Open Call Collection OC-2015-2

Proposal Reference OC-2015-2-20203

Title: **Integrating the integrations for biodiversity information in Europe**

Acronym: **IIBIE**

Summary

Biodiversity is an essential part of our lives; sustainability, well-being and happiness depend on our knowledge, appreciation and taking the right decisions regarding Biodiversity. This has been perceived in many ways and as a result in a large number of national and international conservation and management programmes are being launched to assess ecological integrity and help establishing sustainable ecological conditions. These initiatives are central instruments for the implementation of international commitments and legislations, such as the Convention on Biological Diversity and its associated Aichi biodiversity targets or the European Biodiversity Strategy for 2020 (COM(2011)0244). In this context, it is only natural that seeking integration and interoperability in biodiversity information is a priority for Europe.

This has been reflected in the number of EU projects carried out around biodiversity information and informatics, COST Actions, etc. Many of these initiatives are either time restricted, discipline limited (bees, invasive species, modelling), or both. The resulted fragmented integration is a missed opportunity for better science, decisions on the environment, and responses to climate change.

This Action aims to provide an "integration of integrations" for biodiversity information in Europe; it will focus on content, processes and capacities rather than tools. Thus, it will provide a solid pan-European approach to how biodiversity information is captured, documented (metadata), archived, processed (inc. validation), made available (standards, LOD) and used.

Key Expertise needed for evaluation

Biological sciences
Bioinformatics
Biological sciences
Biological systems analysis, modelling and simulation
Biological sciences
Biodiversity, comparative biology
Biological sciences
Conservation biology, ecology, genetics
Computer and Information Sciences
Theoretical aspects of data curation, data mining and database handling

Keywords

Biodiversity

Open Access

Science Infrastructure

Pan European

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References

Guralnick R, Conlin T, Deck J, Stucky BJ, and Cellinese N (2014) The Trouble with Triplets in Biodiversity Informatics: A Data-Driven Case against Current Identifier Practices. PLoS ONE 9(12):e114069. doi:10.1371/journal.pone.0114069

Hardisty A, Roberts D, and The Biodiversity Informatics Community (2013) BMC Ecology 13:16. doi:10.1186/1472-6785-13-16

Holetschek J, Dröge G, Güntsch A, and Berendsohn WG (2012) The ABCD of primary biodiversity data access. Plant Biosystems 146(4):771-779. doi:10.1080/11263504.2012.740085

Laurenne N, Tuominen J, Saarenmaa H, and Hyvönen E (2014). Making species checklists understandable to machines – a shift from relational databases to ontologies. Journal of Biomedical Semantics, 5, 40. doi:10.1186/2041-1480-5-40

Morris RA, Barve V, Carausu M, Chavan V, Cuadra J, Freeland C, Hagedorn G, Leary P, Mozzherin D, Olson A, Riccardi G, Teage I, and Whitbread G (2013) Discovery and publishing of primary biodiversity data associated with multimedia resources: The Audubon Core strategies and approaches. Biodiversity Informatics 8(2):185-197. doi:10.17161/bi.v8i2.4117

Page RDM (2008) Biodiversity informatics: the challenge of linking data and the role of shared identifiers. Briefings in Bioinformatics 9(5):345–354. doi:10.1093/bib/bbn022

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Page RDM (2009) bioGUID: resolving, discovering, and minting identifiers for biodiversity informatics. BMC Bioinformatics 10:S5. doi:10.1186/1471-2105-10-s14-s5

Parr CS, Guralnick R, Cellinese N, and Page RDM (2012) Evolutionary informatics unifying knowledge about the diversity of life. Trends Ecol Evol. 27(2):94–103. doi:10.1016/j.tree.2011.11.001.

Patterson DJ, Cooper J, Kirk PM, Pyle RL, and Remsen DP (2010) Names are key to the big new biology. Trends Ecol Evol. 25(12):686–691. doi:10.1016/j.tree.2010.09.004.

Robertson T, Döring M, Guranick R, Bloom D, Braak K, Otegui J, Russell L, and Desmet P. (2014) The GBIF Integrated Publishing Toolkit: Facilitating the efficient publishing of biodiversity data on the Internet. PLOS ONE 9(8):e102623. doi:10.1371/journal.pone.0102623

Walls RL, Deck J, Guralnick R, Baskauf S, Beaman R, Blum S, Bowers S, Buttigieg PL, Davies N, Endresen D, Gandolfo MA, Hanner R, Janning A, Krishtalka L, Matsunaga A, Midford P, Morrison N, Ó Tuama É, Schildhauer M, Smith B, Stucky BJ, Thomer A, Wieczorek J, Whitacre J, and Wooley J (2014) Semantics in Support of Biodiversity Knowledge Discovery: An Introduction to the Biological Collections Ontology and Related Ontologies. PLoS ONE 9(3):e89606. doi:10.1371/journal.pone.0089606

Wieczorek J, Bloom D, Guralnick R, Blum S, Döring M, Giovanni R, Robertson T, and Vieglais D (2012) Darwin Core: An Evolving

Community-Developed Biodiversity Data Standard. PLoS ONE 7(1):e29715. doi:10.1371/journal.pone.0029715

COST Mission and Policies

The Action is about gaining true integration of biodiversity data in Europe and beyond, so it will:

- Bring closer science, policy makers and society on how data and information is produced by promoting and building harmonised procedures and standards by which biodiversity information is gathered and distributed, by the different sectors
- Build capacity, through training, STSM and other means in using biodiversity information, to increase scientific knowledge, to take better decisions and to create new business opportunities (e.g. nature observation and tourism, data visualization, mapping, environmental impact assessment, etc.)
- Make data more usable, less scattered so they will be applied to more uses that will foster innovation, visibility and return-of-investment.
- Look after tracking, licensing, and citation procedures to ensure that data providers receive proper credit and visibility
- Increase overall data quality by promoting the adoption standardising methods of data assessment, control, and validation.
- Leverage capacities among the extended network of the Action participants and their contacts, so innovation is spread
- Build a connected community around biodiversity data in Europe in which mutual knowledge, cooperation, and capacity transfer effective and routinely occur.
- Actively seek to bring in countries and partners so far outside of the mainstream regarding management, publication and integration of biodiversity data to bring them up-to-day in terms of technology, procedures and contacts
- Focus on building capacity for young researchers and professional in all relevant areas related to biodiversity information
- Foster innovation by putting in contact developers pursuing similar goals so collaboration is enhance, and duplication of efforts reduced.
- Increase biodiversity data flows and data available by expanding the network of practitioners and spreading the adoption of the more advanced techniques.

Network of Proposers - Features

COST Inclusiveness target countries
26.67 %

Number of Proposers
22

Gender Distribution of Proposers
63.6% Males
36.4% Females

Average Number of years elapsed since PhD graduation of Proposers with a doctoral degree
18.3

Number of Early Career Investigators
4

Core Expertise of Proposers: Distribution by Sub-Field of Science
77.3% Biological sciences
9.1% Computer and Information Sciences
4.5% Civil engineering
4.5% Earth and related Environmental sciences
4.5% Economics and business

Institutional distribution of Network of Proposers

64.2% Higher Education & Associated Organisations
25.9% Government/Intergovernmental Organisations except Higher Education
6.2% Business enterprise
3.7% Private Non-Profit without market revenues, NGO

Higher Education & Associated Organisations:52

- Number by Type
  Research Oriented:10
  Education Oriented:3
- Number by Ownership
  Fully or mostly public:13
- Number by Field of Science of Department/Faculty of Affiliation
  Biological sciences:9
  Computer and Information Sciences:2
  Earth and related Environmental sciences:1

Government/Intergovernmental Organisations except Higher Education:21

- Number by Level
  Central and Federal Government:6
  International:1
- Number by Type
  Government department or government-run general public services:5
  Other Public Non-Profit Institution:2

Private Non-Profit without market revenues, NGO:3

- Number by Type
  Other:1
- Number by Level
  International or European:1

Business enterprise:5

- Number by Market sector of unit of affiliation
  Professional, Scientific And Technical Activities:1
- Number by Type
  Private enterprises:1
- Number by Ownership and International Status
  Independent Enterprise:1
- Number by Size
  SME (EU Definition provided underneath after selection):1

COST Country Institutions(15) : Belgium , Denmark , Finland , France , Germany , Ireland , Luxembourg , Netherlands , Norway , Poland , Portugal , Slovakia , Spain , Sweden , United Kingdom
International Organisations(1) : International Organisations

Network of Proposers - Details

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