• Technical developments (Wouter Addink)
• COL development & production (Yuri Roskov)
• Secretariat report (Christina Flann)
• International developments (Peter Schalk)
• Frank Bisby Price (Mil de Reus)
• CoLP (Tom Orrell)
### Grant Application Summary

<table>
<thead>
<tr>
<th>Application</th>
<th>Amount</th>
<th>Date Submitted</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>CESAB Working Group</td>
<td>€180,000</td>
<td>Nov 2015</td>
<td>Unsuccessful</td>
</tr>
<tr>
<td>Zayed International Prize for the Environment</td>
<td>US$ 250,000 (€235,000)</td>
<td>Sept 2015</td>
<td>Unsuccessful</td>
</tr>
<tr>
<td>eScience ADSI</td>
<td>€250,000</td>
<td>May 2015</td>
<td>Unsuccessful</td>
</tr>
<tr>
<td>GBIF Capacity Enhancement Call</td>
<td>€17,000</td>
<td>Mar 2015</td>
<td>Unsuccessful</td>
</tr>
<tr>
<td>BRAIN</td>
<td>€565,000 (€50,000 Sp2000)</td>
<td>Feb 2015</td>
<td>Unsuccessful</td>
</tr>
<tr>
<td>Volvo Environment Prize</td>
<td>€160,000</td>
<td>Jan 2015</td>
<td>Unsuccessful</td>
</tr>
<tr>
<td>Linking data, services and communities for predictive modelling the biosphere (LinkD)</td>
<td>€9M (€450,000 Naturalis)</td>
<td>Jan 2015</td>
<td>Unsuccessful</td>
</tr>
<tr>
<td>IKEA Proposal for Service Contract</td>
<td>€30,000+</td>
<td>Dec 2014</td>
<td>On hold</td>
</tr>
<tr>
<td>Crowd Classification of Cultural Heritage (C3H) – Full Proposal</td>
<td>€700,000 (c. €100,000 Sp2000 via Thierry)</td>
<td>Oct 2014</td>
<td>Full Proposal</td>
</tr>
<tr>
<td>European Environment Agency (EEA) Proposal for CoL contract</td>
<td>€100,000</td>
<td>Oct 2014</td>
<td>2015 €15,000; 2016 €30,000</td>
</tr>
<tr>
<td>European Linked Open Data In Natural Sciences (ELODINS)</td>
<td>€8M (€260,000 Sp2000; €1.5M Naturalis)</td>
<td>Sept 2014</td>
<td>Unsuccessful</td>
</tr>
<tr>
<td>Design of a European distributed digitisation infrastructure for natural heritage (DEDDI)</td>
<td>€3.5M (€220,000 Sp2000; €325,000 Naturalis)</td>
<td>Sept 2014</td>
<td>Unsuccessful</td>
</tr>
<tr>
<td>Crowd Classification of Cultural Heritage (C3H)</td>
<td>€750,000</td>
<td>April 2014</td>
<td>Pre Proposal Successful</td>
</tr>
<tr>
<td>JRS Biodiversity Foundation, US</td>
<td>US$ 150,000</td>
<td>Feb 2014</td>
<td>Unsuccessful</td>
</tr>
</tbody>
</table>
Secretariat: representation

Summary of Representation of CoL at meetings & conferences in 2015.

- February 2015 Meeting with the EEA, Paris – Peter Schalk
- Natural history museum directors meeting on European Research Agenda, Brussels – Peter Schalk
- March 2015 GBIF Hackathon, Leiden, Netherlands – Wouter Addink
- CoL Global Team Meeting, Oostend, Belgium – Peter Schalk, Christina Flann, Wouter Addink, Yuri Roskov (remotely)
- Species 2000 Directors meeting, Oostend, Belgium – Peter Schalk, Tom Orrell, Mike Ruggierro
- CoL-GBIF-BHL-EOL-BOLD Summit Meeting, Leiden – Peter Schalk, Tom Orrell, Dave Remsen
- GBIF Midterm meeting: strategic plan and COL-Plus backbone, Copenhagen – Peter Schalk June
- 2015 EU BON Meeting, Cambridge, UK – Christina Flann
- Royal Botanic Gardens, Kew, UK – Christina Flann
- Natural history museum directors meeting on European Research Agenda, Brussels – Peter Schalk
- July 2015 IT Training at Naturalis – Luisa Abucay
- Meeting with Donald Hobern, Copenhagen on taxonomic services – Peter Schalk
- August 2015 Species 2000 Editorial Office meeting, Champaign, Illinois – Peter Schalk, Yuri Roskov, David Eades
- September 2015 KEYSTONE, Coimbra, Portugal - Peter Schalk, Wouter Addink October
- 2015 CETAF 38 General Assembly, Geneva, Switzerland – Christina Flann Including signing of renewed MoU between Sp2000 and CETAF
- GBIF GB22. Antananarivo, Madagascar – Dave Remsen, Peter Schalk
- Meeting about ELODINS options in new H2020 WP, Brussels, Belgium – Christina Flann
- H2020 E-infra Info Day, Brussels, Belgium – Christina Flann
- November 2015 Funding opportunities E-infrastructures, Cardiff – Peter Schalk, Alex Gray, Alex Hardisty
- December 2015 IUBS Meeting, Berlin, Germany – Christina Flann
Secretariat

- New website and logo. Species 2000 now has a new website, with an unchanged url: www.sp2000.org
- Workbench Improvements Wouter and the Naturalis IT team have been working on improvements to the Workbench that Yuri uses to create the CoL. As well as this, the CoL servers had to be moved (as the cloud provider company went out of business). This has meant a lot of testing and some disruption to Yuri’s work but minimal disruption to users. The result of the workbench improvements is that several long desired changes have been realized: display of subgenera is implemented; estimates can be filled in per group; Luisa can edit transformation templates herself; and some improvements to including database citations in downloads and outputs have been made.
- Species Number Estimates Yuri has been working on filling in the species number estimates. As well as this, branches with zero children are now visible. These advances give a much clearer picture of where we need to focus on gap areas.
Home

Species 2000

Species 2000 is an autonomous federation of taxonomic database custodians, involving taxonomists throughout the world. Our goal is to collate a uniform and validated index to the world's known species (plants, animals, fungi and microbes). Species 2000 is registered as a not-for-profit company limited by guarantee (registered in England No. 3479405).

Species 2000 began as a joint programme between CODATA® (International Council for Science: Committee on Data for Science and Technology), IUSS® (International Union of Biological Sciences) and the IUMS® (International Union of Microbiological Societies) in the early 1990's. In 1996, eighteen taxonomic database organisations agreed to convert Species 2000 into a legal entity as the vehicle for developing the global Species 2000 programme. It is an associate participant in the Global Biodiversity Information Facility (GBIF®), a data provider to EC LifeWatch®, and is recognised by the United Nations Environment Program (UNEP®) and the Convention on Biological Diversity (CBD®).

Species 2000 has a distributed Secretariat: the administrative office and staff are hosted and sponsored by Naturalis Biodiversity Center® in the Netherlands, the Editorial Office is hosted and sponsored by the Illinois Natural History Survey® in the USA, and the Data managers are hosted by GBIF® in Edinburgh, Scotland and the Australian National University, Australia.
Secretariat: EEA contract

The EEA subcontracted Species 2000 for taxonomic validation work (carried out by Christina Flann)

• € 15,000 contract for matching EEA lists to CoL in 2015
• renewed for € 30,000 in 2016

The work involves checking European Environment Agency lists against the CoL to ensure they are using the most up to date taxonomy. It also touched on the Bern Convention Appendices and use of distribution data in CoL.
Secretariat: the Frank Bisby Price

• The Frank Bisby Prize aims to award researchers who make a remarkable contribution in the field of biodiversity informatics and e-taxonomy, in particular with regard to building global species databases or making other significant contributions to the "Catalogue of life", the community generated authoritative index to all species on earth.

• The Frank Bisby Prize combines a financial contribution and an award certificate. It is awarded every two years based on nominations by international colleagues and direct collaborators of the nominee(s). The nomination is a subject of approval by the Board of Species 2000 and SBNO, the foundation that made the prize possible.
Catalogue of Life: tool for connecting data resources

1995. “Let’s bring together the knowledge of the global taxonomic community in a single shared authoritative system on species concepts that can be used by all”. The resulting product is the Catalogue of Life.

2015

1.6 million species (82% of total)
160 databases from all over the world
Backbone to GBIF and BOLD
Millions of users on a monthly basis

An authoritative resource ...
• an electronic synonymic species checklist,
• a tightly integrated taxonomic hierarchy,
• intended for all 1.9 M extant known species.
.... constructed through international collaboration
• checklist and hierarchy constructed from sectors from 160 networked global species databases around the world
• and integrated using an international review panel of experts
COL Strategic Plan 2016-2020

Completing the CoL (quantity) 95%
Addressing gap areas in the species index. Define precise number of species. (bottom up)
Extending the synonymic content towards completeness (federated approach with partners)

Amplifying quality
Addressing weak spots in CoL GSD coverage. Include indicator of completeness.
Mechanism for inviting user feedback on quality / errors (together with partners)

Improving infrastructure (through shared development)
Updating 4D4Life/i4Life CoL service e-infrastructure (security issues, performance)
Improve CoL construction route (QAW approach for part automation of updates)
Improving user services (fuzzy search, x-mapping)

Strengthening the CoL network of providers
Offering support GSD providers: hosting solutions (proto GSD) & migration services. Backups.
Providing feedback (statistics) on GSD and record level. Access to (literature) data. Funding!

Increase (societal) services.
Extend the number of service contracts and expert validation services
Country proto-checklist reports (with GBIF; hackathon output)
Address identifiers issue on name and taxon level (with partners)
• Deliver Relevant Data
  – Support supranational research and policy needs
  – Enhance relevance to taxonomy and climate change research
• Fill Data Gaps
  – Identify and prioritise spatial, temporal and taxonomic gaps
  – Engage countries and institutions with data to address gaps
• Improve Data Quality
  – Enhance automated and human curation of data
  – Develop clear quality indicators
• Organise Biodiversity Knowledge
  – Link data to other online biodiversity data sets
    • Classifications, genes, traits, literature, etc.
  – Improve stability and persistence of data
• Empower Global Network
  – Provide tools and best practice guidance
  – Promote and support engagement of countries and institutions everywhere within GBIF
Aligning strategic development goals
The global data aggregators COL-GBIF-EOL-BHL-BOLD met with the consortium of large natural history museums (Berlin, Brussels, Copenhagen, Leiden, London, Paris) to discuss synergy and explore potential for intensifying collaboration concerning e-infrastructure, software tools, services. The organizations - each with independent objectives, structures, and assets - have a long standing history of cooperation, sharing information and developments, and together meet essential needs in the biodiversity community and society.
It was agreed to coordinate future activities, develop coherent / integrated services, and work on strategies for funding aiming for a durable relationship.

First step: working towards a single shared taxonomic index
- Achieving a shared taxonomic backbone or index that serves BOLD, COL, GBIF, EOL, BHL, LifeWatch and provide a freely accessible resource to other users
- Unify developing forces and funding resources to realize a jointly owned and maintained taxonomic index to organize biodiversity data
- Use GBIF – as intentionally funded and controlled organisation – as a home base for the index
Towards a centrally shared and owned name index
EUCOLL objectives

• Building a joint, coordinated (decentralized) EU infrastructure for access and use of scientific collections

• Strengthening roles for European research at international level for addressing grand scientific and societal challenges

• Providing for significant synergies and added value to national investments in scientific collections and research infrastructures

• Increasing visibility and use of European scientific collections and facilities, with a special focus on biodiversity research

• Stimulating innovations and technological developments for new applications on collection-based objects and data

• Improving preservation and sustainability of physical and digital scientific collections and services
EUCOLL goals

- Central (virtual) access point/portal for all EU(COLL) collections
- Europe-wide distributed high-level/throughput digitization infrastructure for scientific collection objects/specimens
- Common collection access & use policy and procedures
- Stimulate and coordinate large scale joint interdisciplinary research activities for grand challenges in five key areas:
  - Informatics and genomics
  - Biodiversity discovery
  - Environmental change
  - Health, food and raw materials
  - Changing European society
Science case

- Scientific impact
  - Why do we need an RI?
  - And what do we expect to achieve with it?

- Socio-economic impact
  - strongly expected by Europe
  - develop radical new solutions to achieve the scientific impact
  - find a way to address challenges in society and industry
Science case

• Analysis of ongoing research and developing a shared long-term research agenda
• Landscape analysis: can we find infrastructural solutions to research needs somewhere else
• Description of main characteristics and measure of performance.
• Adequacy: performance at the indicated level is both needed and sufficient
• Learn from (un)successful applications made by the field
Design study (2016)

- Life-cycle planning and costing: from conceptual design to decommission
- Assembling and systemising requirements:
  - How are we going to realize and operate our RI: Concept of Operations.
  - other sources of requirements
- Conceptual design
- Technical design: how to implement the concept
- Costs and funding possibilities
- Governance
- Access policy
- Ensuring reliability, availability, maintainability, safety, ...
- Take into account the accomplishments of previous project
- And again: learn from (un)successful applications