitally important in science. Particularly citation links. CiTo is described here: jbiomedsem.com/content/1/S1/S6

Expand

Roderic Page @rdmpage Feb 13

Slides from my talk at #piblel available here: slideshare.net/rdmpage/someth...

View media

Dave Roberts @vibrant_manager Feb 11

#piblel The slides for the Scartchpad presentation are here: slidesha.re/XqvAG1 @vbrant

View media

William Ulate @WUlate Feb 11

ScratchPads, Edit, Linnaeus NG, BioPortal, Biowikifarm and PracticalPlants.org presenting at #piblel Wkshp

Expand

Ross Mounce @rmounce Feb 11

I'm in Leiden (NL) atm at a @proibiosphere workshop wiki.pro-ibiosphere.eu/wiki/Workshops... follow #piblel for live-tweets about biodiversity informatics #fb

Followed by pro-iBiosphere and 1 other

Expand

Annex 21 - Tweets during meeting #3 in Berlin - #pibber

From User	Tweet	Time
proibiosphere	RT @cabbageleek: Need identifiers 4 specimens #pibber	Sun, 26 May 2013 10:57:25 +0000
tehbuster	#sriracha # hotdog and a #pibber solo _Ÿ˜… (at El Bar) â€" http://t.co/LgY6O2cSj4	Sun, 26 May 2013 04:36:18 +0000
WUlate	RT @proibiosphere: 'Why are we here? funding? collaboration? beer?' Lyubomir Penev, Pensoft, starts his talk with questions. #pibber http://t.co/5DmVF65mEk	Thu, 23 May 2013 15:21:22 +0000
proibiosphere	'Why are we here? funding? collaboration? beer?' Lyubomir Penev, Pensoft, starts his talk with questions. #pibber http://t.co/5DmVF65mEk	Thu, 23 May 2013 15:15:13 +0000
WUlate	Best question ever: Who will curate our Bibliographic References? Answers on the floor: You! Everyone! Who curates Google anyway? #pibber	Thu, 23 May 2013 15:08:54 +0000
WUlate	REFinder won't be the 15th DB http://t.co/0CqmY47bC0 because it's a network of DBs & we envisioned the results! Jordan Biserkov at #pibber	Thu, 23 May 2013 15:06:31 +0000
aaik	RT @proibiosphere: 'Copyright does not protect content, but the form of presentation.' Willi Egloff, Plazi. #pibber http://t.co/2mBMoBmgYX	Thu, 23 May 2013 12:33:40 +0000
JevaKy	RT @proibiosphere: 'Copyright does not protect content, but the form of presentation.' Willi Egloff, Plazi. #pibber http://t.co/2mBMoBmgYX	Thu, 23 May 2013 10:23:40 +0000
JevaKy	RT @proibiosphere: Gregor Hagedorn on Linked Open Data and Scientific knowledge management system: why Linked Open Data? #pibber http://t.co/yNlz7Nvmcf	Thu, 23 May 2013 10:23:12 +0000
proibiosphere	Gregor Hagedorn on Linked Open Data and Scientific knowledge management system: why Linked Open Data? #pibber http://t.co/yNlz7Nvmcf	Thu, 23 May 2013 10:20:25 +0000
rmounce	RT @proibiosphere: 'Copyright does not protect content, but the form of presentation.' Willi Egloff, Plazi. #pibber http://t.co/2mBMoBmgYX	Thu, 23 May 2013 09:36:25 +0000
morrisonnorman	RT @ckmillerjr: Pro-iBiosphere Workshop 2 - Lightning Talks: Pangaea, Euro+Med Plantbase, DWB, LinnaeusNG, BioWikiFarm, BioVel #pibber	Thu, 23 May 2013 09:34:36 +0000
proibiosphere	'Copyright does not protect content, but the form of presentation.' Willi Egloff, Plazi. #pibber http://t.co/2mBMoBmgYX	Thu, 23 May 2013 09:31:04 +0000
cabbageleek	@PLOS @wordpressdotcom @proibiosphere #pibber	Thu, 23 May 2013 07:38:36 +0000
cabbageleek	Never make a presentation where the slides are just paragraphs of text!!! #pibber	Thu, 23 May 2013 07:33:42 +0000
proibiosphere	Workshop 2 gave insights to current costs of delivery services; there are several interesting and important elements to consider #pibber	Thu, 23 May 2013 04:30:42 +0000
proibiosphere	"success is considered by many institutions once a grant is funded and not in generating information"- Richard Old, XID Services #pibber	Thu, 23 May 2013 04:22:00 +0000
WUlate	Talking sustainability in (EU) projects concludes Berlin Workshop day 2: Measuring & constraining the costs of delivering services #pibber	Wed, 22 May 2013 14:39:15 +0000
WUlate	Richard Old: When developing your tool, spend your own money! Any project whose success is to get grant money will surely fail #pibber	Wed, 22 May 2013 14:02:52 +0000
WUlate	@pmergen on Geo & Helpdesk services "Projects want their own website & all their users coming in their own site for statistics" at #pibber	Wed, 22 May 2013 13:24:09 +0000
ckmillerjr	Pro-iBiosphere Workshop 2 - Lightning Talks: Pangaea, Euro+Med Plantbase, DWB, LinnaeusNG, BioWikiFarm, BioVel #pibber	Wed, 22 May 2013 13:20:12 +0000
WUlate	@vibrant_manager Dave Roberts at #pibber: *You need a champion that pushes forward, on Scratchpads, Vince Smith is ours in @vbrant !	Wed, 22 May 2013 13:17:49 +0000
WUlate	@heimor talking at #pibber on International Biodiversity Day!	Wed, 22 May 2013 13:00:40 +0000
WUlate	@nickynicolson talking about #IPNI linking to #BHL at @proibiosphere Workshops in Berlin! http://t.co/VAMOE4lxJJ #pibber @BioDivLibrary !	Wed, 22 May 2013 12:43:19 +0000
cabbageleek	European Journal of Taxonom #EJB costs about 52 euros per page #pibber	Wed, 22 May 2013 11:39:54 +0000
cabbageleek	It is notable that two conferences are simultaneously discussing #openaccess, #nfdp13 and #pibber	Wed, 22 May 2013 10:13:51 +0000
ckmillerjr	#pibber It's a grid! http://t.co/4PwEXjRjnS	Wed, 22 May 2013 08:29:46 +0000
ckmillerjr	#pibber Estimating biodiversity info publishing costs. It's a grid!	Wed, 22 May 2013 08:28:59 +0000
ckmillerjr	#pibber Costs of people far exceed infrastructure costs.	Wed, 22 May 2013 08:12:38 +0000
ckmillerjr	#pibber We need more stickies and more red pens!	Wed, 22 May 2013 07:54:29 +0000
ckmillerjr	ProiBiosphere Workshop 2. #pibber http://t.co/Qc1e9w8AbQ	Wed, 22 May 2013 07:52:22 +0000
ckmillerjr	ProiBiosphere Workshop 2. #pibber http://t.co/F2hjjDKcl9	Wed, 22 May 2013 07:50:12 +0000
ckmillerjr	ProiBiosphere Workshop 2 - Mapping the biodiversity info process w Post-Its #pibber	Wed, 22 May 2013 07:48:47 +0000

proibiosphere	"Informatics is a swift on the information revolution ocean; the waves are high! " Chuck Miller, Missouri Botanical Garden #pibber	Tue, 21 May 2013 21:42:47 +0000
proibiosphere	Brainstorming session on the requirements of Flora, Fauna & Mycota. #pibber http://t.co/FZ44nTqGvx	Tue, 21 May 2013 21:19:36 +0000
WUlate	I whole-heartedly seriously dissagree and won't support without a strong point of contention the voting mechanism! #pibber	Tue, 21 May 2013 15:32:33 +0000
WUlate	Gradient of Agree:1.Whole-hearted endorsement 2. Agree w/min pt.of contention 3. Support w/reservations 4. Abstain 5.Discuss more. #pibber	Tue, 21 May 2013 15:22:01 +0000
cabbageleek	I would be prepared to pay for biota publication data? Polarized #pibber	Tue, 21 May 2013 15:16:44 +0000
WUlate	What should a flora/fauna/mycota of the future be able to do for me? My short lightning talk presentation at http://t.co/PjGSdjxSoQ #pibber	Tue, 21 May 2013 15:08:06 +0000
WUlate	Attending Workshop Berlin 1: Requirements of users of Flora, Fauna or Mycota publications or services. http://t.co/VAMOE4lxJJ #pibber	Tue, 21 May 2013 14:38:47 +0000
cabbageleek	Open annotation. Filter push #pibber	Tue, 21 May 2013 12:24:59 +0000
cabbageleek	Need identifiers 4 specimens #pibber	Tue, 21 May 2013 12:23:29 +0000
cabbageleek	"take care acreditation" Mark Watson #pibber	Tue, 21 May 2013 12:21:11 +0000
WUlate	#pibber Looking a lot of #BHL's at the first group reports in pro-iBiosphere Workshops Day 1 Use Cases ofr Floras, Faunas, Mycotas, Protista	Tue, 21 May 2013 11:36:12 +0000
cabbageleek	"no standards to get funding" #pibber	Tue, 21 May 2013 10:54:31 +0000

Annex 22 - Contribution to events documents

#1 - Flora of the Guianas Biennal meeting Agenda

FLORA OF THE GUIANAS BIENNIAL MEETING AND SEMINARS

22-23 October 2012, Leiden, The Netherlands

22/Oct.: Nationaal Herbarium Nederland, Einsteinweg 2.

9:00 Ongoing floras and modern classifications: How should we organize our families?
By Piero Delprete – IRD, Herbier de Guyane (CAY)

10:00 Board members meeting (only board members)

14:00 General meeting

15:30 E-taxonomy platform for the Flora of the Guianas: open discussion

23/Oct.: Auditorium of Naturalis Biodiversity Center, Darwinweg 1.

9:00 Welcome

9:30 Opening of seminars program: Prof. Dr. E. Smets

Swartzia (Leguminosae) in the Guianas: what we have learned since the publication of the Flora of the Guianas treatment in 1989	Ben Torke - New York Botanical Garden
The Lianas of the Guianas fieldguide	Bruce Hoffman – Naturalis Biodiversity Center
The lichen genus *Cladonia* in the Guiana Highland region	Teuvo Ahti - Finnish Museum of Natural History
The lichen family Parmeliaceae in the Guianas	Harrie Sipman - Botanic Garden and Botanical Museum Berlin-Dahlem

11:20 – 11:40 Coffee break

Hermann Herbarium: the oldest plant collection from Suriname (ca. 1689)	Tinde van Andel - Naturalis Biodiversity Center
Recent botanical explorations in Southern Suriname	Chequita Bhikhi - Naturalis Biodiversity Center
Harnessing business support for floristic: opportunities and implications	William Milliken - KEW

13:00 – 13:40 Lunch

13:40 – 14:10 Poster session

Quick changes in nomenclature: examples and the necessity to update floras and checklists	Christian Feuillet – Smithsonian Institution
Expanding reach through web and mobile apps	Alexander Krings - North Carolina State University
EU FP7 Pro-iBiosphere: toward an open biodiversity knowledge management system	Soraya Sierra – Naturalis Biodiversity Center

15:20 – 15:40 Coffee break

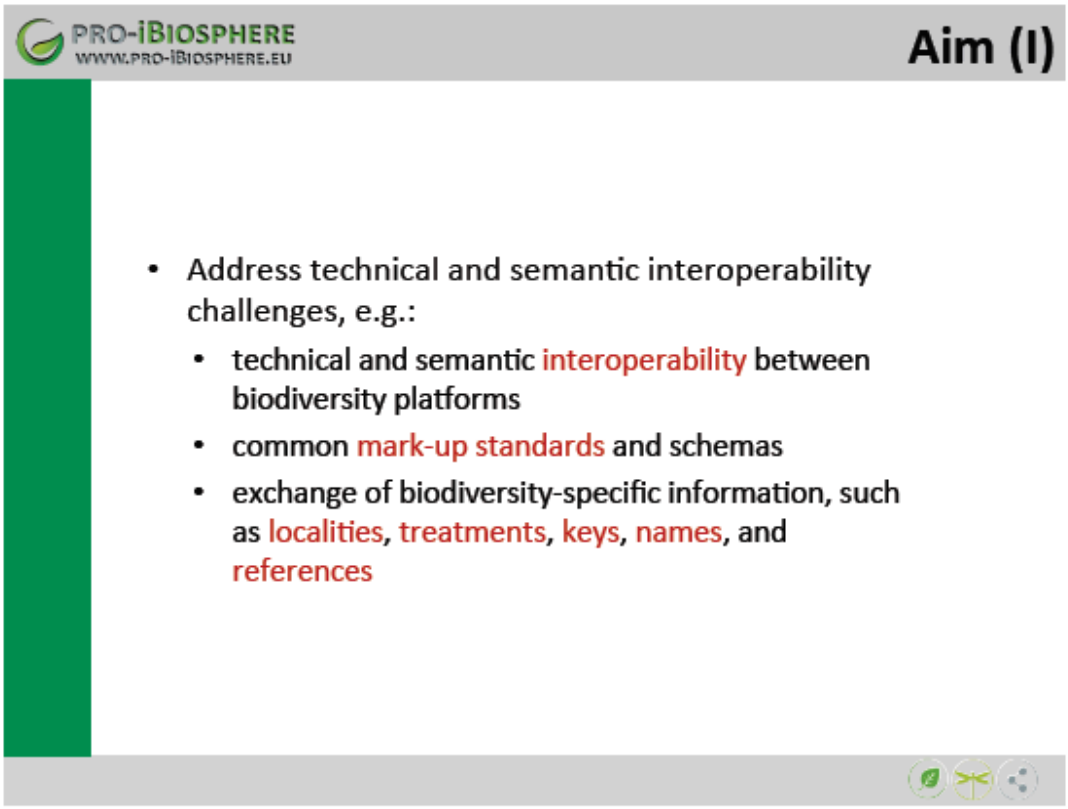
Species composition of the Amazonian forests	Hans ter Steege – Naturalis Biodiversity Center
Novelties and rarity in the flora of the Guianas	Pedro Acevedo-Rodríguez – Smithsonian Institution

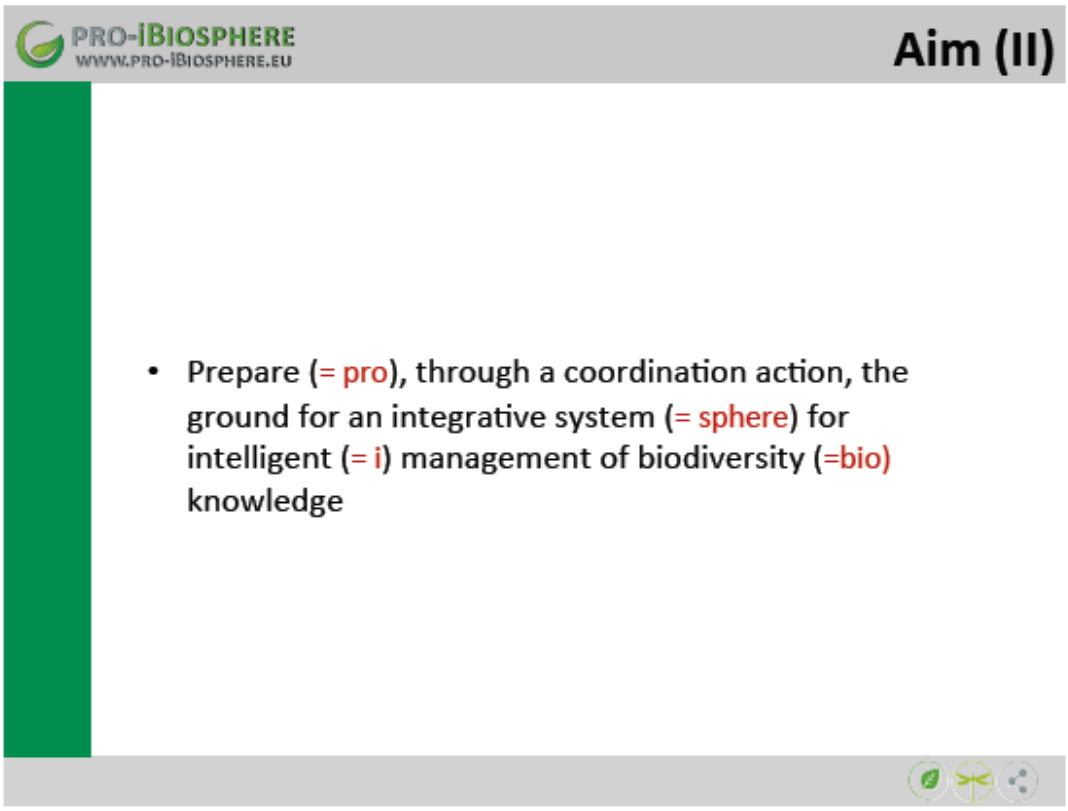
16:30 **Drinks & launching of the book**
Flora of the Guianas Series A, fascicle 29: 127. Sapindaceae, by P. Acevedo-Rodríguez

Note: Attendance and poster submission are free of charge; registration form attached to this message.

Naturalis Biodiversity Center
Einsteinweg 2
P.O. box 9514
2300 RA Leiden
The Netherlands
T +31 (0)71 527 35 50
M +31 (0)6 2545 8216
www.naturalis.nl
Registration: sylvia.motadeoliveira@naturalis.nl

#2 - Flora of the Guianas Biennal meeting presentation


PRO-iBIOSPHERE
WWW.PRO-iBIOSPHERE.EU
Aim (I)
• Address technical and semantic interoperability challenges, e.g.:
• technical and semantic interoperability between biodiversity platforms
• common mark-up standards and schemas
• exchange of biodiversity-specific information, such as localities, treatments, keys, names, and references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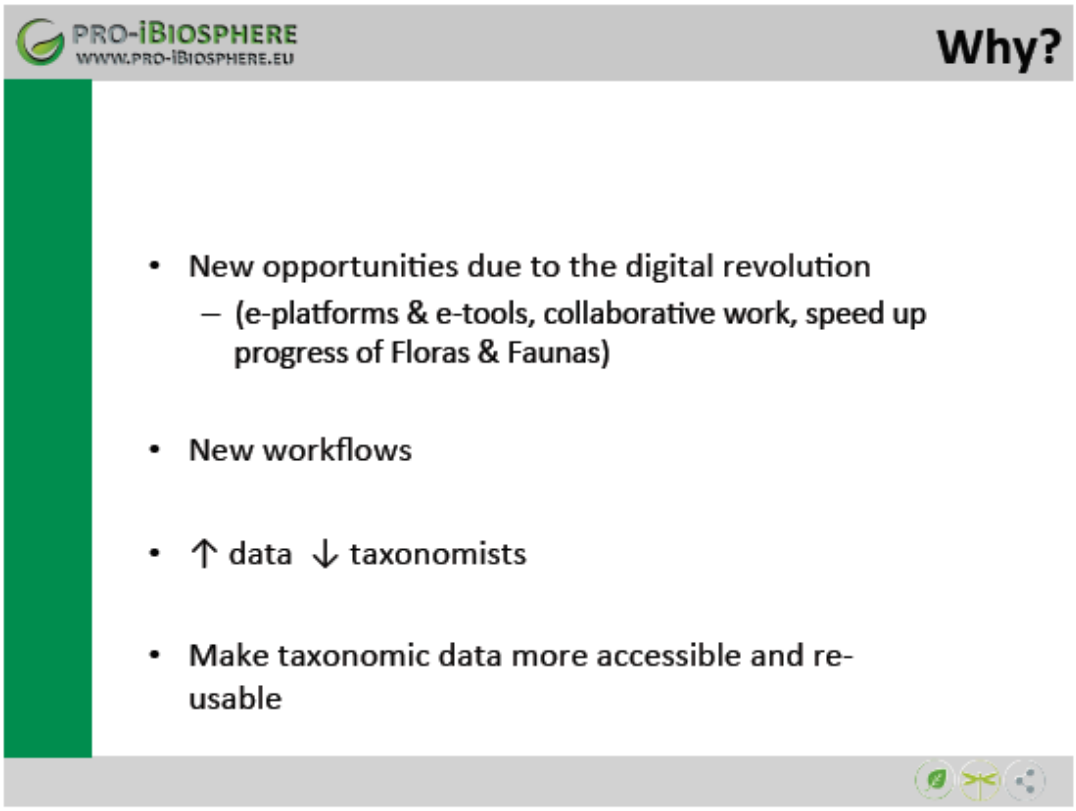
Aim (II)
• Prepare (= pro), through a coordination action, the ground for an integrative system (= sphere) for intelligent (= i) management of biodiversity (=bio) knowledge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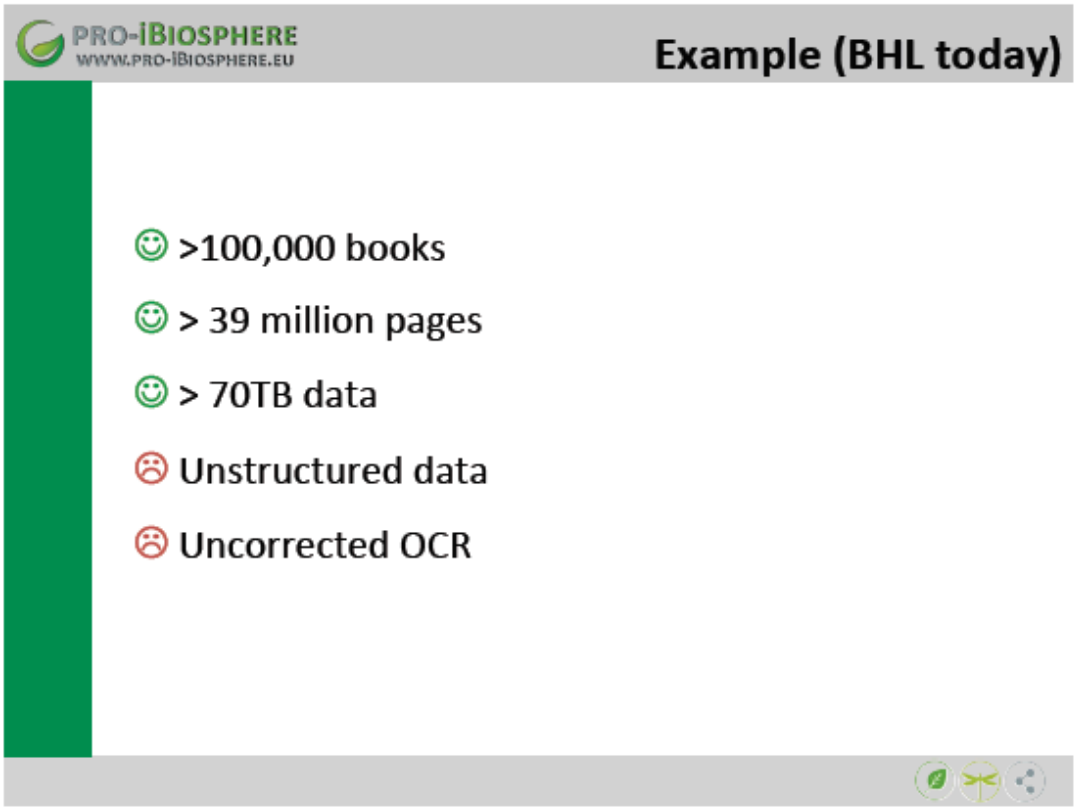
Why?
• New opportunities due to the digital revolution
– (e-platforms & e-tools, collaborative work, speed up progress of Floras & Faunas)
• New workflows
• ↑ data ↓ taxonomists
• Make taxonomic data more accessible and re-usable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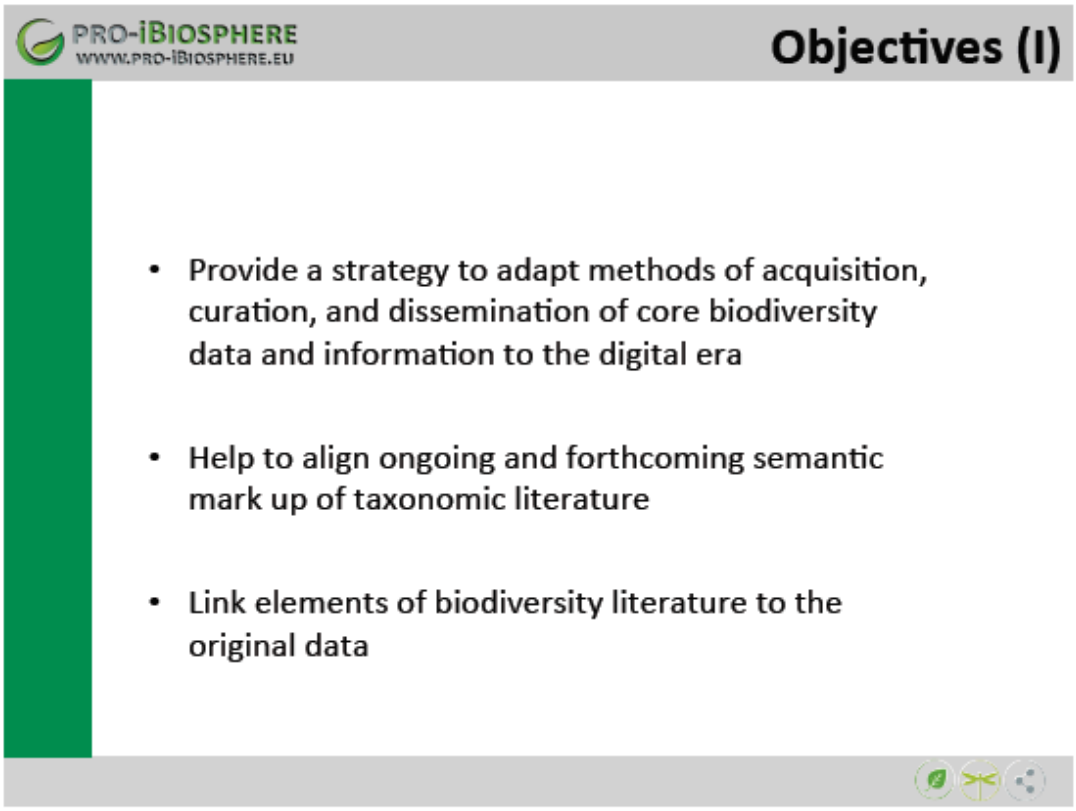
Example (BHL today)
☺ >100,000 books
☺ > 39 million pages
☺ > 70TB data
☹ Unstructured data
☹ Uncorrected OCR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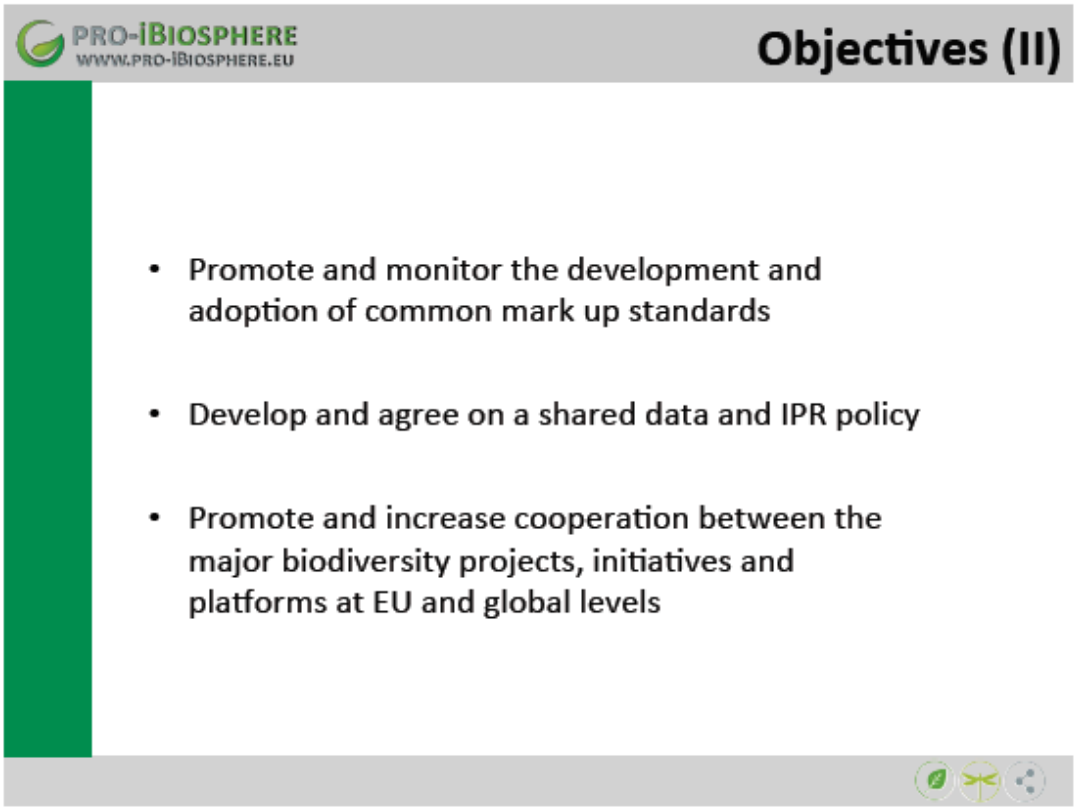
Objectives (I)
• Provide a strategy to adapt methods of acquisition, curation, and dissemination of core biodiversity data and information to the digital era
• Help to align ongoing and forthcoming semantic mark up of taxonomic literature
• Link elements of biodiversity literature to the original data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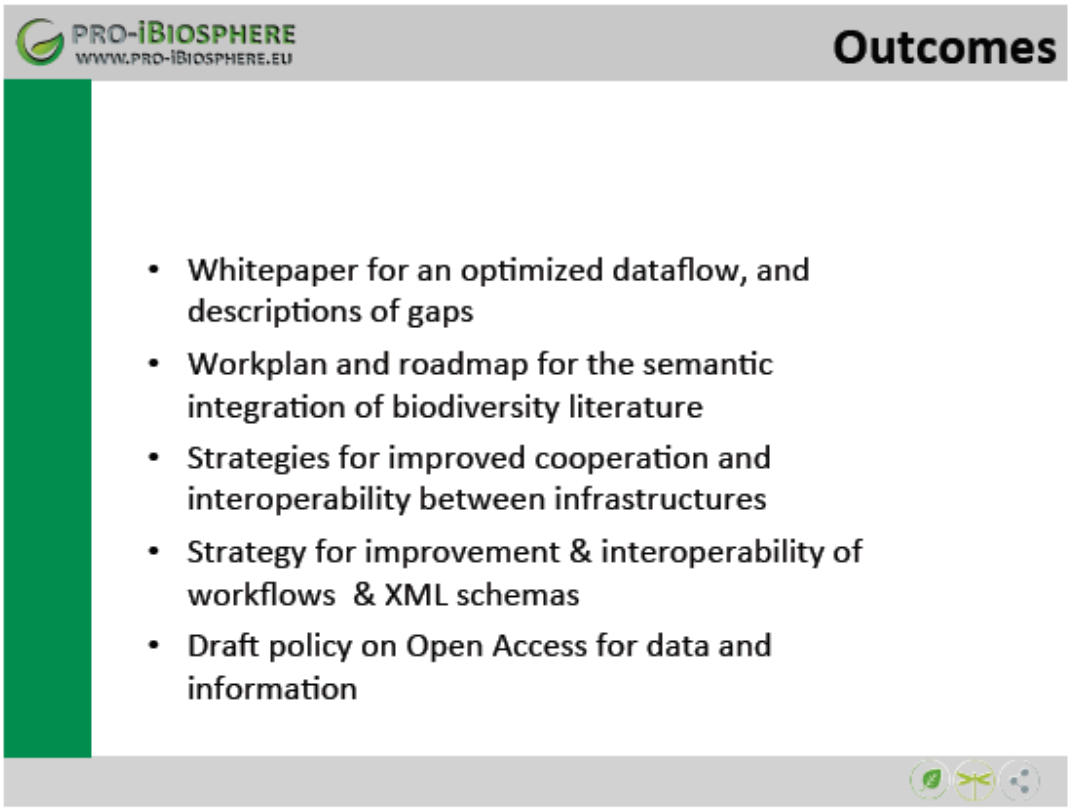
Objectives (II)
• Promote and monitor the development and adoption of common mark up standards
• Develop and agree on a shared data and IPR policy
• Promote and increase cooperation between the major biodiversity projects, initiatives and platforms at EU and global levels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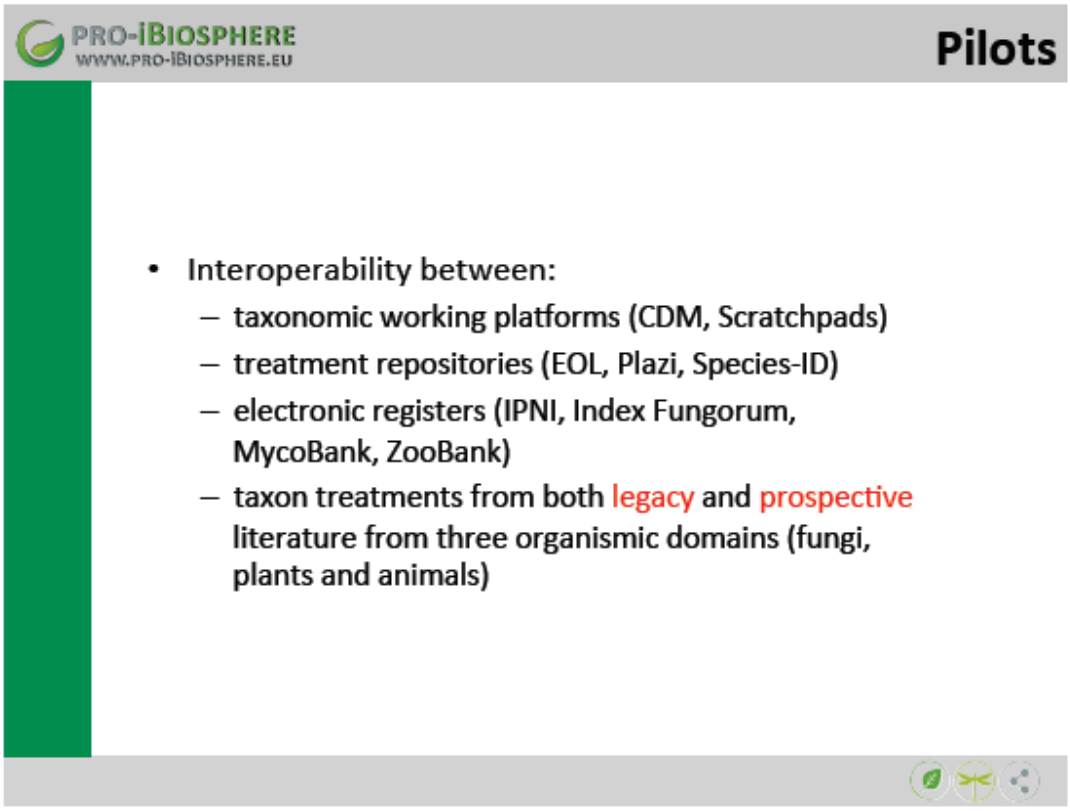
Outcomes
• Whitepaper for an optimized dataflow, and descriptions of gaps
• Workplan and roadmap for the semantic integration of biodiversity literature
• Strategies for improved cooperation and interoperability between infrastructures
• Strategy for improvement & interoperability of workflows & XML schemas
• Draft policy on Open Access for data and information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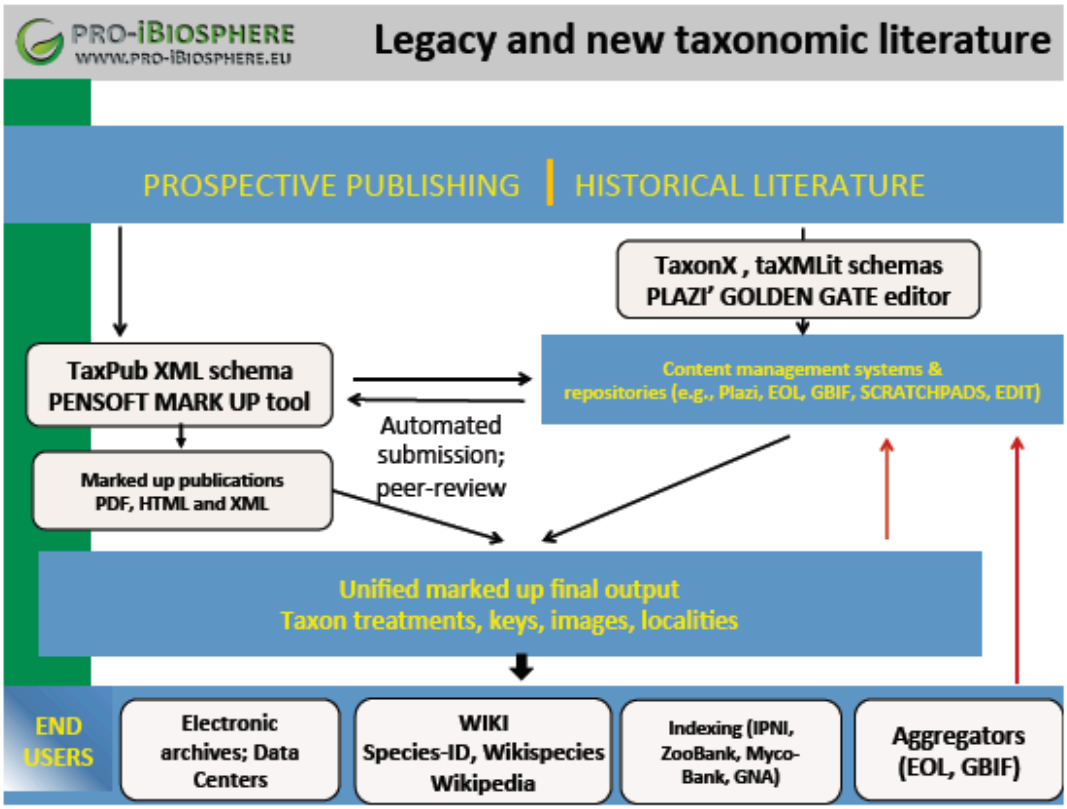
Pilots
• Interoperability between:
– taxonomic working platforms (CDM, Scratchpads)
– treatment repositories (EOL, Plazi, Species-ID)
– electronic registers (IPNI, Index Fungorum, MycoBank, ZooBank)
– taxon treatments from both legacy and prospective literature from three organismic domains (fungi, plants and animals)


PRO-iBIOSPHERE
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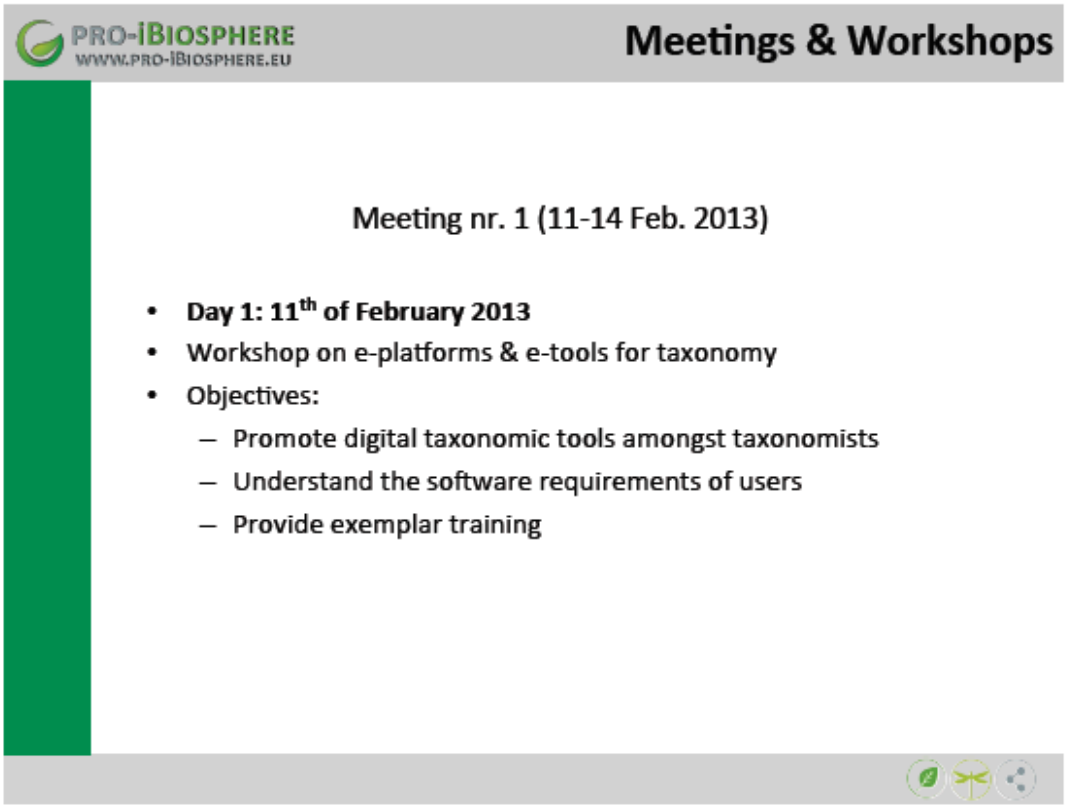
Legacy and new taxonomic literature
PROSPECTIVE PUBLISHING
HISTORICAL LITERATURE
TaxonX , taXMLit schemas
PLAZI' GOLDEN GATE editor
TaxPub XML schema
PENSOFT MARK UP tool
Content management systems &
repositories (e.g., Plazi, EOL, GBIF, SCRATCHPADS, EDIT)
Automated
submission;
peer-review
Marked up publications
PDF, HTML and XML
Unified marked up final output
Taxon treatments, keys, images, localities
END
USERS
Electronic
archives; Data
Centers
WIKI
Species-ID, Wikispecies
Wikipedia
Indexing (IPNI,
ZooBank, Myco-
Bank, GNA)
Aggregators
(EOL, GBIF)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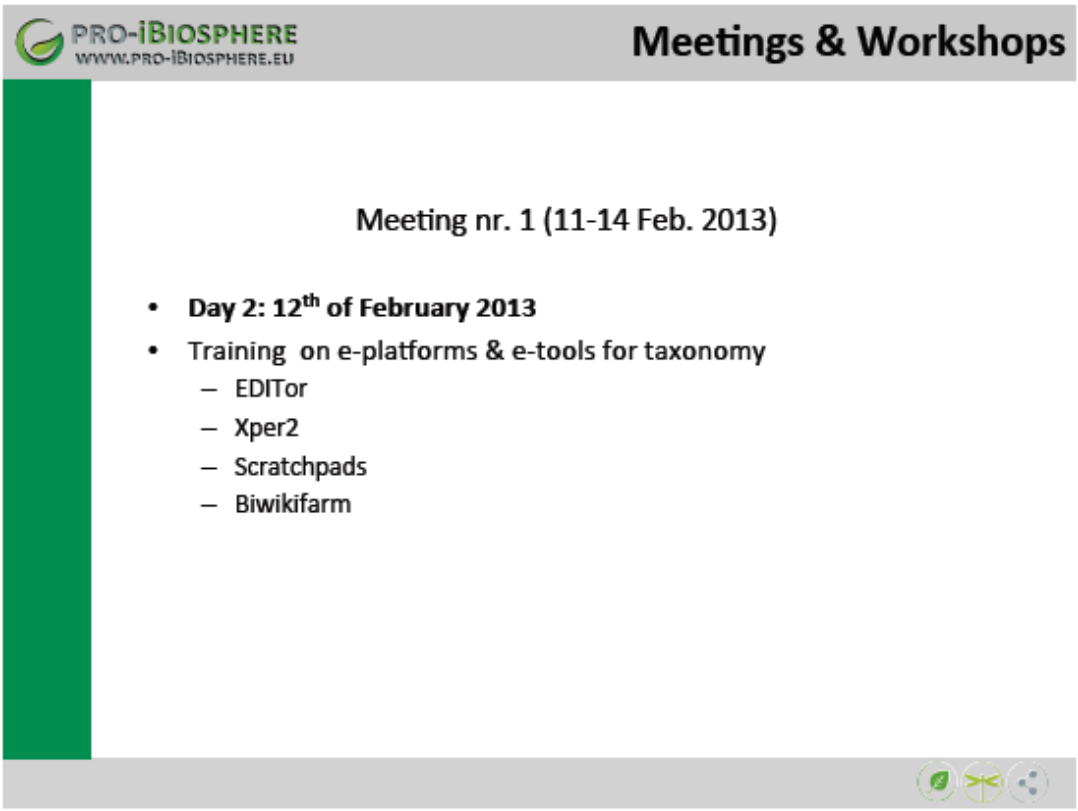
Meetings & Workshops
Meeting nr. 1 (11-14 Feb. 2013)
Day 1: 11th of February 2013
Workshop on e-platforms & e-tools for taxonomy
Objectives:
Promote digital taxonomic tools amongst taxonomists
Understand the software requirements of users
Provide exemplar training


PRO-iBIOSPHERE
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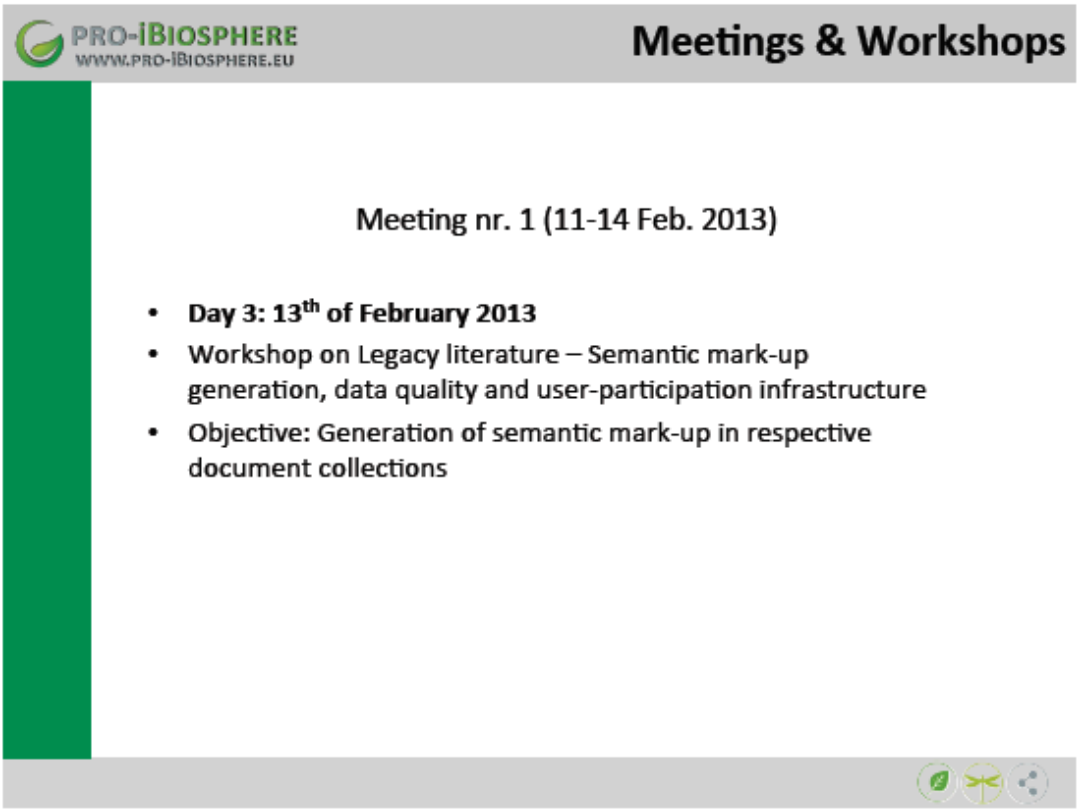
Meetings & Workshops
Meeting nr. 1 (11-14 Feb. 2013)
Day 2: 12th of February 2013
Training on e-platforms & e-tools for taxonomy
EDITor
Xper2
Scratchpads
Biwikifarm


PRO-iBIOSPHERE
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Meetings & Workshops
Meeting nr. 1 (11-14 Feb. 2013)
Day 3: 13th of February 2013
Workshop on Legacy literature – Semantic mark-up generation, data quality and user-participation infrastructure
Objective: Generation of semantic mark-up in respective document collections

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Meetings & Workshops

Meeting nr. 1 (11-14 Feb. 2013)

- **Day 4: 14th of February 2013**
- Workshop on Prospective Literature – Toward Best Practices for data acquisition and curation using e-tools for taxonomy
- Objective: Identify and promote good practices for entering new field data and collaboratively writing of taxonomic treatments

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WWW.PRO-iBIOSPHERE.EU

Where to find us?

- http://wiki.pro-ibiosphere.eu
- http://www.pro-iBiosphere.eu


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Thank you for your attention!

#3 - TDWG 2012 Agenda

TDWG 2012 Program

(All program activities will be held in the Main Hall unless otherwise indicated)**

SUNDAY, October 21

REGISTRATION 4pm – 6pm (follow signs from Hotel Lobby)

TDWG Conference Reception 6pm – 8pm

MONDAY, October 22

9:00 **Opening Remarks**
Keping Ma, Chair of Local Organizing Committee
Chuck Miller, Chair, TDWG Executive Committee
Yinan Liu, Conference Manager
Rusty Russell, Chair, TDWG 2012 Program Committee

9:30 **Keynote: Dr. Robert Robbins**
How Diverse is the Biosphere? New Tools, Recent Discoveries, Huge Implications

10:30 **BREAK**

11:00 **Contributed Papers**

Digital images and DNA barcodes improve international cooperation and informatic value of diverse tropical arthropod inventories
Jeremy Miller

Digitisation of insect soups from entomological collections
Beth Mantle, Paul Kenneth Flemons

Soup for crowds: a new source of data on insect richness, diversity and abundance
Paul Kenneth Flemons, Beth Mantle

Collection and conservation of microalgae biodiversity information in Burkina Faso (West Africa)
Bilassé Zongo

eMonocot: an online resource for monocot plants
Benjamin Richard Clark, Abigail Barker, Edward Baker, William J Baker, Ruth Bone, H Charles J Godfray, Joseph Kelly, Ian J Kitching, Laurence Livermore, Simon Joseph Mayo, Sarah Phillips, Annapaola Santarsiero, Malcolm J Scoble, David A Simpson, Vincent S Smith, Soraya Villalba, Odile Weber, Paul Wilkin

12:30 **LUNCH**

1:30 **Contributed Papers**

Knowledge Organization Systems in the GBIF work programme – recent developments
Dag Terje Filip Endresen, Éamonn Ó Tuama, David Remsen

The new version of the BioCASe protocol: Teaming direct access web services with archive files
Jörg Holetschek, Anton Güntsch, Walter G. Berendsohn

The Biodiversity Heritage Library and bibliographic citations: new user services in support of a Global Names Architecture
Trish Rose-Sandler, William Ulate

Semantic Layers in Database Applications and Implications for Schema Mapping
Maureen Kelly (David Lowery)

1:30 Breakout Room**
Working Meeting
Darwin Core (DwC) Tissue/DNA extension for the Global Genome Biodiversity Network (GGBN)
Paul Kenneth Flemons

2:30 Interest Group
Managing vocabularies - the role of TDWG
Éamonn Ó Tuama, Dag Terje Filip Endresen, David Remsen

3:30 BREAK

4:00 Task Group
The TDWG Technical Architecture Group
Greg Whitbread, Stan Blum

4:00 Breakout Room**
Working Meeting (Continued)
Darwin Core (DwC) Tissue/DNA extension for the Global Genome Biodiversity Network (GGBN)
Paul Kenneth Flemons

6:00 Buffet DINNER

▲▼▲▼▲▼▲▼▲▼▲▼▲▼▲▼

TUESDAY, October 23

9:00 SYMPOSIUM: Biodiversity database and journal interface in e-publication era

Biodiversity database and journal interface in e-publication era
Zhi-Qiang Zhang

Making small data big: The Biodiversity Data Journal
Lyubomir Penev, Teodor Georgiev, Pavel Stoev, David Roberts, Vincent Smith

Semantic Annotation, Ontology Building, and Interactive Key Generation from Morphological Descriptions
Hong Cui, Alex Dusenbery, James Macklin, Fengqiong Huang, Robert Morris, Heather Cole

Towards a Universal Bibliography – The RefBank approach
Guido Sautter, David King, David R. Morse

From Taxonomic Literature to Cybertaxonomic Content
Jeremy Miller*, Torsten Dikow, Donat Agosti, Guido Sautter, Terry Catapano, Lyubomir Penev, Zhi Qiang Zhang, Dean Pentcheff, Richard Pyle, Stan Blum, Cynthia Parr, Chris Freeland, Tom Garnett, Linda S. Ford, Burgert Muller, Leo Smith, Ginger Strader, Teodor Georgiev and Laurence Bénichou

Highlighting fitness-for-use of published biodiversity data
Javier Otegui, Arturo H. Ariño

10:30 BREAK

11:00 SYMPOSIUM: African Biodiversity Information Symposium
(sponsored by JRS Biodiversity and the Belgian Cooperation for Development)

Activity of the Herbarium of Lwiro
Mwanga Mwanga Ithe

A Tool for the Forest in DR Congo
Albert Bulimwengu Walanga

The data of the Biosphere reserve of Luki, DR Congo
Bhely Ronsard Angoboy

Developing biodiversity informatics infrastructure to support conservation of plant diversity in Ghana
Dr. Alex Asase

Building Biodiversity Information Networks for the compilation of Kenya's Natural Capital
Lucy W. Waruingi

Accessibility and Usage of Biodiversity Information in Tanzania: Challenges and Opportunities
Philbert Nyinondi

RIHA and SEP-CEPDEC: Lessions Learned from a contribution to GBIF outreach in Togo
Pierre Radji

12:30 LUNCH

1:30 Contributed Papers

AnnoSys - A generic Annotation System for Biodiversity Data
Lutz Suhrbier, Okka Tschöpe

Generating Annotations for the Semantic Web From Closed-world Data
David Lowery

2:00 Interest Group
Annotations
Paul Morris, James Macklin

2:00 Breakout Room**
Working Meeting
Darwin Core (DwC) Tissue/DNA extension for the Global Genome Biodiversity Network (GGBN)
Paul Kenneth Flemons

3:30 BREAK

4:00 Breakout Room**
Working Meeting (continued)
Darwin Core (DwC) Tissue/DNA extension for the Global Genome Biodiversity Network (GGBN)

6:00 Buffet DINNER

▲▼▲▼▲▼▲▼▲▼▲▼▲▼▲▼

WEDNESDAY, October 24

9:00 ***Dr. Frank Bisby – Personal Recollections***

9:30 **Plenary Speaker: Dr. Li-Qiang Ji**
Bisby Core - a Taxonomic Data Transfer Standard for the Multiple Taxonomy Environment.

10:30 **BREAK**

11:00 **POSTER SESSION – Main Hall (Posters are listed at end of program)**

12:30 **LUNCH**

1:30 **Computer Demonstrations**

Xper3: When taxonomy meets Web 2.0
Visotheary Ung, Florian Causse, Thomas Burguière, Nils Paulhe, Régine Vignes-Lebbe

Pensoft Writing Tool (PWT): A novel, collaborative, domain-specific, article authoring platform
Teodor Georgiev, Pavel Stoev, David Roberts, Vincent Smith

Scratchpads Demo
Ben Scott

2:30 **Workshop**
Global dissemination of natural history content via Biodiversity Library Exhibition (BLE) workshop
Jiří Frank, William Ulate

6:00 **Buffet DINNER**

▲▼▲▼▲▼▲▼▲▼▲▼▲▼▲▼

THURSDAY, October 25

9:00 **Contributed Papers**

The BioVeL Data Refinement Workflow for Occurrence Data.
Anton Güntsch, Cherian Mathew, Vera Hernandez Ernst, Matthias Obst, Sarah Bourlat, Alan R Williams, Yde de Jong, Alex Hardisty

Interoperability between Scratchpads and the EDIT Platform for Cybertaxonomy via the Darwin Core Archive standard
Lorna Morris, Andreas Kohlbecker, Andreas Müller, Simon Rycroft, Edward Baker, Walter Berendsohn

Scratchpads 2.0 and the pitfalls of scale
Simon Rycroft, Ben Scott, Dave Roberts, Vince Smith

Taxonomic Tree Tool for Managing and Comparing Taxonomic Trees
Congtian Lin, Huijie Qiao, Jiangning Wang, Liqiang Ji

A Guideline for Dealing with Data Quality
Allan Koch Veiga, Antonio Mauro Saraiva

10:30 BREAK

11:00 Contributed Papers

Building a participatory open access biodiversity portal in India - India Biodiversity Portal & Western Ghats Portal.
Balasubramanian Dhandapani, Ramesh Brahmasamudra Ranganna, Prabhakar Rajagopal

Biodiversity Information Service in China: The Architecture and Techniques.
Zheping Xu, Keping Ma, Haining Qin, Jinzhong Cui

Leveraging an international infrastructure: case studies from the Encyclopedia of Life
Cynthia Parr, Katja Schulz, Jennifer Hammock

Large-scale indexing of biodiversity data.
Federico Méndez, Tim Robertson

Towards the Global Genome Biodiversity Network (GGBN) – Infrastructure for genomic tissue and DNA sample data.
Gabriele Droege, Katharine Barker, Paul Flemons, Paul Bartels

12:30 LUNCH

1:30 TDWG BUSINESS MEETING

2:30 Interest Group
Biodiversity Information for Cooperation and Development
Alex Asase, Patricia Mergen

2:30 Breakout Room**
Interest Group
Genomic Biodiversity Working Interest Group (GBWG) Charter
John Deck

3:30 BREAK

4:00 Interest Group (continued):
Biodiversity Information for Cooperation and Development
Alex Asase, Patricia Mergen

4:00 Breakout Room**
Interest Group (continued)
Genomic Biodiversity Working Interest Group (GBWG) Charter
John Deck

5:30 Buses leave People's Palace for Conference Dinner

6:30 Conference DINNER

▲▼▲▼▲▼▲▼▲▼▲▼▲▼▲▼

FRIDAY, October 26

9:00 **Lightning Talks**

Species and names: building the taxonomy and nomenclature database in Finland
Dmitry Schigel

The Catalogue of Life e-Infrastructure project, http://www.i4life.eu
Wouter Addink, Walter G. Berendsohn

GeoCASe, OpenUp! and the ABCD-EFG schema -- Mobilizing paleobiological collection data
Falko Glöckler, Jana Hoffmann, Wolfgang Kiessling, Martin Pluta

Opening Up paleontological multimedia data for the public
Jana Hoffmann, Jiří Frank

Announcing ETC: Exploring Taxon Concepts through Analyzing Fine-Grained Semantic Markup of Descriptive Literature
James Alexander Macklin, Hong Cui, Bertram Ludaescher

An Online Metadata Resource of Vegetation Databases: The Global Index of Vegetation-Plot Databases (GIVD)
Falko Glöckler

The Art of Life Schema: describing and providing access to natural history illustrations from the Biodiversity Heritage Library (BHL)
William Ulate, Trish Rose-Sandler, Gaurav Vaidya, Robert Guralnick

9:45 **Interest and Task Group Reports**

10:30 **BREAK**

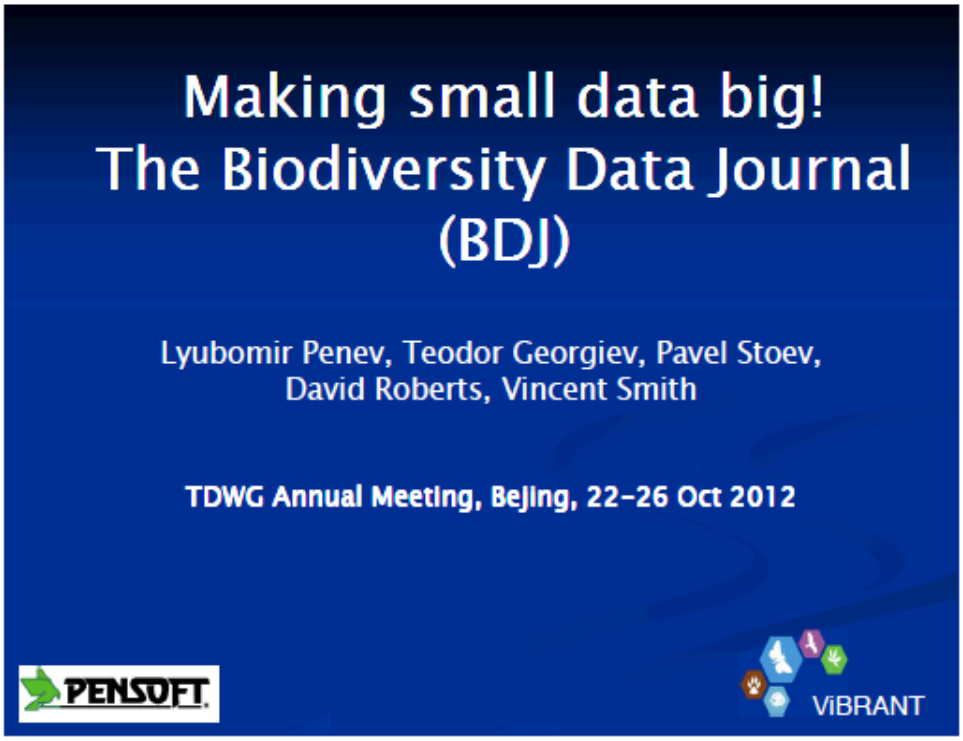
11:00 **Interest and Task Group Reports**

11:45 **TDWG 2013 Report: Florence, ITALY.** ***Patrizia Paolacci, Event Planner***

12:30 **Final Comments from the Chairman**

1:00 **LUNCH**

#4 - TDWG 2012 Presentation



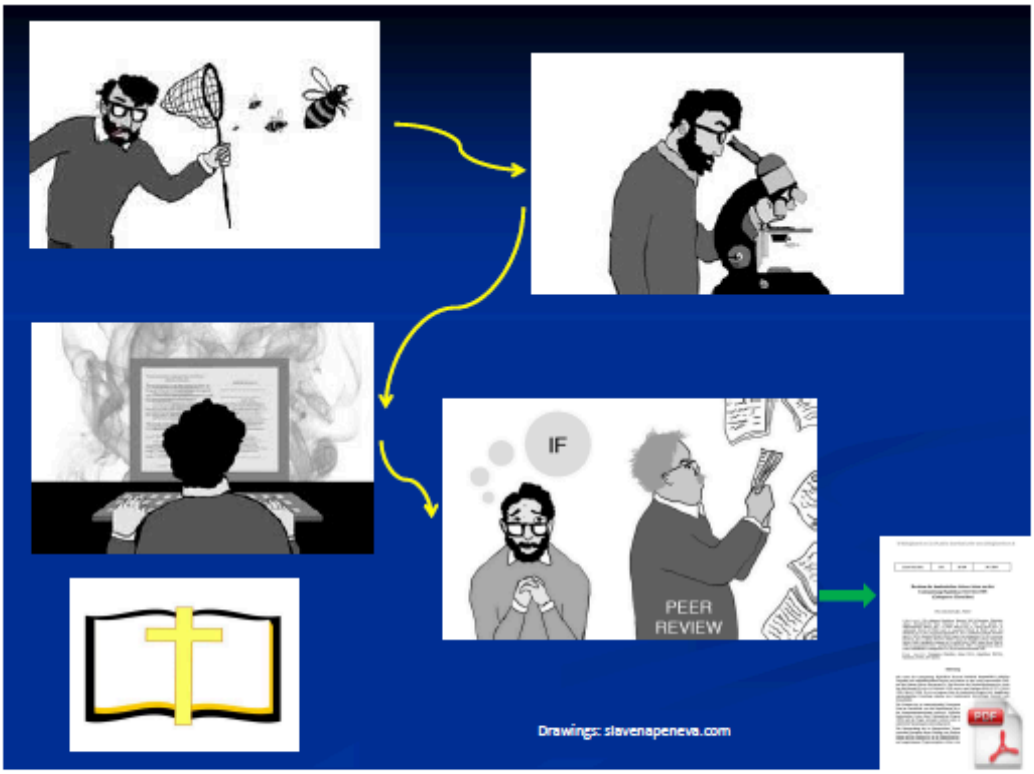
The problem

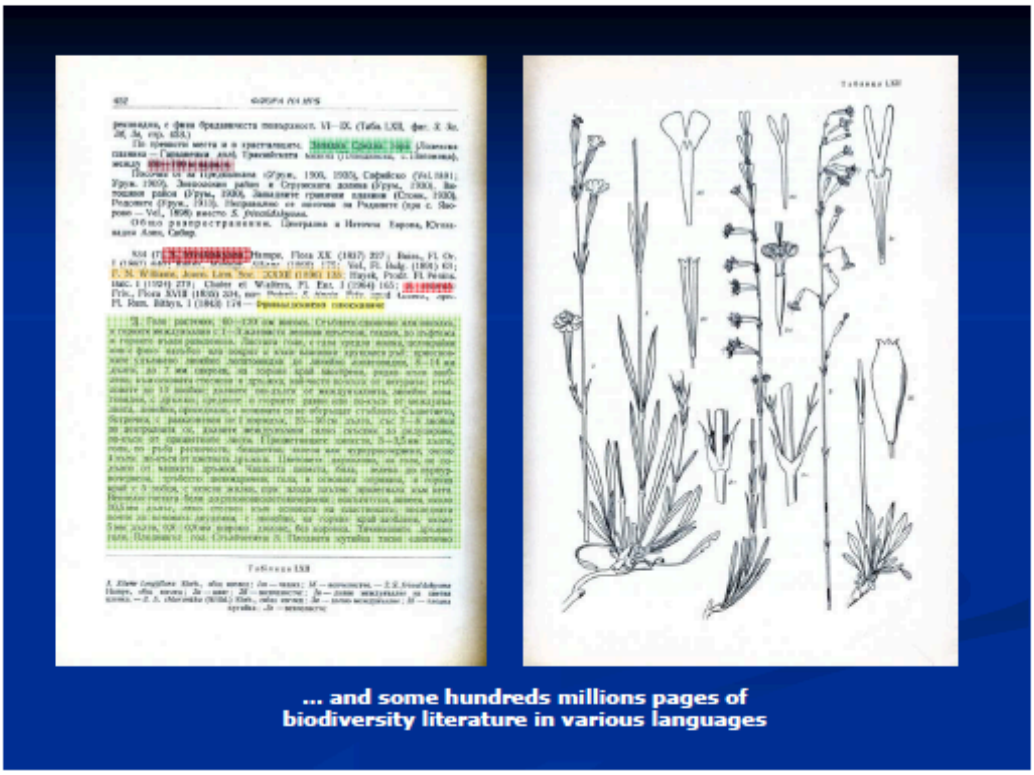
PHILOSOPHICAL
TRANSACTIONS:
GIVING SOME
ACCOMPT
OF THE PRESENT
Undertakings, Studies, and Labours
OF THE
INGENIOUS
IN MANY
CONSIDERABLE PARTS
OF THE
WORLD.

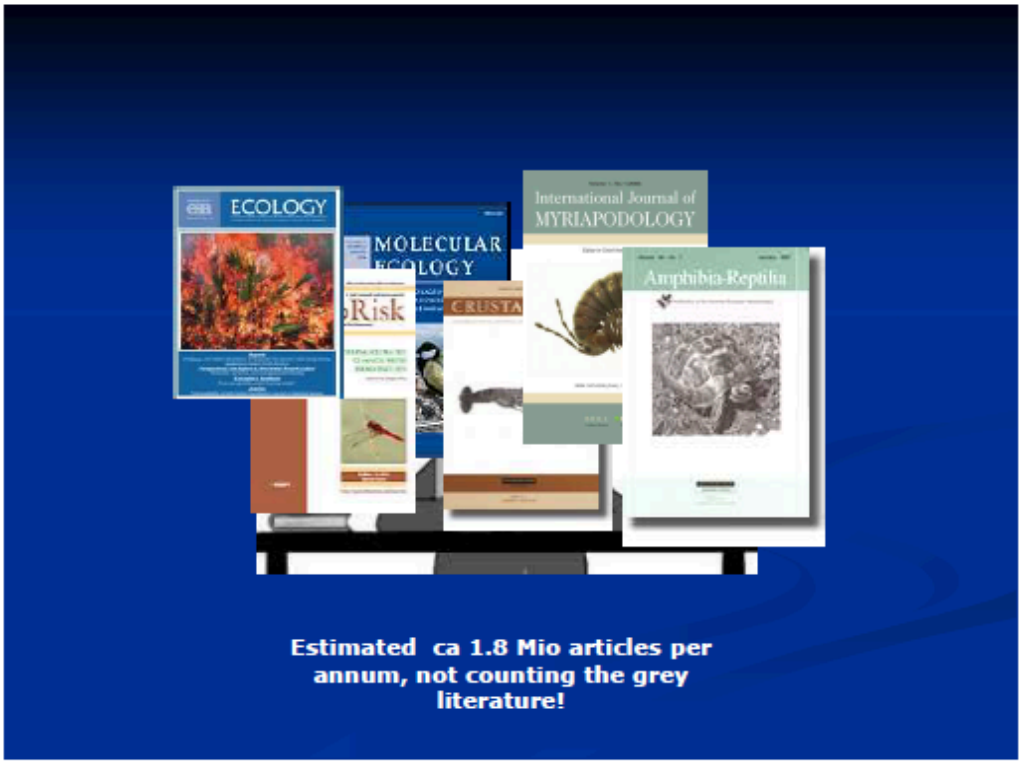
Vol I.
For Anno 1665, and 1666.

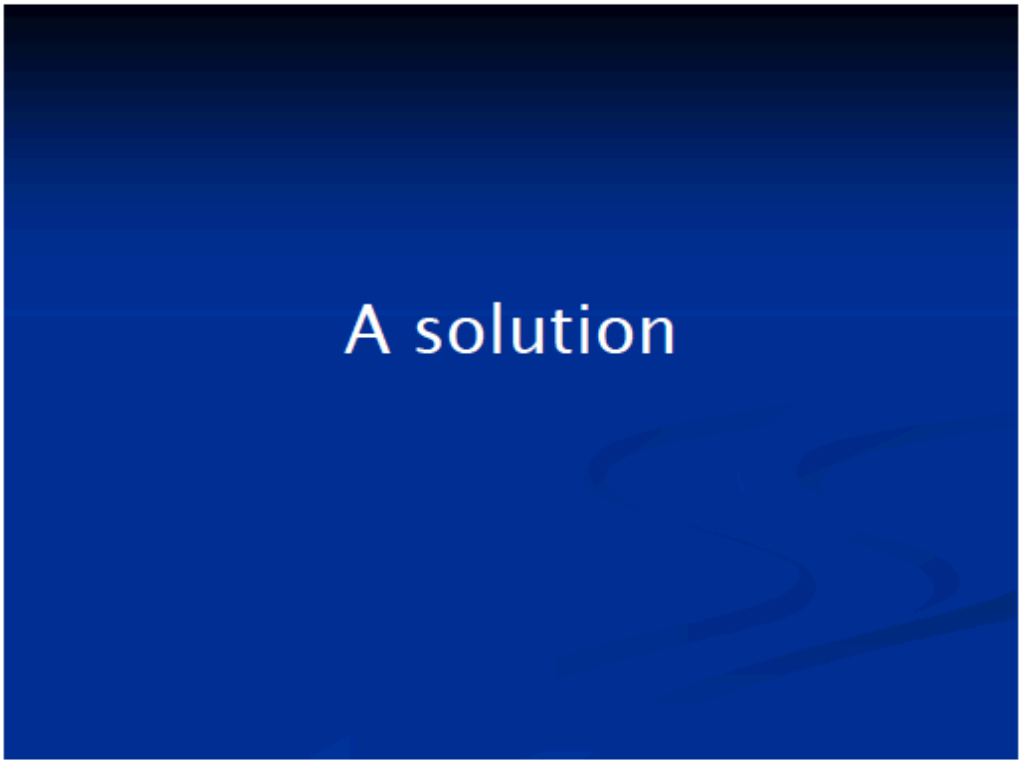
In the SAVOY,
Printed by T. N. for John Martyn at the Bell, a little without Temple-Bar, and James Allestry in Duck-Lane,
Printers to the Royal Society.

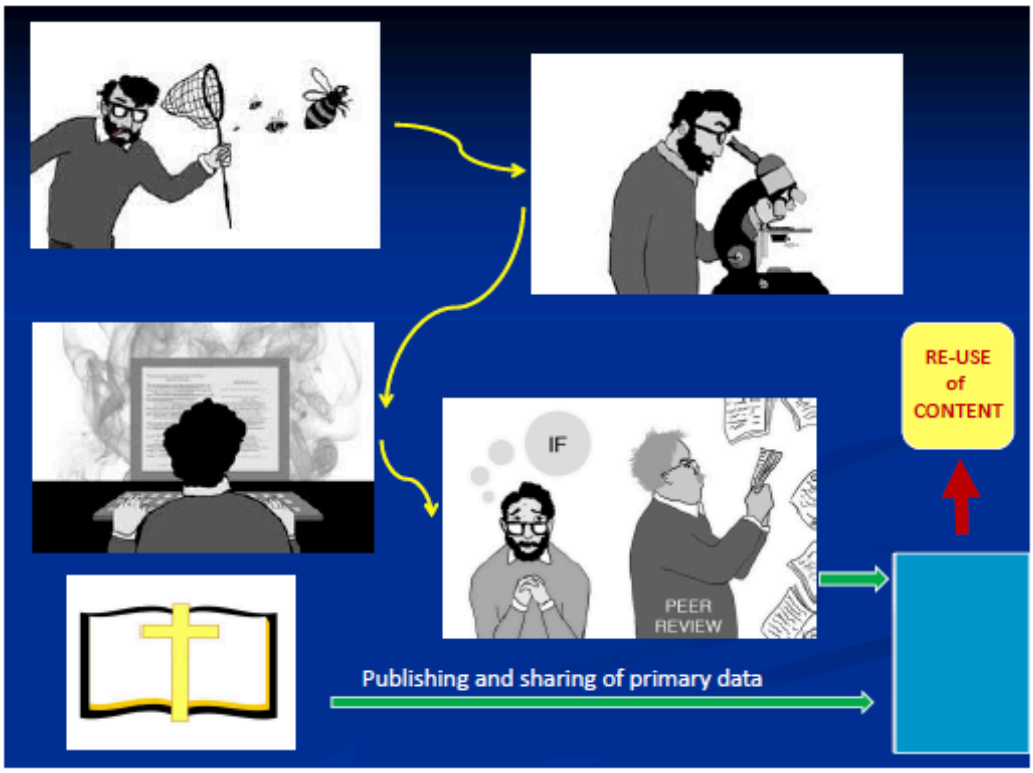
Source: Wikipedia


IF
PEER
REVIEW
Drawings: stavenapeneva.com


... and some hundreds millions pages of
biodiversity literature in various languages


ECOLOGY
MOLECULAR ECOLOGY
International Journal of MYRIAPODOLOGY
Amphibia-Reptilia
Estimated ca 1.8 Mio articles per annum, not counting the grey literature!


A solution

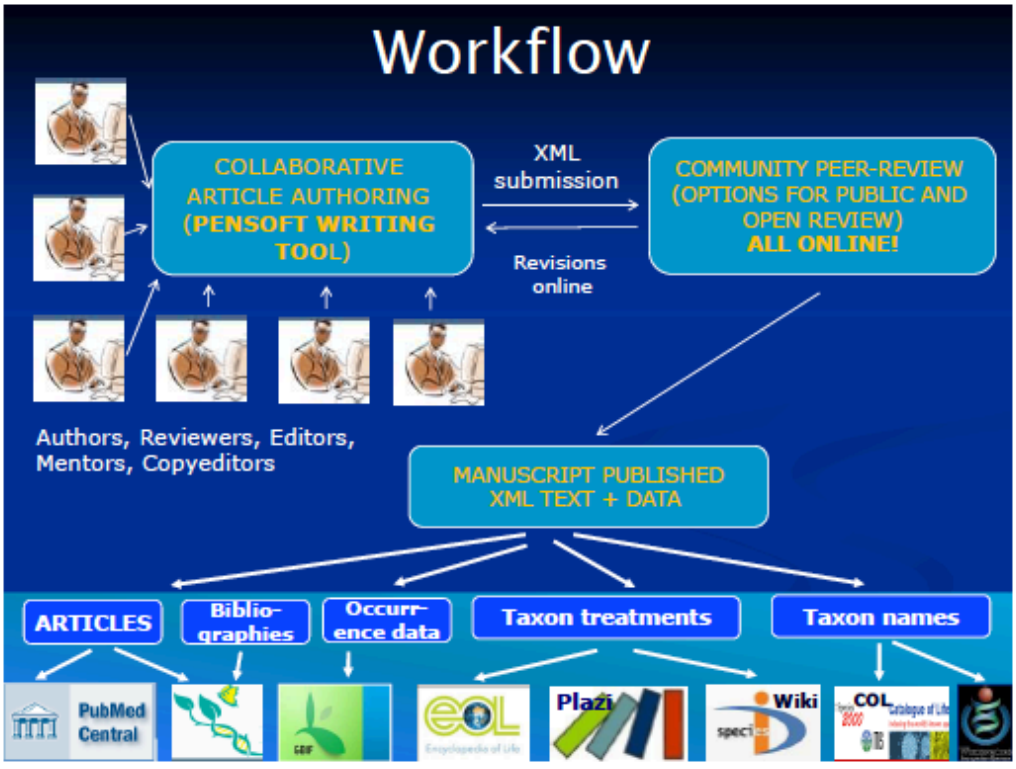


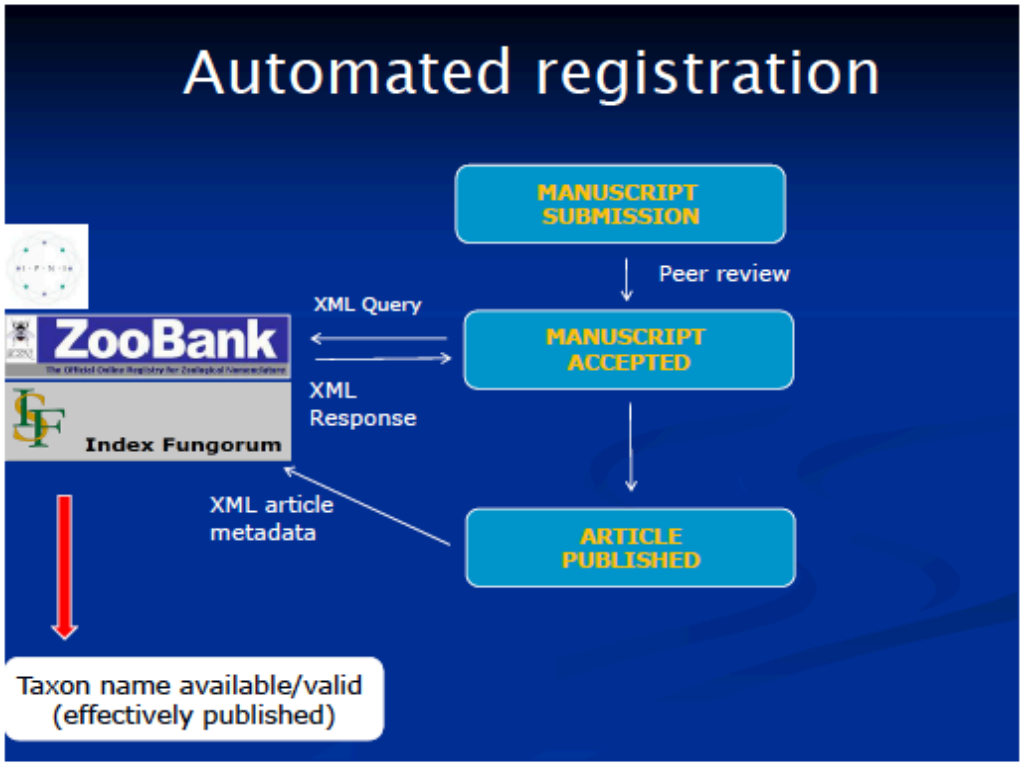
So, why do we need another new journal?

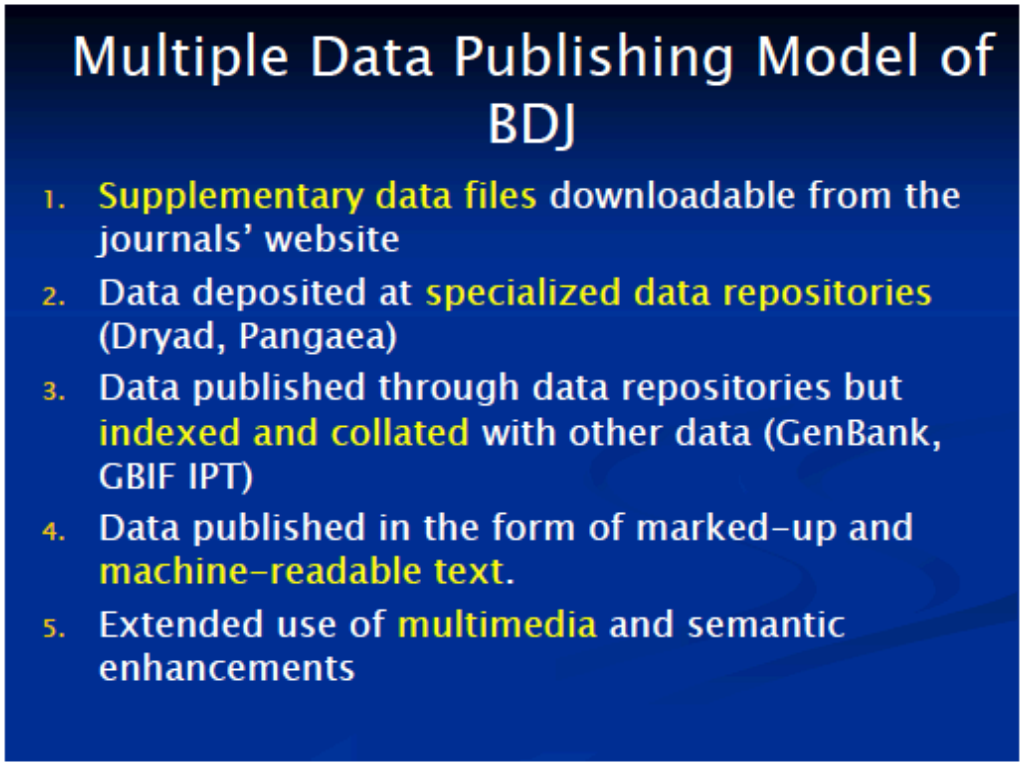
- We need to encourage taxonomists to mobilize & describe their data, especially small data
- This takes considerable effort (e.g. GBIF, Scratchpads experience)
- "Arguably" this is best rewarded through credit
- This means papers and citations
- Process must be very easy for authors
- Process must facilitate data reuse
- Meet "Open Data" policy commitments

- *The Biodiversity Data Journal is very different…*

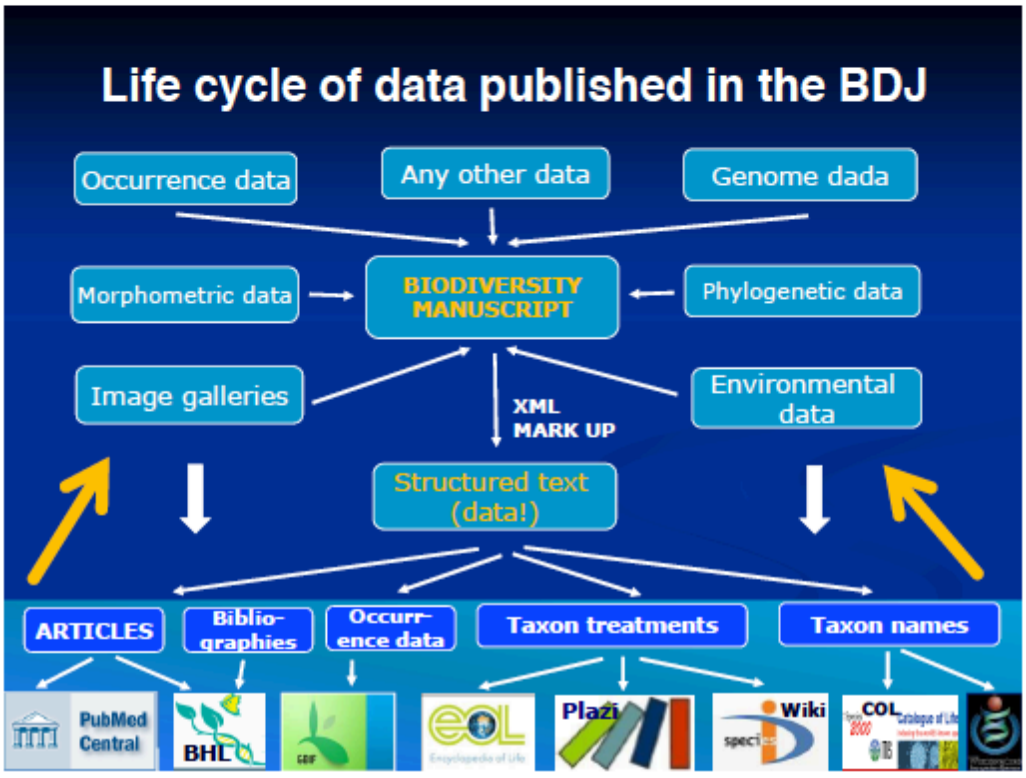

Key features
Biodiversity Data Journal
ALL DATA MATTERS!
Collaborative article authoring
Online peer-review and editing
Community peer review; options for "open" and "public" review
Standard-compliant (DwC, NLM DTD)
Biological Codes compliant article templates
No lower/upper limit of manuscript size
Semantically enhanced "articles of the future"
Integrated with GBIF, EOL, Dryad Scratchpads, etc.

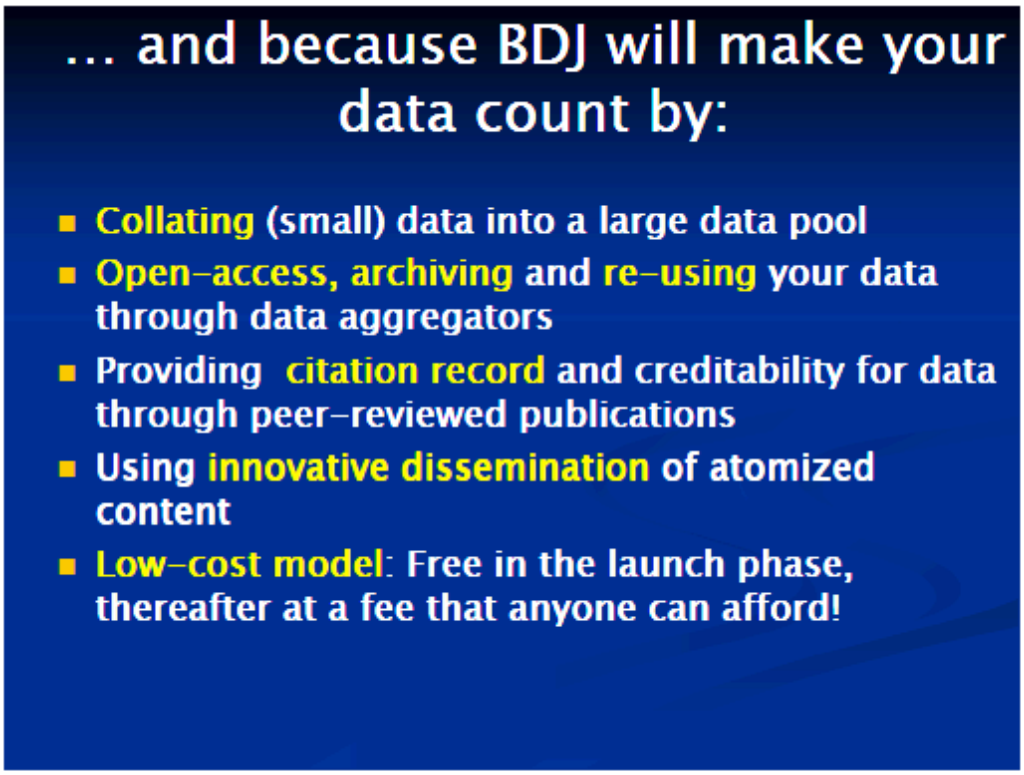

Workflow
COLLABORATIVE ARTICLE AUTHORING (PENSOFT WRITING TOOL)
XML submission
Revisions online
COMMUNITY PEER-REVIEW (OPTIONS FOR PUBLIC AND OPEN REVIEW) ALL ONLINE!
Authors, Reviewers, Editors, Mentors, Copyeditors
MANUSCRIPT PUBLISHED XML TEXT + DATA
ARTICLES
Biblio-graphies
Occurr-ence data
Taxon treatments
Taxon names
PubMed Central
Wiki
COL

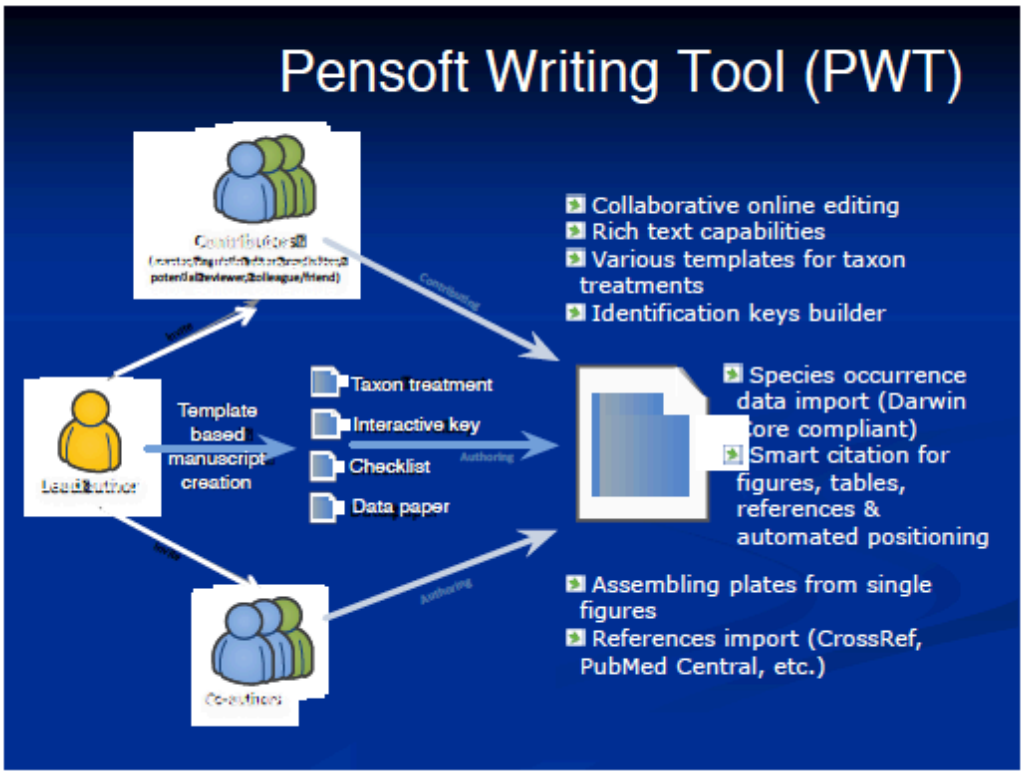

Automated registration
MANUSCRIPT SUBMISSION
Peer review
XML Query
ZooBank
MANUSCRIPT ACCEPTED
XML Response
Index Fungorum
XML article metadata
ARTICLE PUBLISHED
Taxon name available/valid (effectively published)

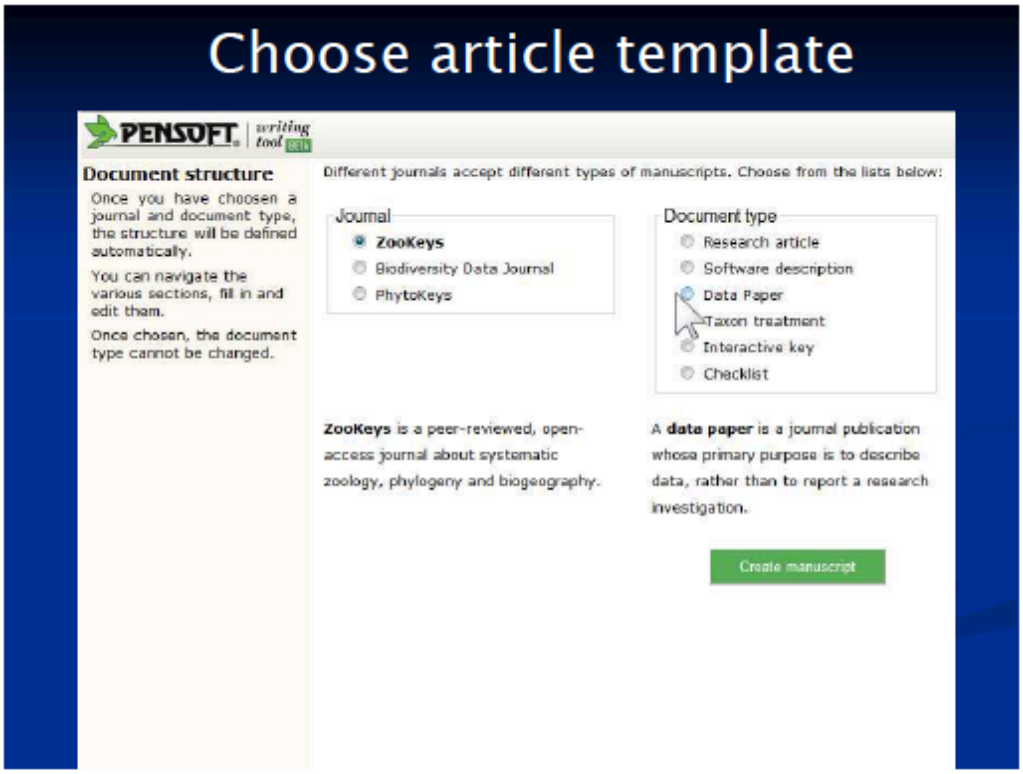

Multiple Data Publishing Model of BDJ
1. Supplementary data files downloadable from the journals' website
2. Data deposited at specialized data repositories (Dryad, Pangaea)
3. Data published through data repositories but indexed and collated with other data (GenBank, GBIF IPT)
4. Data published in the form of marked-up and machine-readable text.
5. Extended use of multimedia and semantic enhancements

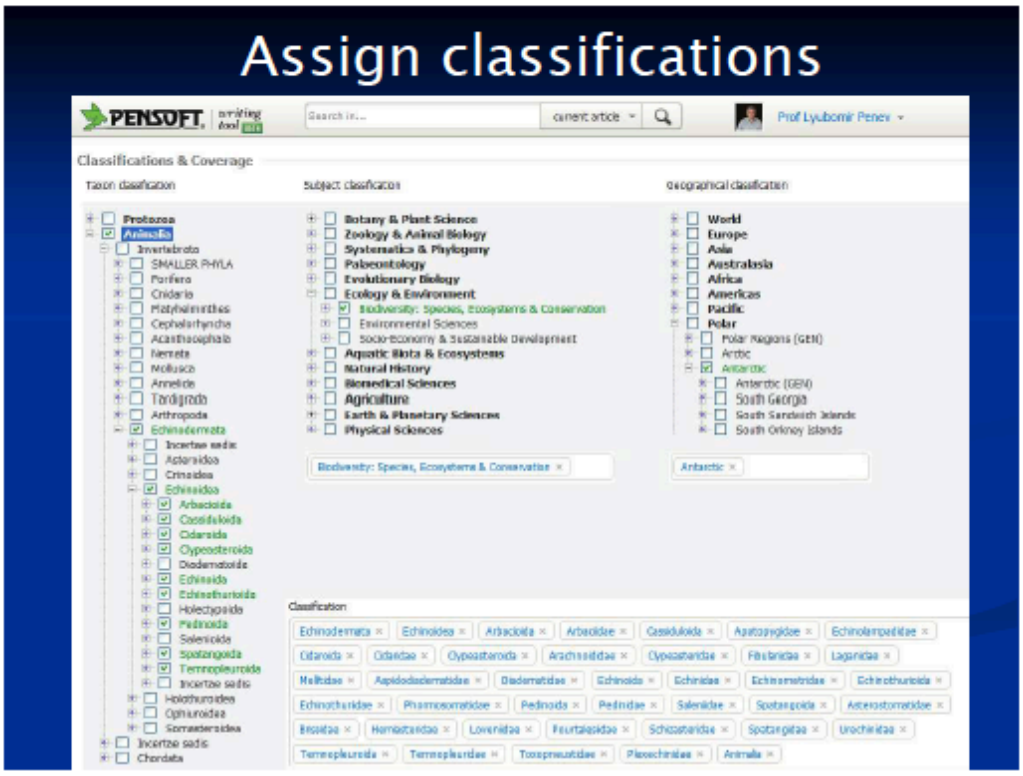

What will BDJ publish?
Single taxon treatments and nomenclatural acts
Local/regional and habitat-based checklists
Sampling reports and occasional inventories
Ecological and biological observations of species and communities
Identification keys
Data papers for any biodiversity-related type of data (genomic, phylogenetic, ecological, environmental, etc.)
Descriptions of biodiversity-related software tools and workflows
Biodiversity Data Journal
Recruiting editors now!

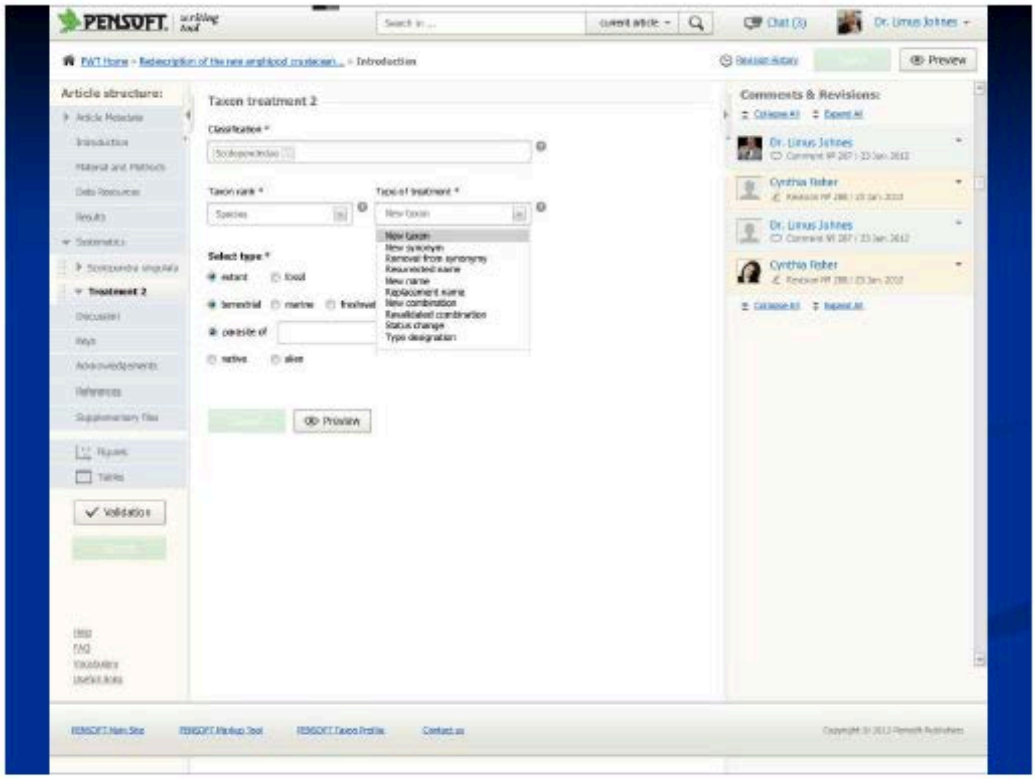

Life cycle of data published in the BDJ
Occurrence data
Any other data
Genome dada
Morphometric data
BIODIVERSITY MANUSCRIPT
Phylogenetic data
Image galleries
XML MARK UP
Environmental data
Structured text (data!)
ARTICLES
Biblio-graphies
Occurr-ence data
Taxon treatments
Taxon names
PubMed Central
BHL
Wiki
COL

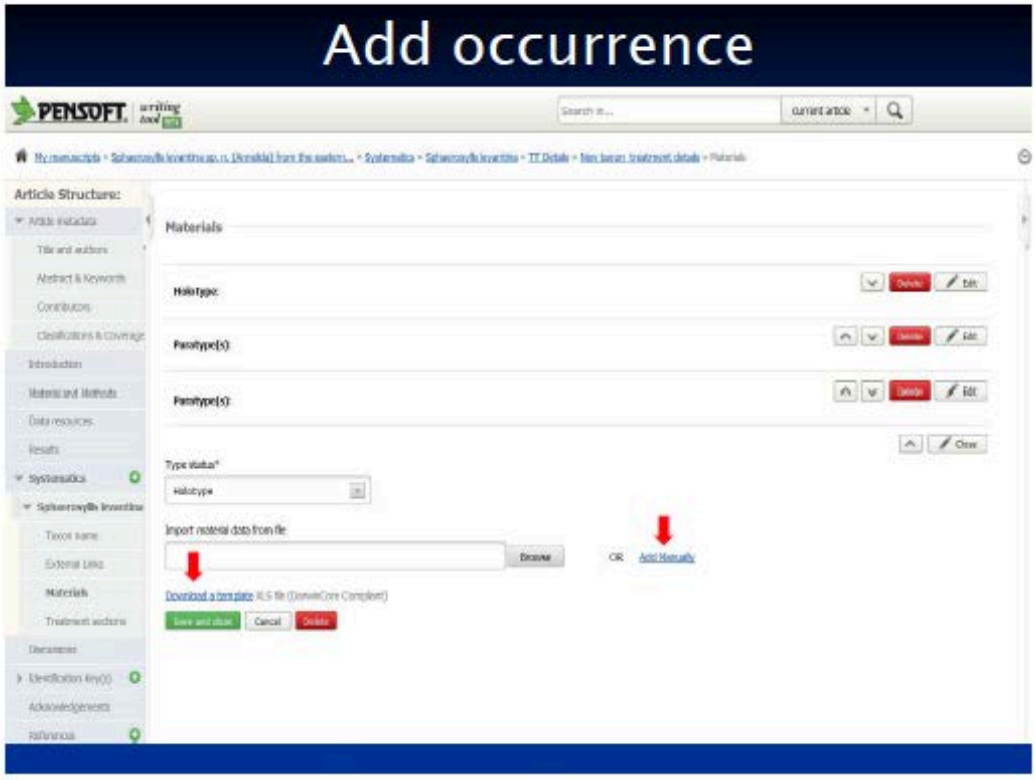

… and because BDJ will make your data count by:
Collating (small) data into a large data pool
Open-access, archiving and re-using your data through data aggregators
Providing citation record and creditability for data through peer-reviewed publications
Using innovative dissemination of atomized content
Low-cost model: Free in the launch phase, thereafter at a fee that anyone can afford!

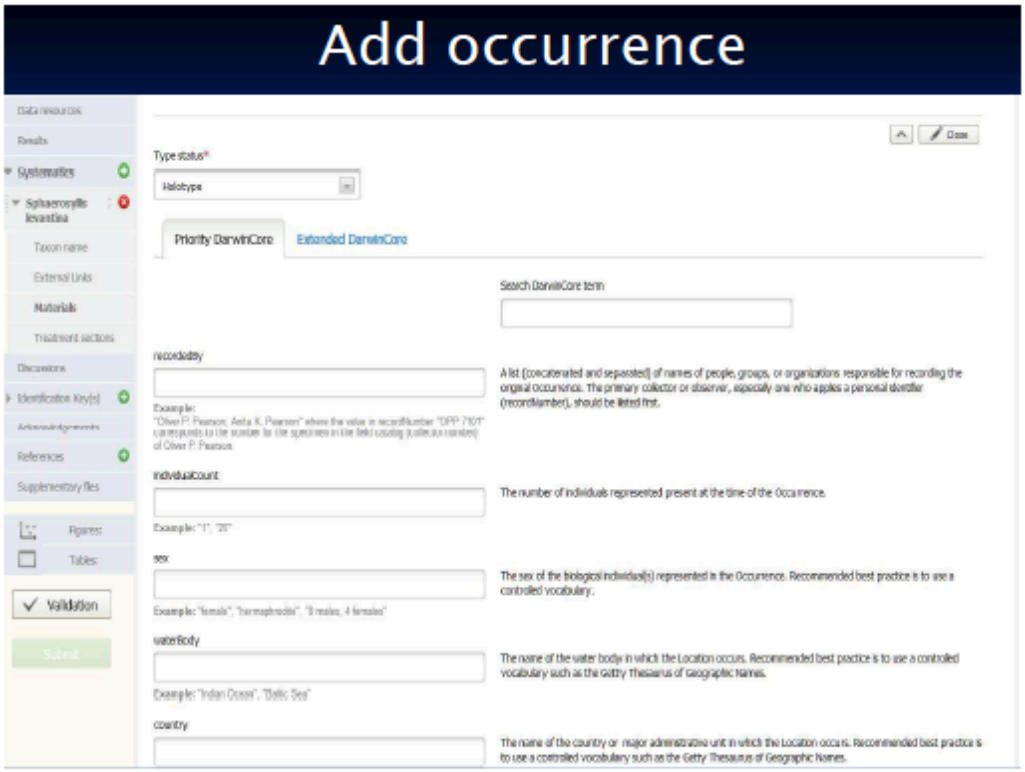

Pensoft Writing Tool (PWT)
Collaborative online editing
Rich text capabilities
Various templates for taxon treatments
Identification keys builder
Template based manuscript creation
Taxon treatment
Interactive key
Checklist
Data paper
Species occurrence data import (Darwin
ore compliant)
Smart citation for figures, tables, references & automated positioning
Assembling plates from single figures
References import (CrossRef, PubMed Central, etc.)


Choose article template
PENSOFT writing tool BETA
Document structure
Once you have choosen a journal and document type, the structure will be defined automatically.
You can navigate the various sections, fill in and edit them.
Once chosen, the document type cannot be changed.
Different journals accept different types of manuscripts. Choose from the lists below:
Journal
ZooKeys
Biodiversity Data Journal
PhytoKeys
Document type
Research article
Software description
Data Paper
Taxon treatment
Interactive key
Checklist
ZooKeys is a peer-reviewed, open-access journal about systematic zoology, phylogeny and biogeography.
A data paper is a journal publication whose primary purpose is to describe data, rather than to report a research investigation.
Create manuscript

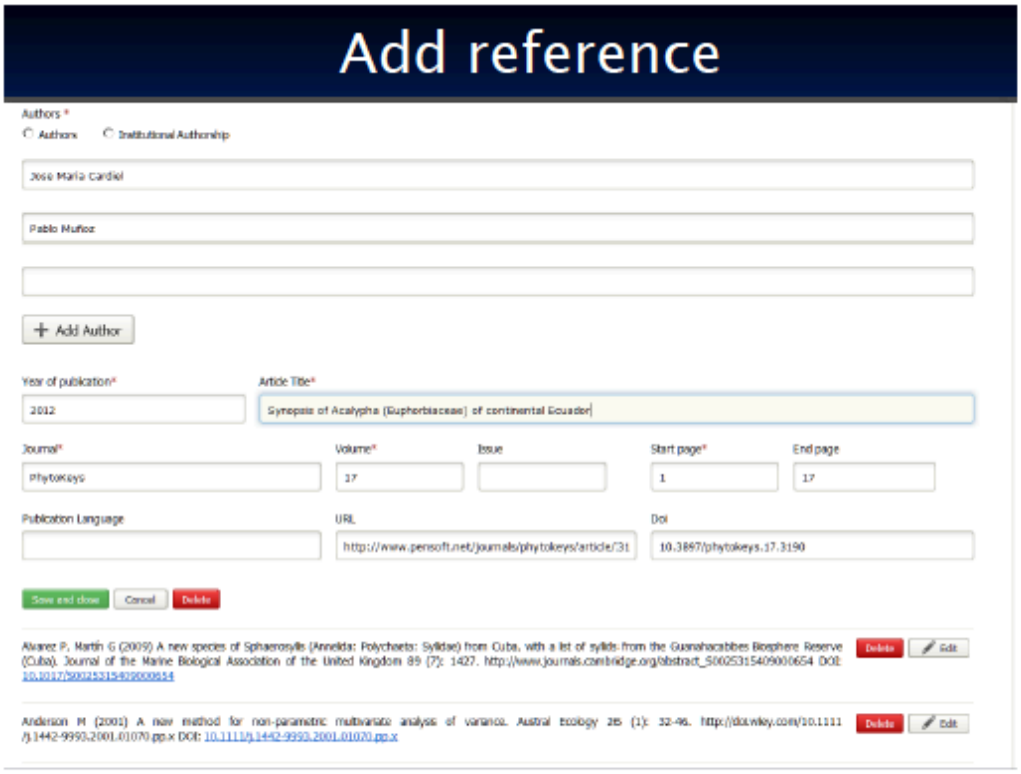

Assign classifications
PENSOFT writing tool BETA
Search in...
current article
Prof Lyubomir Penev
Classifications & Coverage
Taxon classification
Subject classification
Geographical classification
Protozoa
Animalia
Invertebrata
SMALLER PHYLA
Porifera
Cnidaria
Platyhelminthes
Cephalorhyncha
Acanthocephala
Nemata
Mollusca
Annelida
Tardigrada
Arthropoda
Echinodermata
Asteroidea
Ophiuroidea
Crinoidea
Echinoidea
Holothuroidea
Somasteroidea
Chordata
Botany & Plant Science
Zoology & Animal Biology
Systematics & Phylogeny
Paleontology
Evolutionary Biology
Ecology & Environment
Biodiversity: Species, Ecosystems & Conservation
Environmental Sciences
Socio-economy & Sustainable Development
Aquatic Biota & Ecosystems
Natural History
Biomedical Sciences
Agriculture
Earth & Planetary Sciences
Physical Sciences
World
Europe
Asia
Australasia
Africa
Americas
Pacific
Polar
Polar Regions (GEN)
Arctic
Antarctic
Antarctic (GEN)
South Georgia
South Sandwich Islands
South Orkney Islands
Classification


PENSOFT
Article structure:
Taxon treatment 2
Comments & Revisions:
Preview
Validation


Add occurrence
PENSOFT
Article Structure:
Materials
Holotype:
Paratype(s):
Paratype(s):
Type status*
Holotype
Import material data from file
Browse
OR
Add Manually
Download a template
Save and close
Cancel
Delete


Add occurrence
Type status*
Holotype
Priority DarwinCore
Extended DarwinCore
Search DarwinCore term
recordedby
individualCount
sex
waterBody
country
Validation


Taxon treatment
PENSOFT
Systematics
Sphaerosyllis levantina Faulwetter, Chatzigeorgiou, Galil, Nicolaidou & Arvanitidis, 2011, sp. n.
Materials.
Holotype: Haifa Bay, Station ALA-IL-7, 10.5 m, ALA-IL-7, USNM, 1160540.
Paratypes:
33, Haifa Bay, Israel, Eastern Mediterranean Sea, Station ALA-IL-7, 10.5 m, 11.10.2009, USNM, 1160541–1160573
10, Haifa Bay, Israel, Eastern Mediterranean Sea, Station ALA-IL-7, 10.5 m, 11.10.2009, TAU-AN, 25006
Description. Holotype, entire animal, with 25 chaetigers, length 1.9 mm with palps but without anal cirri; width at sixth chaetiger 250 µm without parapodia, 300 µm with parapodia. Body small, slender, widest at level of proventricle (Fig. 1). Dorsal papillation on anterior chaetigers irregular, after proventricle in four longitudinal rows: two mid-dorsal rows with two papillae per segment, lateral rows with three papillae near dorsal cirri (Fig. 2). Ventrum without visible papillation. Prostomium wider than long with 4 coalescent lensed eyes in trapezoidal arrangement. Anterior eyespots absent. Antennae pyriform with bulbous bases and elongated tips, median antenna 40 µm long, lateral ones 33 µm, longer than prostomium and palps together. Median antenna inserted between anterior pair of eyes, lateral ones attached on anterior margin of prostomium (Fig. 1). Palps directed ventrally, fused along their length, with a dorsal notch and few small papillae. Peristomium indistinct, dorsal fold partly covering prostomium. One pair of tentacular cirri, shaped like antennae but shorter (23 µm). Second chaetiger without dorsal cirri but with large papilla instead. Dorsal cirri similar in shape and length to tentacular cirri, anteriorly as long as parapodial lobes (23 µm), posteriorly slightly longer (28 µm). Ventral cirri conical, half as long as parapodial lobe, originating at bases of parapodia.


Add reference
Authors *
Authors
Institutional Authorship
Jose Maria Cardiel
Pablo Munoz
Add Author
Year of publication*
2012
Article Title*
Synopsis of Acalypha (Euphorbiaceae) of continental Ecuador
Journal*
Phytokeys
Volume*
17
Issue
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17
Publication Language
URL
http://www.pensoft.net/journals/phytokeys/article/31
Doi
10.3897/phytokeys.17.3190
Save and close
Cancel
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Alvarez P, Martin G (2009) A new species of Sphaerosyllis (Annelida: Polychaeta: Syllidae) from Cuba, with a list of syllids from the Guanahacabibes Biosphere Reserve (Cuba). Journal of the Marine Biological Association of the United Kingdom 89 (7): 1427. http://www.journals.cambridge.org/abstract_S0025315409000654 DOI: 10.1017/S0025315409000654
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Anderson M (2001) A new method for non-parametric multivariate analysis of variance. Austral Ecology 26 (1): 32-46. http://doi.wiley.com/10.1111/j.1442-9993.2001.01070.pp.x DOI: 10.1111/j.1442-9993.2001.01070.pp.x
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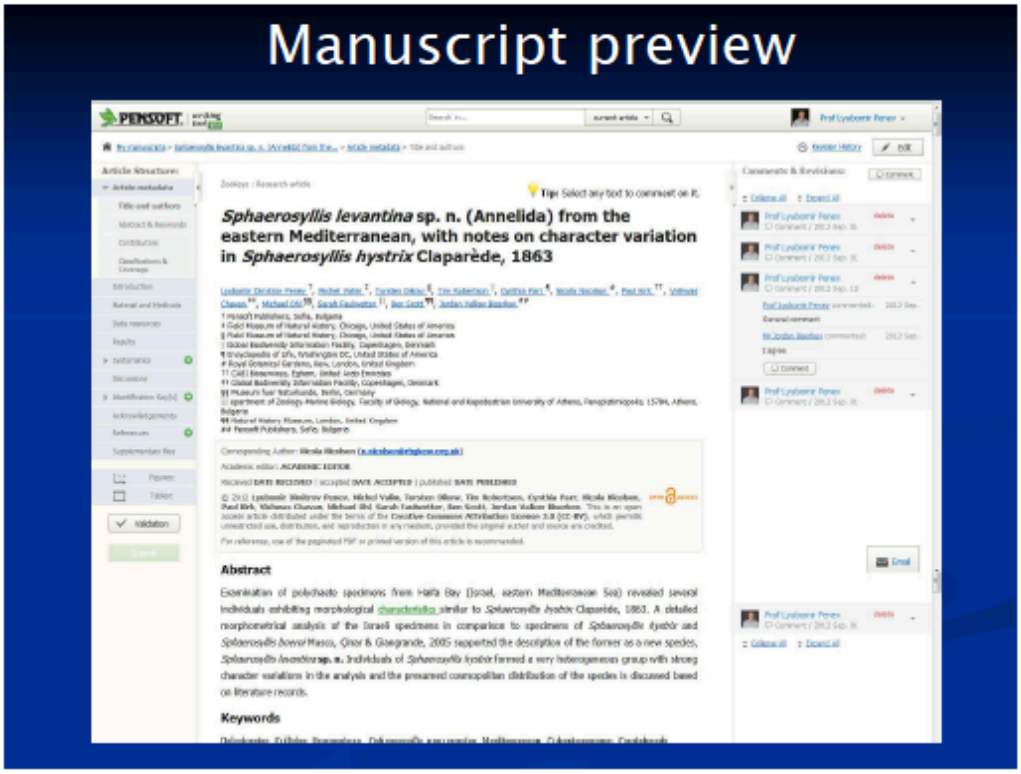

Manuscript preview
PENSOFT
Sphaerosyllis levantina sp. n. (Annelida) from the eastern Mediterranean, with notes on character variation in Sphaerosyllis hystrix Claparède, 1863
Abstract
Keywords

Several more features

Manuscript preview

Multi-figure plate builder

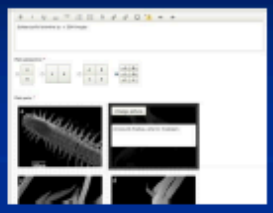


Plate layout

ID Key builder

ID Key preview

Why publish in the BDJ?

- Joining (small) data into a large data pool
- Open-access, archiving and re-using your data
- Citation record for data through peer-reviewed publications
- Easy online authoring/editorial process for authors, reviewers and editors
- Innovative dissemination of atomized content
- Very low-cost! Free in the launch phase, thereafter at fee that anyone can afford!

Coming in two months!

Editor Application Form
http://www.pensoft.net/journals/bdj/editor_form.html


Thank you for your attention!
Biodiversity Data Journal
PENSOFT
www.pensoft.net/journals/bdj
ViBRANT

#5 - TDWG 2012 Feedbacks from Pensoft

De : Lyubomir Penev <info@pensoft.net>
Objet : First pilot discussed and approved
Date : 22 octobre 2012 18:21:06 HAEC
À : Walter Berendsohn <w.berendsohn@bgbm.org>, Anton Guentsch <a.guentsch@bgbm.org>, Donat Agosti <agosti@amnh.org>, "Miller, J." <Jeremy.Miller@ncbnaturalis.nl>, Guido Sautter <sautter@ipd.uka.de>, Pensoft Publishers <preprint@pensoft.net>, Pavel Stoev <pavel.e.stoev@gmail.com>, "'Don Kirkup'" <d.kirkup@kew.org>, Quentin Groom <quentingroom@gmail.com>, "Sierra, S.E.C." <Soraya.Sierra@naturalis.nl>, "Tol, J. van" <jan.vantol@naturalis.nl>, "camille.torrenti@sigma-orionis.com" <camille.torrenti@sigma-orionis.com>, Stephanie Morales <stephanie.morales@sigma-orionis.com>, Gregor Hagedorn <g.m.hagedorn@gmail.com>

Dear All,

We have had a fruitful pro-iBiosphere meeting at the TDWG Bejing. Please find below a short summary of the meeting which we shall put on the Wiki for a further elaboration.

Present: Walter Berendson, Anton Guentsch, Lorna Mitchel, Jeremy Miller, Guido Sautter, Teodor Georgiev, Lyubomir Penev

We have discussed and agreed to consider the genus Chenopodium as one of the test groups to elaborate the pilots and in first case Pilot No 1 (Task 4.2):

"Interoperability between taxonomic content management platforms, taxon treatment repositories and electronic registers".

The Chenopodium pilot will follow the steps and responsibilities as described below:

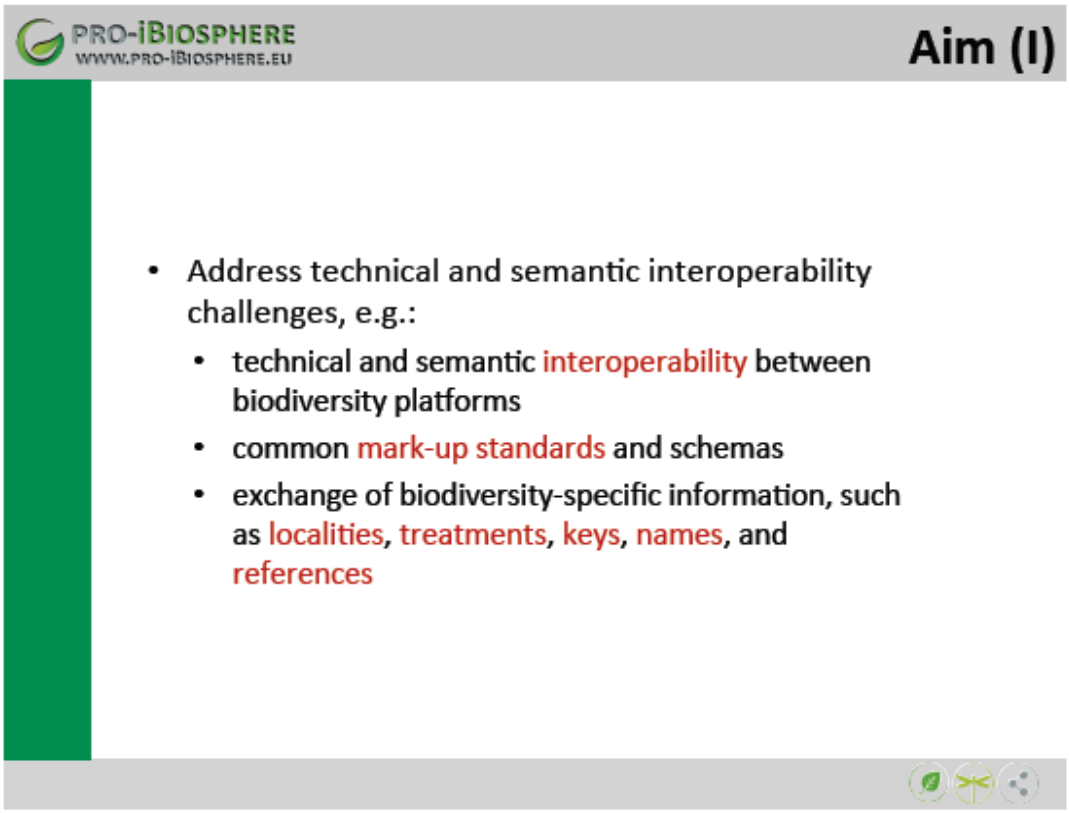
1. The Chenopodium treatments have not been marked up, that is we start the pilot from the ground zero.
2. Relevant treatments of 60-70 species will be identified in various literature sources and provided by BGBM in electronic format
3. The treatments shall be marked up to the lowest possible granularity level (including synonimies and localities) by Susanna
4. To do the markup, Susanna will be trained by Plazi. Plazi will provide complete control on the quality of markup
5. For markup Susanna will be using the GoldenGate editor and most likely the web version of it which is expected to be provided soon by the OBOE services of the ViBRANT project (this will ensure a nice link to another similar EU project)
6. Marked up treatments shall be uploaded onto the Plazi Treatment Repository (PTR)
7. The treatments shall be imported from TPR to CDM using the TaxonX schema ; TaxonX will be tested to become the input format for CDM also for treatments coming from other pilot test groups
8. The data on CDM (from both marked up literature and unpublished data sources) shall be used to create new treatments (e.g., re-description or species-group revision/review) and published in PhytoKeys
9. The new treatments published in PhytoKeys shall be automatically harvested by Plazi from the journal's XML article, ingested in PTR and exported to CDM; this test intends to demonstrate a completion of a data cycle and adding new information to PTR and CDM from properly published prospective literature
10. In addition, that might be another Chenopodium publication which shall not come out from CDM but from a completely different and independent source. The treatments in such a publication will again be harvested from PhytoKeys by PTR and exported to CDM; this will illustrate adding of newly published treatments to PTR and CDM.
11. All possible linking mechanisms that might connect treatments to original literature sources (e.g., BHL), collection IDs and specimen IDs available online, IPNI registration numbers, gazetteers, etc. will be identified and explored to draw a model of linked data based on available and trusted biodiversity platforms and online databases.

Please let me know if you have some comments or questions. They can be put also on the Wiki.

Best regards,
Lyubo

--
Prof. Dr. Lyubomir Penev
Managing Director
Pensoft Publishers

#6 - Naturalis colloquium Presentation


PRO-iBIOSPHERE
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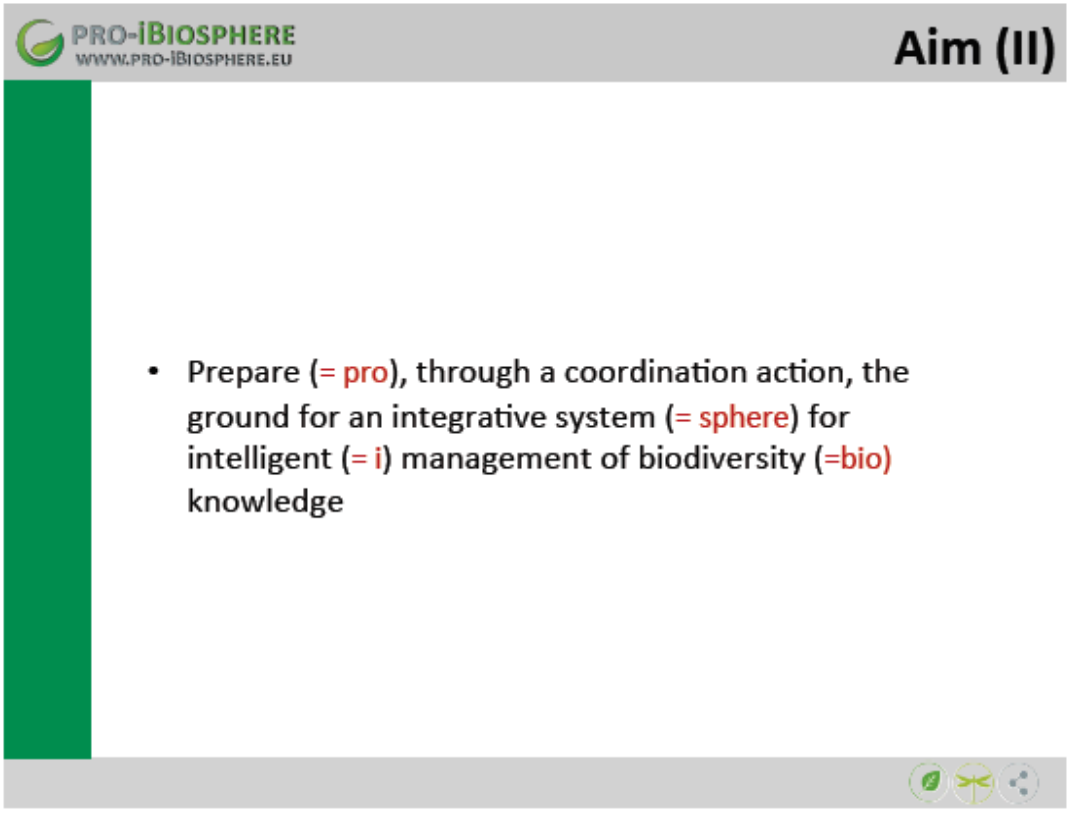
Aim (I)
• Address technical and semantic interoperability challenges, e.g.:
• technical and semantic interoperability between biodiversity platforms
• common mark-up standards and schemas
• exchange of biodiversity-specific information, such as localities, treatments, keys, names, and references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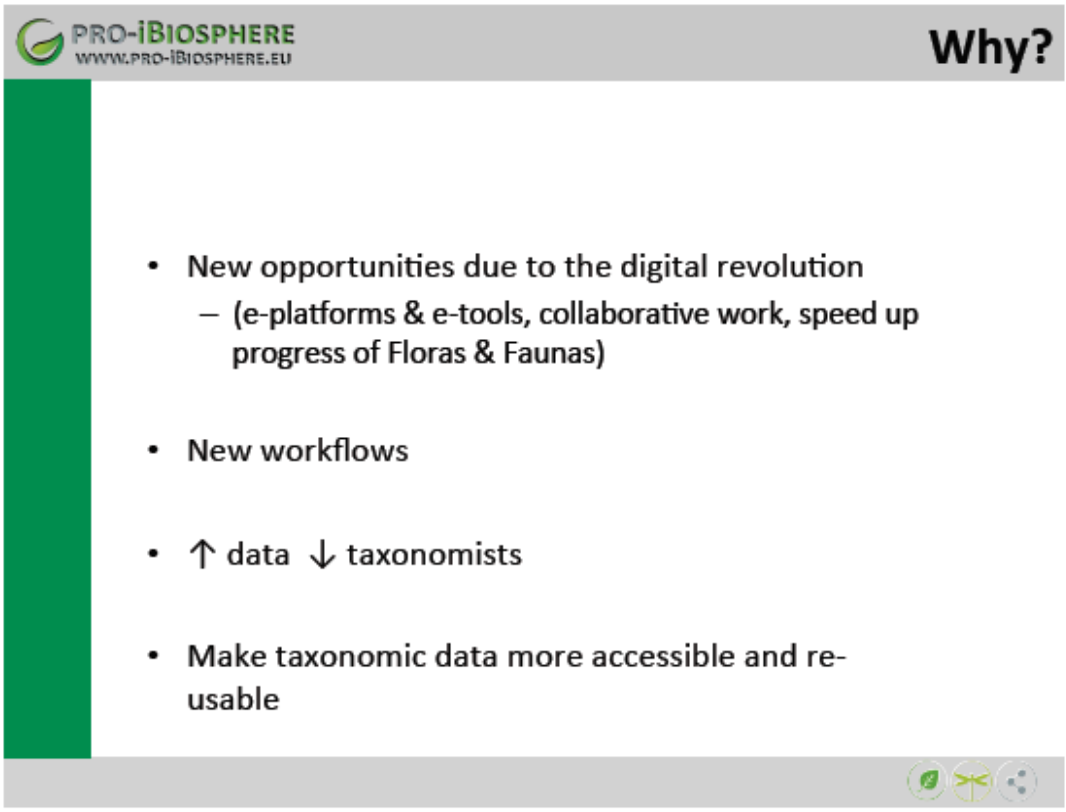
Aim (II)
• Prepare (= pro), through a coordination action, the ground for an integrative system (= sphere) for intelligent (= i) management of biodiversity (=bio) knowledge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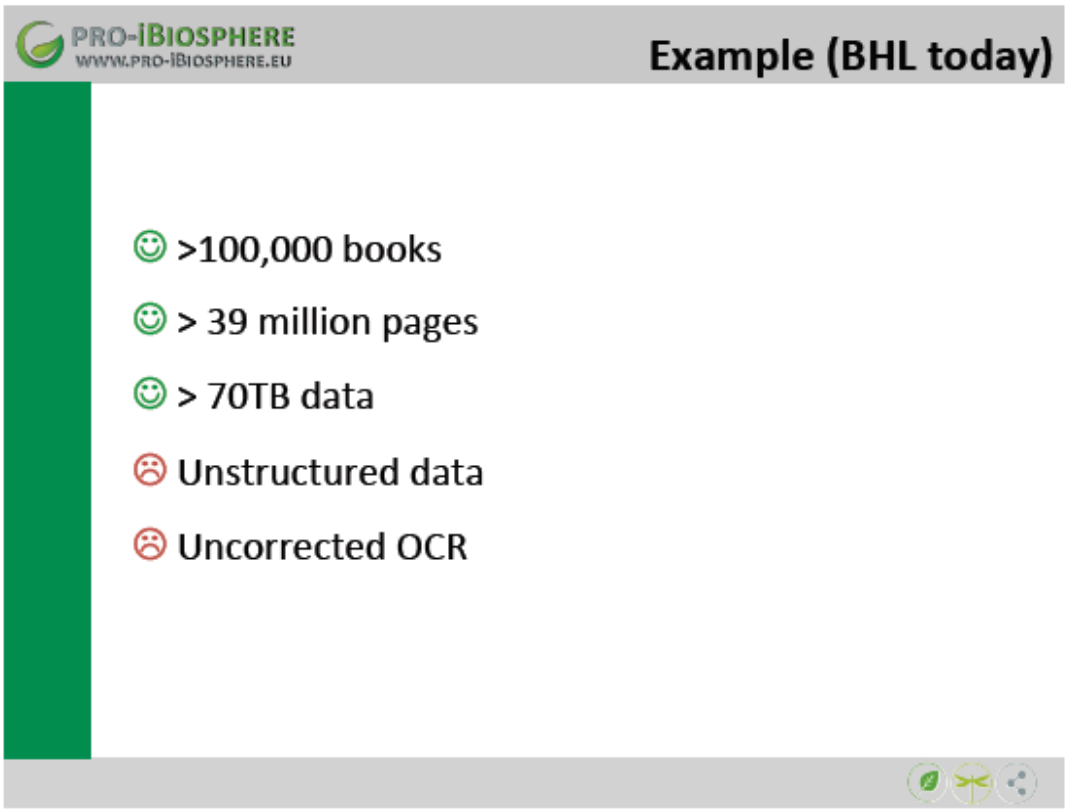
Why?
• New opportunities due to the digital revolution
– (e-platforms & e-tools, collaborative work, speed up progress of Floras & Faunas)
• New workflows
• ↑ data ↓ taxonomists
• Make taxonomic data more accessible and re-usable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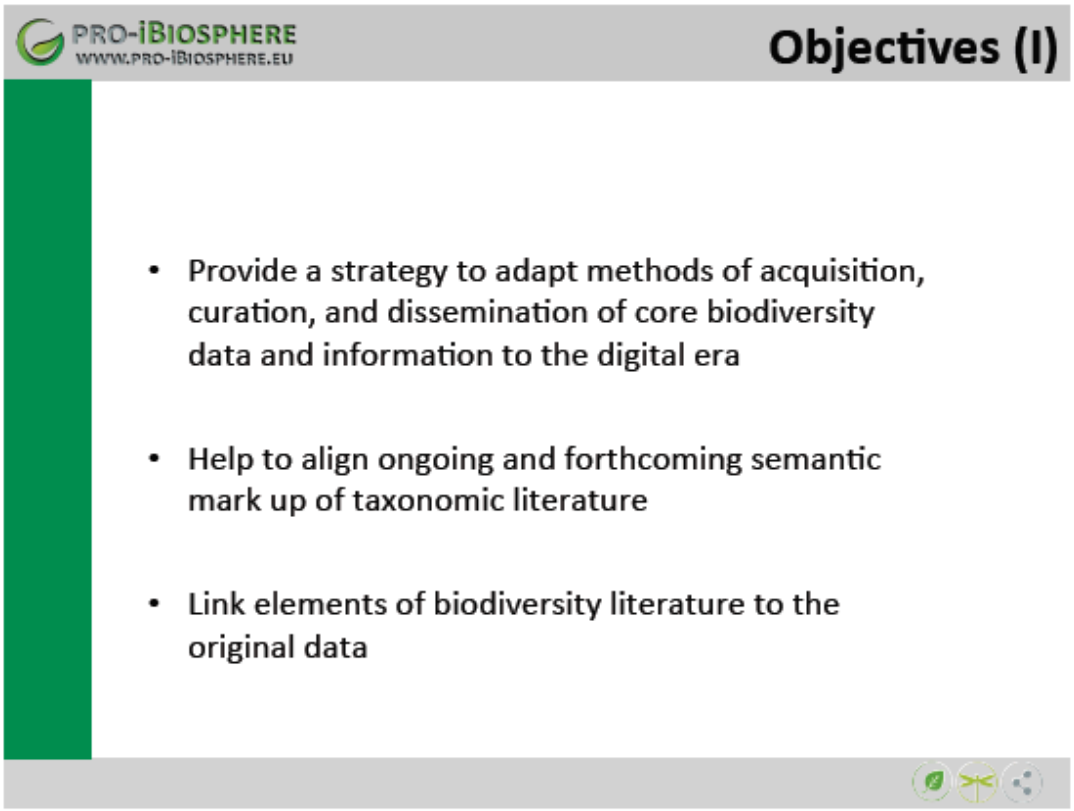
Example (BHL today)
☺ >100,000 books
☺ > 39 million pages
☺ > 70TB data
☹ Unstructured data
☹ Uncorrected OCR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Objectives (I)
• Provide a strategy to adapt methods of acquisition, curation, and dissemination of core biodiversity data and information to the digital era
• Help to align ongoing and forthcoming semantic mark up of taxonomic literature
• Link elements of biodiversity literature to the original data


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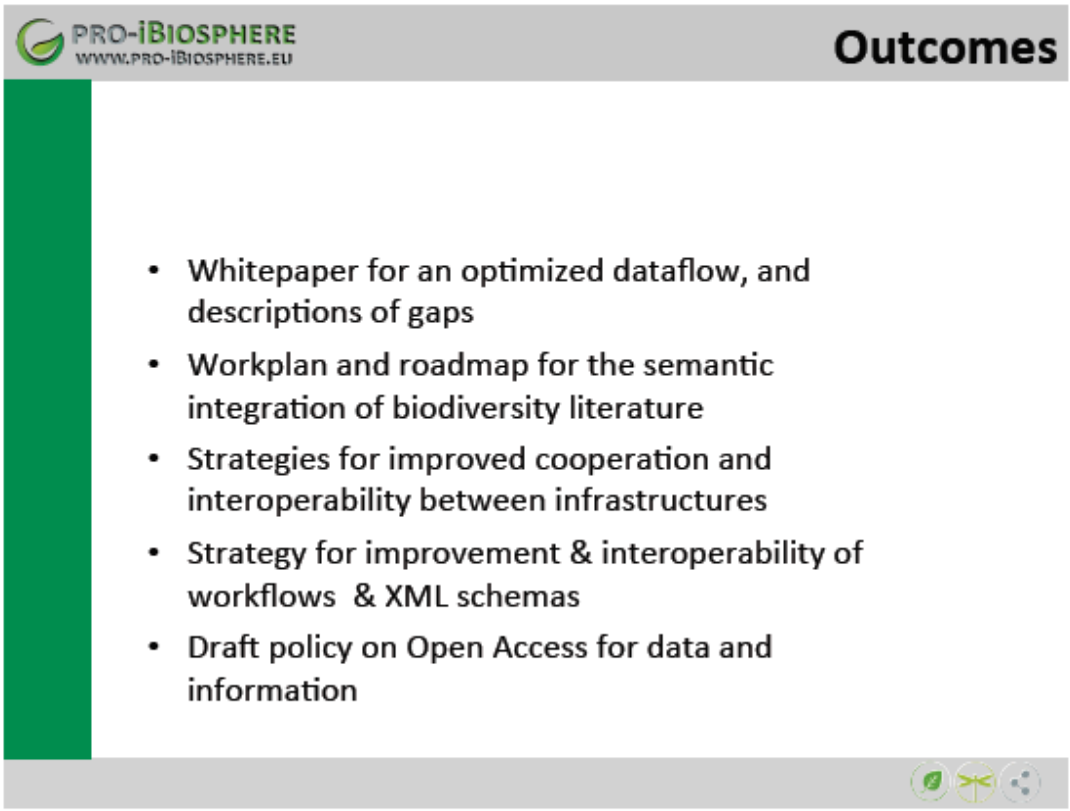
Objectives (II)
• Promote and monitor the development and adoption of common mark up standards
• Develop and agree on a shared data and IPR policy
• Promote and increase cooperation between the major biodiversity projects, initiatives and platforms at EU and global levels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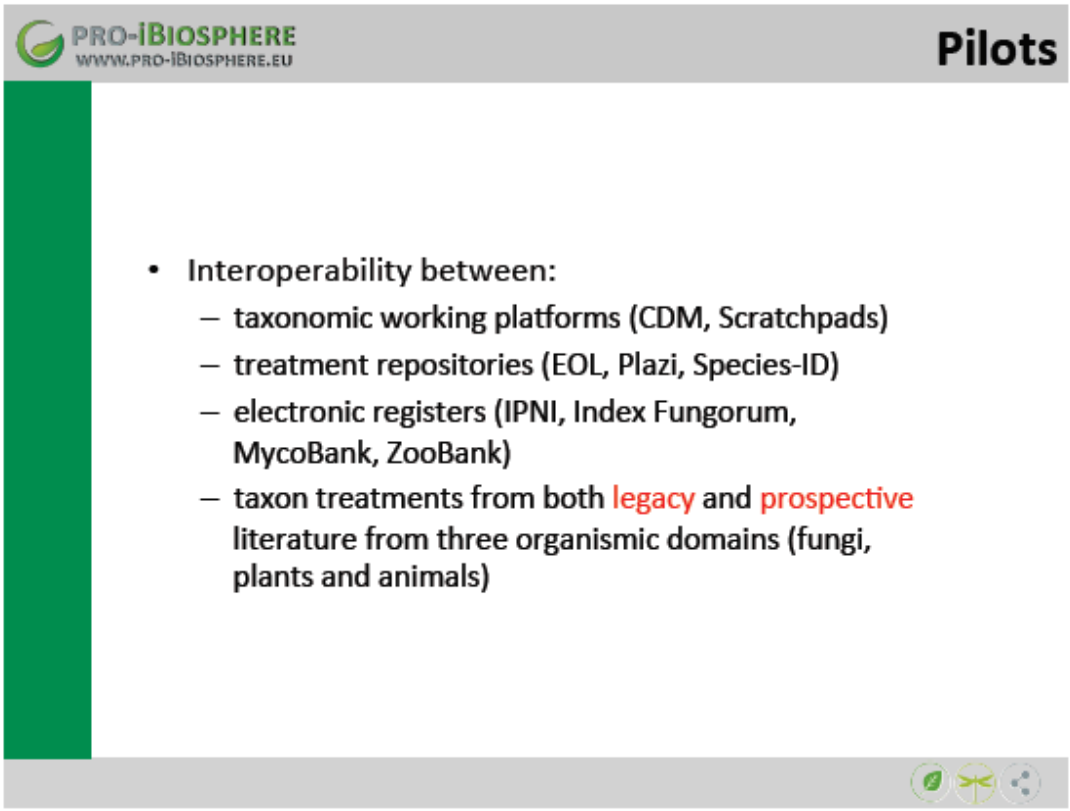
Outcomes
• Whitepaper for an optimized dataflow, and descriptions of gaps
• Workplan and roadmap for the semantic integration of biodiversity literature
• Strategies for improved cooperation and interoperability between infrastructures
• Strategy for improvement & interoperability of workflows & XML schemas
• Draft policy on Open Access for data and information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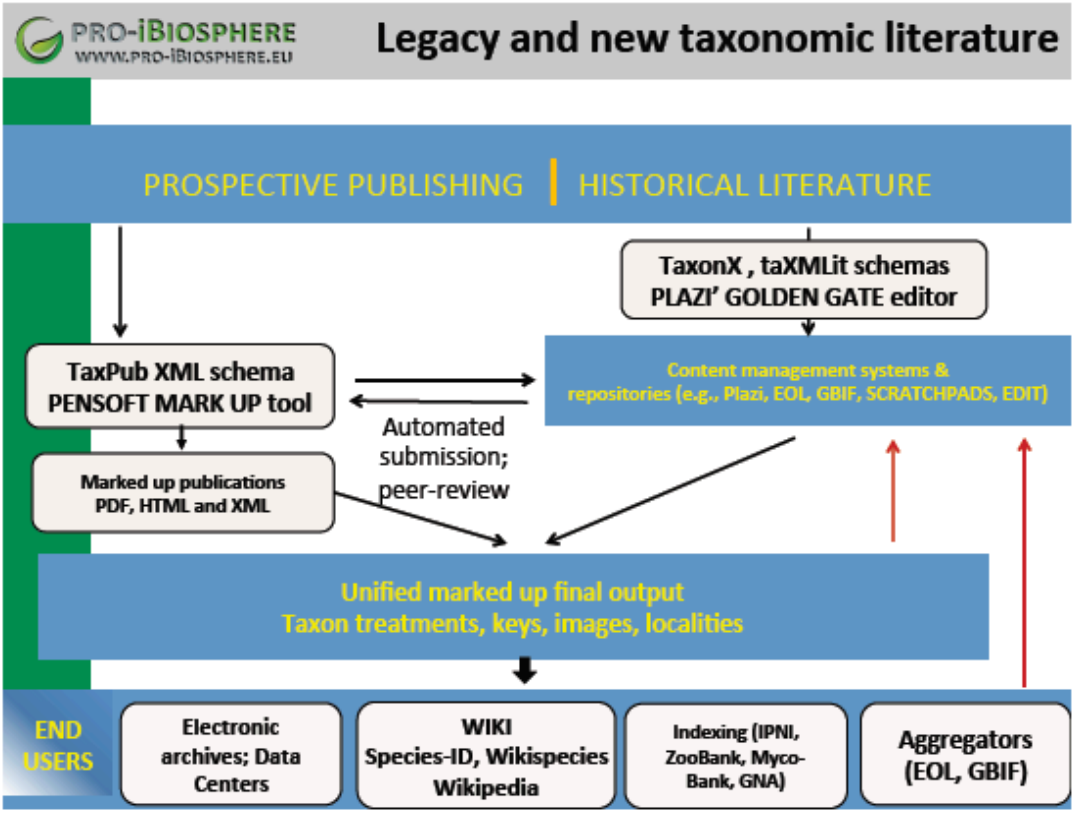
Pilots
• Interoperability between:
– taxonomic working platforms (CDM, Scratchpads)
– treatment repositories (EOL, Plazi, Species-ID)
– electronic registers (IPNI, Index Fungorum, MycoBank, ZooBank)
– taxon treatments from both legacy and prospective literature from three organismic domains (fungi, plants and animals)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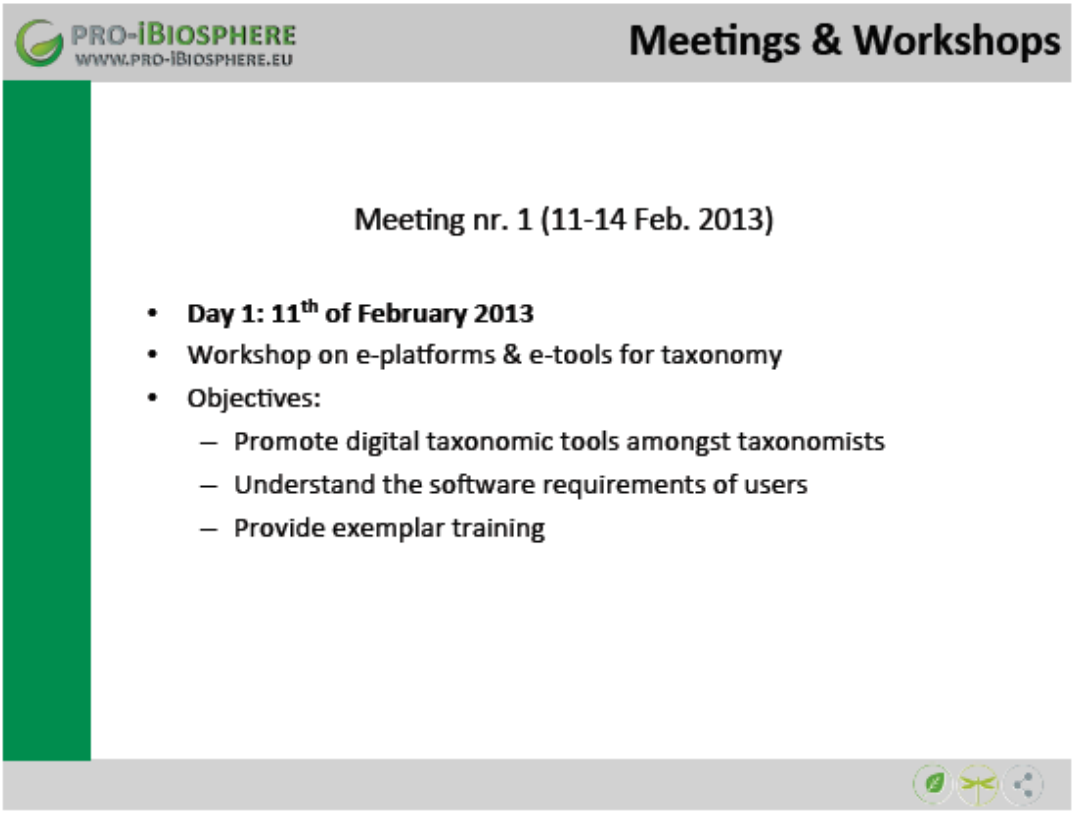
Legacy and new taxonomic literature
PROSPECTIVE PUBLISHING
HISTORICAL LITERATURE
TaxonX , taXMLit schemas
PLAZI' GOLDEN GATE editor
TaxPub XML schema
PENSOFT MARK UP tool
Content management systems &
repositories (e.g., Plazi, EOL, GBIF, SCRATCHPADS, EDIT)
Automated
submission;
peer-review
Marked up publications
PDF, HTML and XML
Unified marked up final output
Taxon treatments, keys, images, localities
END
USERS
Electronic
archives; Data
Centers
WIKI
Species-ID, Wikispecies
Wikipedia
Indexing (IPNI,
ZooBank, Myco-
Bank, GNA)
Aggregators
(EOL, GBIF)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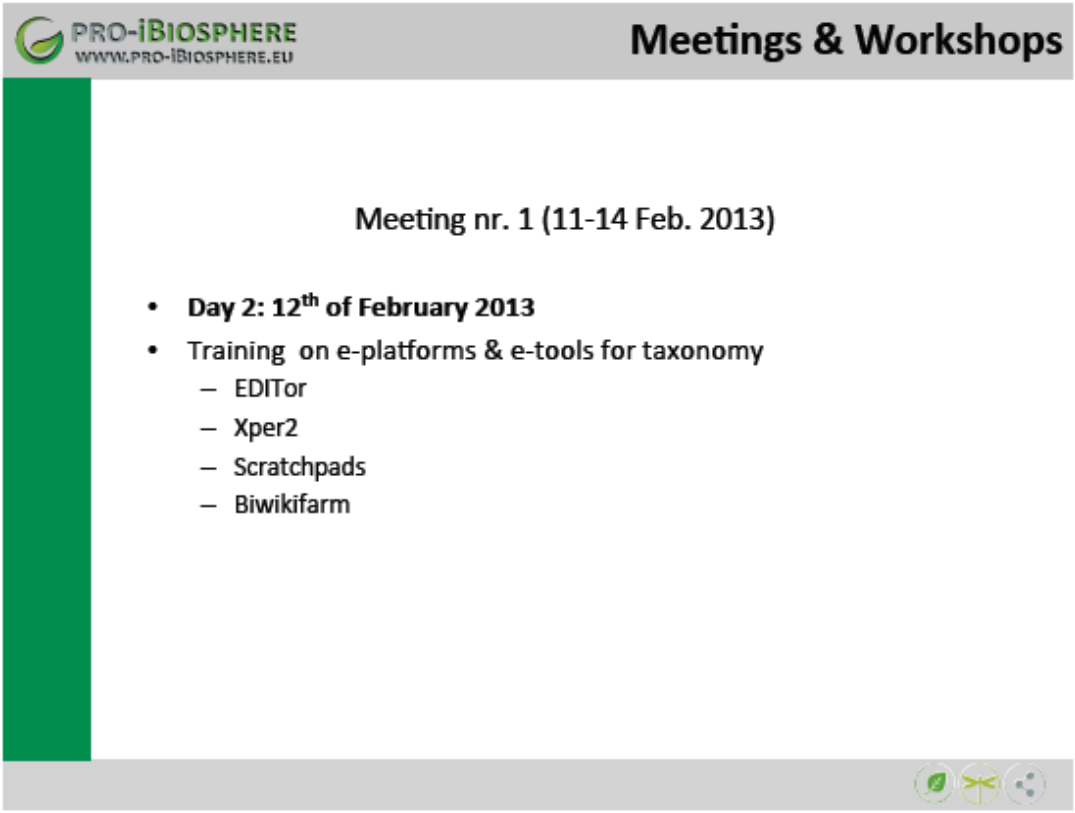
Meetings & Workshops
Meeting nr. 1 (11-14 Feb. 2013)
Day 1: 11th of February 2013
Workshop on e-platforms & e-tools for taxonomy
Objectives:
Promote digital taxonomic tools amongst taxonomists
Understand the software requirements of users
Provide exemplar training


PRO-iBIOSPHERE
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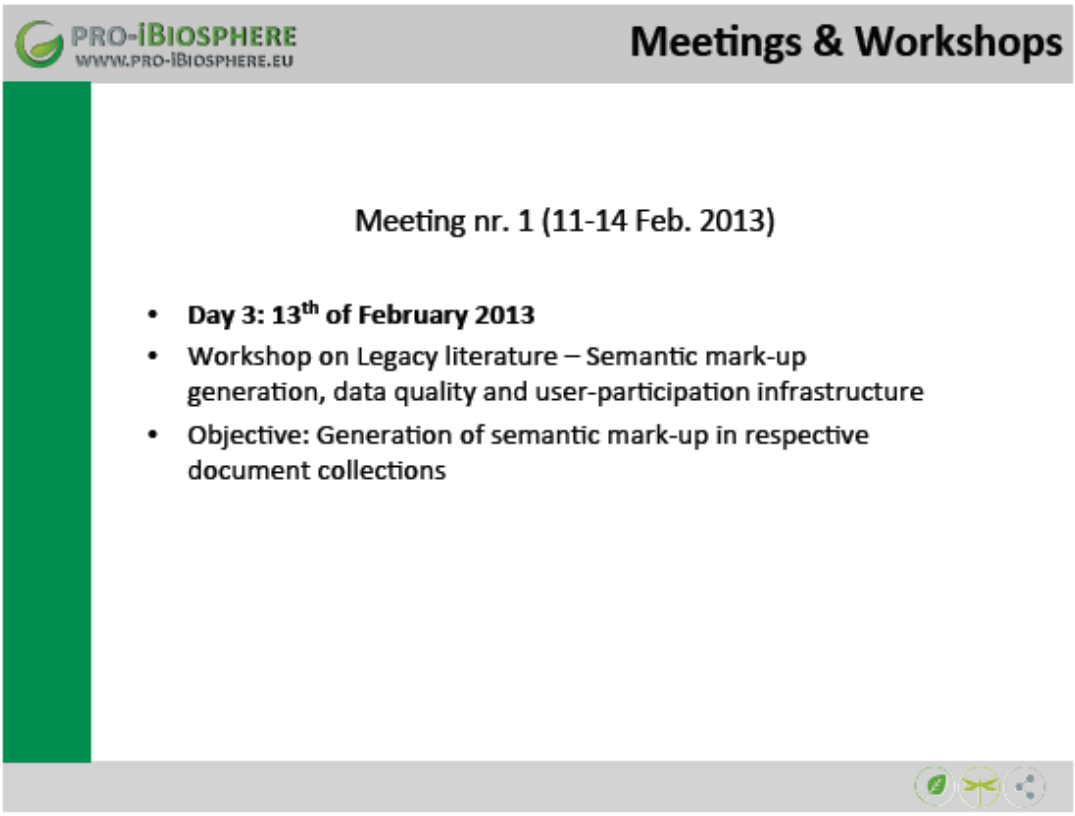
Meetings & Workshops
Meeting nr. 1 (11-14 Feb. 2013)
Day 2: 12th of February 2013
Training on e-platforms & e-tools for taxonomy
EDITor
Xper2
Scratchpads
Biwikifarm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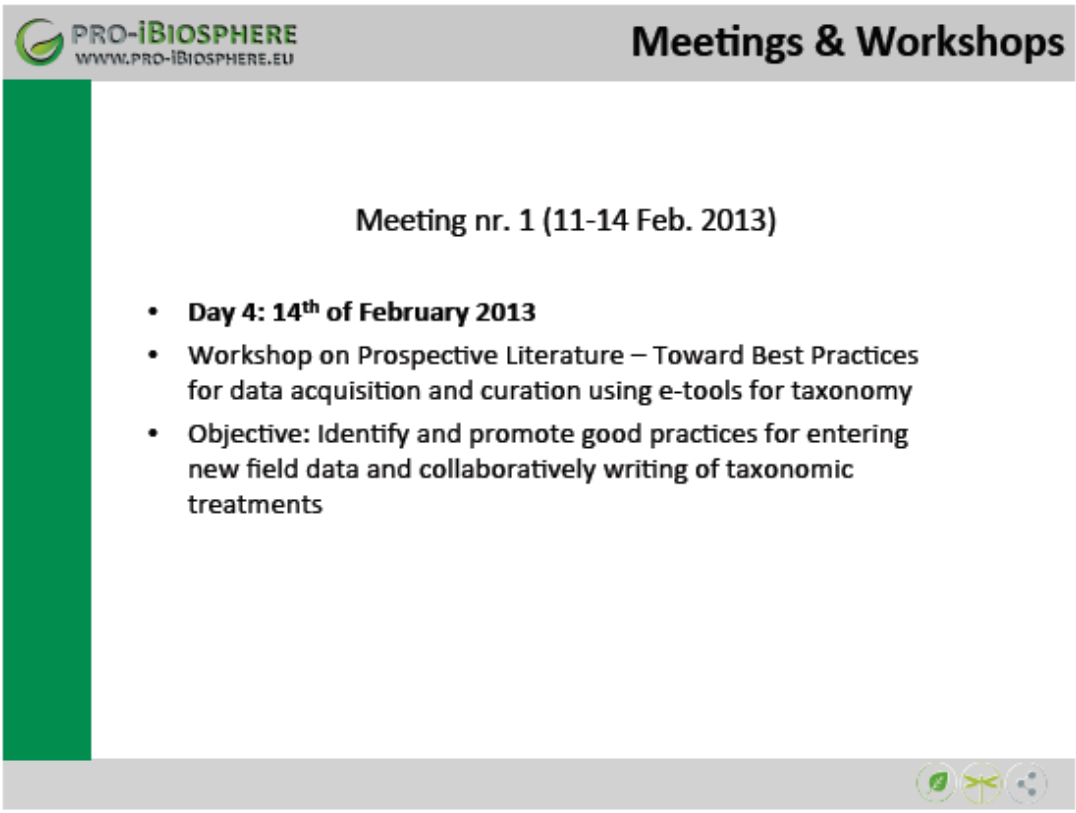
Meetings & Workshops
Meeting nr. 1 (11-14 Feb. 2013)
Day 3: 13th of February 2013
Workshop on Legacy literature – Semantic mark-up generation, data quality and user-participation infrastructure
Objective: Generation of semantic mark-up in respective document collections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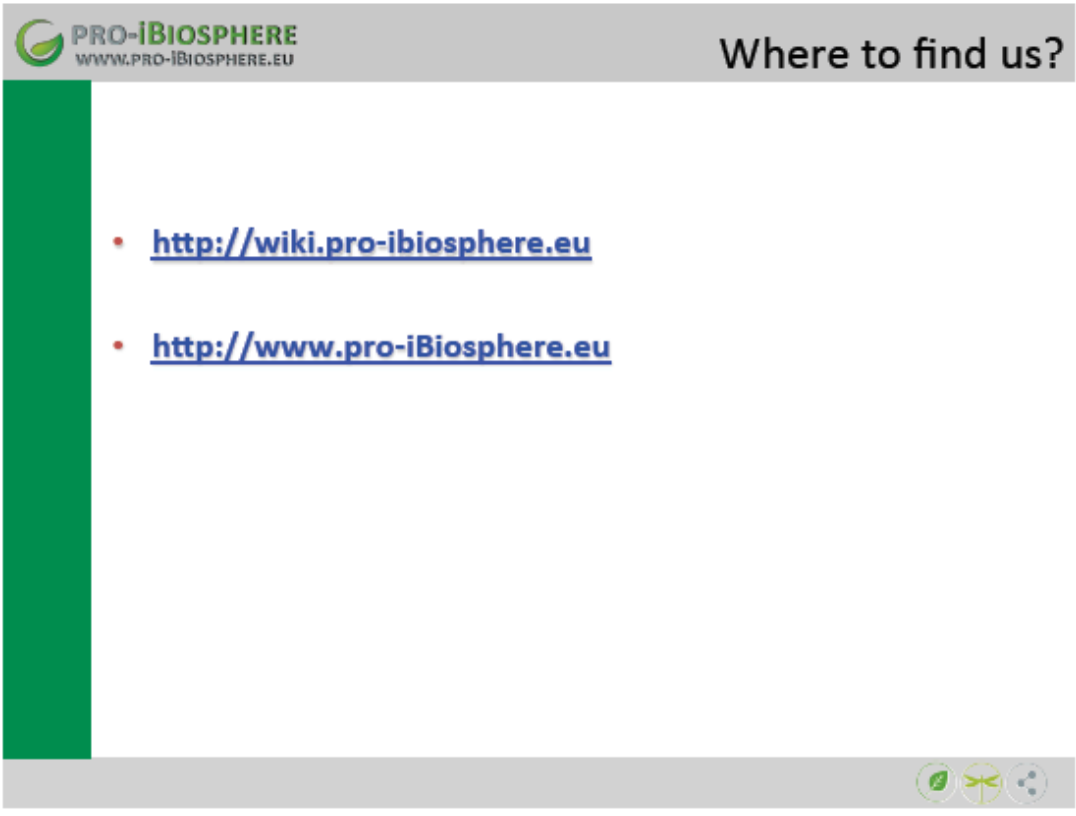
Meetings & Workshops
Meeting nr. 1 (11-14 Feb. 2013)
Day 4: 14th of February 2013
Workshop on Prospective Literature – Toward Best Practices for data acquisition and curation using e-tools for taxonomy
Objective: Identify and promote good practices for entering new field data and collaboratively writing of taxonomic treatments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Where to find us?
http://wiki.pro-ibiosphere.eu
http://www.pro-iBiosphere.eu


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Thank you for your attention!

#7 - 1st Annual meeting on plant ecology and evolution Agenda

AMPEE1 - PROGRAMME

1st Annual meeting on plant ecology and evolution

Oral Presentations

9h00 Registration and Coffee

9h25 Welcome address

9h30 Invited lecturer **François Gillet** (Université de Franche-Comté – CNRS, France)
Plant community ecology: old questions, new paradigms?

SESSION 1 (Chairperson FRANÇOIS GILLET)

10h05 Keynote speaker **Arnaud Monty** (ULgGembloux)
Evolutionary mechanisms in colonizing plant populations

10h30 Keynote speaker **Olivier De Clerck** (UGent)
Diversity, diversification and niche evolution of marine macroalgae

10h55 Keynote speaker **Nausicaa Noret** (ULB)
Metal hyperaccumulating plants

11h20 **Jason Vleminkx** (ULB)
Variation partitioning to control for anthropogenic impact on species composition in a tropical forest of central Africa

11h35 **Basile Herpigny** (ULB)
Comparative approach of functional ecology of *Fallopia japonica*, *F. sachalinensis* and *F. ×bohemica* in Belgium

11h50 **Tobias Sandner** (Philipps-Universität Marburg, Germany)
Inbreeding depression and environmental stress in *Silene vulgaris*

12h05 **Filip Vandelook** (Philipps-Universität Marburg, Germany)
Relative embryo length as an adaptation to habitat and life cycle in Apiaceae

12h20 Lunch & Poster session

SESSION 2 (Chairperson MYRIAM HEUERTZ)

13h30 Keynote speaker **Jorinde Nuytinck** (UGent)
Speciation in Fungi

13h55 **Kenny Bogaert** (UGent)
Dictyota embryogenesis: a complementary model to study the establishment of polarity

14h10 **Agnieszka Lipinska** (UGent)
Next generation transcriptomics elucidates brown algal sexual reproduction genes

14h25 **Marie-Stéphanie Samain** (UGent)
Towards a protocol for management of genetic variation of ex situ living plant collections

14h40 Coffee Break

SESSION 3 (Chairperson BONAVENTURE SONKÉ)

15h00 **Anne Ronse** (National Botanic Garden of Belgium)
The rare *Helosciadium repens* is strongly influenced by management and climate

15h15 **Alexander Vrijdaghs** (KULeuven)
Floral cups in Rubiaceae. A developmental approach

15h30 **Isabel Larridon** (UGent)
Tackling convergent evolution, radiation and paraphyly:
towards a modern classification of the giant genus *Cyperus*

15h45 **Myriam Heuertz** (INIA,Forest Research Centre, Spain)
Phylogeography and the geographic scale of adaptation in a widespread rainforest tree, *Symphonia globulifera* (Clusiaceae)

16h05 Keynote speaker **Steven Janssens** (KULeuven)
Towards an understanding of the evolution and radiation of angiosperms

16h30 Proclamation of the Emile De Wildeman award

16h45 Closure & Awards best presentation and best poster

Poster presentations

Kenneth Bauters (UGent)
Infrageneric classification of *Lipocarpha* and allied genera (Cyperaceae) based on morphological, developmental and molecular evidence

Eduardo Cires (Ugent)
Gap analyses to support ex situ conservation of genetic diversity in *Magnolia*, a flagship group

Arimatea de Carvalho Ximenes (ULB) *et al.*
Global analysis of the threatened mangrove trees species

Guillaume Delhaye (ULB)
Variation of functional traits in steppic savanna vegetation along a copper gradient in Katanga (DR Congo)

Yannick De Smet (UGent)
Applying the General Lineage Concept of species to Asian *Hydrangea*

Bram D'hondt (RBIN)
Small, immobile, yet ubiquitous: distribution & dispersal of annual *Trifolium* in urbanized landscapes

Sharon Eeckhout (UGent)
Ceratopteris richardii (C-fern): a model system for investigating tissue- specific cell wall architecture and metabolism

Carolina Granados Mendoza (UGent)
Application of the phylogenetic informativeness method to chloroplast markers: a test case of closely related species in tribe Hydrangeae (Hydrangeaceae)

Quentin Groom (National Botanic Garden of Belgium)
Accurately estimating vascular plant occupancy at a national scale

Quentin Groom (National Botanic Garden of Belgium)
Coordination and policy development in preparation for a European Open Biodiversity Knowledge Management System, addressing Acquisition, Curation, Synthesis, Interoperability and Dissemination

Mélanie Harzé (UlgGembloux) *et al.*
Functional traits variability along a local environmental gradient of water availability

Della Kemalasari (VUB) *et al.*
Does shape matters? A global vulnerability assessment of fragmented mangrove forests against climate changes

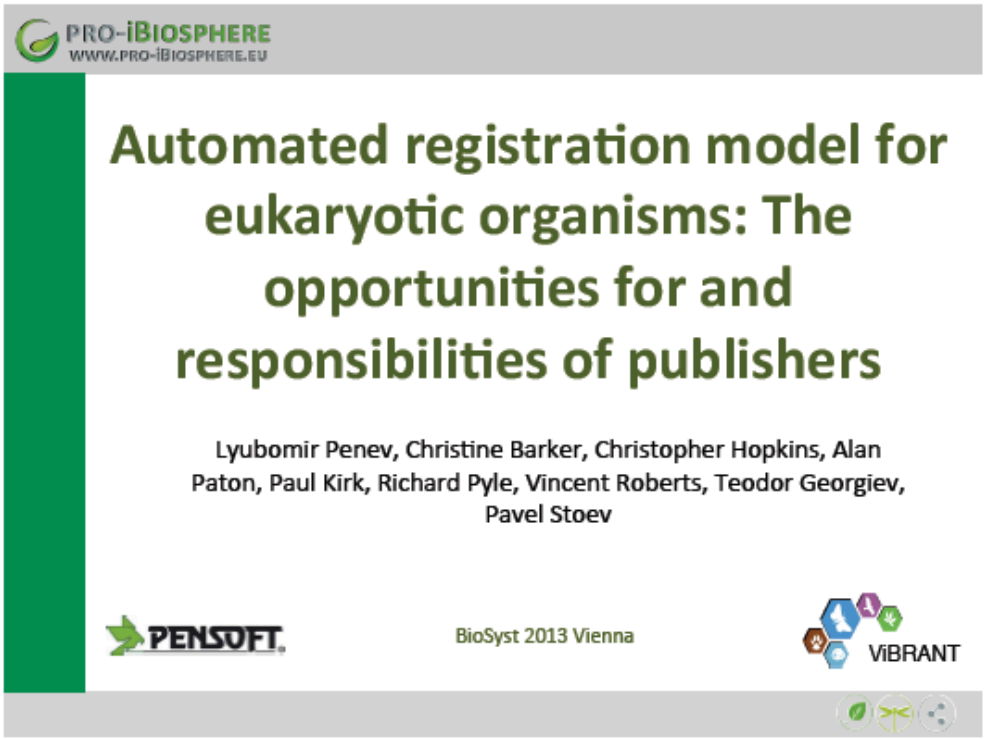
Caroline Laroye (ULB) *et al.*
GIS analysis of climate change impacts on threatened mangrove trees

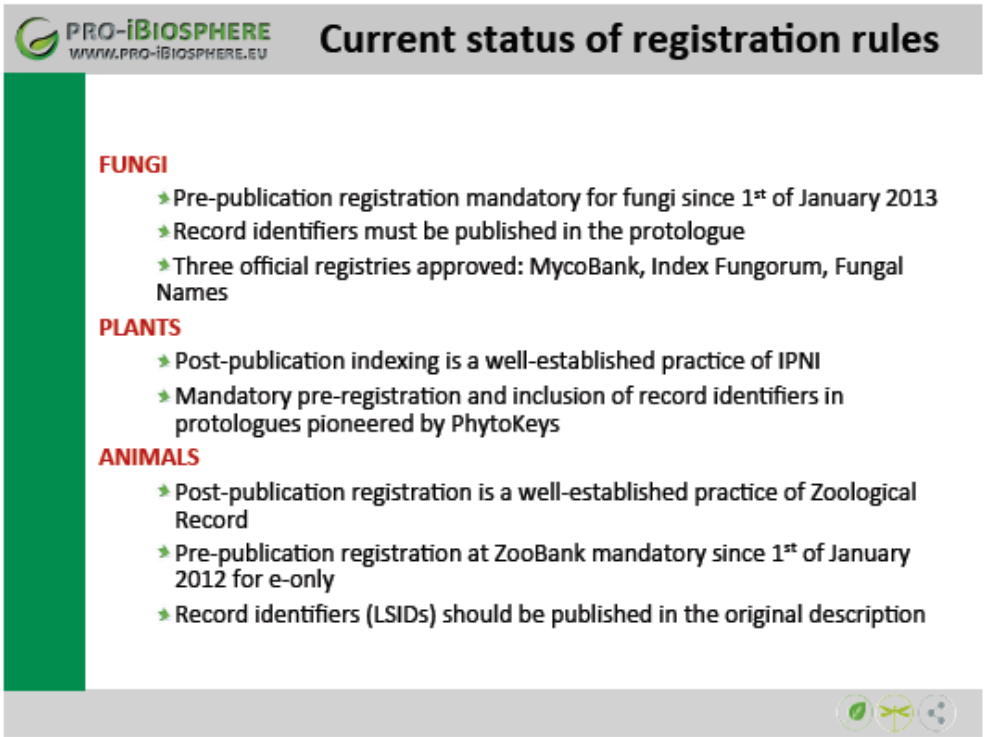
Janvier Lisingo (Universite de Kisangani, DR Congo)
Variation à l'échelle locale de la composition spécifique des communautés d'arbres dans une forêt tropicale du forestier central: rôle des facteurs édaphiques et topographiques

Jonathan Taylor (National Botanic Garden of Belgium) *et al.*
Diatoms from the Congo and Zambezi sister basins – a first overview

Brecht Verstraete (KULeuven)
ß-proteobacteria beyond legumes: endophytic *Burkholderia* in Rubiaceae

#8 - BioSyst.EU 2013 Global systematics! Presentation





PhytoKeys registration policies

The International Plant Names Index

Search the data
- Plant Names
- Authors
- Publications

IPNI Home

contact us

Plant Name Details

Oxalidaceae ***Oxalis simplicifolia*** Lorence & W.L.Wagner

PhytoKeys 4: 54 (-57; fig. 1-2). 2011 [12 Jul 2011]

Distribution:

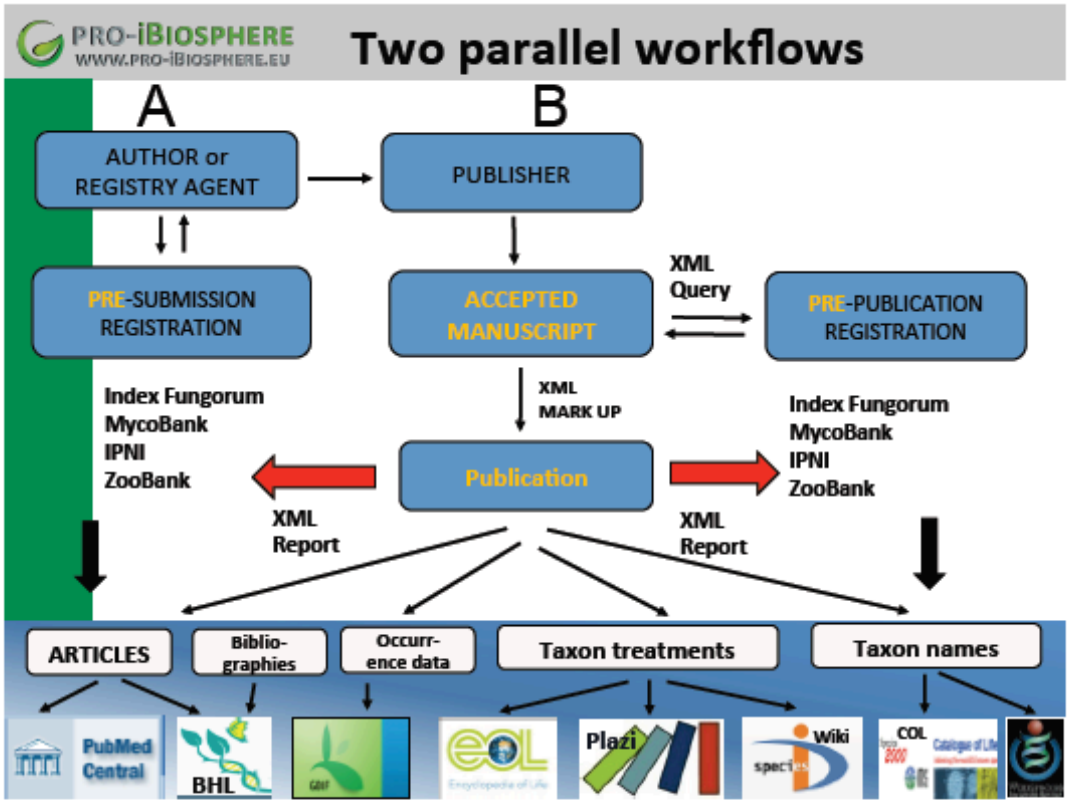
Marquesas (South-Central Pacific, Pacific)

Type Information

Collector(s):	S. Perlman & K. R. Wood 19072
Locality:	Ua Huka: Hanahouua valley, back of valley below cliff walls, 457 m
Latitude:	8° 54' 47" S
Longitude:	139° 30' 9" W
Collection Date:	2004-6-26
Type Location:	holotype PTBG 041184 isotype P isotype PAP isotype US

The challenges of the registration process

- Three main groups of players: registry curators, authors, publishers
- Who will be "allowed" to register new data in electronic registries?
- Who will validate (quality control) the registrations?
- Who will supply the registry's GUIDs (record numbers) to the publishers?
- Who and when will add/correct the final article metadata upon publication?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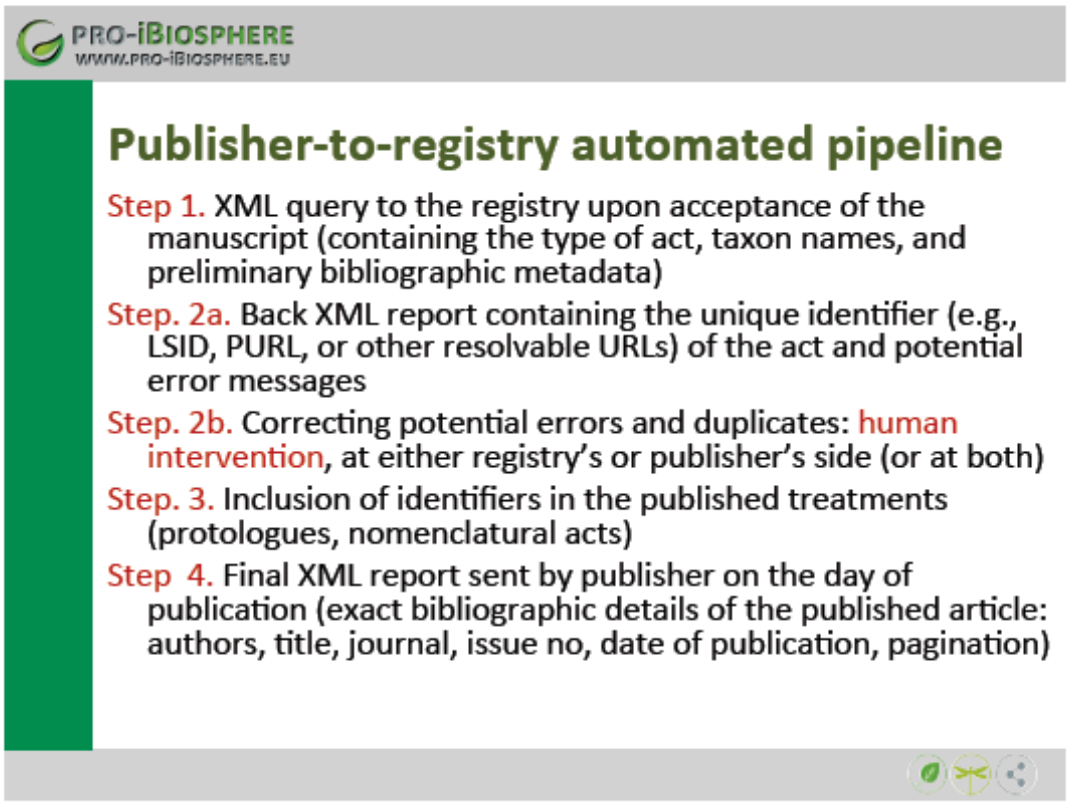
Two parallel workflows
A
B
AUTHOR or REGISTRY AGENT
PUBLISHER
PRE-SUBMISSION REGISTRATION
ACCEPTED MANUSCRIPT
XML Query
PRE-PUBLICATION REGISTRATION
XML MARK UP
Index Fungorum
MycoBank
IPNI
ZooBank
Publication
Index Fungorum
MycoBank
IPNI
ZooBank
XML Report
XML Report
ARTICLES
Biblio-graphies
Occurr-ence data
Taxon treatments
Taxon names
PubMed Central
BHL
Plazi
Wiki
COL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Publisher-to-registry automated pipeline
Step 1. XML query to the registry upon acceptance of the manuscript (containing the type of act, taxon names, and preliminary bibliographic metadata)
Step. 2a. Back XML report containing the unique identifier (e.g., LSID, PURL, or other resolvable URLs) of the act and potential error messages
Step. 2b. Correcting potential errors and duplicates: human intervention, at either registry's or publisher's side (or at both)
Step. 3. Inclusion of identifiers in the published treatments (protologues, nomenclatural acts)
Step 4. Final XML report sent by publisher on the day of publication (exact bibliographic details of the published article: authors, title, journal, issue no, date of publication, pagination)


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Why automated registration?


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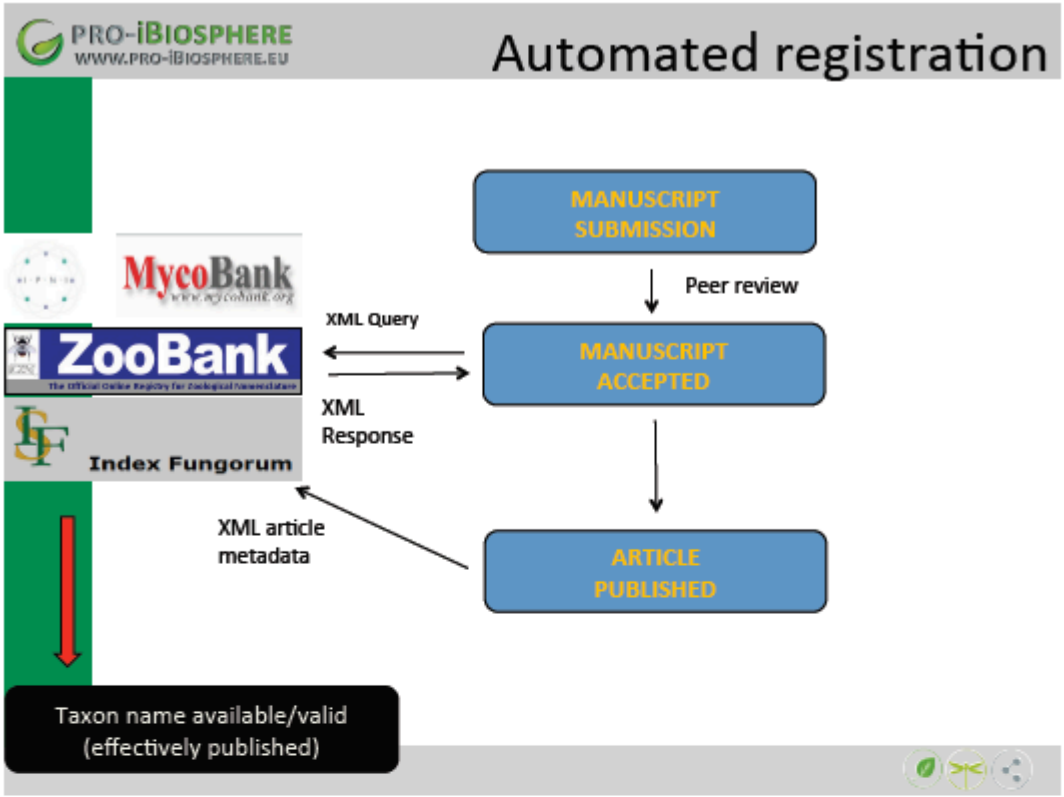
PENSOFT
ZooKeys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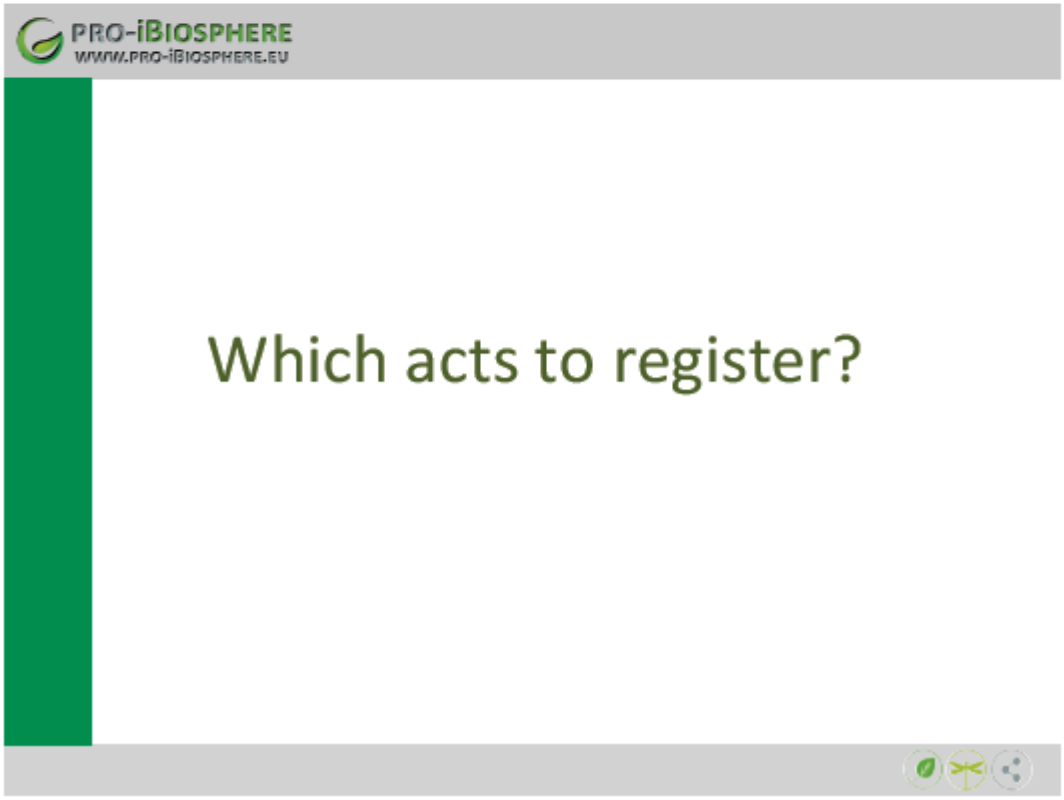
Automated registration
MycoBank
ZooBank
Index Fungorum
MANUSCRIPT SUBMISSION
Peer review
XML Query
MANUSCRIPT ACCEPTED
XML Response
XML article metadata
ARTICLE PUBLISHED
Taxon name available/valid (effectively published)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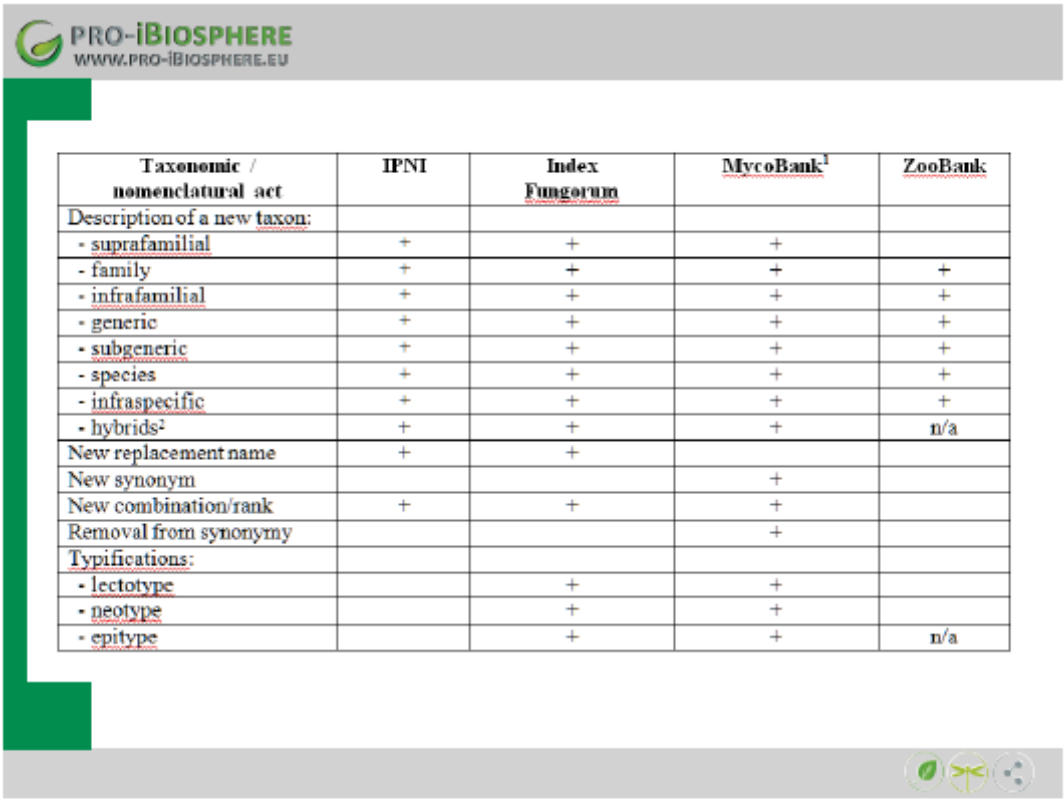
Which acts to register?



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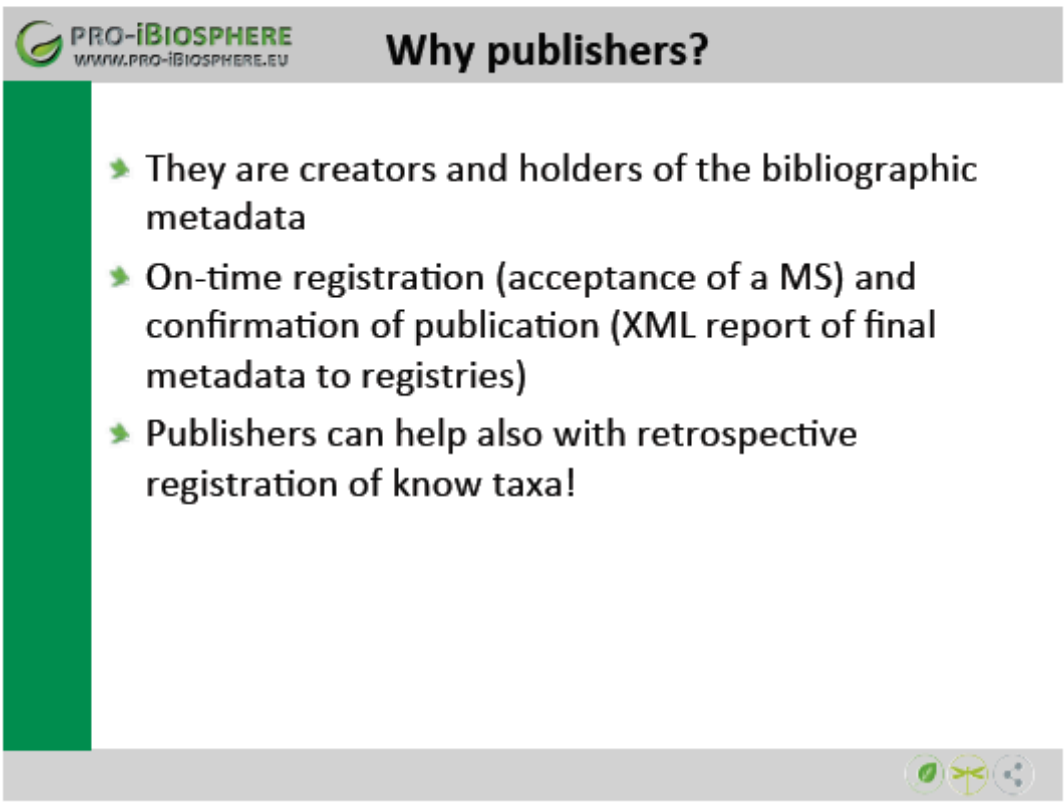
Taxonomic / nomenclatural act	IPNI	Index Fungorum	MycoBank[1]	ZooBank
Description of a new taxon:				
- suprafamilial	+	+	+	
- family	+	+	+	+
- infrafamilial	+	+	+	+
- generic	+	+	+	+
- subgeneric	+	+	+	+
- species	+	+	+	+
- infraspecific	+	+	+	+
- hybrids[2]	+	+	+	n/a
New replacement name	+	+		
New synonym			+	
New combination/rank	+	+	+	
Removal from synonymy			+	
Typifications:				
- lectotype		+	+	
- neotype		+	+	
- epitype		+	+	n/a



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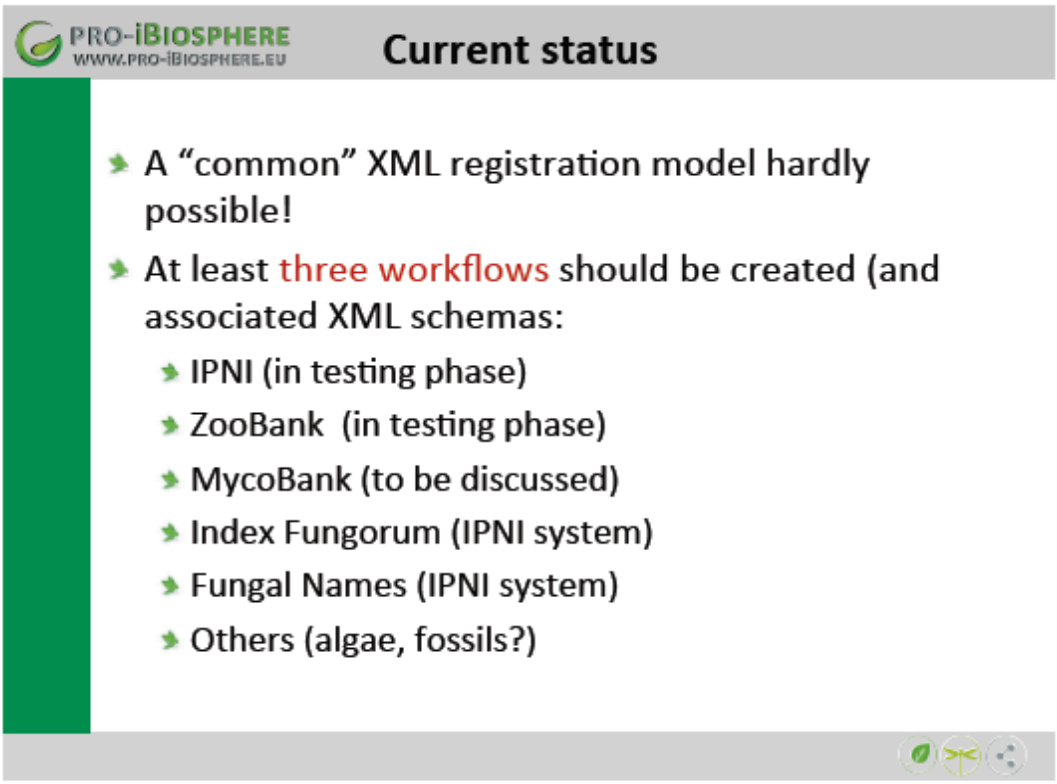
Why publishers?

- They are creators and holders of the bibliographic metadata
- On-time registration (acceptance of a MS) and confirmation of publication (XML report of final metadata to registries)
- Publishers can help also with retrospective registration of know taxa!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Current status
A "common" XML registration model hardly possible!
At least three workflows should be created (and associated XML schemas:
IPNI (in testing phase)
ZooBank (in testing phase)
MycoBank (to be discussed)
Index Fungorum (IPNI system)
Fungal Names (IPNI system)
Others (algae, fossils?)


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Acknowledgments
Plazi
Biodiversity Heritage Library
ZooBank
The Official Online Registry for Zoological Nomenclature
Index Fungorum
MycoBank
www.mycobank.org
GBIF
ViBRANT


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PENSOFT
Open Access!
Благодаря
за
вниманието!

#9 - 10th e-Infrastructure Concertation Meeting Agenda

10th e-Infrastructure Concertation Meeting

Wednesday 06 March 2013 - Thursday 07 March 2013

The Hotel, Brussels

Programme

Table of contents

Wednesday 06 March 2013

Opening Session - Vista, 27th floor (13:30-15:30)

- Conveners: Glinos, Kostas

time	[id] title	presenter
13:30	[0] Welcome address	GLINOS, Kostas
13:45	[1] Keynote: Political vision on e-Infrastructures for Science and Innovation	Prof. KENWAY, Richard
14:15	[2] FP7 Project Success Story Winners	
15:15	[5] e-Science Reporting for Europe	GATER, Catherine

Panel session - Vista, 27th floor (16:00-18:15)

- Conveners: Holmgren, Sverker

time	[id] title	presenter
16:00	[6] Update on e-Infrastructure impact and metrics	GLINOS, Kostas
16:15	[7] Self-assessment of the e-Infrastructure project efficiency	MANIERI, Andrea
16:30	[8] The European e-Infrastructures Observatory	SANCHEZ-PAPASPILIOU, Jorge-Andres
16:45	[9] The costs of the HTC/HPC e-Infrastructures	KARAGIANNIS, Fotis
17:00	[11] Open discussion on impact analysis and metrics	

Thursday 07 March 2013

Plenary Session - Vista, 27th floor (09:30-10:30)

- Conveners: Karp, Pekka

time	[id] title	presenter
09:30	[12] Keynote: e-Infrastructures in 2020 - the global perspective	Prof. SEIDEL, Ed
10:00	[13] Horizon 2020 overview	GLINOS, Kostas

Track 1: Strengthening the European research capacity through open data e-Infrastructures - Vista, 27th floor (11:00-13:00)

- Conveners: Morais Pires, Carlos

Track 2: Developing the computational infrastructure of 21st century science - Meet 25:2, 25th floor (11:00-13:00)

- Conveners: Varghese, Aniyan

Track 3: Creating the European communication commons for knowledge economies - Meet 25:3, 25th floor (11:00-13:00)

- Conveners: Dorel, Jean-Luc

Track 4: Developing digital environments for large-scale collaboration - Meet 26:2, 26th floor (11:00-13:00)

- Conveners: Jansen, Wim

Panel Session - Vista, 27th floor (14:00-17:00)

- Conveners: Glinos, Kostas

time	[id] title	presenter
14:00	[14] Wrap up from the parallel tracks	
15:00	[15] Session on sustainability	Prof. TREFETHEN, Anne Prof. PALMGREN, Juni Prof. BODE, Arndt Mr. ROBERTSHAW, Steve

#10 - Towards a Roadmap for Research Infrastructures on Biodiversity and Ecosystem research in Europe Workshop Agenda

European Commission

Title of the site

SYNERGIES WITH EU INITIATIVES

Towards a Roadmap for Biodiversity and Ecosystem research in Europe

Workshop, Brussels, 19-20 March 2013

Sorry! The file that should have displayed here, Agenda (infrastructures/pdf/workshop-april-2013-agenda.pdf), was not where it should have been so we couldn't display it!

Day 1: 19 March 2013

Session 1 – Workshop objectives and status of developments

- Welcome and objectives of the workshop, Ana Arana, EC Head of Unit Research Infrastructures
- Background and expected outcomes of the workshop, Wouter Los (3.3 MB)

State of the art:

- Research Infrastructures: Biodiversity and Ecosystem research infrastructures; the ESFRI process and IA project developments, Ana Arana (734 KB)
- Joint Programming Initiatives and their ecosystem research: status of developments, Rita Lecbychova (363 KB) , EC Head of Unit, Joint Programming
- Key note introduction I, Gelsomina Pappalardo (231 KB) , Chair of the ESFRI Strategy Working Group for Environmental Sciences
- Keynote introduction II, Rudy Herman (207 KB) , Research Department, Government of Flanders, Belgium

Session 2 – Exploring a possible cooperation of JPIs and RIs

- Challenges and opportunities for cooperation of Research Infrastructures and JPIs., Wouter Los (384 KB)
- Dimensions to consider for a Roadmap for the next 10 years, Alex Hardisty &

Dave Roberts (11.7 MB)

Day 2: 20 March 2013

Session 3 – Parallel sessions

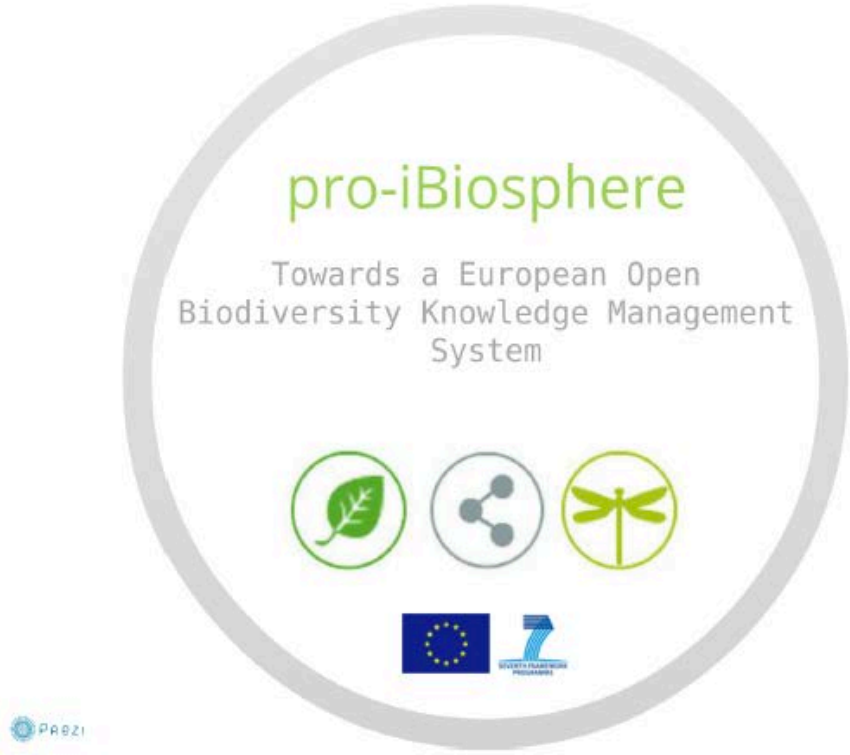
Discussion in 3 parallel side groups

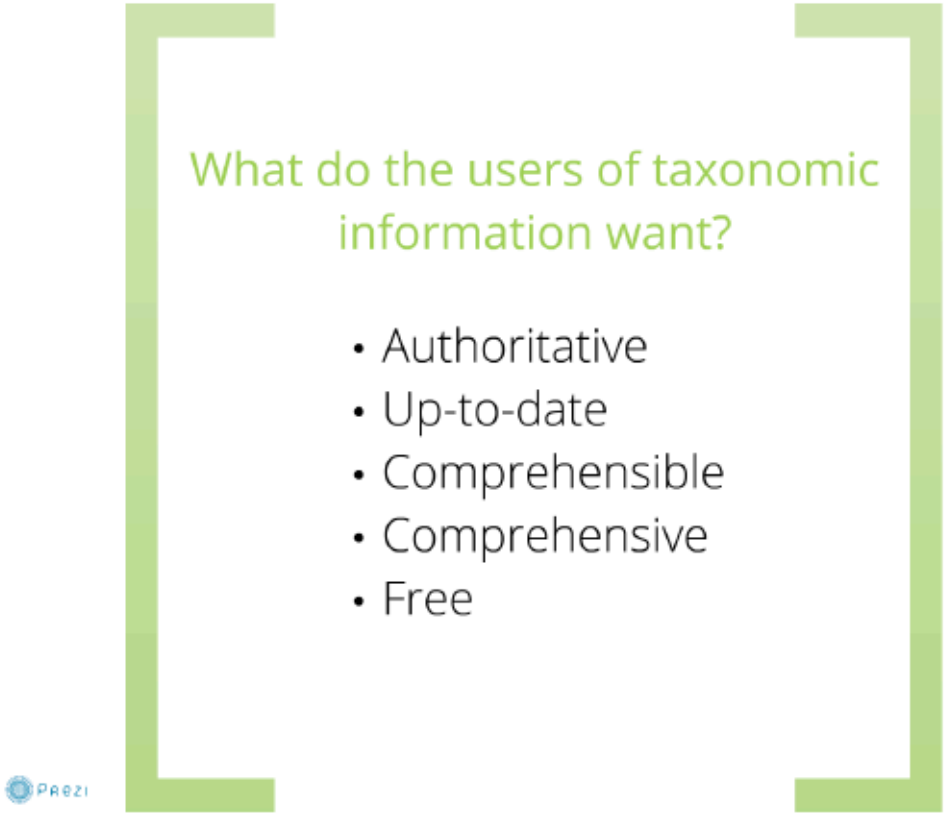
- Observatories, Chair: Katalin Török
  Rapporteur: Herman Hummel
- Physical equipment, Chair: Camille Pisani
  Rapporteur: Jacques Roy
- e-infrastructure, Chair: Tjess Hernandez
  Rapporteur: Pasquale Pagano

Session 4 - Preliminary conclusions

- Reports from the parallel groups followed by discussion
  Group I (1.8 MB)
  Group II (268 KB)
  Group III (156 KB)
- Consideration of options & next steps (314 KB) , and whom to act
- Closing remarks, Ana Arana

#11 - National Botanic Garden of Belgium Seminar Series Presentation




What do the users of taxonomic information want?
• Authoritative
• Up-to-date
• Comprehensible
• Comprehensive
• Free


What do the creators of taxonomic information want?
• Recognition
• Funding
• Academic Freedom
• Payment
• Easy access to literature
• Free access to literature
• Free access to data

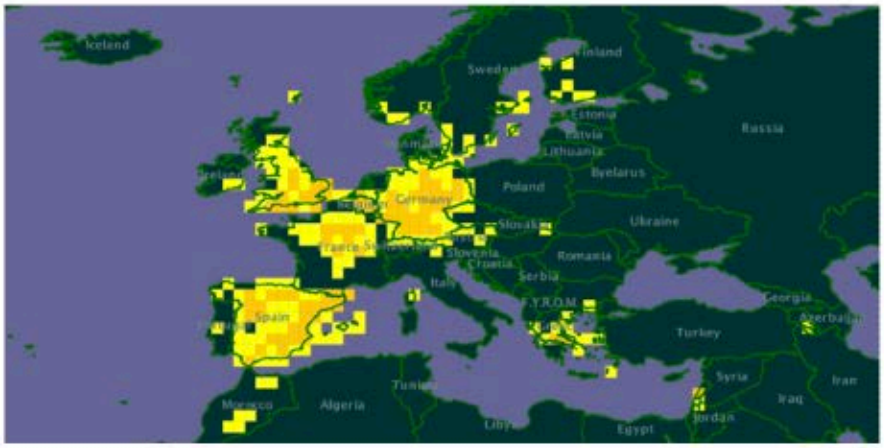
Chenopodium vulvaria L.

pro-iBiosphere pilot

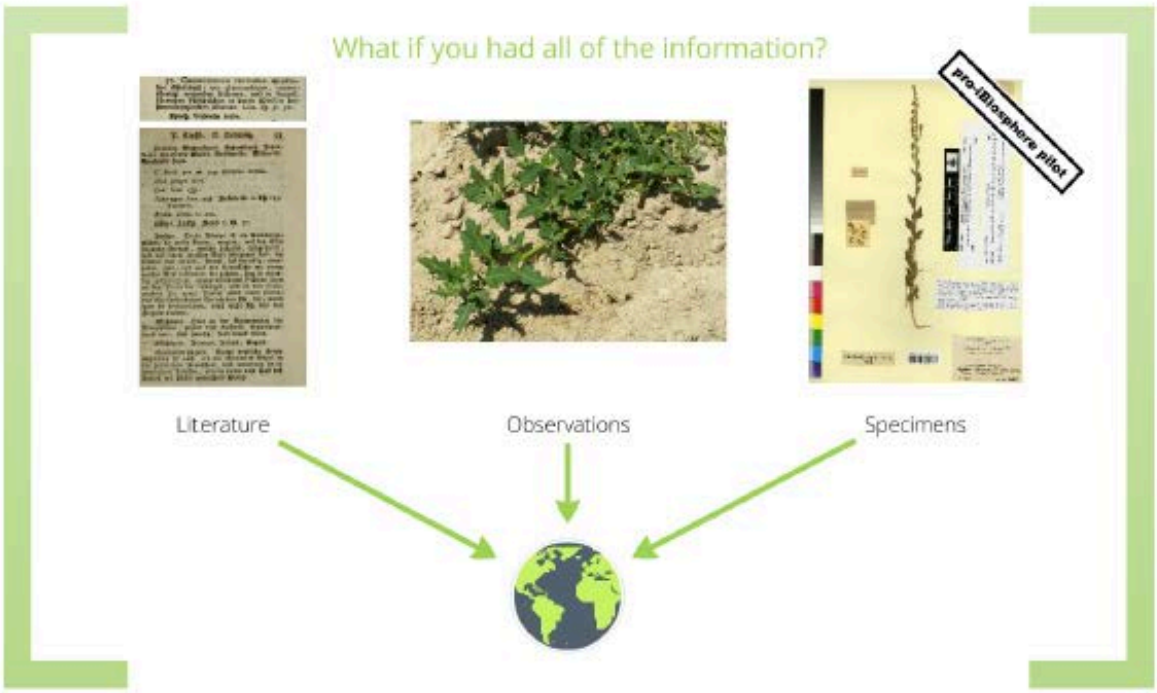
- Weedy
- invasive
- Red-listed
  - Critically endangered in Flanders
  - Endangered in UK
  - Endangered in Czech Republic
- Easy to identify
- Simple synonymy

GBIF data in patchy

pro-iBiosphere pilot

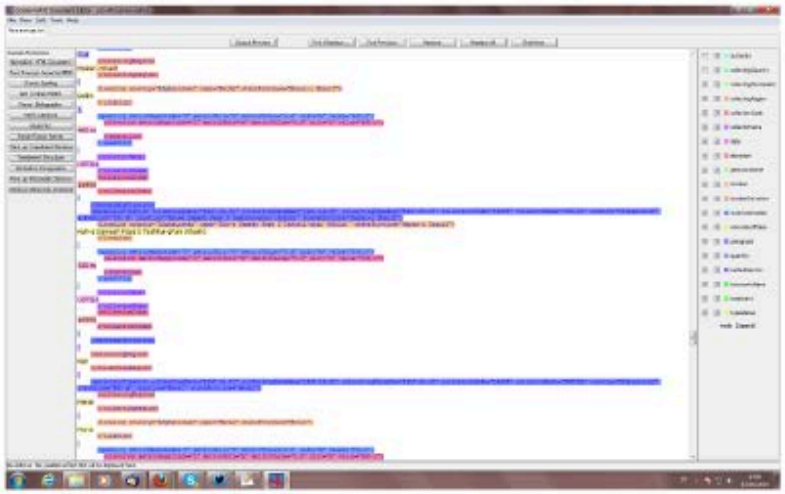



Flora Europaea is
inconsistent in other ways
pro-iBiosphere pilot
502
Prezi


What if you had all of the information?
pro-iBiosphere pilot
Literature
Observations
Specimens

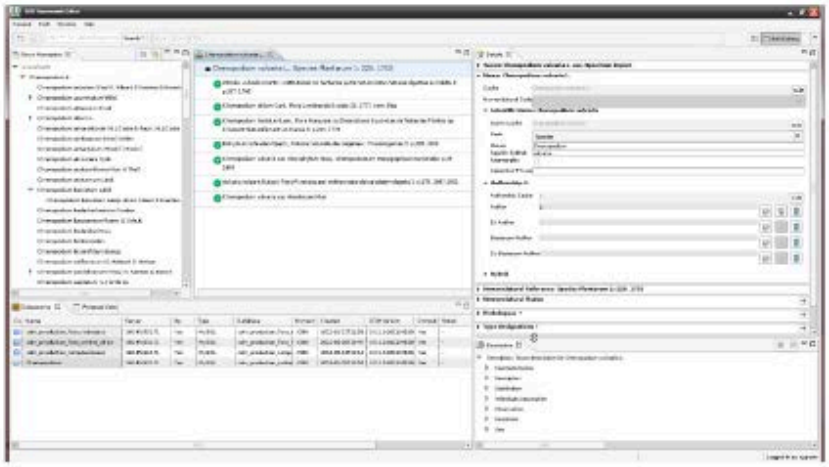
Marking-up in the Goldengate Editor

pro-iBiosphere pilot

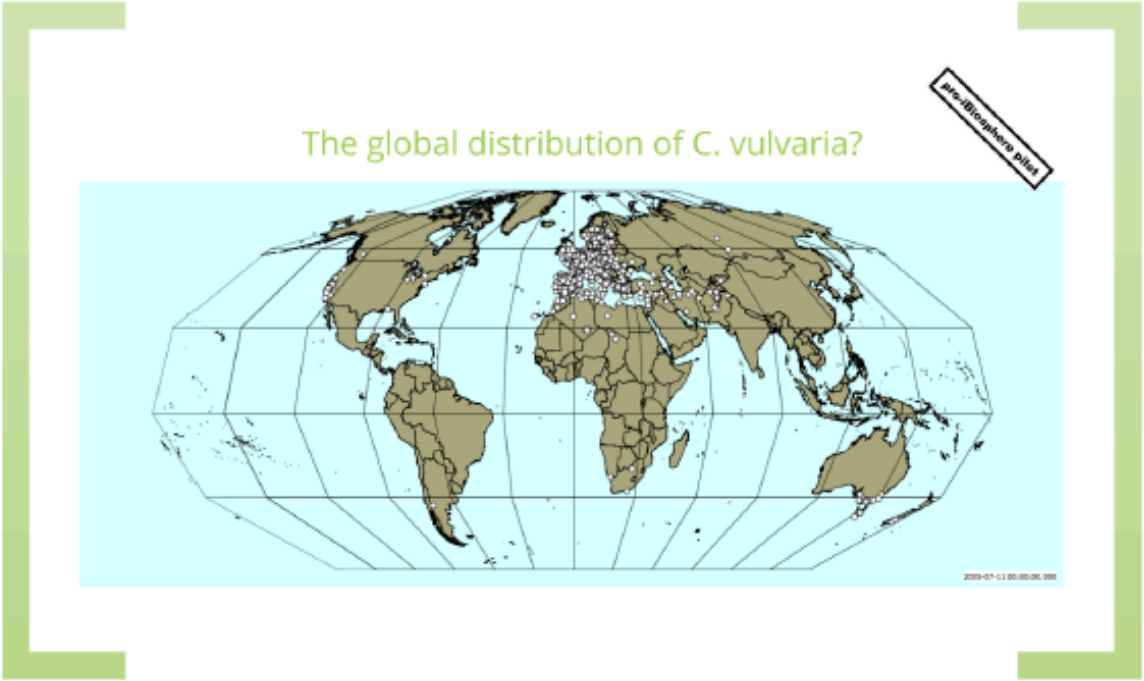


CDM Editor

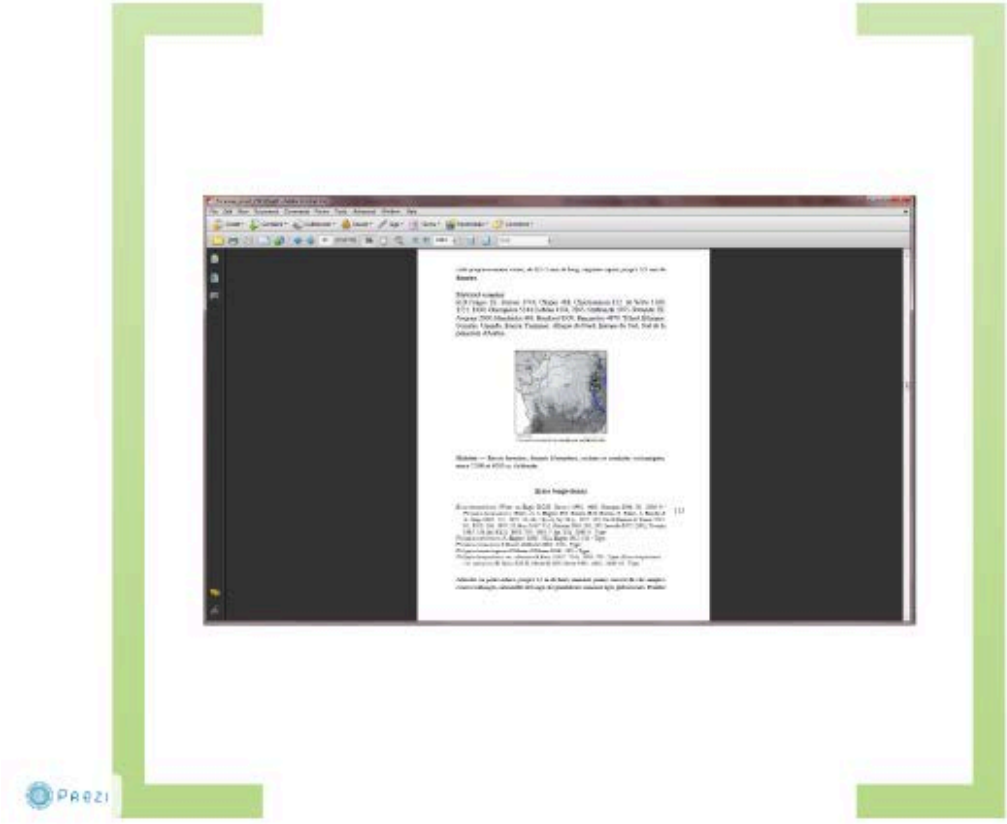
pro-iBiosphere pilot




Output to website
pro-iBiosphere pilot
EDIT proiBiosphere - Chenopodium Pilot
Home
Search taxa
Chenopodium vulvaria
Species
Navigation


The global distribution of C. vulvaria?
pro-iBiosphere pilot


The collection of
recording events with time
pro-iBiosphere pilot
PREZI


PREZI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Acknowledgments
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Sabrina Eckert (FUB-BGBM)
Susy Fuentes (FUB-BGBM)
http://dev.e-taxonomy.eu/dataportal/chenopodiumPilot/
PLAZI

#12 - 19th International Congress of Arachnology Agenda

June 24th, Moday				
09:00 - 09:15	Opening Ceremony			
09:15 - 10:00	Congress photo			
10:00 - 10:30	Morning coffee			
Plenary session I, Chair: I-Min Tso (Banquet Hall)				
10:30 - 11:15	**Hirotsugu Ono:** Asia as a gold mine for arachnologists or spider enthusiasts? -- A brief report on the history and present situation of spider taxonomy in Asia.			
11:15 - 12:00	**Shuqiang Li:** Species diversity of spiders in Yunnan-Guizhou Plateau, China			
12:00 - 14:00	Lunch			
	Banquet Hall	M103	M104	M105
	Behaviral Ecology I Chair: Linda S. Rayor	**Systematics and Biogeography I** Chair: Yong-Chao Su	**Paleontology/ Non-araneid arachinds** Chair: Paul A. Seldon	**Community Ecology and pest management**
14:00 - 14:14	**Walter, André**: The odd cross: Web decoration variability as a potential anti-predator strategy in *Argiope mascordi*	**Hormiga, Gustavo**: Systematics of the Araneoid Spider Family Malkaridae (Araneae)	**Giribet, Gonzalo**: The first phylogenetic analysis of Palpigradi—the most enigmatic arthropod order	**Baba, Yuki**: The effects of landscape structure and agricultural practice on spider community in rice paddy fields of Japan
14:15 - 14:29	**Tanaka, Kazuhiro**: Diel activity pattern of the wolf spider, *Pardosa astrigera* under semi-natural conditions	**Byeon, Hye-Yun**: Close relationship of Chelicerata and Tardigrada	**Esposito, Lauren A.**: Hidden beneath the surface: adaptive radiation in the scorpion genus *Centruroides* Marx, 1890	**Petcharad, Booppa**: The distribution of understory web-building spiders along rubber plantation across edge through forest and the relationship between spider composition and
14:30 - 14:44	**Nakata, Kensuke**: Body color variation and prey attraction in an orb-web spider, *Cyclosa argenteoalba*	**Tsurusaki, Nobuo**: Another case of circular overlap in the harvestman *Gagrellula ferruginea* (Sclerosomatidae: Gagrellinae) involved in the both color-pattern and chromosomal	**Neethling, Jan A.**: A revision of the South African Geogarypidae (Arachnida: Pseudoscorpiones)	**Hashimoto, Yoshiaki**: Do biodiversity of ant-mimic spiders associate with ant biodiversity in tropical forests?
14:45 - 14:59	**Liao, Hsien-Chun**: The function of ventral body coloration of the ladder-web spider *Herennia multipuncta*	**Lehtinen, Pekka T.**: Polyphyly of Orbiculariae, based on different ultrastructure of all chitinous structures and lacking homology of structures of the copulatory organs	**Loria, Stephanie F.**: Can we see the patterns?: Homology of lateral ocelli in the order Scorpiones	**Sebastian, Pothalil A.**: Interactive effects of varietal resistance and insecticides on spider-prey dynamics in the rice agro-ecosystem in Kerala, India.
15:00 - 15:14	**Rao, Dinesh**: Symmetry in orb web spiders		**Huang, Diying**: The Middle Jurassic arachnids and their coeval insects from the Daohugou fauna	
15:15 - 15:29				
15:30 - 16:00	Afternoon tea			
16:00 - 18:00	Poster session (posters 1 - 22)			

June 25th, Tuesday				
Plenary session II, Chair: Mark Elagr (Banquet Hall)				
08:30 - 09:15	**Marie E. Herberstein:** Establishing spiders as model organisms - why and how?			
09:15 - 10:00	**Daiqin Li:** Ultraviolet coloration in jumping spiders: mechanisms, functions and evolution			
10:00 - 10:30	Morning coffee			
	Banquet Hall	M103	M104	M105
	Behaviral Ecology II Chair: Marie E. Herberstein	**Systematics and Biogeography II** Chair: Mark S. Harvey	**Arachnid diversity, urbanization and sustainable development symposium I** Chair: Ferenc Samu	**Sexual Selecition I** Chair: Anne Danielson-Francois
10:30 - 10:44	**Líznarová, Eva**: Physiological efficiency and trade-offs in adaptations of the ant-eating *Euryopis episinoides* (Theridiidae)	**Giribet, Gonzalo**: Arachnid phylogeny revisited—a phylogenomic approach	**Samu, Ferenc**: Long-term arachnid diversity changes in habitat islands	**Berner Aharon, Naama**: Does Sexual Selection play a Role in the Dispersal of the Colonial Spider *Cyrtophora citricola* ?
10:45 - 10:59	**Wilder, Shawn**: Nutrient consumption by redback spiders (*Latrodectus hasselti*) in the field and its consequences for growth	**Vink, Cor**: Is 28S and COI useful for interfamily spider phylogenetics?	**Huang, Pao-Shen:** Comparisons of spider compositions of university campuses in different landscape types in central Taiwan	**Cheng, Ren-Chung**: Transform for more fecundity: The evolution of abdominal shape in the araneid subfamily Argiopinae
11:00 - 11:14	**Cangialosi, Karen**: Using molecular gut content analyses to examine foraging behavior in Neospintharus trigonum	**Labarque, Facundo M.**: *Pretarsus* , nice to see you again! Defining unknown structures in the internal anatomy of the distal segment of a spider leg.	**Lyle, Robin**: The South African National Survey of Arachnida (SANSA) – the way forward.	**Hurst, Jacob A.**: What's sex got to do with it? Effects of changes in sexual size dimorphism at maturity on running speed in *Delena cancerides* (Sparassidae)
11:15 - 11:29	**Michalko, Radek**: Different degree of individual specialisation in three *Philodromus* species (Araneae: Philodromidae) is caused by influence of different selection pressures	**Lasut, Liana**: Barcoding restrictions in sibling species	**Elverici, Mert**: Composition of a Mediterranean spider assemblage, a first comprehensive report from the Mediterranean coast of Turkey	**Tu, Lihong**: Study on the origin and evolution of complex organ with a model of spider epigynum
11:30 - 11:44	**Khandelwal, Shilpa**: Studies on life history and breeding pattern of new species of *Steatoda* at Indore (M.P), India	**Gregorič, Matjaž**: Phylogeny and web evolution of enigmatic orbicularians: the new family Zygiellidae and bark spiders of the genus *Caerostris*	**Siliwal, Manju**: A decade of mygalomorph studies in India: An Update	**Foellmer, Matthias W.**: The effects of vegetation density, morphology and condition on mate search success in male *Argiope trifasciata*
11:45 - 11:59		**Stoev, Pavel**: Making small data big: The Biodiversity Data Journal	**Foord, Stefan H.**: Drivers of spider diversity along an altitudinal transect in a floristic kingdom sensitive to climate change	**Berger-Tal, Reut**: The consequences of low genetic variability and adaptation to inbred mating in the social spider *Stegodyphus dumicola*
12:00 - 14:00	Lunch			

June 25th, Tuesday				
	Banquet Hall	M103	M104	M105
	Behaviral Ecology III Chair: Linda S. Rayor	**Systematics and Biogeography III** Chair: Ingi Agnarsson	**Arachnid diversity, urbanization and sustainable development symposium II** Chair: Ferenc Samu	**Sexual Selecition II** Chair: Matthias W. Foellmer
14:00 - 14:14	**Henneken, Jessica**: Chemically mediated mate choice for monogynous males	**Su, Yong-Chao**: Host-use and evolution of group-living behavior in kleptoparasitic spiders: Molecular phylogeny of the Argyrodinae (Araneae: Theridiidae).	**Haddad, Charles R.**: The faunistic diversity of spiders (Arachnida: Araneae) of the Grassland Biome in South Africa	**Sun, Ning**: The morphology of female genitalia in Erigonine spiders and its implication on evolution
14:15 - 14:29	**Sentenská, Lenka**: Mating plugs in the spider *Micaria sociabilis* (Gnaphosidae): origin, efficacy and female control	**Kanniparambil, Sunil J.**: Studies on two Tetragnathid Spiders from South India	**Tso, I-Min:** Using spiders as indicator to evaluate ecological effectiveness of university campuses in central Taiwan	**Danielson-Francois, Anne**: Sexual selection on spider fang length: long enough to steal with?
14:30 - 14:44	**Rivera, Christine**: Diversification of male courtship traits in Habronattus jumping spiders: the role of environment and female preference on signal evolution	**Yamasaki, Takeshi**: Ant-mimicking jumping spiders of the Malay Archipelago	**Gajdoš, Peter**: Diversity of the spider fauna in relationship to the historical structures of agricultural landscape in central Europe	**Tuni, Cristina**: Indirect benefits of polyandry in a nuptial feeding spider
14:45 - 14:59	**Brandt, Erin**: Effects of Ambient Temperature on Courtship Behavior and Mating Preference in a Desert-Dwelling Jumping Spider, *Habronattus clypeatus*	**Sharma, Prashant P.**: The effects of geologic dynamism on inference of ancient biogeographic events: mathematical models and empirical arachnid phylogenies	**Sharma, Priya:** Spider diversity at Indore city (Madhya Pradesh) India	**Sharma, Vipul K.**: Maturity related male trait in *Latrodectus hasselti* indicus.
15:00 - 15:14	**Girard, Madeline B.**: Female preference in the peacock spider, *Maratus volans*	**Harrison, Sophie**: Phylogeography of pseudoscorpions: exploring new species diversity in the calcrete aquifers of the Yilgarn and Pilbara regions, Western Australia	**Lowe, Elizabeth**: The effect of urbanisation on the size and condition of an urban spider (*Nephila plumipes*)	**Michalik, Peter**: A new type of sperm transfer form in spiders (Araneae, Arachnida) and its implications on the evolution of sperm conjugates
15:15 - 15:29	**Cárdenas, Manuel**: Untangling the oviposition preference and offspring performance in the myrmecophagous *Euryopis episinoides* spiders (Araneae: Theridiidae)	**Guadanucci, José Paulo L.**: Comparative study of spinning apparatus of spiders *Actinopus sp.* (Actinopodidae) and *Ischnothele annulata* (Dipluridae)	**Gavish-Regev, Efrat**: Can spiders be used as biodiversity indicators in peri-urban environments? – Modiin corridor as a case study	
15:30 - 16:00	Afternoon tea			
16:00 - 18:00	Poster session (posters 23 - 46)			
21:00 -	Russian party			

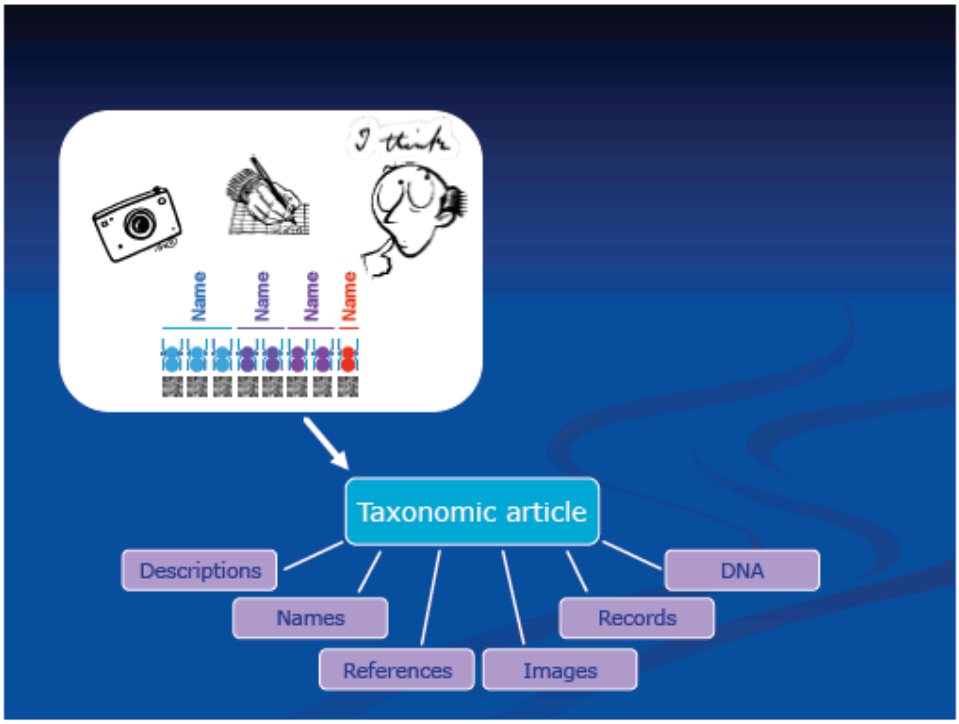
June 27th, Thursday				
Plenary session III, Chair: Yael Lubin (Banquet Hall)				
08:30 - 09:15	**Matjaž Kuntner:** A model spider lineage: Reconstructing its past and predicting its future			
09:15 - 10:00	**Todd A. Blackledge** Weaving together silk mechanics and web function in the evolution of spider ecology			
10:00 - 10:30	Morning coffee			
	Banquet Hall	M103	M104	M105
	Behaviral Ecology IV Chair: Shawn Wilder	**Systematics and Biogeography IV** Chair: Cor Vink	**Harvestman Symposium I** Chair: Prashant P. Sharma	**Spider silk symposium** Chair: Todd A. Blackledge
10:30 - 10:44	**Kralj-Fišer, Simona**: Which spiders can succeed in the city?	**Rix, Michael G.**: Australian assassins: taxonomy, phylogeny and biogeography of the Australian assassin spiders (Araneae: Archaeidae)	**Giribet, Gonzalo**: The systematics and biogeography of Neogoveidae, a tropical family of Cyphophthalmi (Arachnida, Opiliones)	**Blackledge, Todd A.:** Opening remarks
10:45 - 10:59	**Yip, Eric C.**: New frontiers in subsocial behavior and maternal care in spiders	**Xu, Xin**: Phylogeny and biogeography of the spider family Liphistiidae (Araneae: Mesothelae)	**Taylor, Christopher K.**: The littlest giants: reclassifying the Australian harvestmen genera *Megalopsalis* and *Spinicrus* (Opiliones:	**Liao, Chen-Pan:** The effects of wind on microstructures of major ampullate silks produced by *Cyclosa mulmeinensis*
11:00 - 11:14	**Rayor, Linda S.**: Evolution of sociality in three huntsman spider species	**Harvey, Mark S.**: A highly diverse mygalomorph spider fauna in arid Australia revealed by barcoding and morphology	**Willemart, Rodrigo H.**: We learn, we find food, we find mates, we find our way back home: chemoreception, we can´t live without you.	**Seenappa, Marashetty**: The signing ceremony of Signature spider *Argiope anasuja*
11:15 - 11:29	**Bucher, Roman**: Fitness consequences of antipredator behaviour in crickets driven by spider cues	**Guadanucci, José Paulo L.**: Distributional patterns and areas of endemism of Mygalomorphae spiders in Atlantic Forest, Brazil	**Zhang, Chao**: Notes on some species of the genus *Melanopa* (Sclerosomatidae: Gagrellinae) from China	**Blamires, Sean**: X-ray diffraction analysis of nutrient-induced spider silk plasticity
11:30 - 11:44	**Wolff, Jonas O.**: The great silk alternative: Multiple co-evolution of web loss and sticky hairs in spiders.	**Mathew, Elizabeth V.**: Redescription of *Cyrtophora bidenta* Tikader, 1970 (Araneidae), an endemic species of India		**Sheu, Hwo-Sheunn**: Effects of nutrient level on silk properties of *Nephila pilipes* : perspectives from XRD
11:45 - 11:59		**Benjamin, Suresh P.**: Revision of the Australasian crab spiders currently placed in the genera *Stephanopis* O. P.-Cambridge, 1869 and *Sidymella* Strand, 1942 (Araneae: Thomisidae)"		
12:00 - 14:00	Lunch			

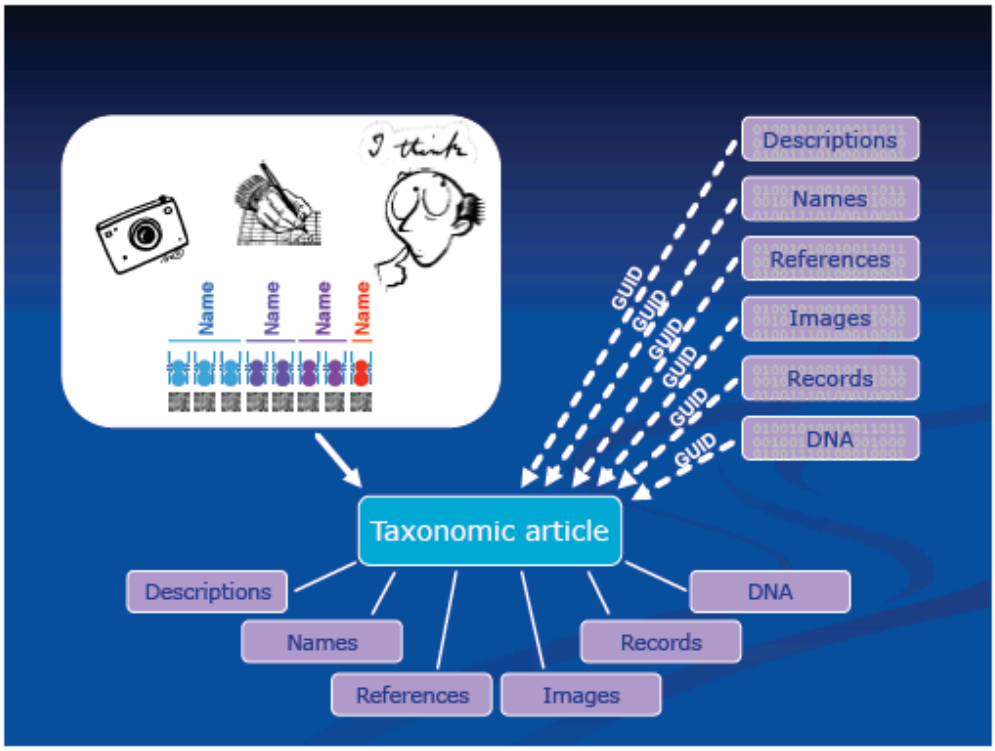
June 27th, Thursday				
	Banquet Hall	M103	M104	M105
	Physiology and Ecophysiology Chair: Sean Blamires	**Systematics and Biogeography V** Chair: Michael G. Rix	**Harvestman Symposium II** Chair: Sarah L. Boyer	**Biodiversity, Faunistics and Conservation I** Chair: Jeremy Miller
14:00 - 14:14	**Nentwig, Wolfgang**: Spider bites potentially lethal to humans – a global review	**McHugh, Anne K.**: A first look at the Caribbean biogeography of *Micrathena* and *Deinopis*	**Dolejš, Petr**: Type specimens of harvestmen (Arachnida: Opiliones) from the Šilhavý's collection deposited in the National Museum in Prague (Czech Republic)	**Patrick, L. Brian:**
14:15 - 14:29	**Moser, Aline I.**: Substrate specificity of spider venom hyaluronidases in different spider species	**Huber, Bernhard A.**: Smeringopina and the distribution of African pholcid diversity	**Tsurusaki, Nobuo**: Biogeography of harvestmen in the Ryukyu Islands, the northeastern border between the Oriental and Palearctic zoogeographic regions	**Mundackatharappel, Joseph M.**: Diversity and ecology of spiders (Arachnida: Araneae) in Agasthyamalai Biosphere Reserve in the Western Ghats biodiversity hotspot, India
14:30 - 14:44	**Kuhn-Nentwig, Lucia**: The immune system of spiders	**Agnarsson, Ingi**: Multi-species microhabitat coexistence and evidence for sympatric speciation in a radiation of Malagasy social spiders	**Malumbres-Olarte, Jagoba**: Shedding light on dark-dwelling creatures: phylogenetics and biogeography of Iberian troglobiont Ischyropsalis (Opiliones: Dyspnoi: Ischyropsalidoidea)	**Mohd Ghazali, Amir Ridhwan**: Highland spiders in Malaysia
14:45 - 14:59	**van den Berg, Francesca**: Growing up hot: effects of retreat-site traits on development of flat rock spiders, *Morebilus plagusius*	**Ovtcharenko, Vladimir**: Biogeography of genera of ground spiders family Gnaphosidae in Old World.	**Boyer, Sarah L.**: Historical biogeography of mite harvestmen (Opiliones, Cyphophthalmi) in the Wet Tropics of Queensland, Australia	**Chotwong, Wimolwan**: Many new records and new species are expected
15:00 - 15:14	**Cardillo, Marissa G.**: A test of the hypothesis of depressed metabolic rate as an adaptation for group living in social sparassid and eresid spiders.	**Planas, Enric**: Combining ecological niche modelling and phylogeographic approaches to elucidate complex biogeographical patterns in the Mediterranean basin: *Loxosceles rufescens* as a case study		**Quasin, Shazia**: Assessment of morphometric changes in spiders across guilds and altitude
15:15 - 15:29		**Lotz, Leon N.**: The family Agelenidae (Araneae) in the South African National Survey of Arachnida (SANSA) Atlas		**Zamani, Alireza:** First Record of *Loxosceles rufescens* (Dufour, 1820) (Arachnida: Araneae: Sicariidae) from Iran
15:30 - 16:00	Afternoon tea			
16:00 - 18:00	Poster session (posters 47 - 72)			
18:30	Congress dinner			

June 28th, Friday				
Plenary session IV, Chair: Daiqin Li (Banquet Hall)				
08:30 - 09:15	**Tadashi Miyashita:** Distribution and abundance of spiders from small to large spatial scales			
09:15 - 10:00	**Yael Lubin:** Group living in spiders, revisited			
10:00 - 10:30	Morning coffee			
	Banquet Hall	M103	M104	M105
	Genus *Nephila* symposium Chair: Matjaž Kuntner	**Systematics and Biogeography VI** Chair: Gustavo Hormiga	**Harvestman Symposium III** Chair: Gonzalo Giribet	**Biodiversity, Faunistics and Conservation II** Chair: L. Brian Patrick
10:30 - 10:44	**Seenappa, Marashetty**: Mating behavior in *Nephila kuhlii*	**Zakharov, Boris:** Cladistic analysis of the diversity of the male palp organs of ground spiders (Araneae: Gnaphosidae)	**Sharma, Prashant P**: Evolutionary developmental biology of Arachnida and experimental approaches in harvestman developmental genetics	**Smith, Victoria R.**: The abundance of *Latrodectus katipo* Powell 1871 is affected by season and vegetation type.
10:45 - 10:59	**Elgar, Mark**: Genetic and environmental influences on the extraordinary size variation in male *Nephila edulis*	**Rheims, Cristina A.**: Cladistic analysis of the subfamily Deleninae Hogg (Araneae, Sparassidae)	**Burns, Mercedes**: Reproductive morphology indicates multiple evolutionary transitions from female enticement to precopulatory antagonism in the leiobunine harvestmen (Opiliones: Sclerosomatidae)	**Miller, Jeremy**: Improving the informatic value of diverse tropical arthropod inventories with digital images and DNA barcodes
11:00 - 11:14	**Chou, Hao-Hai**: A bridegroom in red: function of body coloration of male giant wood spider *Nephila pilipes* .	**Polotow, Daniele**: Cladistic analysis of the superfamily Lycosoidea (Arachnida, Araneae, Entelegyne)	**Giribet, Gonzalo**: A stem-harvestman from the Late Carboniferous Montceau-Les-Mines Lagerstätte	**Čandek, Klemen**: Utility of DNA barcodes in taxonomy and biogeography of spiders
11:15 - 11:29	**Seldon, Paul A.**: A review of fossil *Nephila*	**Dimitrov, Dimitar**: Squeezing the last drops of the lemon: molecular phylogeny of Orbiculariae (Araneae)	**Gainett, Guilherme**: Walk it off: Predictive power of appendicular characters toward inference of higher-level relationships in Laniatores (Arachnida: Opiliones)	**Borkar, Manoj R.**: Micro-morphology of the Pedipalpal ' Cleaning Organ' in the epigean species of Indian Whip Spider *Phrynichus phipsoni* , (Pocock 1900)
11:30 - 11:44	Discussion and Concluding remarks	**Bayer, Steffen**: Psechridae – Phylogenetic relationships and the significance of their pre-epigynes in taxonomy	Discussion and Concluding remarks	**Lafage, Denis**: Recolonisation of temperate grasslands by spiders after a severe spring flood
11:45 - 11:59				**Siliwal, Manju**: Natural history of *Idiops Perty* , 1833 (Araneae: Idiopidae) from the Western Ghats, Karnataka, India
12:00 - 14:00	Lunch			
14:00 - 16:00	ISA meeting			
16:00 - 16:30	Congress closing ceremony			

#13 - 19th International Congress of Arachnology Presentation

the structure of taxonomic data…

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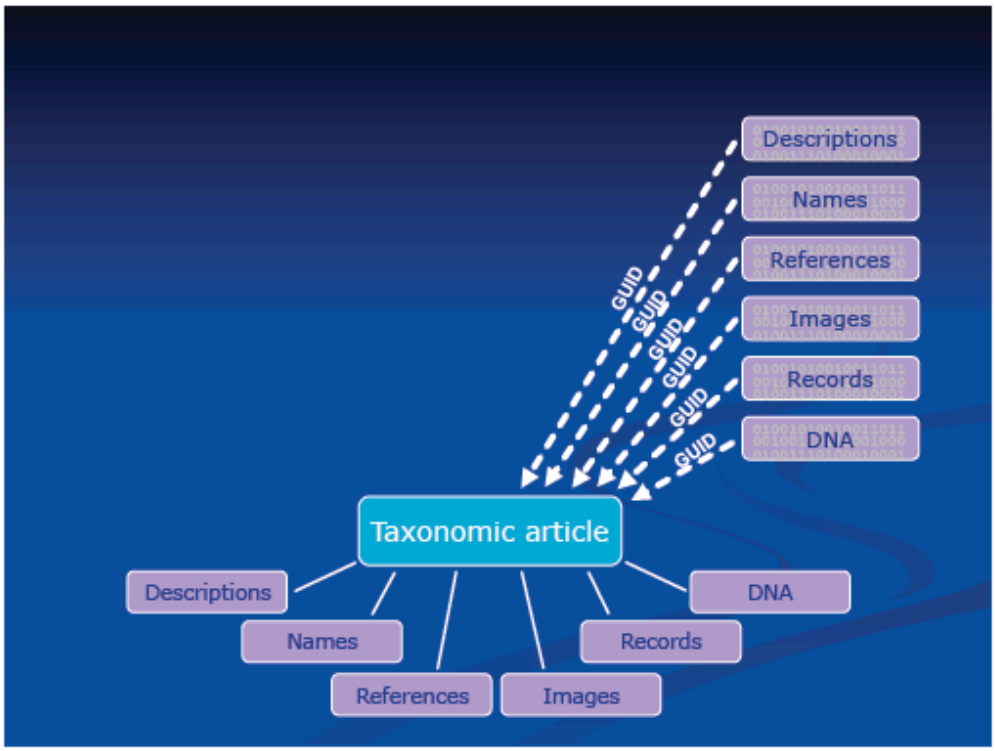
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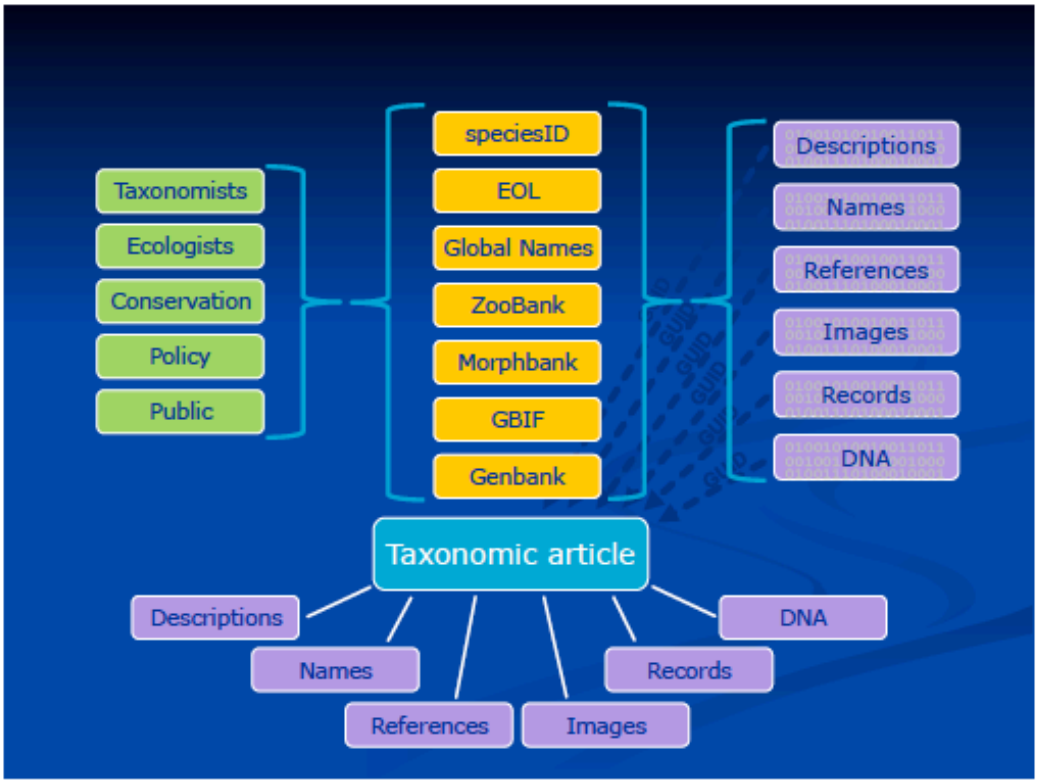
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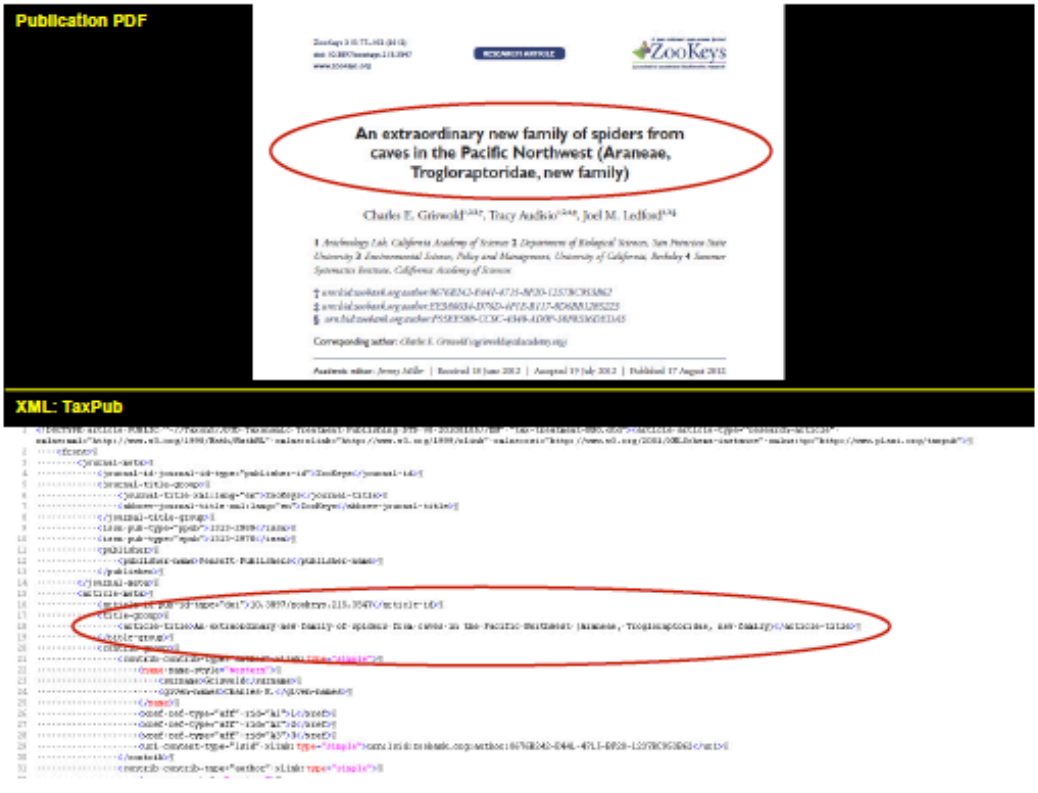
Publication PDF
ZooKeys
An extraordinary new family of spiders from caves in the Pacific Northwest (Araneae, Trogloraptoridae, new family)
XML: TaxPub


Publication PDF
An extraordinary new family of spiders from caves in the Pacific Northwest (Araneae, Trogloraptoridae, new family)
XML: TaxPub


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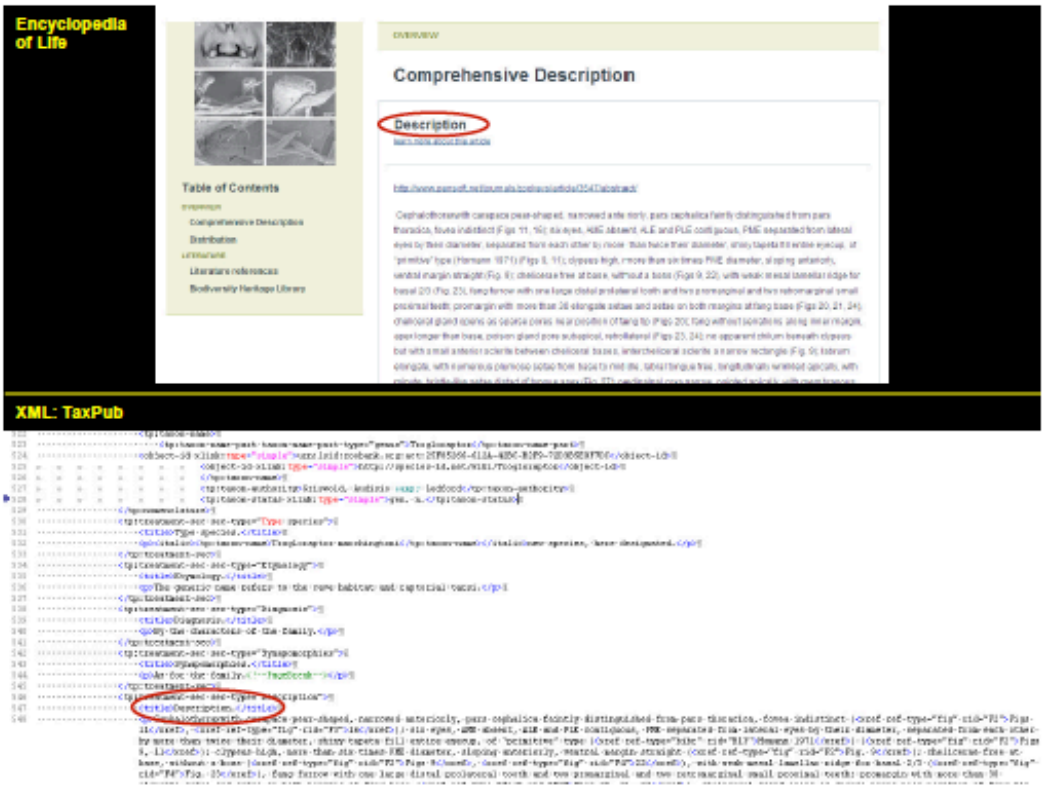
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Literature references
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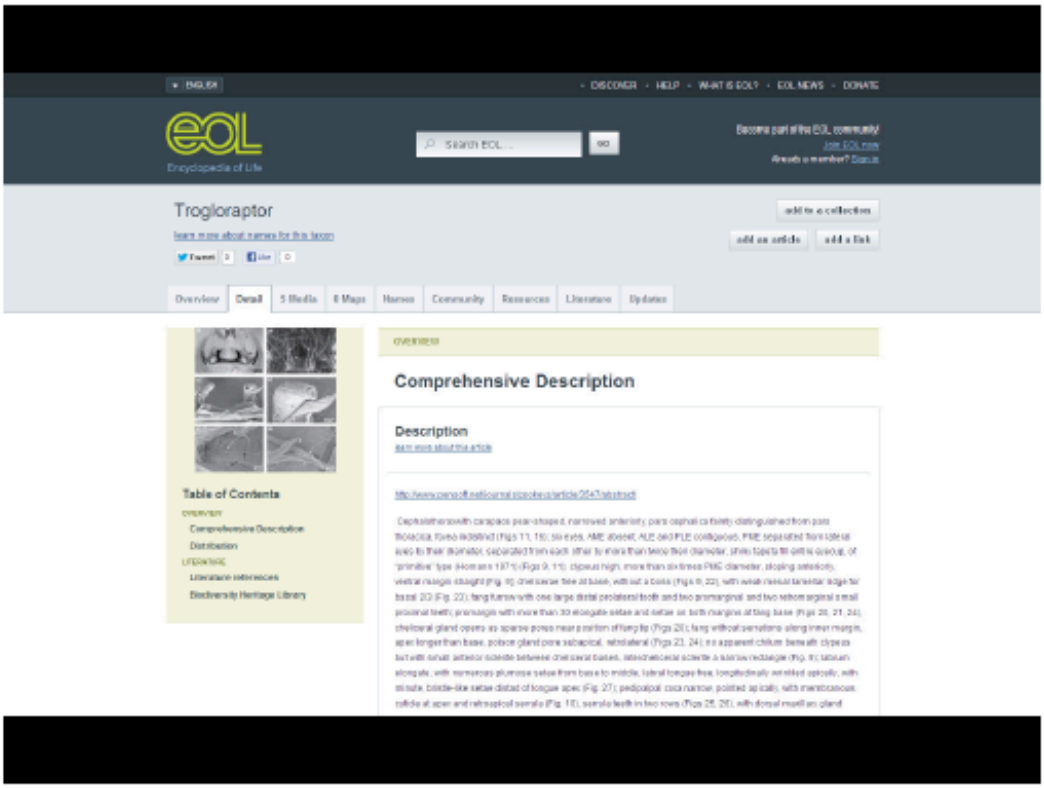
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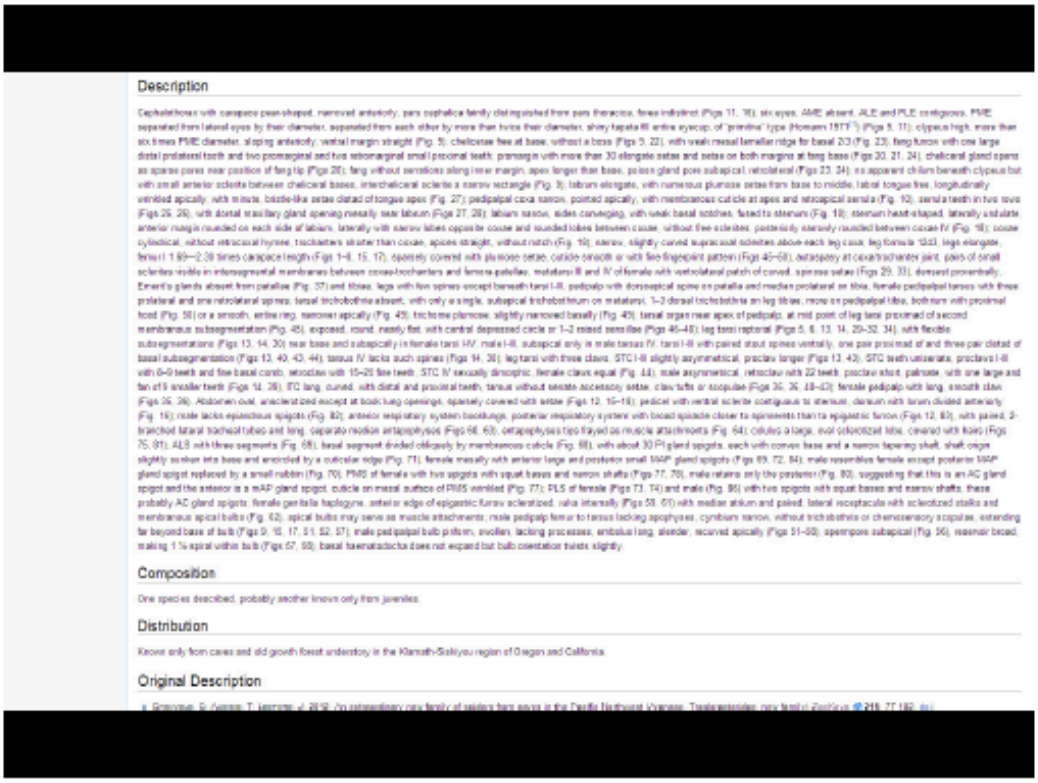


Description

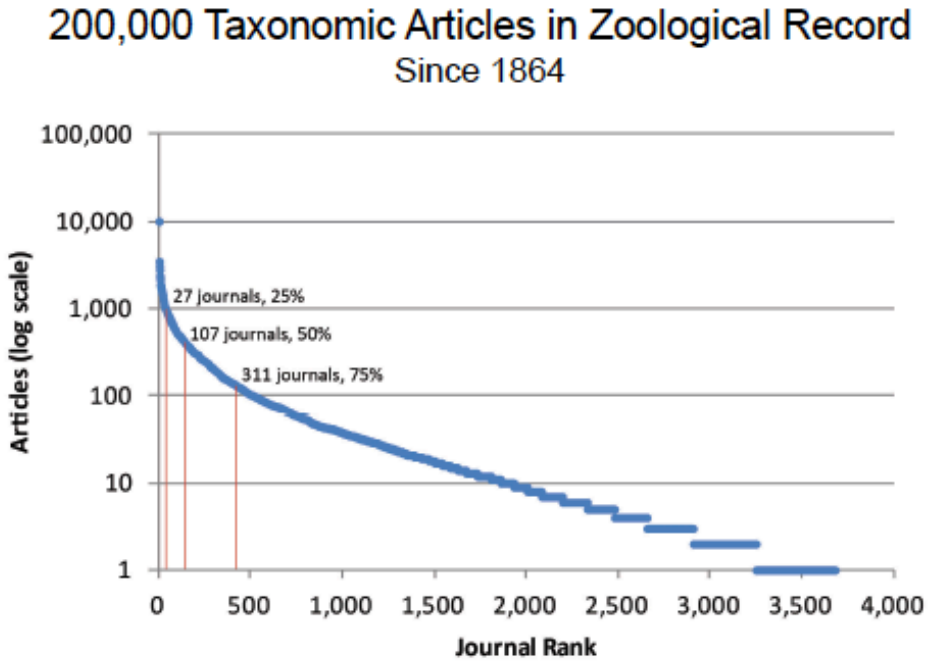
Composition

One species described, probably another known only from juveniles.

Distribution

Known only from caves and old growth forest understory in the Klamath-Siskiyou region of Oregon and California.

Original Description

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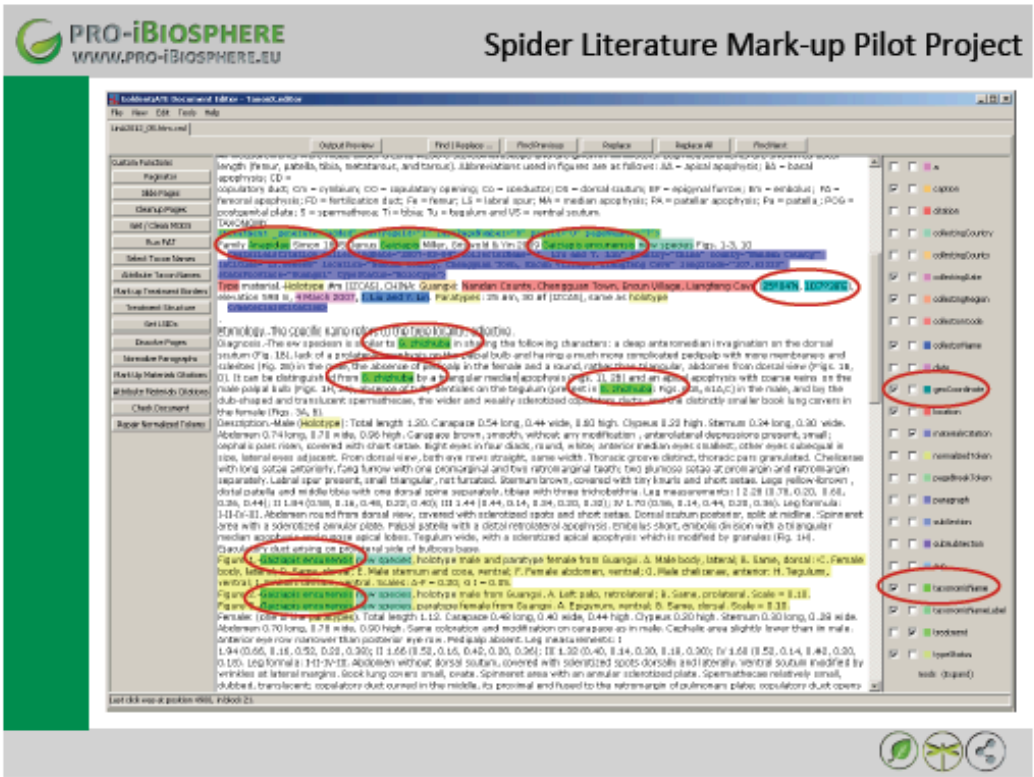
Spider Literature Mark-up Pilot Project
2012. The Journal of Arachnology 40:159–166
Three new spider species of Anapidae (Araneae) from China
Yucheng Liu[1,2] and Shuqiang Li[1]: [1]Institute of Zoology, Chinese Academy of Sciences, Beijing 100101, P. R. China; [2]School of Life Sciences, Sichuan University, Chengdu 610064, China
Abstract. Three new species of the family Anapidae are reported from caves and tropical rainforest of southern China: Gaoligapis emeiensis, Minanapis menglunensis and Sinanapis longituba. The genus Minanapis is recorded for the first time from China.
Keywords: Anapid, tropical rainforest, cave spiders, taxa
The family Anapidae was erected by Simon (1895). Anapid members are small (usually less than 3 mm in body length), three-clawed, cribellate, haplogyne, cryptoneic spiders with six or eight eyes situated on an elevated ocular region. They usually live in leaf litter and moss on the rainforest floor and build orb webs with a diameter of less than 3 cm (Murphy et al. 2000). Some also inhabit caves. This family was redefined by Platnick and Shadab (1978, 1979). Platnick and Forster (1989) supposed that the labral spur and the glandular openings at anterolateral corners of the carapace were two synapomorphies for the family Anapidae.
The family Anapidae includes 38 genera and 150 species (Platnick 2011), distributed in tropical and southern temperate regions, such as Central and South America, Australia and Southeast Asia. The anapid species from China are insufficiently studied. Brignoli (1981) first reported an anapid species, Pseudanapis serica Brignoli 1981 from Hong Kong. Since then four species, Comanonia songjiaca Zhang & Chen 1994 (from Zhejiang), Sinanapis crassitarsa Wunderlich & Song 1994 (from Yunnan), Etaikkanie anaroides Ono 2006 (from Taiwan) and Gaoligapis zhichuba Miller, Griswold & Yin 2009 (from Yunnan) have been reported from China. The present paper deals with three new Chinese species of the family Anapidae based on material collected in Guangxi, Yunnan and Hainan.
copulatory duct; Cm = cymbium; CO = copulatory opening; Co = conductor; DS = dorsal scutum; EF = epigynal furrow; Em = embolus; FA = femoral apophysis; FD = fertilization duct; Fe = femur; LS = labial spur; MA = median apophysis; PA = patellar apophysis; Pa = patella; POG = postgenital plate; S = spermatheca; Ti = tibia; Tu = tegulum and VS = ventral scutum.
TAXONOMY
Family Anapidae Simon 1895
Genus Gaoligapis Miller, Griswold & Yin 2009
Gaoligapis emeiensis new species
Figs. 1–3, 10
Type material.—Holotype ♂ (IZCAS), CHINA: Guangxi Nandan County, Chengguan Town, Encun Village, Liangfeng Cave (25°04′N, 107°38′E), elevation 298 m, 4 March 2007, J. Liu and Y. Lin. Paratypes: 25 ♂, 30 ♀ (IZCAS), same as holotype.
Etymology.—The specific name refers to the type locality; adjective.
Diagnosis.—The new species is similar to G. zhichuba in sharing the following characters: a deep anteromedian invagination on the dorsal scutum (Fig. 1B), lack of a prolateral apophysis on the palpal bulb and having a much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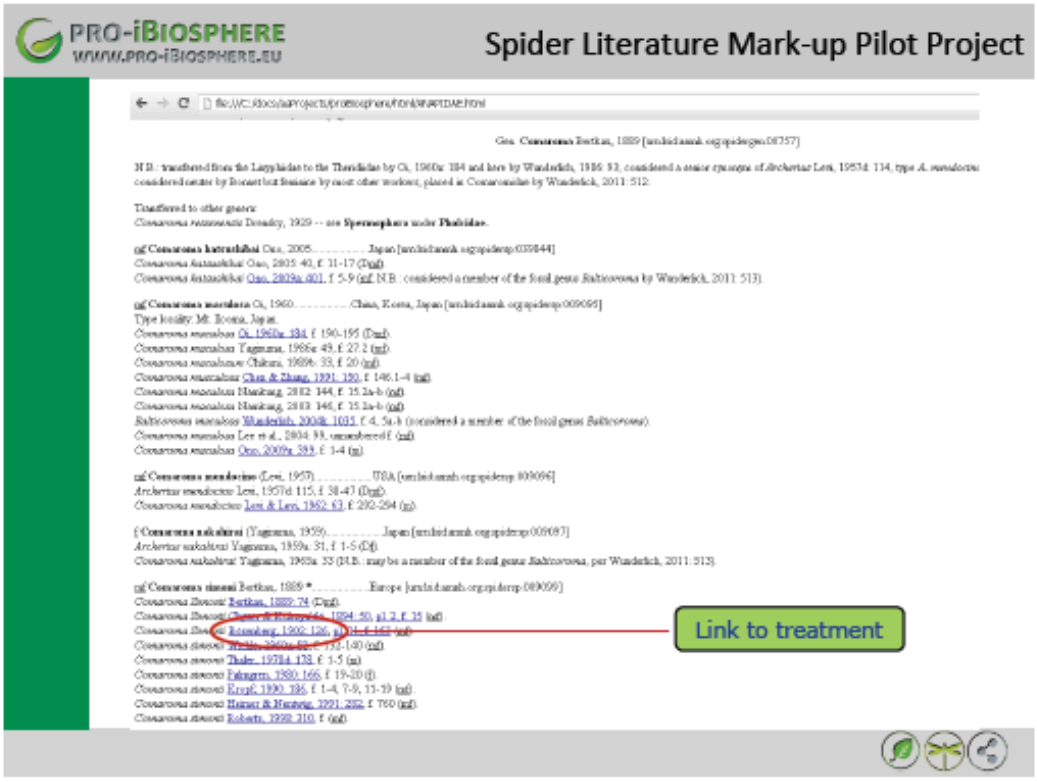
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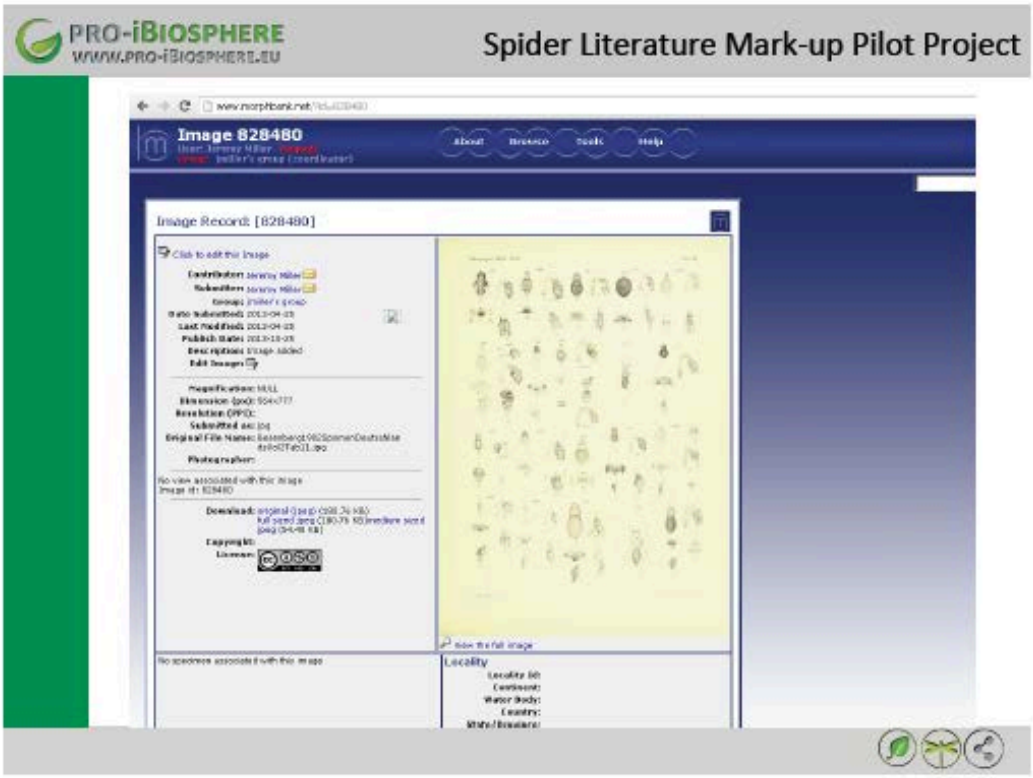
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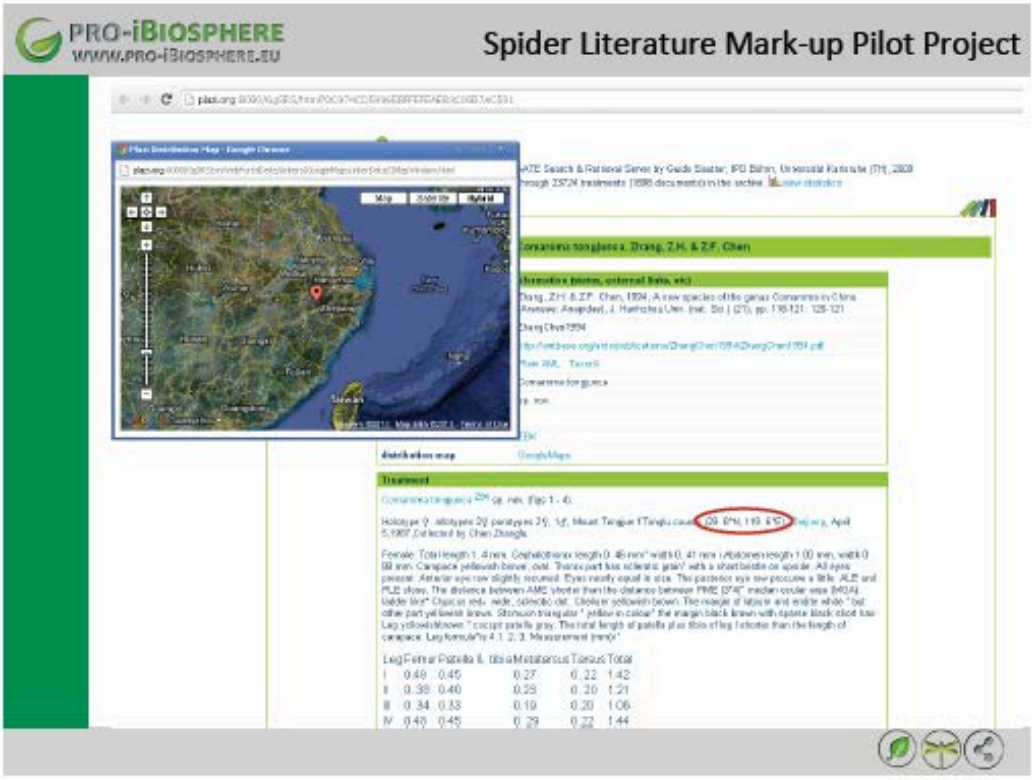
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Thank you for your attention

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Vu Quang National Park
Nguyen Thanh Son (Vu Quang)
Dao Huy Phien (Vu Quang)
Cuc Phuong National Park
Lung Van Hien (Cuc Phuong)
Cat Ba National Park

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Morphbank Deb Paul
Barcode of Life Database

Biodiversity Synthesis Center, Encyclopedia of Life
Plazi.org
Donat Agosti (Plazi)
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Naturhistorisches Museum Bern Christian Kropf
University of Bern Wolfgang Nentwig
University of Cincinnati Joshua Miller

#14 - CETAF – ISTC Meeting Proceedings

Jun
14
2013

Stable Identifiers for Specimens Workshop

Informatics, Science

On the 4th & 5th of June 2013 we held a workshop at the Botanics on using stable HTTP URIs (sometimes called URLs) for specimens. This was the result of a paper we published last year and then presented at a meeting of CETAF-ISTC in Belgium in March this year. The approach we were taking seemed attractive to several institutions so we organised this workshop to iron out any issues and see how we could get the approach more widely adopted.

Summary for Humans

Natural history collections and herbaria contain many millions of specimens that are used for research. When scientists publish their results they cite which specimens they used so that other scientists can both check the work and build on what has been achieved.

Institutions that hold specimens are publishing increasing amounts of data about (and images of) their specimens on-line. We need to have a way for scientists to reference specimens so that someone reading research results can simply click a link to see the supporting data and perhaps an image. To make this happen we need stable web links to the specimens that the holding institutions commit to maintain for the long term and that are implemented in a similar way across many institutions. Once this mechanism is widely adopted machines will be able to exploit the links to specimens to help do entirely new kinds of research.

This meeting was about establishing a consistent mechanism that will work across institutions.

Attendees

Thirteen people attended the workshop. They were: (In the order of appearance in the photograph left to right, top to bottom.)

- Martin Pullan – Royal Botanic Garden Edinburgh, UK
- Ayco Holleman – Naturalis, The Netherlands
- Anton Güntsch – Botanischer Garten und Botanisches Museum Berlin-Dahlem, Germany
- Dominik Röpert – Botanischer Garten und Botanisches Museum Berlin-Dahlem, Germany
- Nicola Nicolson – Royal Botanic Gardens Kew, UK
- Simon Chagnoux – Muséum national d'histoire naturelle, Paris, France
- Robyn Drinkwater – Royal Botanic Garden Edinburgh, UK
- Rob Cubey – Royal Botanic Garden Edinburgh, UK
- Falko Glöckler – Museum für Naturkunde, Berlin, Germany
- Ben Scott – Natural History Museum, London, UK

- Joerg Lange – Staatliches Museum für Naturkunde Stuttgart, Germany
- Roger Hyam – Royal Botanic Garden Edinburgh, UK
- Elspeth Haston – Royal Botanic Garden Edinburgh, UK

Presentations

- Introduction and Scoping – Roger Hyam (with contribution from Elspeth Haston)
- Digitisation and stable URIs at MfN Berlin - Falko Glöckler
- NHM London – Ben Scott
- How the specimen data is organised and published at BGBM – Dominik Röpert
- Specimen Data at RBGE – Martin Pullan
- Online Specimens at MNMH – Simon Chagnoux
- Level 1: Stable HTTP URIs – Roger Hyam
- Level 1: What if? – Roger Hyam (slightly modified to include an aside on 3rd party suppliers)
- Level 2 – Linked data - Roger Hyam (degrades into demos at the end)
- Web Service Registration - Anton Güntsch

Outcomes

It was agreed that having stable HTTP URIs, at least to implementation level 1, was desirable. There was some discussion of the details of linked data implementation at level 2 particularly around the bookmarking of pages by users. If the user is viewing an HTML document that they have been sent to via a 303 redirect then they feel like they are looking at the specimen and might bookmark that page URL as if it were the specimen. The severity of this issue and strategies to mitigate or remove it will continue to be discussed.

Anton presented ideas for how we could expose the existence of the URIs to users. It was agreed that we would try two things:

1. Registering the HTTP URIs for an institution with the The BiodiversityCatalogue which is a service providing a curated catalogue of Biodiversity Web Services.
2. Provide a single RDF download file of all the HTTP URIs provided by each institution similar to a sitemap used by Google and other search engines. This would be the simplest method for syndicating data between sites and allowing people to start building services.

Anton agreed to create a specification document for the web services registration and index file.

Of the eight institutions represented in the workshop five are either in the process of implementing stable HTTP URIs or are planning to do it. All five committed to having working implementations in place and registered as web services by October this year. These five institution were, in no particular order:

- Royal Botanic Garden Edinburgh, UK
- Botanischer Garten und Botanisches Museum Berlin-Dahlem, Germany
- Muséum national d'histoire naturelle, Paris, France
- Museum für Naturkunde, Berlin, Germany
- Royal Botanic Gardens Kew, UK

The three other institutions were at different stages in the development of their infrastructure and couldn't commit to this approach for now but did express and interest in following this pattern in the future.

Next Steps

We plan to have a workshop in Berlin around the 8th to 11th October where we will develop a test application to confirm that these five institution's systems are working. We might also have some fun developing demonstration applications to show how the system can be used.

As we demonstrate the value in this way of working we hope to encourage other institutions to adopt HTTP URIs for their specimens. TDWG in Florence in November and the pro-iBiosphere projects may be a suitable platforms for this. We have made no attempt so far to engage with institutions outside of Europe.

#14 - CETAF – ISTC Meeting Presentation

Web service registration

Anton Güntsch
FUB-BGBM

Collection Specimen URIs as Services

Do we want other systems to discover, harvest, and re-use our collection data?

If so, we need to access points and mechanisms for registration.

Access points

- Option 1: use protocols and implementations established in our community (e.g. DiGIR, BioCASe, TAPIR, DwC-A)
- Option 2: use generic protocols and implementations (e.g. SPARQL, OAI-PMH)
- Option 3: keep it simpler

The simple system

- Publish base-url in a registry (to be decided)
- Example: http://data.bgbm.org/herbarium/
- The link returns a simple rdf-encoded list of all published specimen-URIs (format to be decided)
- No query or paging mechanisms. They can be implemented by clients/aggregators.

Proposed registry

- The BiodiversityCatalogue (https://www.biodiversitycatalogue.org/)
- Implemented by BioVeL
- Part of the MyExperiment platform
- „Little sister“ of the BioCatalogue with ~2500 services registered

#15 - EC Public consultation on open research data - pro-iBiosphere's Statement on Open Research Data

pro-iBiosphere's Statement on Open Research Data

The e-infrastructures project "pro-iBiosphere" strongly supports the European Union's initiative towards open data from publicly funded research. We believe that openness is an essential tradition of science, a basis of trust and verifiability, and that increased openness in the world of digital data will improve the efficiency of research and promote innovation. Our subject domain is global biodiversity data. Below we have outlined our responses to your questions for public consultation.

How can we define research data?
A collection of logically connected facts (observations, descriptions or measurements), typically structured in tabular form as a set of records, with each record comprising a set of elements and recorded in one or more computer data files along with metadata that together comprise a data package. Research data can be both, original study data and the result of analytical processes based on those.

What types of research data should be open?
The vast majority of biodiversity data should be open, however, an area that is often neglected is the vast amount of data buried in PDFs and paper publications. These data are not easily accessible, but are of great value. For example, taxonomic descriptions of organisms are often highly structured and can be re-used in many contexts. However, they are written as blocks of text and don't fall neatly into a database format. There is still need for research on ways to make such data open in a useful and accessible way.

When and how does openness need to be limited?

- The default status should be that all data collected by publicly funded research should be open. An initial protection period of non-disclosure until publication of the research has been achieved is acceptable. However, data must be released with the first publications to allow verification of the published results. It is not acceptable to wait for the last publication; no objective criterion exists for "last" and any research project also includes data of marginal quality, which may or may not be used for future publications. Waiting for those publications would lock the data often forever.
- However, circumstances exist where data must be restricted to protect a species from becoming extinct by collection or exploitation. This generally affects specific fields in records whose content is withheld, not entire data.
- Publicly funded research in biodiversity often uses data from a wide variety of sources, in particular many biodiversity records are collected by amateur scientists. These data can be used for research, but frequently come with caveats to their distribution. Wherever possible such data should also be open, though we recognise that it will not always be possible to publish these data.

Where should research data be stored and made accessible?

Appendixes to publications are perhaps suitable for some small and derived data, but the majority of data should be stored and made accessible in large repositories. For example, in the field of biodiversity GBIF is the obvious choice for location data. The publication of "data papers" can help resolve issues of citability and discovery, examples are the Dryad and Pangaea data repositories. Also, data management systems such as Scratchpads and EDIT CDM can be effective ways to manage data, particular during the process of data acquisition.

How can we enhance data awareness and a culture of sharing?

- By providing tools that make data sharing and the re-use of data easy, data can be merged or joined with other datasets across space and time. This will create new opportunities for recognition of and collaboration with the data authors.
- By adapting copyright legislation to the needs of scientific research, e.g., by providing copyright exceptions for text mining.
- By using common standards for resource identification. These standards are essential to ensure that individuals and institutions can get credit for the data that they share.
- Journals need to find methods of citation of data that won't be overloaded by volume.
- By promoting openness early in scientific careers as part of good practice in scientific methodology.
- By giving curators in large museums and herbaria the ability to trace usage and citations of digitized data from their collections.
- By publishing data, authors and institutions maintain priority and authorship through indexing, discovery and citation.
- By insuring the interlinking of datasets, metadata and publications to mutually extend their dissemination, to the benefit of the authors and society at large.

#15 - EC Public consultation on open research data - article on pro-iBiosphere website

EC Public consultation on open research data

04.07.2013

On the 2nd July 2013, I attended the EC Public consultation on open research data.

The EU has already a commitment to open publication of publicly funded research, but this was a consultation on the policy for the openness of data. The European Commission recognizes that openness of data is better for scientific advancement, it promotes innovation and it is also good for the citizen. It means that scientific research will be more verifiable and it will promote acceptance of research.

There were five topics for consultation:-

1. What types of data should be open and how do you define what research data is?

2. What restrictions should be placed on openness and when?

3. Where should open data be stored and made accessible?

4. How can a culture of openness be promoted?

5. How can issues related to re-use, such as citation, be addressed?

There were many perspectives at the meeting, from industry, medical research, particle physics, publishers, research funders, librarians, etc. However, from a Biodiversity perspective I came away with several points that I thought worth sharing.

1. Biodiversity researchers are much better placed than many other fields to move towards openness. We are not often restricted by issues of personal privacy and commercially sensitive data.

2. Being open with data will cost money. It is still not easy for the majority of biodiversity scientists to get their data in a format that they can deposit in a central repository. This will require investment in software and training.

3. Well maintained central repositories are essential for the storage, dissemination and citation of open data.

4. Unique identifiers of people (e.g. ORCID), publications (e.g. DOI) and data are essential for a culture of openness.

5. Data management plans are likely to be required in Horizon 2020 proposals, either in the proposal or as a first deliverable. Data management plans are now becoming essential at national and institutional level.

We have a long way to go in the promotion of openness in the Biodiversity community. Other scientific communities are well ahead of us. Yet there are good reasons to be optimistic, particularly with the progress of open publication. A change to a culture of sharing will develop if issues of citability of data can be resolved and if institutions give recognition to researchers for being open with their data.

Can I suggest you register for an ORCID today? It will help you get credit for your work and move us towards more open science.

Article by Quentin Groom (NBGB)

Annex 23 - Article #1: Implementation of TaxPub, an NLM DTD extension for domain-specific markup in taxonomy, from the experience of a biodiversity publisher

Journal Article Tag Suite Conference (JATS-Con) Proceedings 2012 [Internet]. Bethesda (MD): National Center for Biotechnology Information (US); 2012.

Bookshelf ID: NBK100351

Implementation of TaxPub, an NLM DTD extension for domain-specific markup in taxonomy, from the experience of a biodiversity publisher

Lyubomir Penev,[1,2] Terence Catapano,[3,4] Donat Agosti,[3] Teodor Georgiev,[2] Guido Sautter,[3] and Pavel Stoev[1,5].

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TaxPub was created as an XML extension to the general JATS to provide domain-specific markup for prospective publishing in the area of biological systematics. The core idea of the schema is to delimit descriptions of taxa, or treatments, within an article and also several sub-elements within a treatment, and to use these individual portions of information for various purposes. TaxPub was developed in a close cooperation between the author (Terence Catapano), a community interested in such markup (Plazi), the NLM JATS group and a journal publisher (Pensoft). Since July 2009, TaxPub has been routinely implemented in the everyday publishing practice of Pensoft, to provide: (1) Semantically enhanced, domain-specific XML versions of articles for archiving in PubMedCentral (PMC); (2) Visualization of taxon treatments on PMC; (3) Export of taxon treatments to various aggregators, such as Encyclopedia of Life, Plazi Treatment Repository, and the Wiki Species-ID.net.

Introduction

You can only protect what you know. The Earth Summit in 1992 and the subsequent Convention on Biological Diversity (CBD, 1992) has been the first global official acknowledgement of an ongoing biodiversity crisis with an assumed loss of species at a never known rate. This has been based on inferences, mainly derived from the loss of tropical forests, and hardly on the actual observation of the decline and extinction of species. Scientifically it became clear that even the knowledge of the diversity of species, not to speak of its dynamics, is very limited. A comprehensive list of all the scientifically known species did not – and still does not -- exist, nor tools to identify species. This became known as the "Taxonomic Impediment" (GTI, 1998). Access to taxonomic information and the agonizingly slow process of scientific description of new species have been identified as core features of the Impediment. This became even more vexing with increasing access to and potential of the Internet and online publishing, which lends itself to create a seamless biodiversity knowledge system. In such a system, publications would be the validation and import tool of new data and information. Though more than 17,000 new species are being described every year (Polaszek et al., 2005), and a multiple of updated re-descriptions, they are scattered within more than 2,000 scientific journals which are at best accessible in electronic PDF format. They do not lend themselves without discouragingly large conversion efforts as import vehicle into a biodiversity knowledge system.

Though not domain specific, the US National Library of Medicine Journal Archiving and Interchange Tag Suite (NLM DTD, 2008) offers the appealing feature that it has at least a basic structure that could serve as the main starting point for building tools to transfer content from various journals at a finer degree of granularity than at the article level. NLM DTD based journals have the additional feature that they can be more readily submitted to PubMed, and several of them are displayed in open access on PubMedCentral. The TaxPub extension of the NLM DTD furthermore made use of the ability to add domain specific elements to the tags to semantically enhance and link the content to dedicated databases. This allows especially machines to harvest content and contribute to initiatives like the recently launched Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES, 2012), a follow-up of the CBD, thus reducing the taxonomic Impediment. With the dramatic removal of the extraction barrier, the creation of new semantically enhanced and linked articles and journals remained the issue, for which a specific journal production would be the solution.

This paper is a follow-up of an earlier presentation at JATS (Catapano, 2010) on the creation of the domain specific TaxPup NLM DTD, in which the concepts and techniques are described. Here we describe a professional journal production workflow to create semantically enhanced and linked taxonomic publications encoded using TaxPub. Together with tools to disseminate the discovery of new taxa, as well as treatments of taxa in a particular area or habitat, they will reduce the Taxonomic Impediment tremendously and allow catching up with the increased speed of discovery by additional molecular methods.

TaxPub

As discussed in an earlier paper presented at JATS-Con in 2010 (Catapano, 2010), the TaxPub extension was developed with an eye towards new taxonomic literature. Prior experiences with the retrospective conversion showed that any schema attempting to model the broad range of stylistic, editorial, and formal variation of legacy taxonomic literature would be so loose as to greatly challenge interchange as well as development of consuming applications. TaxPub, conversely, was designed to be adequately constrained to facilitate interchange and application development. It was hoped that such constrained markup could be applied more easily during either the authorial or editorial stages rather than after publication, as Pensoft has done in their implementation.

The "taxon treatment" is the focus of TaxPub. Following publishing traditions in taxonomy, a taxon treatment is a formal description of a taxon, including sections on nomenclature, morphological characteristics, behaviour, ecology, distribution, and specimens examined. TaxPub primarily models these taxon treatment features, providing (within a namespace with1 the prefix "tp") a <tp:taxon-treatment> element with a required <tp:nomenclature> element which is highly structured and contains the essential data about the named species and an <tp:treatment-sec> element for other sub-sections for which a treatment-sec-type attribute provides specific semantics. Otherwise, TaxPub provides within most "Blue" DTD block level elements the elements <tp:taxon-name> to encode scientific names of organisms, <tp:material-citation> for references to specimens and other material, and <tp:descriptive-statement> for descriptions of physical characteristics of organisms. Beyond these elements TaxPub relies on the elements in "Blue" DTD for all other features. In particular, the <named-content> element is intended to be used for the wide range of phrase level data which may be of interest in taxonomy (e.g., locality information such as latitude, longitude, elevation, etc...). The intention is that users will employ terms from external controlled vocabularies (e.g., DarwinCore) to supply specific semantics. Indeed, un-extended NLM DTD/JATS could have been used in a similar way, with domain-specific terms supplying semantics in -type attribute values. This would have the advantage of eliminating the need to produce the various modified entity files, but would have shifted the burden to usage documentation and development of non-DTD based validation (e.g., Schematron). As it turned out the NLM/JATS DTD proved to be exceptionally well designed for extension. There is relatively little to be gained by not taking advantage of those mechanisms in favor of documenting and developing validation tools for a profile of the un-extended DTD, particularly if the extension is easily converted to generic NLM/JATS DTD as TaxPub documents are in the process of ingest into PubMed Central.

A TaxPub encoded taxon treatment can be used for several purposes, the most important of which is retrieval of the taxon treatment and its sections separately from the article text. Figure 1 presents an example of how the subelements of a taxon treatments are either harvested by or exported to various aggregators of biodiversity information.

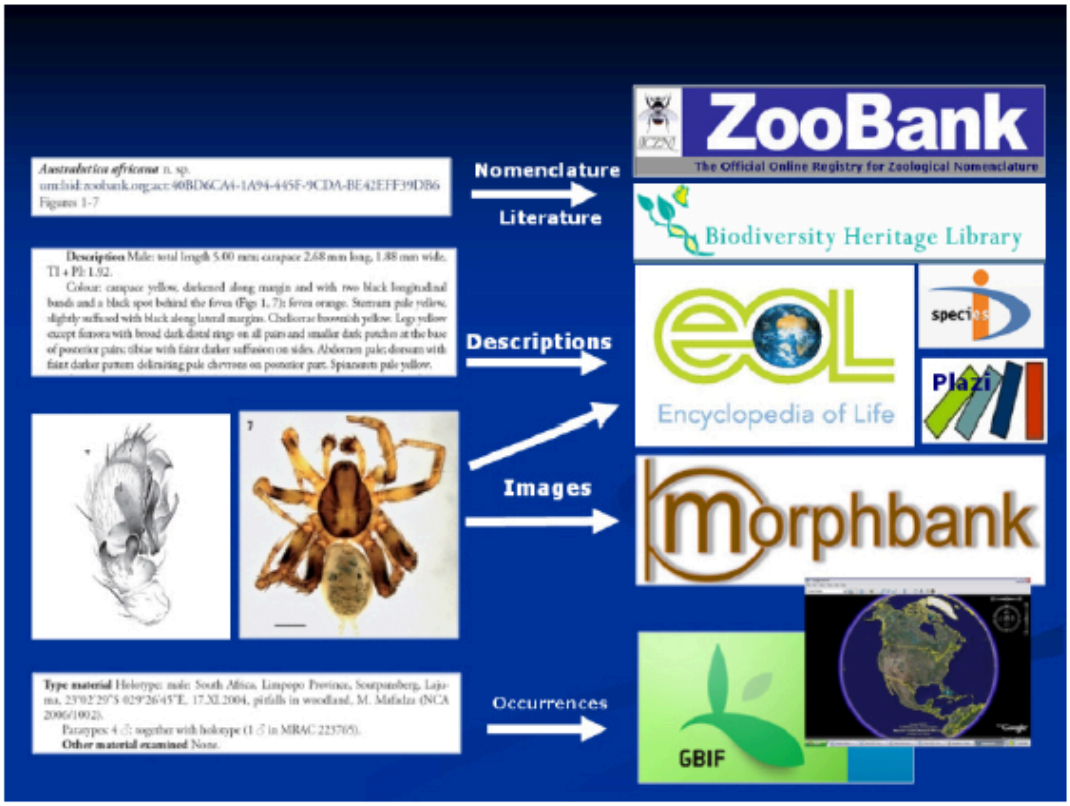

Fig. 1

Traditional taxonomy publication (left) and export of its content to different aggregators, performed with XML markup based on the TaxPub extension to the NLM JATS DTD

As minimal as it is, TaxPub has proven to be effective in encoding taxonomic articles by Pensoft journals over the past two years, including now additional journals (Phytokeys, Mycokeys, Journal of Hymenoptera Research, International Journal of Myriapodolgy, Biodiversity Data Journal). Some minor changes have been made to the extension (e.g., the addition of the <x> element to the <tp:nomenclature> element for encoding of interstitial punctuation), but it has remained quite stable. The latest version may be found on the TaxPub SourceForge site at http://sourceforge.net/projects/taxpub/, and development is performed within the subversion repository at https://taxpub.svn.sourceforge.net/svnroot/taxpub. While the extension itself is stable, work on documentation for TaxPub, available at http://species-id.net/wiki/TaxPub, has been slow, thus delaying its 1.0 release. To date TaxPub has been a unfunded, volunteer effort by members of the organization Plazi. As previously mentioned, developing the extension per se was relatively easily accomplished and a discrete task. What was learned, however is that any schema is more than the schema files themselves. There is also a need to maintain the schema through versions, feature requests, bug tracking, support, etc., with the preservation of previous versions. What eventually follows is a need for documentation, examples, profiling tools, presentation and crosswalking stylesheets, etc., themselves continuously revised as new versions emerge. These are open-ended tasks that present demands of time, resources, and funds on maintainers and developers, however dedicated. Starting in September 2012, further development and maintenance of TaxPub, its documentation and related tools will be done by Plazi as part of the European Union funded project Pro-iBiosphere which aims to plan for an integrated system for the management of biodiversity knowledge. The support and renewed focus should help to insure that TaxPub will stabilize and be useful to more users for a longer time.

Pensoft's Implementation

History and workflow

The implementation of TaxPub XML schema in a routine editorial process started in 2009, when the ZooKeys journal of Pensoft launched several pilot projects and created the respective software tools to provide semantic tagging of taxonomy articles (Penev et al., 2010a; Catapano, 2010). During the elaboration of the workflow, the

schema was tested against different types of manuscripts, and its structure was discussed and improved in a close collaboration with the Plazi team. The testing and implementation phase was completed more than a year later with publishing of ZooKeys's special issue No 50 'Taxonomy shifts up a gear: New publishing tools to accelerate biodiversity research' which marked the journal's innovative publishing model, based on an XML editorial workflow and on the domain-specific XML schema TaxPub) (Penev et al., 2010a).

The process happened simultaneously with the development of the Pensoft Mark Up Tool (PMT), a program specially designed for XML tagging and exporting a TaxPub version of the published articles, compliant with the NLM JATS specifications. The PMT workflow is described by Penev et al. (2010b), and thus we only briefly present its key elements here:

1. After a manuscript's acceptance, the text is formatted in InDesign.
2. A plug-in to InDesign identifies the article structure – namely sections and taxon treatments.
3. A dedicated algorithm identifies all inline elements - taxon names, geographical coordinates, etc. within the text.
4. The marked proo-f is verified by a semi-automated method.
5. The TaxPub XML is verified and exported into a semantically enhanced HTML version.
6. The paper is published in three electronic versions: PDF, HTML and XML.
7. The XML version is submitted to PubMedCentral for archiving and display.
8. Taxon treatments are extracted and exported to various aggregators.

Export to Aggregators

The delimitation of taxon treatments within articles and the possibility to export them in various XML formats, independent of the rest of article's text, has established the basis for several further useful applications. A key advantage of TaxPub is that it extends the usage of the regular NLM JATS DTD into a domain-specific "atomization" of the article content, providing at the same time the output format for papers to be archived and visualized on PubMedCentral. Soon after launch of the TaxPub-based publication workflow, the NLM team configured the visualization of treatments within articles on PMC in a special section called "Supplementary Material" (Fig. 2).

One of the first use cases of TaxPub has been implemented with Encyclopedia of Life (EOL). On the day of publication, all newly described taxa are being exported through XML onto the website of EOL, from where they are harvested on a daily basis and visualized on the EOL species pages (Fig. 3).

A slightly different workflow has been established with Plazi's treatment repository. Plazi accesses the XML sitemap of the publisher's website and harvests the XML versions of the published articles. Thereafter, treatments are extracted and converted into another XML schema, TaxonX (TaxonX, 2009), and then stored and visualized on Plazi's website. From there, they can be exported to various aggregators, such as EOL and others (Fig. 4).

Realizing the importance of Wiki environments for popularization and dissemination of biodiversity data, in April 2011 ZooKeys undertook another major step towards increased usage and dissemination of the taxon treatments. Another tool, Pensoft Wiki Convertor (PWC) has been created to transform the TaxPub treatments into Media-Wiki files and to upload the latter to the Wiki treatment repository, Species-ID (Penev et al., 2011) (Fig. 5).

Some aggregators collect metadata about objects and to link from their platforms to the original source. Such an approach is applied by KeyCentral – a global database of taxonomic keys and other identification resources for living organisms. Thanks to the possibility to delimit treatments within the text, metadata about identification keys are automatically exported to KeyCentral.

Semantically Enhanced Publications

TaxPub XML files are also used to create a semantically enhanced HTML version of the publication. Semantic enhancement to scientific texts can be determined as "anything that enhances the meaning of a published journal article, facilitates its automated discovery, enables its linking to semantically related articles, provides access to data within the article in actionable form, or facilitates integration of data between articles" (Shotton et al., 2009).

TaxPub elements have been exploited to create of semantic enhancements to taxonomic texts. The process has been described and exemplified in issue 50 of ZooKeys (Penev et al., 2010a,b) and from that point onward turned into a routine practice for Pensoft's journals.

The most important uses of semantic enhancements implemented through the TaxPub XML files are:

1. A newly published taxonomic revision can be searched and retrieved for taxon treatments
2. Treatments, taxon names, and citations can be highlighted throughout the papers in different colors so users can easily identify them while reading.
3. Georeferenced localities can be plotted on Google Maps for individual treatments, or collated for groups of treatments (e.g, for all species in a genus treated in the papers).
4. Occurrence data can be published as a supplementary KML file and visualized on Google Earth.
5. Citations in the text are cross-linked with the reference lists; each citation can be visualized as a full text reference by pointing the cursor on it.
6. Figure citations are cross-linked with the figures themselves; each figure can be visualized just by pointing the cursor on its citation.
7. Each taxon name published in the paper, independently of its rank, is linked to its dynamic online profile (Pensoft Taxon Profile, PTP, www.ptp.pensoft.eu), created on the fly. PTP links the taxon name to a number of other biodiversity resources, for example Global Biodiversity Information Facility (GBIF), Encyclopedia of Life (EOL), National Center for Biotechnology Information (NCBI), Biodiversity Heritage Library (BHL), International Plant Name Index (IPNI), Index Fungorum, ZooBank, Tropicos, PLANTS database, Morphbank, Wikipedia, Wikispecies, Yahoo images, and others (Fig. 6).

Future Developments

Pensoft Writing Tool (PWT)

The Pensoft Writing Tool (PWT) is for collaborative online article authoring; it provides templates for different kinds of biodiversity articles, with upfront markup, links to external resources, and various options for data publishing.

The tool is designed to solve one of the main difficulties with the implementation of TaxPub, namely to mark texts that have already been structured by the authors in text editors (usually MS Word or OpenOffice). Authors using the PWT have at their disposal a set of pre-defined, yet flexible templates they will need to fill in through sophisticated editing software. Taxon treatments are a core element in the PWT. The different types of taxon treatments, such as (re-)descriptions, nomenclatoral acts (new synonymies, re-validations of names, designations of type specimens, etc.) are modelled in accordance with the slightly different requirements of the Biological Codes, e.g., for animals, plants, and fungi.

The PWT will serve as gateway for the *Biodiversity Data Journal* (http://www.pensoft.net/journals/bdj, BDJ) and also for other journals in the future. BDJ is the first journal ever to complete the cycle from writing a manuscript, through submission, community peer-review and editing, to publication and dissemination within a single, fully XML-based, online collaborative platform, called Pensoft Journal System(PJS) (Fig. 7). The publication in the PJS environment is intended to be very low-cost, and this is largely achieved by properly structured submission and thus minimising handling by human editors.

In addition, PWT will provide:

- A collaborative environment for authors to create and work on an online document (manuscript);
- Authors may invite additional contributors (e.g., mentors, potential reviewers, linguistic and copy editors, etc.) to watch, comment, and edit the text during the writing process;
- Email and chat communication tools within the group of co-authors and contributors associated with a manuscript;
- Automated import of data-structured manuscripts generated in various platforms (e.g., Scratchpads, authors' databases);
- Revision history, version control, and version comparison;
- Various modes of data publishing (supplementary files, multimedia, import of data tables, linking to external data repositories, etc.), in accordance with internationally accepted standards (e.g., species occurrence data in Darwin Core)
- Semantic markup of text and data during the writing process, with no additional effort for the authors;
- Rich-text editing, smart management of citation and placement for references/figures/tables;

- Import of references from external bibliographic databases (CrossRef, PubMed and others);
- Pre-submission validation of the manuscript.

PWT is being developed within the EU-funded project ViBRANT (www.vbrant.eu) and at the time of writing this manuscript is available for beta-testing at http://test.pwt.pensoft.eu/.

Eco-TaxPub

While taxonomy and nomenclature focus on taxon treatments, a huge amount of related literature is structured differently. For example, floristic and faunistic papers usually describe a region or locality and then list species that have been encountered there, based on data from literature and/or newly performed surveys. Listings of species on their turn may contain information allocated to each species, such as distribution, ecological traits, conservation status, etc.

Ecological papers may have a similar structure, but the focus is usually on habitats or ecosystems instead on regions or localities. Description of a habitat contains most of the geographical details of a locality, but in addition it should also yield information on the ecological features that characterize a habitat, often according to existing habitat classifications, such as EUNIS at European scale.

The two aforementioned cases could be modeled in the present version of TaxPub through the taxon treatment element, but at the expense of complicated and inefficient markup of the text. To solve the problem we have to "turnaround" the focus from taxon treatment to "locality-, region- or habitat-treatments".

"Eco-TaxPub" will be developed as a new extension based on the present TaxPub, containing a new core element at the hierarchical level of taxon treatment. The element called "Locality- or Habitat-Treatment" will feature and model a set of sub-elements, such as locality name, geographical coordinates, habitat name, and several more available in DarwinCore. The species encountered at the locality or in the habitat will be listed in different categories, for example: (1) species proved to be present; (2) wrongly recorded species; (3) species proved to be present but currently extinct, and so on.

The main purpose of Eco-TaxPub is to facilitate structuring and markup of papers in the huge domain of biodiversity inventorying at different spatial and temporal scales. Good examples are the countless inventories of nature reserves that either remain "hidden" in project reports, or in the best case, published on separate and isolated websites, Eco-TaxPub will facilitate publishing of such inventories in a highly structured format that will facilitate data mining and re-use of the accumulated data.

Conclusion

The application of TaxPub NLM DTD, the first domain specific enhancement of the NLM/JATS DTD, in a rapidly developing professional publishing environment and the adherence to the principle of Open Access are removing a great barrier to the knowledge of biodiversity, one of the main elements of the taxonomic Impediment in its conservation. The building of journal production workflow and dissemination mechanism remove almost the entire publishing impediment and thus will make it easier to disseminate new knowledge in a fast turnover. The linking of the semantically enhanced elements – the core element in the corpus of biodiversity knowledge - to the original sources create a rich documentation of an increasing number of species and thus the biodiversity conservation has for the first time the technical tools to popularise what scientists discover and needs be protected, immediately after publication and in a highly automated way. In other words, TaxPub NLM DTD is at the base of a technical revolution that will substantially contribute to the change of the way we study and protect our biodiversity.

Acknowledgements

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Figures

Fig. 2

XML taxon treatments are visualized separately in a "Supplementary Material" section of the PubMedCentral's HTML version of each article

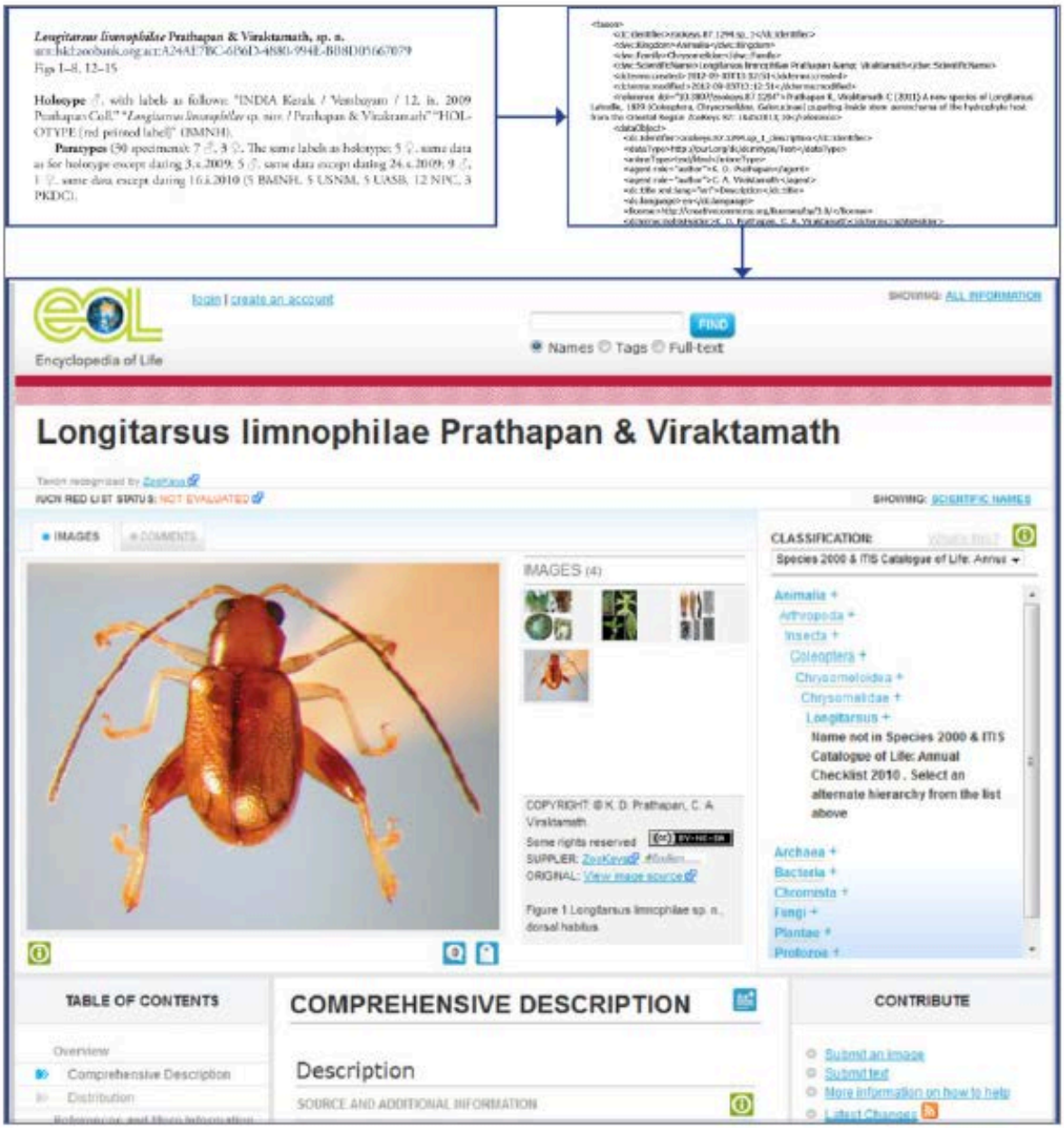

Fig. 3

Taxon treatments are extracted from the main text and exported into the Encyclopedia of Life (EOL) server, from where they are harvested and visualized on a daily basis

Fig. 4

Taxon treatments are harvested daily by Plazi's server and stored at the Plazi Treatment Repository direct from the published XML version of each article

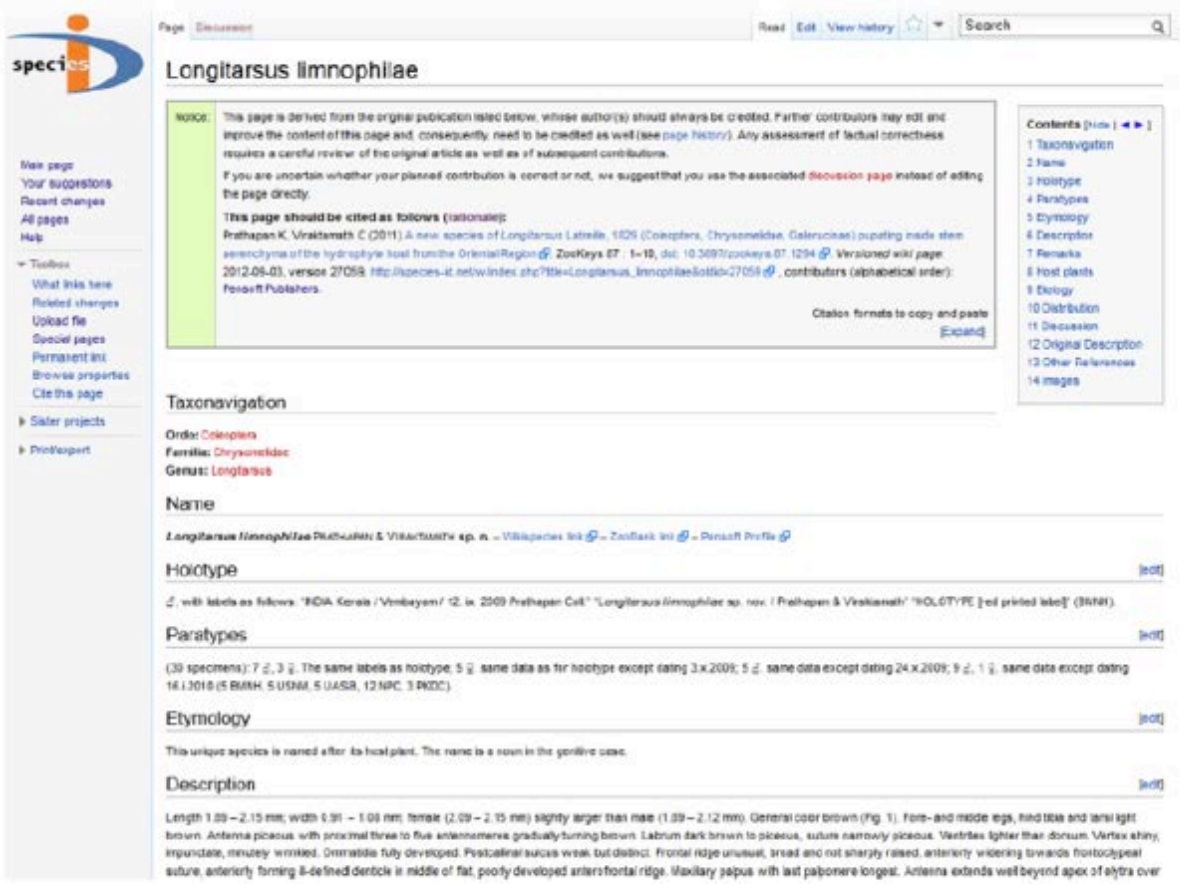

Fig. 5

Visualization of a taxon treatment on the Wiki treatment repository Species-ID.net.

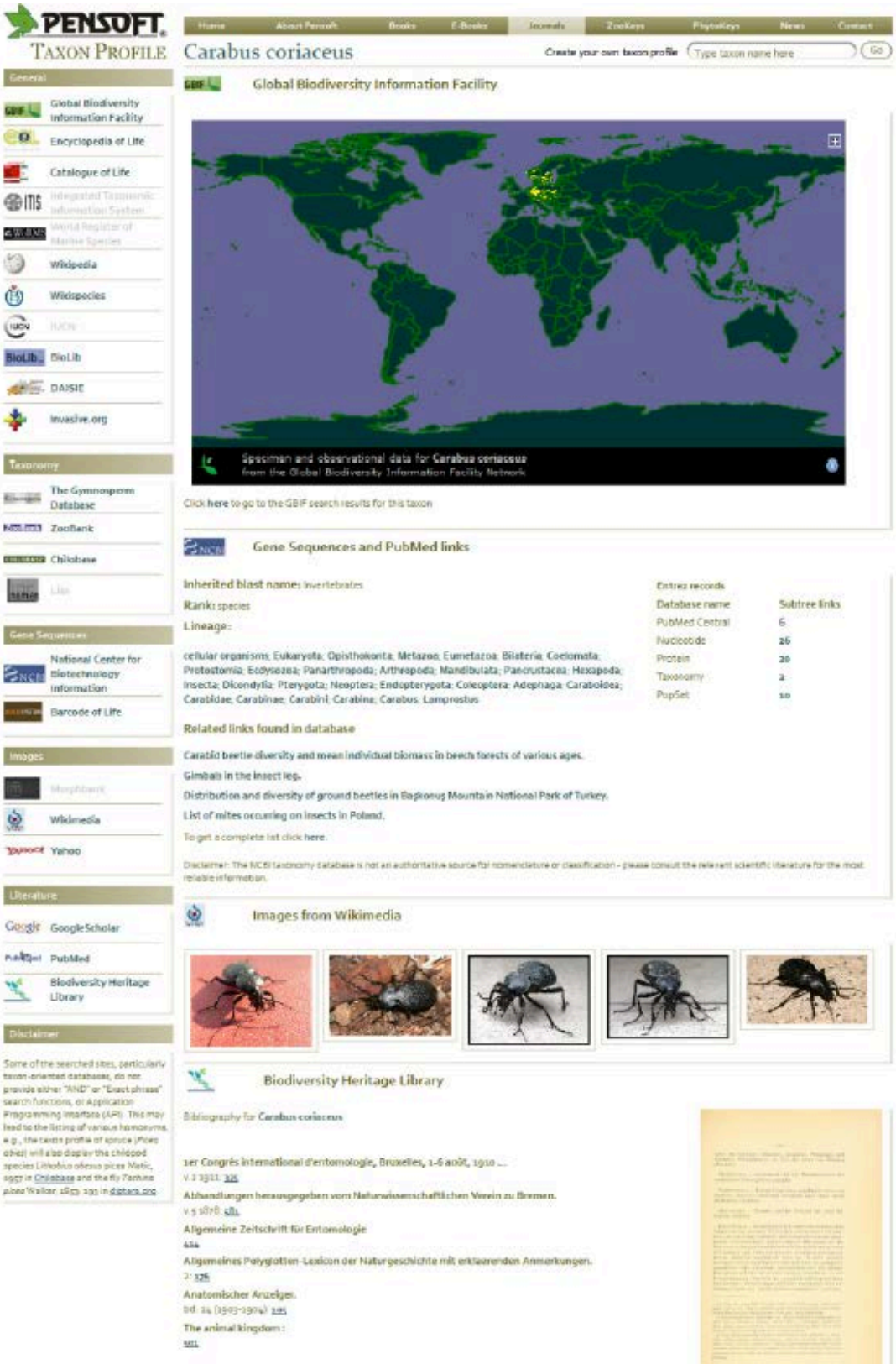
PENSOFT
TAXON PROFILE
Carabus coriaceus
Global Biodiversity Information Facility
Specimen and observational data for Carabus coriaceus
from the Global Biodiversity Information Facility Network
Click here to go to the GBIF search results for this taxon
Gene Sequences and PubMed links
Inherited blast name: Invertebrates
Rank: species
Lineage:
cellular organisms; Eukaryota; Opisthokonta; Metazoa; Eumetazoa; Bilateria; Coelomata; Protostomia; Ecdysozoa; Panarthropoda; Arthropoda; Mandibulata; Pancrustacea; Hexapoda; Insecta; Dicondylia; Pterygota; Neoptera; Endopterygota; Coleoptera; Adephaga; Caraboidea; Carabidae; Carabinae; Carabini; Carabina; Carabus; Lamprostus
Related links found in database
Carabid beetle diversity and mean individual biomass in beech forests of various ages.
Gimbals in the insect leg.
Distribution and diversity of ground beetles in Bagkonuş Mountain National Park of Turkey.
List of mites occuring on insects in Poland.
To get a complete list click here.
Entrez records
Database name | Subtree links
PubMed Central | 6
Nucleotide | 26
Protein | 20
Taxonomy | 2
PopSet | 10
Images from Wikimedia
Biodiversity Heritage Library
Bibliography for Carabus coriaceus
1er Congrès international d'entomologie, Bruxelles, 1-6 août, 1910 ...
Abhandlungen herausgegeben vom Naturwissenschaftlichen Verein zu Bremen.
Allgemeine Zeitschrift für Entomologie
Allgemeines Polyglotten-Lexicon der Naturgeschichte mit erklärenden Anmerkungen.
Anatomischer Anzeiger.
The animal kingdom :

Fig. 6

Pensoft Taxon Profile (PTP) generated in real time by clicking on a taxon name mentioned in a journal article

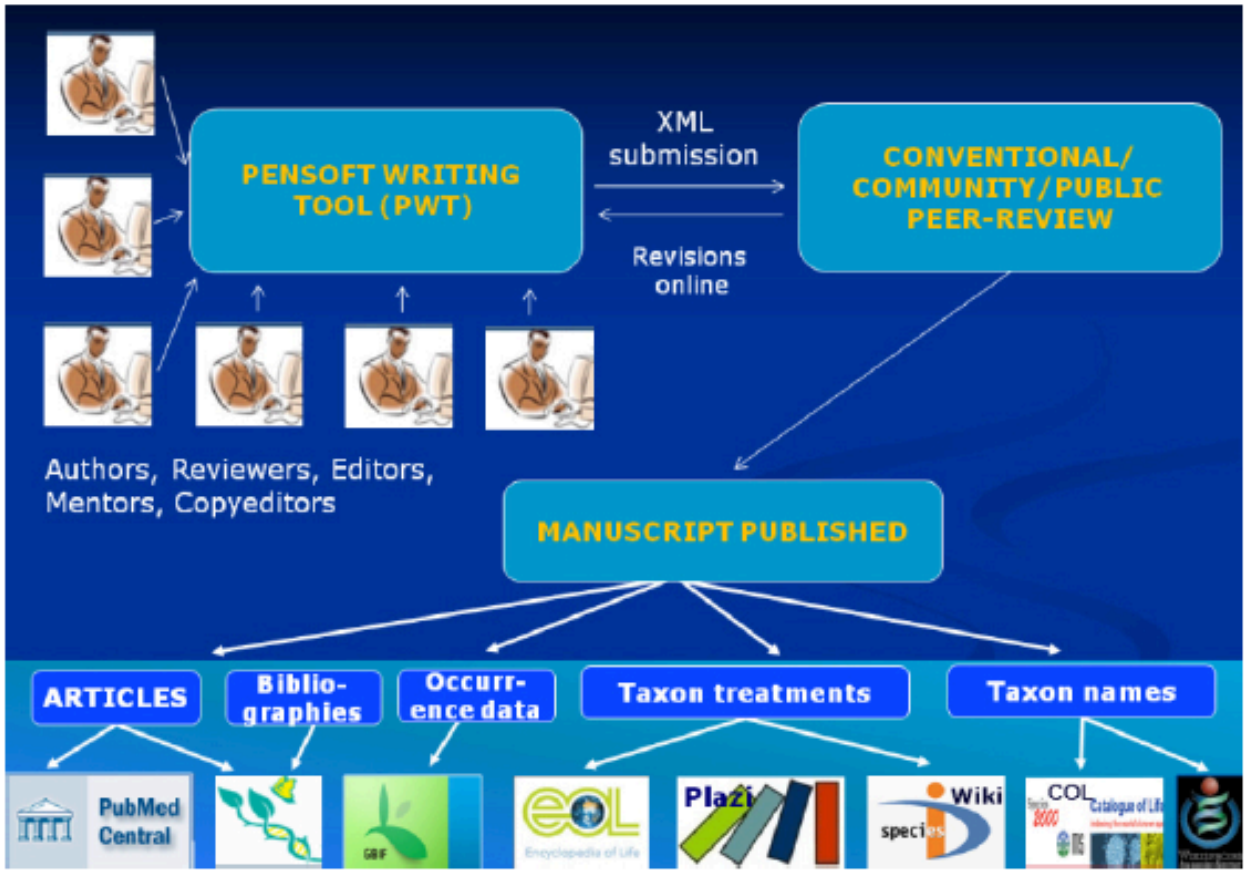

Fig. 7

A generalized workflow of the Pensoft Journal System (PJS), consisting of collaborative article authoring and editing software (Pensoft Writing Tool, PWT), and peer-review and editorial online manager that allow opting for conventional, community and public peer-review. The system will be implemented by the Biodiversity Data Journal, and other journals in the future

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Annex 24 - Article #2: An appraisal of megascience platforms for biodiversity information

MycoKeys 5: 45–63, doi: 10.3897/mycokeys.5.4302

An appraisal of megascience platforms for biodiversity information

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For reference, use of the paginated PDF or printed version of this article is recommended.

Abstract

The megascience platforms Biodiversity Heritage Library (BHL), Catalogue of Life (CoL), Encyclopedia of Life (EOL), Global Biodiversity Information Facility (GBIF), International Barcode of Life (iBOL), International Nucleotide Sequence Database Collaboration (INSDC) and JSTOR Plant Science, all belong to a group of global players that harvest, process, repurpose and provide biodiversity data on all kinds of organisms. Each of these platforms primarily focus on one data domain, for instance, taxonomy and classification, occurrence, morphology, ecology, and molecular data.

The present contribution describes aspects of processing and provision of biological research data on these platforms, focusing on the technical implementation of data exchange, copyright issues, and data sharing policies as well as their implications for data custodians, owners, providers, and publishers. With the exception of JSTOR Plant Science, most international initiatives seek long-term business models and funding mechanisms to provide online data openly and free of charge. For example, currently GBIF depends on governmental commitments for its funding, and CoL is financed by EU or national grants, as well as being based on Species 2000, a British non-for-profit company, and ITIS. These business models are compared with that of JSTOR Plant Science, the commercial portal of the Global Plant Initiative (GPI). All initiatives currently meet challenges of sustainability with regard to data curation as well as software development for maintaining the complexity of their services. All platforms discussed here also harvest and provide mycological and lichenological research data.

Keywords

Internet Platforms for Natural Sciences, BHL, CoL, EOL, GBIF, iBOL, JSTOR Plant Science, INSDC, DDBJ, EMBL, GenBank, Barcoding, Data Flow, Research Data

Introduction

In biodiversity research, data driven approaches, relying on internet resources that provide huge amounts of quality information, are increasingly important. In the late 1990s, most biodiversity websites offered more or less static web content and were operated by individual scientists or research groups. At that time, only a limited number of data access portals, mostly addressing data collections of homogenous structure, existed. Today, web-based information sources are almost overwhelmingly

complex, heterogeneous, and seemingly exponentially growing. To find useful and reliable biodiversity information, several general approaches exist: (a) web sites where individual scientists or scientific community members curate categorized link collections, e.g., The Mycology.Net (http://www.mycology.net), (b) global search providers such as Google, Bing, or Yahoo and others that provide solutions with advanced generic search tools, and (c) so-called megascience platforms which have been set up in a scientific community context. The present contribution will analyse the latter approach and the probable challenges these will have to face in the future. It will focus on seven large platforms for biodiversity, which are relevant for lichen research data at a global scale.

Some major biodiversity data projects and platforms which have a geographically limited scope such as the Atlas of Living Australia (ALA; http://www.ala.org.au/) and the envisaged European LifeWatch project (http://www.lifewatch.eu) are not subject of this paper. Some other limited time projects, e.g., EDIT (http://www.e-taxonomy.eu/) or 4D4Life (http://www.4d4life.eu/), are not discussed in detail here because their results are contributing or have contributed to other platforms (e.g., 4D4Life results are injected into CoL).

Finally, several new initiatives or platforms are under active technical development and might attract relevant amounts of biodiversity and ecology research data in the near future. They are, however, not yet suitable for a comparison of the kind intended here. ViBRANT (http://vbrant.eu/) develops web-based virtual research communities for biodiversity science. Based on Scratchpads (http://scratchpads.eu/) and the Biowikifarm (http://biowikifarm.net), individual research communities share data management, curation, analysis and publishing services. This allows to improving effectiveness of research and supports long term data preservation and re-use in several of the platforms discussed here. pro-iBiosphere (http://www.pro-ibiosphere.eu/) is a coordination project to provide for a global generic organismic knowledge publishing and curation platform that brings the traditional Flora and Fauna editorial efforts into the digital world. The Map of Life (MOL; http://www.mappinglife.org/about/) project is an initiative that is just starting. Supported by content data from GBIF and EOL, it focuses on occurrence maps along with tools for quering and transforming related data.

History and scope of megascience platforms processing biodiversity information

Starting in the early 1990s, researchers in biology recognized the importance of the internet for disseminating data for research purposes. Work groups dedicating themselves on nucleic acid sequence data were the first to initiate domain-specific data projects covering all organism groups at a global level. Three platforms, EMBL-Bank (http://www.ebi.ac.uk/embl/), GenBank (http://www.ncbi.nlm.nih.gov/genbank/), and DDBJ (http://www.ddbj.nig.ac.jp) emerged, which in 1992 formed the International Nucleotide Sequence Database Collaboration (INSDC; http://www.insdc.org). Today, this consortium provides access to several databases focussing on molecular data.

Ten years later, in 2001, two other megascience platforms were initiated by scientists with the objective to collect and curate organismic biodiversity information. The first was the Catalogue of Life (CoL) that aims to produce a global quality-assured checklist of all species of plants, animals, fungi and other macro- and micro-organisms known to science (http://www.catalogueoflife.org). Currently, this data pool is supplied by data sets of more than 100 taxonomic databases and checklists and is annually updated. CoL currently contains authorative names and synonyms for about 8, 000 lichen species obtained from the Global Species Database LIAS (Rambold 2012; http://www.catalogueoflife.org/col/details/database/id/79).

In the same year, 2001, the Global Biodiversity Information Facility (GBIF) was initiated. It provides species distribution data in the form of occurrence records along with names and classifications, as well as links to additional information (http://data.gbif.org/tutorial/tutorial). GBIF makes data from more than 400 so-called 'data publishers' from all over the world openly and freely available. Occurrence records with geographical coordinates are visualized in global distribution maps. For instance, for Lecanoromycetes 3, 281, 898 occurrence records exist (last visited: 31-10-2012).

In 2003, the precursor project ('API – African Plant Initiative') of the Global Plant Initiative (GPI; http://gpi.myspecies.info) was started. The output of the efforts of GPI is accessible via the JSTOR Plant Science portal providing access to foundational content concerning plant type specimen data, taxonomy, references, high-resolution images of type specimens, and related literature (http://plants.jstor.org/action/about). JSTOR Plant Science makes available data that are shared by more than 220 partner herbaria worldwide. Certain lichen type collections, like those of BM, G, H, LINN and M, are accessible as well.

Subsequently in 2005, the Biodiversity Heritage Library (BHL) consortium was founded. BHL is a consortium of libraries with a focus on natural history and botanical literature that cooperate in digitizing and making legacy literature of biodiversity accessible under open access (http://www.biodiversitylibrary.org; last visited: 26-06-2012). Currently, more than 60, 000 titles and 100, 000 volumes are available. Scientific organism names in the literature are recognized by means of the uBio NameBank (including lichen species names from LIAS and Index Fungorum, see http://names.ubio.org/browser/details.php?namebankID=3871575). The BHL is not the only initiative or project digitalising historical biology literature (more than 40 are listed by Kasparek 2010), but so far it is the largest one.

In 2007, the CBOL (the Consortium for the Barcode of Life) started the International Barcode of Life (iBOL http://ibol.org) initiative. The original idea is a consequence of the barcoding proposal published by Hebert et al. (2003). The initiative is devoted to the collection of DNA barcoding sequence data http://www.barcodinglife.com/ stored in the Barcode of Life Data System (BOLD). BOLD contains 156, 461 taxa species with barcode sequences and a total of 1, 702, 485 specimens with barcode sequences, (last visited: 26-06-2012); about 1, 250 of these are Lecanoromycete specimens (http://www.barcodinglife.com/index.php/Taxbrowser_Taxonpage?taxid=262560; last visited: 04-11-2012). The primary mission of iBOL is to extend the geographic and taxonomic coverage of the barcode reference library to store the resulting barcode records, to provide community access to the knowledge they represent, and to create new devices to ensure global access to this information. The work of iBOL is carried out by a research alliance spanning 25 nations with varying levels of investment and responsibilities (http://www.barcodeoflife.org/content/about/what-ibol). The overall task of the iBOL research participants is to collect and curate specimens, to extract DNA, to gather barcode data (records of group-specific DNA marker gene sequences), and to build up an informatics platform being required for storing and providing these records for species identification.

In the same year when iBOL was launched, 2007, another highly ambitious megascience initiative was launched: The Encyclopedia of Life (EOL; http://eol.org/discover), which collects and freely provides information about all species at a global scale including classifications, multimedia data, maps of occurrences. This initiative created more than 3.3 million pages: 1, 079, 652 pages with some amount of content, including 94, 467 with considerable contents, being called 'rich pages' (http://eol.org/statistics/page_richness?date_one_set=2012-10-12&date_two_set=2012-10-31data.gbif.org).

Data domains

Each of the major biodiversity data platforms profiled here has its own scope (Table 1). Aside, each has a focus on one of the three central information segments: names and classification, occurrence, and descriptive or trait data.

Table 1.
Contents and scopes of megascience platforms providing and processing biodiversity information

Megascience platform	Content and scope	Year of launch	Logo
International Nucleotide Sequence Databases (INSDC)	Nucleic acid sequences	1992	
Catalogue of Life (CoL)	Taxonomic checklists	2001	

Global Biodiversity Information Facility (GBIF)	Occurrences and records	2001	
JSTOR Plant Science	Type specimens, multimedia objects	2003	
Biodiversity Heritage Library (BHL)	Biodiversity literature, multimedia objects	2005	
Barcode of Life (iBOL)	DNA barcoding sequences	2007	
Encyclopedia of Life (EOL)	Knowledge data, species fact sheets, multimedia objects	2007	

Name data primarily include accepted names, synonyms, and proposed higher classification (usually reflecting a phylogenetic concept). Data from this domain may be classified as being either unequivocal (or 'objective', like the validity of a name according to the relevant nomenclatural code as well as the obligate synonymy), or

equivocal ('subjective', e.g. depending on a phylogenetic concept, like the assignment of a heterotypic synonym to a currently accepted taxon name). Relevant databases for lichenology which provide taxon names as well as taxonomic concepts are LIAS names (http://liasnames.lias.net/; Triebel et al. 2010), Species Fungorum (http://www.speciesfungorum.org/), MycoBank (http://www.mycobank.org/), and, in future, the evolving Chinese Portal for fungal names (http://www.fungalinfo.net/fungalname/fungalname.html). EOL, GBIF, BOLD for iBOL, and INSDC use the names and classifications from these and other name providers. Name data are also essential for the BHL site which provides access to digital images of biodiversity literature resources. BHL extracts scientific names from the digitized documents by a taxonomic name recognition algorithm and offers extended search techniques for these names. JSTOR Plant Science needs taxonomic names and information on classification to improve search tools and provide basic data on type specimens including multi-media objects important for taxonomy and systematics.

Occurrence data may be split into two major categories: collection and observation data. Collection data are correctly considered as more reliable when compared to observational records. However, for many groups of taxa, with sufficient quality control of observer expertise and combined with digital photographs or other multimedia data, the relevance of observational data has dramatically increased in recent years. The central platform for collection and occurrence data is GBIF. GBIF set up various kinds of tools and APIs to mobilise, visualize, and analyse the distribution patterns of taxa (http://tools.gbif.org), preferably with the data contents available through GBIF.

Descriptive data may be split in various specific ones, referring to a) morphological and anatomical characters and character states, b) to chemical properties (in the case of lichens, e.g. the highly diverse secondary metabolites), and c) to nucleic acid sequences, from DNA sequences of various genes (including the so-called 'barcoding genes') to full genome sequences d) to behavioural and ecological features. The central platform for descriptive data under a), b), and d) is EOL with the limitation that the descriptions of species are generated by individuals and partners with heterogeneous content data (e.g., FishBase), and do not derive from structured database contents. One major phenotypic trait database with structured descriptive data for lichen species is LIAS light (http://liaslight.lias.net), covering the morpho- and chemodiversity of about two thirds of all known lichen species (> 9, 000 taxa). The most outstanding nucleic acid sequence database repository with three partners is the INSDC consortium with EMBL-Bank, NCBI-GenBank, and DDBJ.

Business models and consortial structures

In the case of the INSDC consortium, the collaborating institutions (DDBJ, EMBL-ENA, and NCBI-GenBank) have established data-sharing policies for more than twenty years. Responsibility for the quality and accuracy of the records, however, has been assigned to the submitting authors or institutions (http://www.insdc.org/policy). The three well-established partner institutions agreed to maintain a common technical core infrastructure for submission and archiving nucleic acid sequence data worldwide (Cochrane et al. 2010).

The Catalogue of Life (CoL) consortium is a cooperation of two partners being the autonomous federation of database organizations and taxonomic database custodians 'Species2000' (registered as a not-for-profit, limited by guarantee company in the UK), and ITIS, a partnership of federal agencies and other organizations from the United States, Canada, and Mexico. The CoL secretariat is currently located at University of Reading (UK) and mainly financed by grants and financial support from one of the two partners, Species2000. Data are provided by experts from 115 taxonomic databases from around the world, each responsible for a defined group of organisms (http://www.catalogueoflife.org/col/info/about). Data quality is assured by peer-review mechanisms.

The Global Biodiversity Information Facility (GBIF) is an intergovernmental organization. GBIF members or 'GBIF participants' (http://www.gbif.org/participation/being-a-part-of-gbif/) are about 60 nations (China not included) and approximately 50 international organizations. The voting participants provide financial contribution to the GBIF secretariat, the advisory committee structure and the work program on a yearly basis (http://www.gbif.org/governance/finance/). They are responsible for the national support of the GBIF network, which is primarily a non-centralised system with national participant nodes (http://www.gbif.org/participation/). Data are provided by more than 420 mainly institutional publishers, being responsible for data quality and accuracy. GBIF is developing a decentralised network of 'biodiversity information facilities' (BIFs) established and maintained by its participants which, e.g., are countries or international organisations that have signed the GBIF Memorandum of Understanding (MoU) (http://www.gbif.org/participation/participant-nodes).

JSTOR Plant Science has been funded and spearheaded by the Andrew W. Mellon

Foundation through the project 'Global Plant Initiative' (http://about.jstor.org/content/jstor-plant-science). Content partners and publishers are represented by more than 200 institutions from over 50 countries. The major goal of the initiative is to digitise herbarised type specimens (mainly plants, but also bryophytes, algae, fungi, and lichens) and provide access to images and metadata at a global scale. The digitised and quality-controlled data is published under non-exclusive license conditions by JSTOR (http://about.jstor.org/10things). JSTOR itself is a not-for-profit organization with a commercial segment being based on the income from subscriptions fees by foundations, universitary institutions, libraries and individuals for accessing the information. A considerable number of scholarship institutions have access for free, but the majority of individual scientists who are not affiliated to such institutions can use only a limited amount of the research data from JSTOR Plant Science for free.

The Biodiversity Heritage Library (BHL) is a consortium of 12 partner libraries from US and UK natural history collections, supported by grants from several foundations. Its primary funding came from the Encyclopedia of Life initiative (http://biodivlib.wikispaces.com/Funding+Sources), a close co-operation partner of this initiative. The BHL project is focussed on digitising legacy literature related to biodiversity. Since 2009, it has expanded globally, e.g. by an EU funded project with 28 institutions involved, as well as BHL nodes in China, Australia, and Brazil.

The International Barcode of Life (iBOL) initiative with its central node in Canada is funded mainly and by the Ontario government, two Canadian Foundations, and the Genome Canada association. The international research program is coordinated by a team at the University of Guelph and supports barcoding activities of the iBOL partners to a certain degree. The governance board consists of senior staff from Genome Canada, a science advisory committee, and an international scientific collaboration committee with members drawn from nations with funded barcoding projects linked to iBOL (http://ibol.org/funding-shortfall-brings-changes-at-ibol/). iBOL is structured and organized in four major nodes (Canada, China, Europe, US), several regional and national nodes, as well as partner organizations from 27 nations (http://ibol.org/about-us/partner-nations/).

The Encyclopedia of Life (EOL) is an international consortium, financially supported by 16 institutions and 6 foundations. Its contents are provided by more than 220 partner content data platforms and more than 62, 000 so-called 'members'. Data is quality-controlled by about 300 active EOL curators on a voluntary basis (http://eol.org/statistics; access 2012-10-31). The EOL executive committee provides governance and decision-making at the policy level. The senior individuals represent GBIF, BHL, foundations in the USA, and cornerstone institutions in the USA, Australia, China, Egypt, and Mexico (http://eol.org/info/3#SC).

In conclusion, only three to four of the seven initiatives have sufficient technical infrastructure backbone that can be regarded as independent from third-party grants to scientists or scientific institutions, which are INSDC, GBIF, JSTOR Plant Science, and probably EOL. For four of the seven initiatives discussed here, financing the creation of content data is not the central issue of the business model. Only JSTOR Plant Science, iBOL and BHL-US directly back this kind of activity by financial support. The remaining ones mainly rely on the motivation of volunteers and individual enthusiasts (EOL, CoL), or on national funding programs to support generation of data and its delivery (GBIF, iBOL).

Data flows, cross-linkages

Each of the seven platforms has its own profile with respect to data domains, providers and scope of contents, and user communities, but strong dependencies between the platforms (e.g. between BHL and EOL) exist. Furthermore, there is cooperation between the four platforms GBIF, iBOL, EOL and JSTOR Plant Science to visualise occurrence data and to link data from biodiversity literature. They therefore require a common name data backbone, provided by a jointly developed technical structure in the frame of a common project, the Global Names Architecture (GNA; http://www.globalnames.org/) project. For sequence data which is produced in the iBOL context, the INSDC consortium with NCBI GenBank has agreed to stand by as the general data repository and backup archive.

The cooperation and linkages between the seven megascience platforms themselves as well as between the seven initiatives and their primary data providers is assumed to be facilitated by relying on open source principles and on contents provided under creative commons or open database licences conditions or – at least – data sharing policies on a non-exclusive basis. With growing content, the data flow and cross-linkages between the seven platforms is visible (Fig. 1). In parallel, the backtracking of multimedia data with corresponding metadata, e.g., from EOL and from thematic portals like EDIT (http://search.biocase.org/edit/ : this is mirroring the GBIF index database), back to the primary providers or publishers of scientific data is

possible.

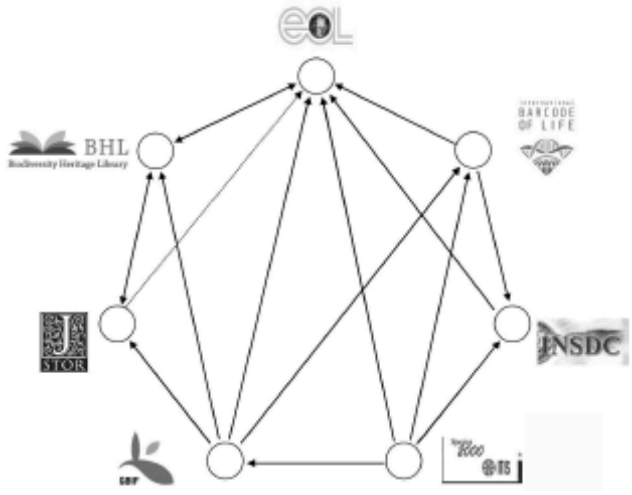

Figure 1.
Biodiversity megascience platforms – cross-linkages and data exchange.

The data life cycle and data flow starts with data production. The megascience platforms are harvesting infrastructures which are part of a 'food chain' that starts with the primary-content producers to primary and secondary harvesters and ends up with data users, consumers and digesters. Data harvesters like GBIF and CoL, which are typically fed by research data from individual scientists and institutions, may alternatively also be supplied by primary data collecting infrastructures, e.g. by the World Register of Marine Species (WoRMS; http://www.marinespecies.org/), Species Fungorum (http://www.speciesfungorum.org/), and FishBase (http://www.fishbase.org/).

Names data, taxonomy, and classifications are of essential interests for all biodiversity platforms. Thus the comprehensive and reliable species databases offered by CoL form one of the multiple taxonomic backbones of EOL, GBIF, iBOL, BHL, and the INSDC data platforms.

Concerning taxonomic names and classifications, the data flows will be even more complicated in the future because there are overlapping and competing name thesauri for taxonomic and biological groups worldwide. As an example: Lichen names and synonym data are actually being collected by three different major sites (Index Fungorum/ Species Fungorum; http://www.indexfungorum.org, LIAS names, and MycoBank), and are either directly forwarded to several megascience platforms, or indirectly via CoL.

Another type of data flow starts with the occurrence data harvested by the megascience platform GBIF. Several initiatives or projects like EDIT and BioCASE established data flow structures with mirrors of the GBIF index database. Based on these cache databases, they forward large amounts of GBIF occurrence data to various thematic search portals (http://search.biocase.org/; http://search.biocase.org/edit/; Holetschek et al. 2009).

Data harvesting, data exchange, and data quality

Different data harvesting strategies are required (a) for the initial content building from facts not yet available in aggregated form, and (b) for harvesting data that are already aggregated and available as databases, digital publications. In the latter case this may be organized as a unidirectional, perhaps hierarchical data flow, or as reciprocal exchange (partial or full data replication).

In both cases, the goal of megascience platforms is to attract data from a large number of potential provider groups, researchers and research groups, citizen scientists, and established infrastructure and science institutions. With regard to the data domains in focus of JSTOR Plant Science and BHL, institutions are the main data providers, whereas INSDC attract individual researchers and EOL – at least – intends to attract individual researchers and 'citizen scientists' to contribute with their data. Currently, however, the majority of data in EOL comes from other databases: Wikipedia, FishBase, Plazi, etc.

GBIF and CoL address large and small data aggregators, both institutional and individual, but not accept single data records from individual scientists. They require a certain level of aggregation and the capacity to follow structured information transfer protocols according to data exchange standards.

All seven platforms have to be attractive for their data provider communities and use easy-to-use upload techniques, modern web presentation, analysis and visualisation techniques and at least have started the implementation of download options. To facilitate massive collaboration with data providers, data users, and the data exchange between platforms of other data domains, the use of creative commons licenses for data content is urgently recommended (Hagedorn et al. 2011).

EOL was initiated as a funded project and will depend on third-party funds for continued operation. With its strong dependency on biodiversity communities and the activities of individuals and other project content partners, it will always be confronted by new user requirements due to the changing internet world and the rapid enhancement of web technologies. EOL relies mainly on the aggregation and harvesting of external content and uses established web technologies and community solutions to mobilise and cache data. Active input by users is guided via community user interfaces (e.g., until 2010 through so called LifeDesks, now by endorsing ViBRANT scratchpads).

With the growth of content and the rapid enhancement of web technologies, new technical challenges will have to be met to keep large amounts of data manageable and available. Thus the analysis options of the content data for scientific purposes actually are not (yet) in the focus of this platform.

The Wikipedia platform (as well as the associated Wikispecies) goes a citizen science driven and interactive way to mobilise species-related description data and images and provide them to public. Wikispecies currently comprises more than 343, 862 content pages (mostly taxon pages, https://species.wikimedia.org/wiki/Special:Statistics), the contents of which is limited to nomenclature, taxonomic hierarchy, or names in various languages. The English Wikipedia contains approximately 213, 661 taxon pages (http://toolserver.org/~jarry/templatecount/index.php?lang=en&name=Template%3ATaxobox#bottom), most of which with substantial content.

INSDC is the only platform which has an explicit mandate from the scientific community to harvest and present data. This is achieved through alliances with publishers. Today, the editorial rules of most journals consider INSDC deposition of nucleotide or protein sequences and the citation of the resulting INSDC accession numbers as mandatory, a practice which "arose not passively, but through the efforts of INSDC member institutions and other proponents of open data sharing" (Cochrane et al. 2010). The technical mechanism of the data exchange in the INSDC consortium (with regard to nucleic acid sequence data submission and provision) is the pooling of the original data into one joint data management system, managing this newly established system at one institution and mirroring the database to the consortial partners. iBOL is using the INSDC consortial infrastructure for data archiving.

The large number of providers for occurrence data (from the monitoring community as well as the natural history collection community) and the large amount of data packages which are regularly updated determine the harvesting strategy of the GBIF network. It was originally planned for continuous connectivity and distributed queries, but the technical limitations were difficult to master. GBIF therefore now uses harvesting of a limited set of data instead (called 'indexing'), such that the index is centrally maintained and can be directly queried. With the new GBIF integrated publishing toolkit (IPT) GBIF has been able to support a much wider range of content providers with less technical expertise. The updating of the harvested data may occur at short intervals, or only when a provider publishes a new version. In that way, they underline the decentralized approach of the network with independent data holders or publishers and a mediating role of the national GBIF participant nodes. The new harvesting network of CoL follows a similar strategy.

Data curation and quality control of harvested data is a main issue for all megascience platforms (e.g., Costello et al. 2012). All have to consider quality (in the sense of Chapman 2005) of the original data and address the life cycle of data. They do it in different ways:

GBIF, iBOL, JSTOR Plant Sciences, and probably INSDC, work to establish feedback mechanism to their primary data providers to improve quality of data. GBIF and CoL are planning to realise technical workflows to obtain high-quality data from primary sites by dynamic periodic and event-based data harvesting. Thus, they are likely to provide relatively up-to-date data, as far as the connected primary sites are maintained by domain experts. Platforms like iBOL rely on the direct input and curation efforts of the contributing scientific community and single researchers to ensure and improve the quality of data – similar as INSDC does. Besides relying on the quality of the harvested data from large content partners, EOL has established an own system of single EOL curators, who are expected to improve the harvested EOL content. There is, however,

no regular feedback option to the primary data providers.

In addition, copies of harvested data occur which might be harvested again by EOL (or other megascience platforms and thematically focussed portals). Thus, it can happen that the secondary information becomes ranked higher in internet searches than the original, well-curated information from the primary information site. Information duplication of this kind is most easily visible with Latin taxon names. For instance, a Google search of "*Rimularia exigua*", a hitherto extremely rarely collected crustose lichen from Australia, only having been treated in the context of one monograph and occurring in only one primary species checklist, results in 330 hits, nearly all from secondary and tertiary data harvesters and portals like Cybertruffle (http://www.cybertruffle.org.uk) and SinBiota 2.0 (http://sinbiota.biota.org.br) which spread names data obtained, e.g., from CoL. Unfortunately, not only correct names are disseminated but also misspelled or otherwise erroneous names, even if they are corrected already at a primary information site.

Benefits for data producers, primary data providers and data consumers

Data producers and primary data providers are individuals or organizations that contribute with their data to the content of megascience platforms. They may profit in decidedly different ways from such an activity. The member institutions of JSTOR Plant Science are paid for their digitalisation efforts and contribution to the initiative by the A. Mellon foundation. With regard to GBIF, data providers directly profit from an established data pipeline that allows publishing data sets by using the integrated IPT publishing toolkit as recommended by the GBIF secretariat. In that context, the source data are getting processed and published in standard-compliant Darwin Core Archive (DwC-A) and Ecological Modeling Language (EML v2.1.1) formats (http://www.gbif.org/informatics/infrastructure/publishing/). Various feed-back mechanisms at the GBIF central node support quality control at the primary data site.

The easy access to useful and reliable high-quality data for open and free "data-driven" research purposes (with the aim to publish in high-ranked scientific journals) may be primarily of interest to the platform users and consumers, but not necessarily to the operators and content providers. The content maintenance of a scientific data platform therefore has to be considered as a valuable achievement of the data generators (and maintainers) *per se*. Recently, 'data publishing' through scientific information portals is combined with new kinds of mechanisms to provide additional incentives to data owners that provide their original data to others. The so-called 'data papers', currently promoted by GBIF and EOL community members and publishers like Pensoft (Chavan and Penev 2011), are suggested as an option to form a link between biodiversity data publishing via megascience platforms or portals and the scholarly publishing in peer-reviewed journals with DOI assignment and provision of impact factors. The process of data-paper-publishing uses a common GBIF/Pensoft workflow of data publishing and automated generation of data paper manuscripts using the GBIF integrated publishing toolkit, followed by the editorial workflow via the Pensoft online editorial system and resulting in a regular scholar publication in online publication like the 'Biodiversity Data Journal' (http://www.biomedcentral.com/1471-2105/12/S15/S2) and MycoKeys.

Reliable and quality-controlled data are a prime interest of data consumers. The data publishing mechanism in the context of INSDC is the best example for that. It requires the active submission of the respective data sets by individuals or organisations which receive an INSDC accession number for every submitted nucleic or amino acid sequence. This identifier is requested by peer-reviewed journals for submission of manuscripts and allows for the backtracking of information to the data producer.

A similar solution is presently being established for the improvement of data content of fungal names thesauri which – regarding the data flow – will secondarily positively influence CoL data. A group of mycologists and database operators gained influence on the fungal scientific community and achieved that the new ICN code (ratified in Melbourne 2011) dictated, that, as of 1 January 2013, each new fungal name must be registered in a recognized repository prior to publication (Norvell 2011, Norvell and Redhead 2012). From a technical point of view, such obligations are probably unnecessary. It seems to make more sense to realise technical solutions for harvesting this type of data from open access (and access-limited) journals, all by now being available in digital form. To do this effectively, markup standards for scientific publishing should be developed, a topic presently dealt with by pro-iBiosphere.

Primary data providers also profit to some degree from seed money projects being funded by platform initiatives and consortia like GBIF, EOL, and CoL. At least, during the first years, iBOL proved to be an excellent opportunity for natural history collections to receive free DNA barcoding data of specimens in their own collections.

Primary data providers usually are also users of their own data and profit from various kinds of analysis options. As data are generally openly accessible (except those in JSTOR; see above), analysis of own data against a wider data background has become a standard use case. Most published phylogenies are based on nucleic acid sequence data of the data producer (or primary provider) combined with otherwise published background sequence data. The situation is similar for occurrence data, where freely available bioinformatics and biodiversity informatics tools for data analysis (INSDC, GBIF, iBOL, and BHL) and visualisation (GBIF, JSTOR, BHL, and EOL) enlarge benefit for platform users.

The benefit for scientists mainly depends on the amount and quality of openly and freely available information. Established megascience information platforms with a history of more than ten years like INSDC already comprise a considerable number of records. However, due to missing or insufficient data curation services by INSDC, insufficient mechanisms to improve and enrich previously submitted (meta-)data, uncritical use of INSDC cannot be recommended. For that reason, a considerable number of thematically focused secondary data platforms have evolved, providing quality-controlled data. In the context of nucleic acid sequence data especially valuable examples are the 'ITS2 Database' at Würzburg University, Germany (http://its2.bioapps.biozentrum.uni-wuerzburg.de), several RNA databases (e.g., http://www.bioexplorer.net/Databases/RNA_Databases/), or, as an example of a full genome sequence database, the *Saccharomyces* genome database (http://www.yeastgenome.org).

In some cases, the quality of a data may also decrease with time. For instance, data being linked with taxonomic names may degenerate, as taxonomic opinions and phylogenetic concepts are not stable over time. The reasons for this are the discovery of new taxa, the reappraisal of old or discovery of new phenetic traits or of additional gene markers, or the application of improved data analysis algorithms. It entails that under insufficient and inadequate data curation conditions that insufficiently provide for data updates from the original data sources, even well-established megascience platforms are liable to become outdated sooner or later. With regard to taxonomic and nomenclature data flow mechanisms, two major preconditions need to be considered. Firstly, that external taxonomy sources, providing synonymy and classification, are up-to-date and second, that feed-back mechanisms between data sources and platforms need to provide mechanisms for correcting recognized inconsistencies. Both issues are presently not satisfactorily realized even for the oldest megascience platform INSDC, despite the fact that this platform has probably the strongest profile of all established biodiversity information platforms under discussion.

Discussion

In an era of data-driven research and open science (Krotoski 2012), biodiversity data platforms are facing a number of challenges. Perhaps the most important issue is the question of sustainability in data curation and software development. Data curation is a complex task that involves both primary data producers or providers and platforms which integrate such data. Although a primary responsibility for correctness lies with the primary data producers or providers, the platform has a responsibility to monitor the data quality and the frequency of updates from the data sources. A considerable part of quality control concerns the necessity of a data integration workflow, which typically exposes data quality issues, that where difficult to detect, while the data were curated in isolation. Beyond that, many platforms invest into purpose-built quality control tools, drawing on the development, computing, and data source integration power of the platform. Since the platform is often attracting a much larger number of users than the primary data source (should it be online), much feedback and annotation activity is likely to occur on the platform. Both, the platform workflow or tools-supplied and user-supplied feedback must be efficiently communicated to the primary data sources.

Amount and granularity of the primary data sources that are harvested or integrated into the platforms can range from huge databases to individual contributions both with elementary or rather detailed information. Although the various platforms have a different focus, in fact all have to support a wide spectrum of granularity from individuals to institutions. Because individuals typically have rather different means as well as motivations to curate a dataset than institutions, this further complicates quality control, annotation and feedback workflow. Presently, megascience platforms rarely include the publishing level, which can be seen as a granularity gap between individual contributions (by direct editing) and data flow from private or institutional databases. New efforts (e.g., within the pro-iBiosphere project) explore the necessary collaboration infrastructure for a biodiversity 'Knowledge Organisation System' that bridges existing gaps between scientific publishing (journal articles as well as flora/fauna monographs) and megascience data platforms. To enable integration, structuring, quality control, feedback mechanism, attractive data retrieval and other

sophisticated services (e.g., Hill et al. 2010), or even the realisation of virtual research environments, platforms need to invest into man person-years of software development work. A major problem with respect to the present dynamic world of a global information system is that software needs constant investment in maintenance and development simply to keep up with ongoing feature development and security fixes of the basic tools as well as software interfaces of partners.

Furthermore, the number of platforms with thematic but global focus in biology and environmental sciences is increasing. In the field of biodiversity they are often backboned by automatically generated template web pages filed according to taxon names. The temptation to fill these auto-generated pages with existing name lists and classification structures is evident and somehow understandable as it serves the desire to become globally relevant. The hope that such templates will be supplied with content by scientific community members, however, is rarely fulfilled.

The relation between megascience biodiversity information platforms and smaller, more focussed data providers is and will remain a complex one. Simplifying it by shifting all responsibility and ownership of data to a central institution or data node may, however, not be the right path into the future. While focussed central platforms can become a service to stakeholders, all-encompassing platforms are likely to satisfy only a limited number of use-cases. As a result, stakeholders still would require independent systems, leading in the end to lower total efficiency. We therefore believe that sharing responsibility and funding opportunities is the right path into the future. For the content partners of megascience biodiversity information platforms, it is most likely to be beneficial, if they operate their own original or primary databases under their own responsibility at an institution. In the long term that means – from the view of the megascience platforms – a decentralised approach should be realised. In that way, data sustainability and quality seems to be best ensured. The technical support for primary-content databases should be guaranteed by commitments of the institutions which hosts or own the databases. Also at that level of a decentralised biodiversity data network data architecture and IT infrastructure have to be continuously adapted to the changing requirements. At the same time, the infrastructure of the megascience platforms also depend on institutional or other reliable and permanent funding, as the technical and content data management of the platforms themselves will always remain a challenging task.

Due to the steadily increasing number of scientists from countries all over the world being involved in higher level biodiversity and environmental science projects, it is clear that certain architectures and mechanisms of data storage, transfer and provision will be recognized as obsolete. They are symptomatic of a past unilateral world. The megascience platforms discussed here, have to attract both, new primary-content partners by offering added values to them as well as new technical partners, e.g. as consortial members of equal rank. To be able to replicate information with primary-content partners, it will be necessary to implement technical interfaces that better support data exchange standards. In recent years with the rise of new user interface concepts, the mode of presentation needs to be adapted to changes in the device technologies (gestures and touch modes). Alleged limitations of database and data transfer technologies are sometimes used as an alibi to replace federated structures of distributed responsibility and ownership with central and often 'monopolistic' structures. However, centralised power always includes the temptation of abuse, be it to dictate prices (as seen in some major commercial scientific publishers), or be it to monopolize the use of data for research, trying to secure future research grants at the expense of excluding competing researchers (which may have a different research agenda, perspective, or insight).

Both single and distributed ownership of primary data can lead to monopolies or single-points of failure (for all or parts of the data). It is not uncommon that valuable data sources are either lost or that the owners decide to no longer share them. Long-term preservation and open access to scientific data is a prime value in science. Both a system of a single platform with a single data store, and a system where a large number of stakeholders could arbitrarily decide that it is no longer financially feasible or perhaps desirable to them to provide their data to the scientific community, does not fulfil this requirement. The solution would have to provide for a large number of duplicated storage of data, the use of which is at least as uninhibited as the use of books. Achieving this is (a) a technical problem in finding the right technologies to replicate large volumes of data, (b) a social problem in documenting and understanding the difference between primary holders that frequently update their data versus static copies that have been created for particular uses and which may become outdated, and (c) a legal problem, in providing sufficient rights over the copied data. Scientific knowledge becomes more valuable to society, the more it is shared. The scientific world must therefore take care that the principles of openness and sharing that have successfully governed science for centuries are not lost in the new age of digital scientific data. Sharing has to be open and permissive, following the principles of Open Science, Open Source and Open Data (Molloy 2011).

The megascience platforms discussed here already have to face complementary or alternative structures (e.g., EOL China, http://www.eolchina.org/; Species2000 China Node, http://www.sp2000.cn/ioaen/; BHL China, http://www.bhl-china.org/cms/). Global platforms will probably still dominate in the near future and guide mainstream activities, but they will not be able to claim an exclusive status. They are driven by modern information technologies and have to support approaches for decentralized and 'intelligent' network structures with flexible data nodes. In this context, efforts of multilinguality and internationalisation should also be prioritized. Despite English being de facto the lingua franca of natural sciences, IT technologies will increasingly allow to (automatically) generate multilingual presentations to include users from countries outside the space of world-dominating languages.

Acknowledgements

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Internet resources

Atlas of Living Australia (ALA) – http://www.ala.org.au/
BioCASE Search Portal – http://search.biocase.org/
Biodiversity Heritage Library (BHL) – http://www.biodiversitylibrary.org; http://biodivlib.wikispaces.com
Biodiversity Heritage Library China (BHL China) – http://www.bhl-china.org
Bioexplorer – http://www.bioexplorer.net
BioMed Central – http://www.biomedcentral.com
Biowikifarm – http://biowikifarm.net
BOLDSYSTEMS – http://www.boldsystems.org; http://www.barcodinglife.com
Catalogue of Life (COL) – http://www.catalogueoflife.org; http://www.catalogueoflife.org/colwebsite/content/contributors/
Cybertruffle – http://www.cybertruffle.org.uk
Distributed Dynamic Diversity Databases for Life (4D4Life) – http://www.4d4life.eu/
DNA Data Bank of Japan (DDBJ), Mishima, Japan – http://www.ddbj.nig.ac.jp
EDIT Search Portal – http://search.biocase.org/edit/
EMBL-Bank, European Nucleotide Archive, Cambridge, UK – http://www.ebi.ac.uk/embl/
Encyclopedia of Life (EOL) – http://eol.org
Encyclopedia of Life China (EOL China) – http://eolchina.org
European Distributed Institute of Taxonomy (EDIT) – http://www.e-taxonomy.eu/
FishBase – http://www.fishbase.org/
Fungal Names Registration – http://www.fungalinfo.net
Global Biodiversity Information Facility (GBIF) – http://www.gbif.org
Global Names Architecture (GNA) – http://www.globalnames.org/
GenBank, NCBI, Bethesda, MD, USA – http://www.ncbi.nlm.nih.gov/genbank/
GlobalPlantsInitiative (GPI) – http://api.myspecies.info/; http://plants.jstor.org/action/community/
Index Fungorum – http://www.indexfungorum.org
International Barcode of Life (iBOL) – http://www.barcodinglife.com
International Nucleotide Sequence Database Collaboration (INSDC) – http://www.insdc.org
ITS2 Database – http://its2.bioapps.biozentrum.uni-wuerzburg.de
JSTOR – http://www.jstor.org
JSTOR Plant Science – http://plants.jstor.org
LIAS light – http://liaslight.lias.net
LIAS names – http://liasnames.lias.net/
LifeWatch – http://www.lifewatch.eu
Map of Life (MOL) – http://www.mappinglife.org
MycoBank – http://www.mycobank.org/
pro-iBiosphere– Coordination and policy development in preparation for a European Open Biodiversity Knowledge Management System, addressing Acquisition, Curation, Synthesis, Interoperability and Dissemination– http://www.pro-ibiosphere.eu/
Saccharomyces Genome Database (SGD) – http://www.yeastgenome.org
Scratchpads biodiversity online – http://scratchpads.eu/
SinBiota 2.0 – http://sinbiota.biota.org.br
Species Fungorum – http://www.speciesfungorum.org/
Species 2000 China Node – http://www.sp2000.cn
The Mycology Net – http://www.mycology.net
uBio Indexing & Organizing Biological Names – http://names.ubio.org
Virtual Biodiversity Research and Access Network for Taxonomy (ViBRANT) – http://vbrant.eu/
Wikimedia Toolserver – https://toolserver.org
Wikispecies – https://species.wikimedia.org
World Register of Marine Species (WoRMS) – http://www.marinespecies.org/

Annex 25 - Networking session proposal for ICT event 2013

Networking session ID: 10506 [Public page]

Overview

State: submitted

Proposal by Catherine GATER (EGI.eu, Netherlands)

Proposal [Edit]

Session title

What does the future hold for e-science and big data?

Objective of the proposed session

Big science and big data have led to some of the most exciting discoveries to date, such as the human genome and the Higg's boson. As society's challenges grow in scale, for example in biodiversity, environment, health and ICT, the collaborations needed to address them must cross national borders. The open computing services that support these collaborations must ensure that Europe has world-class research and data infrastructures (including e-infrastructures) accessible to all researchers. Infrastructures should also maintain Europe's competitive edge and deliver the ERA through increased coordination and elimination of fragmented effort. This session brings together researchers, data owners and service providers (including SMEs) to explore the future for e-science and how to deliver open access to data through Horizon2020. European digital science will drive excellence in science and future and emerging technologies, underpinned by world class research and data infrastructures.

Stakeholders to be attracted (who and how)

Stakeholders in excellent science are: data owners, who curate and link data; researchers who generate, analyse and publish data; and resource providers who store, share and protect data. Data owners and researchers who wish to use worldwide distributed resources efficiently will benefit from using data infrastructures. These include Virtual Research Communities, research groups and even single researchers. Engaged communities include cultural humanities, biodiversity, environmental and high energy physics through the ESFRI support projects and others. Resource providers offer open computing, including clouds, HPC and grids and provide services such as federated identity, science gateways and virtual research environments. Bringing these communities together to share requirements and develop cutting edge technologies is crucial for future services supporting scientific excellence and innovation. A panel of experts from each stakeholder group will provide Q&A and lead discussions.

Expected outcome

Participation will lead to better awareness of e-infrastructures and their potential for universal access to big data and a closer understanding of how they solve scientific challenges, including supporting science's 'long tail'. In future, interdisciplinary science will be enhanced by new technologies that link data from disparate disciplines, for example by using proven technologies from one domain to solve "Big Data" challenges in another, including SMEs. Discussions led by a BBC World Service journalist will lead to a concrete set of requirements for future research and data infrastructures, based on challenges that data owners and researchers need to address now, and expect to see in the future. The benefit of holding the session at ICT2013 will be to bring together international participants with a clear vision of the future challenges that ICT will bring. It will dovetail with sessions focusing on the needs of digital humanities and regional interoperability and collaboration.

My organisation is also submitting another proposal for a Networking Session:

No

Other session title

(empty)

My organisation is also submitting an Exhibit proposal:

No

Exhibit title

(empty)

State: submitted

Proposal by Catherine GATER (EGI.eu, Netherlands)

Annex 26 - ICT event 2013 Networking sessions planning and rooms

ICT2013 Networking Sessions
Allocation of day, time and room

Day	Session Start Time	Room A	Room B	Room C	Room D
06-nov	16:00	What does the future hold for e-science and big data?	Pervasive access to media content	Women in International ICT Research: Smart cities, Gender and Inclusion	Management and Monetisation of Personal data
06-nov	16:50	How will Big Data yield a new economic sector?	Creative and Innovative Content and Media 2020	Shaping Open Innovation for Smart Cities	Towards a secure and trusted Europe - Research Challenges for Horizon 2020
07-nov	09:00	Digital Earth	DesignEurope: Social Network, Communities of Practice and Creativity	Intelligent energy management in production - real-time e-monitoring and demand-side-manag. with ICT	Preparing the industry to privacy and security-by-design by supporting its application in research
07-nov	09:50	Big data and data analytics impact in healthcare	Digital Cultural Heritage stakeholders: challenging cooperation towards Horizon 2020	Connected Smart Cities and the Future Internet	International cooperation: developing countries
07-nov	11:00	The Business of Open Data	ICT Research in Creativity	How to Benefit from the European Smart Systems Integration Ecosystem	International cooperation: emerging economies
07-nov	11:50	Genomic Information Systems: Big Data for Personalized Medicine	User Centric Semantic Exploitation in Social Media	2050's visions inspiring 2020's policies: a role play game on future ICTs	International cooperation: industrialised countries
07-nov	14:00	How big? How open? Identifying the scope and limits of data-driven growth & governance.	Next generation media: Social, distributed, personalised and context aware	ICT requirements and solutions for Structural biology and Life Sciences	ICT Professional Associations in H2020
07-nov	14:50	Big Data Research and Innovation in Horizon 2020	ICT&Art Connect: Art community meets ICT community	Grand Coalition for Digital Jobs	COST: Create your network to boost European Research and Technology in ICT
07-nov	16:00	Boosting EU Competitiveness with Cloud Computing - SME & Industry Perspectives	ICT innovation empowering the European publishing sector	Digital Era Governance and Digital Entrepreneurship	Sustainability, take up and adoption of Future Internet results in Horizon 2020
07-nov	16:50	Aligning Cloud Research and Innovation Agendas of European Technology Platform(s) with Horizon 2020	A Virtual Research Community for the Preservation of Digital Cultural Heritage (DCH)	The Onlife Initiative: a bridge between research and policy	SMEs and web-entrepreneurs as drivers of Future Internet Ecosystem
07-nov	18:00	Engineering Applications for the Cloud	Language Technologies – The cornerstone key enabling technology for the Digital Single Market	H2020 supporting innovation through standardisation	IoT Centric Cloud: A Catalyst for Innovation in Europe
07-nov	18:50	FoCAS on multi-disciplinary approaches for smart, green and integrated transport	ICT training/education and certification		
08-nov	09:00	High Performance and Embedded Architecture and Compilation in Horizon 2020	In silico medicine: all hands meeting (Part 1)	Future simulation, planning and forecasting technologies	Digital Agenda for Europe - The role of trustworthy and interoperable electronic identification.
08-nov	09:50	Resilient Robotics and Autonomous Systems	Companion-Robots & Smart Applications for Health and Well-Being Support	Knowledge-based Digital Manufacturing	Value Creation through collaborative research in ICT
08-nov	11:00	Challenges in developing and managing Systems of Systems	Human-Technology-Interaction for Demographic Change: A Cross-Cutting Issue	Rapid Deployment of key enabling ICT technologies for smart factories	Educate and Innovate: EIT ICT Labs' outreach strategy
08-nov	11:50	The new Electronic Components and Systems JTI: Joint Session of ENIAC, ARTEMIS and EPoSS		ICT for Factories of the Future	Towards More Agile and Responsive Support for Innovation

Annex 27 - Exhibition booth proposal for ICT event 2013

State: selected

Proposal by Neasan ONEILL (EGI, Netherlands)

Management Summary

Main title
e-Infrastructures at work and the future of research
Acronym (if applicable)
(empty)
Most relevant web site
(empty)
Keywords
ERA, einfrastructures, e-infrastructures, data infrastructures, science gateways, identity federations, research, computing, grid computing, cloud computing
Abstract

Big science and big data have led to some of the most exciting discoveries to date, such as the human genome and the Higg's boson. As society's challenges grow in scale, for example in biodiversity, environment and health, the collaborations needed must cross-national borders. This exhibit will showcase four EC-funded projects that address this, the European Grid Infrastructure (EGI), pro-iBiosphere, CHAIN-REDS and ei4Africa. EGI provides a computing infrastructure to allow researchers to make the most of computing technologies. pro-iBiosphere prepares the ground for an open biodiversity knowledge system to improve our understanding of how the world's biota is being described, studied and preserved. CHAIN-REDS promotes collaboration across different e-Infrastructures on various continents, allowing researchers access to distributed computing resources and tools. ei4Africa helps to improve the potential of African e-Infrastructures and supports Euro-African cooperation.

What do you apply for?
a technology or innovation stand
Yes, we are a startup company (less than two years old)
No

Exhibit Profile

Visual Form
application running on a computer
Other, please explain

(empty)

Interactivity
exhibitors and visitors interact with the demonstration
Ease of comprehension
exhibit requires some explanation by the exhibitor
Maturity
product is on the market since a year or more
This demonstration has been shown elsewhere in public
Yes
When and where?
Science Museum London, CERN computing centre, Ministerial workshops in Africa and United Arab Emirates
Duration
4

Detailed Descriptions

What exactly will you show the visitor?

Visitors will see how to seamlessly submit computing jobs on and move data across Distributed Computing Infrastructures by means of standards based Science Gateways and attractive apps for mobile devices. Cluster, Grid and Cloud computing and storage resources available all over the world are used in a transparent and easy way to execute jobs and store data belonging to several humanistic and scientific disciplines such as cultural heritage, agriculture, earth sciences, life sciences, etc. The Real Time Monitor, a 3D visualisation of the grid's activity on a virtual globe, will track 100s of thousands of jobs running on the various sites and show them on a fully interactive world map in real time.

Visitors will also be able to navigate across data infrastructures made of thousands of Open Access Document Repositories and Data Repositories, allowing them to do semantic searches on tens of millions of records and correlate scientific papers with the data sets used to write them. Repository navigation and semantic search will be possible through a web browser and an app for mobile devices.

Members of the various projects will be on hand to fully engage with visitors and outline the benefits that each provides to the ERA. There will also be supporting information and materials such as videos, posters and leaflets.

What is innovative/visionary about the technology or activity that you will show?

The future of research is inextricably linked with information technology. Big science and big data have already led to some of the most exciting discoveries to date, such as the human genome and the Higgs boson. To have world-class research we need to enable open access to data, collaborators, and computing power for everyone, regardless of national borders or geography. All four projects highlighted here are working to ensure that the wider scientific community, both in Europe and further afield, are part of a truly connected world.

This connectivity is about more than just a physical infrastructure; there needs to be standards, tools and agreements. Enabling efficient collaboration, data sharing and analysis will (i) bring the European Research Area at the forefront of the global market; (ii) create a truly global marketplace for research, bringing in countries from outside the ERA and developing nations; and (iii) connect new communities and researchers. Not every discovery needs to be a collaboration of thousands. The work being presented aims at bringing benefits to smaller teams looking to work with similar minded individuals.

How has your project contributed to the 5 themes?

The work presented has wide-ranging effects and builds into the "Intelligent connecting intelligence" theme. All the involved projects build connections across the ERA and collaborate with other regions of the world and their researchers. There is also a big impact on the area of "culture, science and creativity" providing a platform for new thinking.

The 4 projects provide the added value needed to make the best use of human capital and physical infrastructures. There have already been successes in the fields of genomics and high energy physics These not only create fantastic templates for the future of these kinds of communities but the tools that can be to used connect intelligence, no matter the scale. These four projects ensure researchers and "citizen scientists" across the globe have the tools they need to work together efficiently, whether they belong to large virtual research communities or the so-called "long tail of science".

The platforms being built make it easier to bring people together from very different backgrounds and geographical places. This allows unusual collaborations to re-evaluate, and re-contextualise data leading to a different view of an established problem or cultural construct. State-of-the-art technologies and standards, such as Identity Federations, will be

showcased as key enablers of worldwide collaborations and access to a wide series of e-Infrastructure services.

What is the expected impact for Europe in terms of competitiveness, jobs and societal aspects?

Modern European society is based on a knowledge economy. Hand in hand with this is Europe's position as a global leader in supporting science and research. Continued growth in these areas relies on both support structures like those provided by the four projects being discussed but also on close collaboration with partners outside the EU and ERA. The projects being highlighted are providing tools to support European researchers in their work but also improve the movement of knowledge, experience and expertise to where it is needed most.

Projects like European Grid Infrastructure (EGI), proiBiosphere, CHAIN-REDS and ei4Africa are instrumental in the new landscape of collaborative, cross-border science. In a world where instruments like the Square Kilometre Array can span 2 continents or meteorological data is accessible but not unified the benefits of a global e-Infrastructure allowing collaboration, data sharing and analysis is apparent. You can't just throw data at a problem; you need people and the correct tools.

How does your product/project fit into the 2050 vision of Futuris?

The four projects support innovation, research and collaboration, three areas vital in empowering individuals and communities in the future digital world. They reduce technological and economic barriers and try to bridge the digital divide. Enabling pan-European and global collaboration supports research in key areas highlighted for Europe in 2050, such as reducing dependence on fossil fuels, ageing, wellbeing and health.

Does your product/project contribute an artistic element to the exhibit?

No

Please explain how

(empty)

Links and Documents

1. CHAIN-REDS Website (linked resource) - **Public Information**
2. EGI Website (linked resource) - **Public Information**
3. ei4Africa website (linked resource) - **Public Information**
4. pro-iBiosphere (linked resource) – **Public Information**

Technical Details

Estimated space required

9 square metres

Wireless/LAN connections

Ethernet LAN connection - 1 LAN UTP connection 100Mbit/s (max 5 DHCP IPs)
Wireless LAN connection (1Mbit/s DHCP)

Communications

(empty)

Please justify your requirements and provide technical details (number of connections, frequency bands, power etc) Mention any spectrum requirements for broadcasting or other regulated wireless communications (e.g. WiMax).

(empty)

Other Notes

This exhibit is involved in an EU programme
Yes
Programme
FP7
Project acronym
EGI-InSPIRE
Project number
RI-261323
Remarks

EGI is the lead partner in the exhibit but the other 3 projects involved are also FP7 Projects:

CHAIN-REDS - RI-306819

eI4Africa - RI-312582

pro-iBiosphere - RI-312848

Annex 28 - Posters on pro-iBiosphere pilots for BIH2013

No	Title	Short Description	Poster of
1	Tracking bio-geographical change from its footprints in botanical literature	Hidden away in the vast corpus of botanical literature are data on the distributions of practically all described plants. By using the GoldenGATE Editor we markup treatments and extract data from as many sources as possible to create the best possible distribution maps of our model species.	Pilot 1 on Chenopodium vulvaria L.
2	Interoperability model between PLAZI and the EDIT CDM Platform	Plazi maintains a digital taxonomic literature repository to enable archiving of taxonomic treatments and EDIT Platform for Cybertaxonomy cover aspects of the taxonomic workflow, such as, taxonomic editing, publishing of edited data, data storage and exchange, collections and specimens, descriptions, fieldwork, literature and geography. In order to improve and fine tune the quality of the marked-up treatments, interoperability model between PLAZI and the EDIT CDM Platform is an on-going process.	Pilot 3 on Cybertaxonomy
3	A common, automated, pre-publication registration model for higher plants (International Plant Names Index, IPNI), fungi (Index Fungorum, MycoBank) and animals (ZooBank)	The process of post-publication recording and indexing of taxonomic and nomenclatural acts has a long tradition,in some cases dating as far back as the middle of 19th century (e.g. Index Kewensis, Zoological Record, etc.). The online publication of nomenclatural novelties brought into focus the concept of *pre-publication registration* and inclusion of the registries' persistent identifiers in the publications. This process has become mandatory in fungal and animal nomenclature due to the amendments to the biological Codes accepted recently. The pre-publication model is based on XML query/response model and includes various steps.	Pilot 2 on Common Registration Model

Annex 29 - List of scientific journals, magazines and websites

PUBLICATIONS			
Online journals			
Biodiversity Data Journal		Community peer-reviewed, open-access, comprehensive online platform, designed to accelerate publishing, dissemination and sharing of biodiversity-related data of any kind	http://biodiversitydatajournal.com
Biodiversity Informatics		The leading journal in its field, Bioinformatics publishes the highest quality scientific papers and review articles of interest to academic and industrial researchers. Its main focus is on new developments in genome bioinformatics and computational biology.	http://bioinformatics.oxfordjournals.org
BioMed Central	BMC Evolutionary Biology ; BMC Plant Biology…	BioMed Central is an STM (Science, Technology and Medicine) publisher of 256 peer-reviewed open access journals.	http://www.biomedcentral.com/journals
BioScience		Attempting to relay the top bioscience news	
CODATA's Data Science Journal		The Data Science Journal is a peer-reviewed, open access, electronic journal publishing papers on the management of data and databases in Science and Technology. The scope of the Journal includes descriptions of data systems, their publication on the internet, applications and legal issues.	www.codata.org/dsj/index.html
F1000 Research		F1000Research is a far-reaching alternative Open Access journal in biology and medicine.	http://f1000research.com
Frontiers Journal Series (online journals)	Frontiers in Zoology ; Frontiers in Plant Science	Scholar community, Frontiers in Plant Science	http://www.frontiersin.org/
Geoscience Data Journal		Geoscience Data Journal provides an Open Access platform where scientific data can be formally published, in a way that includes scientific peer-review.	http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)2049-6060/homepage/ProductInformation.html
GigaScience ?		GigaScience aims to revolutionize data dissemination, organization, understanding, and use. An online open-access open-data journal, we publish 'big-data' studies from the entire spectrum of life and biomedical sciences.	www.gigasciencejournal.com
Hindawi publishing		Hindawi publishes 555 peer-reviewed, open access journals covering a wide range of academic disciplines.	www.datasets.com
Mendeley		Desktop & web program for managing & sharing research papers, discovering research data & collaborating online.	http://www.mendeley.com/research-papers/
Pensoft	MycoKeys ; PhytoKeys ; ZooKeys ; BioRisk ; NeoBiota ; Journal of Hymenoptera Research…	Pensoft Publishers specialize in academic and professional book and journal publishing, mostly in the field of biodiversity science and natural history.More than 600 books and e-books published so far.	http://www.pensoft.net/journals/
Taxonomic Literature II (TL-2)		Taxonomic Literature: A selective guide to botanical publications and collections with dates, commentaries and types	http://www.sil.si.edu/digitalcollections/tl-2/
Wiley Online Library	Conservation Biology	World's broadest and deepest multidisciplinary collection of online resources covering life, health and physical sciences, social science, and the humanities.	http://onlinelibrary.wiley.com/browse/publications?type=journal&activeLetter=

Magazines			
Nature Magazine		International weekly journal of science	
Science Magazine		The world's leading outlet for scientific news, commentary, and cutting-edge research.	www.sciencemag.org/
Websites			
e Science News !		Latest & breaking science news articles, continuously updated from all major science news sources around the web.	http://esciencenews.com
EurekAlert!		Online, global news service operated by the science society (AAS)	http://www.eurekalert.org/
SciDev.Net		News, analysis, multimedia and other resources about science and technology for global development	http://www.scidev.net/
ScienceDirect		The world's leading source for scientific, technical, and medical full text research.	www.sciencedirect.com
Science Daily		ScienceDaily is one of the Internet's most popular science news web sites.	www.sciencedaily.com

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NEWSLETTER

Issue 3

(May/August 2013)

In this Issue:

ORCID: disambiguating authors of science

07.08.2013

Two of the biggest challenges of aggregating data and giving credit to the sources are duplication and ambiguity. The easiest way to resolve this is through unique persistent identifiers to objects, events and people. In pro-iBiosphere we have discussed at length identifiers for specimens (http://wiki.pro-ibiosphere.eu/wiki/Best_practices_for_stable_URIs). However; a solution already exists... more

pro-iBiosphere will actively participate in the ICT event 2013

24.07.2013

pro-iBiosphere, in collaboration with eScience talk and other projects from the e-Infrastructure Unit, will hold an exhibition stand and organise a networking session at ICT 2013 event organised by DG CONNECT on November 6-8, 2013 in Vilnius, Lithuania. The networking session will focus on the theme "What does the future hold... more

EC Public consultation on open research data

04.07.2013

On the 2nd July 2013, I attended the EC Public consultation on open research data. The EU has already a commitment to open publication of publicly funded research, but this was a consultation on the policy for the openness of data. The European Commission recognizes that openness of data is better... more

Stable identifiers for specimens – A CETAF ISTC initiative supported by pro-iBiosphere

01.07.2013

A recent initiative of the CETAF ISTC (Consortium of European Taxonomic Facilities – Information Science and Technology Committee) aims to implement a consistent identifier system for biological collections. This could be an important contribution to the formation of an international system of stable identifiers for the realm of biodiversity data. The... more

Excavating observational data buried in botanical literature

21.06.2013

It can be surprisingly hard to map the global distribution of a species and even harder to understand how it has changed with time. Even though many millions of observations are available on the Global Biodiversity Information Facility, many more are buried in books, papers, on specimens and in databases.... more

Moving forward to the Flora of Brazil Online

19.06.2013

Eduardo Dalcin[1] In order to attend to Target 1 of the Global Strategy for plant Conservation (GSPC), adopted by the parties in the Convention on Biological Diversity (CDB) of 2002, a Brazilian initiative coordinated by the Rio de Janeiro Botanical Garden (Rio BG) began in late 2008. The purpose of this... more

Herbaria@home: an innovative digitalized herbarium now drawing a web of links among botanists
18.06.2013
When Herbaria@home started in 2006, it was a ground-breaking approach to digitise and document the archives/material of the United Kingdom's herbaria. The website provides a web-based method for documenting herbarium sheets so that they can be accessed by anyone with internet connection. The United Kingdom has the world's largest and oldest... more

Linking ecophysiology to vegetation modeling and pro-iBiosphere
17.06.2013
Shuangxi Zhou[1] My research project aims to establish a synthesis of field experimental data on the response of different plant functions to environmental changes and to study the relationships between plant traits, processes and key environmental factors. By incorporating recent advances in plant ecophysiology and biophysics and rapid accumulation of quantitative... more

Exploring a pro-iBiosphere - Korean collaboration
17.06.2013
Yong-Shik KIM, FLS, Ph.D.[1] I attended the pro-iBiosphere meeting that took place during the 21st and 23rd of May 2013 in Berlin, and found the topics of the workshops diverse and useful. It was an unusual opportunity for me to brainstorm with an expert group on the user requirements of fundamental... more

Producing an e-Flora for South Africa
14.06.2013
Marianne le Roux[1] An online Flora for South Africa will be compiled during the next few years in response to the updated Global Strategy for Plant Conservation (GSPC) 2011-2020. The GSPC includes five objectives and 16 targets. The first target states that an online Flora of all known plants must be... more

European Citizen Science Association (ECSA): A major new EU-wide initiative
13.06.2013
European Environment Commissioner Janez Poto?nik welcomed the creation of the European Citizen Science Association (ECSA) at an event at EU Green Week on Thursday, 7 June 2013. The new body will be based in London and headed by Dr Linda Davies of Imperial College London – the director of OPAL. ECSA aims... more

ERA-NET: European Network for co-ordination of policies and programmes on e-infrastructures
05.06.2013
A new ERA-NET is proposed to further the integration of national, EC and global e-infrastructure programmes. An experienced consortium comprising relevant national programme managers is proposed to develop the ERA-NET, called e-InfraNet. e-InfraNET Project is ambitious to address the need for harmonising and co-ordinating the related national efforts and establishing a... more

San Francisco Declaration on Research Assessment (DORA) calls for reassessment of the importance of Impact Factor
17.05.2013
The San Francisco Declaration on Research Assessment (DORA) was initiated by the American Society for Cell Biology (ASCB) together with a group of editors and publishers of scholarly journals after a meeting in December 2012 during the ASCB Annual Meeting in San Francisco. The document recognizes the need to improve... more

DRYAD announces nonprofit sustainability plans
09.05.2013
The data repository invites community input on the future of data archiving at upcoming membership meeting Dryad, a repository for data underlying the international scientific and medical literature, works with a variety of journals, societies and publishers to archive research data at the time of publication. The project began in 2009... more

MTSR 2013 : VII Metadata and Semantics Research Conference
08.05.2013
November 19-22, 2013 Alexander Technological Educational Institute of Thessaloniki, Greece Continuing the successful mission of previous MTSR Conferences (MTSR'05, MTSR'07, MTSR'09, MTSR'10, MTSR'11 and MTSR'12), the seventh International Conference on Metadata and Semantics Research (MTSR'13) aims to bring together scholars and practitioners that share a common interest in the interdisciplinary field... more

pro-iBiosphere series of meetings in Berlin

08.05.2013

The pro-iBiosphere project is organising 3 workshops to be held on May 21-23, 2013 in Berlin: May 21st: Workshop on Requirements of users of Flora, Fauna or Mycota publications or services - more information here. May 22nd: Workshop on Measuring and constraining the costs of delivering services - more information here. May 23rd:... more