



Project no. 018340

Project acronym: EDIT

Project title: Toward the European Distributed Institute of Taxonomy

Instrument: Network of Excellence

Thematic Priority: Sub-Priority 1.1.6.3: "Global Change and Ecosystems"

C3.5.4-5 Report on cooperation between EDIT partner institutions, ABRS and SANBI

Due date of component: Month 42

Actual submission date: Month 42

Start date of project: 01/03/2006

Duration: 5 years

Organisation name of lead contractor for this component: 6 – (NHN)

Project co-funded by the European Commission within the Sixth Framework Programme (2002-2006)		
Dissemination Level ("X" in the relevant box)		
PU	Public	X
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

Executive summary

As a result of the workshop held in October 2008 in Copenhagen, organized by EDIT WP3.5, on international collaboration with international organisations and/or networks, the ABRS (Australian Biological Resources Study) and SANBI (South African National Biodiversity Institute) each drafted a document indicating concrete collaboration opportunities with relevant EDIT partners in order to initiate discussions on further cooperation and how that can be implemented during the 4th JPA (Joint Programme of Activities) of EDIT.

In conjunction with the most recent SPNHC meeting held in Leiden (July, 2009), the directors of ABRS, SANBI and EDIT workpackages met to further discuss short and long term collaboration opportunities, to work out projects and link them to specific funding possibilities in more detail. The present report describes the results of that meeting and includes detailed information on the major areas where collaboration is being pursued:

1. Botanical and Zoological Liaisons Officers Exchange; virtual laboratories and remote microscopy
2. Training and online learning
3. Fieldwork and Biological Survey; role of taxonomy and collections in global change research; analysis of mega-datasets on southern African flora
4. Developing scratchpads as a systematic tool
5. Research grants
6. Publication issues, digitisation and electronic dissemination of taxonomic products

It was agreed that the formalisation of envisaged cooperation documents will be by means of a European-Australian-South African Agreement to Collaborate (AtC) to be signed based on reciprocal benefit.

Introduction

Given the serious shortage of taxonomic experts and scholars, institutions and/or networks of taxonomy in and outside Europe seek further cooperation to capture commonalities, avoiding in this way duplication of efforts. For instance, EDIT would like to promote the use of scratchpads with international partners, so that taxonomists working on similar research projects and/or the same taxa can join forces and work together more efficiently. Additionally, EDIT and the two international partners would like to develop innovative applications of systematic knowledge in combination with taxonomic data in an IT environment. In this way funding could be used to improve existing products and to develop new, innovative ones.

Two major institutions of taxonomy, the ABRS (Australia) and SANBI (South Africa) are keen to pursue short and long term projects with EDIT by means of a European-Australian-South African Agreement to Collaborate (AtC). Such an agreement will enable them to mutually enhance collaboration, funding and capacity-building in the three continents. The agreements (to be signed in October 2009) will specify the partners, the topics of cooperation, the actions proposed, the products envisaged, and the financial input, among others.

The directors of ABRS and SANBI met with EDIT in conjunction with the SPNHC meeting held in Leiden, in order to discuss areas where they mutually seek collaboration (see <http://www.e-taxonomy.eu/files/newsletter16webhires.pdf>). Detailed information of those areas is found in the Workshop report on international collaboration with international organisations and/or networks (see Annex 1 & 2 of 'Workshop report on international collaboration with international organisations and/or networks by Sierra & Roos 2008 in <http://www.e-taxonomy.eu/node/490>). For additional information see article 'EDIT workshop on International Collaboration' (Sierra & Roos 2008 in <http://www.e-taxonomy.eu/files/newsletter12.pdf>).

As a result of the meeting, the ABRS, SANBI and EDIT agreed that major areas where collaboration might be fruitfully pursued are:

1. Botanical and Zoological Liaisons Officers Exchange; virtual laboratories and remote microscopy
2. Training and online learning
3. Fieldwork and Biological Survey; role of taxonomy and collections in global change research; analysis of mega-datasets on southern African flora
4. Developing scratchpads as a systematic tool
5. Research grants
6. Publication issues, digitisation and electronic dissemination of taxonomic products

Additionally, to help to create sustainability of EDIT beyond the end of its present EU funding period the ABRS and SANBI would like to establish an international network of taxonomy with EDIT institutions, which will create the ground to develop long term projects. For this purpose a proposal will be submitted in December 2009 to the EDIT Board of Directors.

For detailed information about the ABRS and SANBI see 'EDIT C.3.5.3 Full proposal for an EDIT communication mechanism for cooperation and information exchange with other international organisation and/or networks' (Sierra & Roos 2008 in <http://www.e-taxonomy.eu/node/472>).

Areas of collaboration

1. Botanical and Zoological Liaisons Officers Exchange; virtual laboratories and remote microscopy

Topic: To set up a system of mutual liaison officers

Purpose: To enable staff to work in foreign collections on a temporary basis; capacity building through exposure to different collections and new ideas by sharing expertise

ABRS funds an annual position for an Australian botanist at Kew (the Australian Botanical Liaison Officer (ABLO)). This position undertakes a research project relating to the collections, handles queries and requests related to Kew's Australian holdings and contributes to the digital capture of the Australia collection at Kew. This position is currently under review. ABRS is interested in jointly supporting exchanges between Australian, EDIT and South African collections in order to enhance capacity building of early career researchers, access to collections by researchers and, potentially collection digitisation. European, Australian and South African institutions already have staff doing extensive work abroad, but not usually formalised. The staff exchange could take place on a temporary basis (e.g., in months).

Eventually, it is aimed to mutually create generic liaison positions to enhance collaboration on collections throughout Europe and Australia, but that is beyond the present scope of EDIT.

Topic: Use of virtual laboratories and remote microscopy

Purpose: To access important collections which are abroad and not available in local herbaria

The use of virtual laboratories and remote microscopy to access important collections (e.g., holotypes) that are abroad and that are not available in local herbaria could also form part of the mechanisms here that is low-cost and time efficient, and therefore could be started quickly.

2. Training and online learning

DEST Summer Schools

Topic: A funding scheme to mutually give early career researchers from Australia and S. Africa the opportunity to participate in field work during the EDIT summer schools

Purpose: To open "All Taxa Biodiversity Inventories + Monitoring" (ATBI+M) sites to scientist from ABRS and SANBI and in this way offer a broad range of opportunities in practical skill fields

EDIT aims to strengthen the input of taxonomic expertise for biodiversity conservation. Therefore, it supports and organises the participation of taxonomists and experts in biodiversity inventory and monitoring efforts in protected areas through "All Taxa Biodiversity Inventories + Monitoring" (ATBI+M) sites in selected protected areas.

During EDIT's lifetime there will be a 3rd summer school in 2010. Participation in the summer school is funded for teachers and students (travel, subsistence and per diem for teachers). The established EDIT ATBI+M sites could also be open to scientists from ABRS and SANBI on similar conditions as for Europe-based participants. EDIT has 20 grants available for MSc students and PhD students from EDIT institutions or European universities/institutes. Additionally, it could offer a total of 4 grants for SANBI and ABRS. In return, SANBI will provide content (training providers) and ABRS will provide joint funding. ABRS will consult with Australian collections as to their interest in providing trainers.

Beyond EDIT, Workpackage 8 (RBINS) would like to continue with the concept of the Summer Schools and be its focal point. The RBINS and its other BE-TAF partners, ABRS and SANBI (together with other institutions that might be interested) could jointly develop the summer schools (location, programme, training providers, etc.). Student participation conditions could be different (subscription fee will be asked for; students coming from developing countries will pay less subscription). Additional funding should be searched to award student grants.

The EDIT summer school has been taking place during late July-August-September. If taking place in June 2010 (end of the financial year in Australia), the ABRS could provide 20.000 Euros for the School. Presently, the location of future DEST Summer Schools is still unknown. If done in Australia, ABRS could find additional funding for all participants (including European). Costs within Australia can be covered by ABRS, but not international travelling costs. The precise timeframe needs further consideration in view of the exam period in Europe.

A topic to be addressed in this respect is facilitating permits for the participants to bring collected materials back to their home institutions for further work.

DEST Expert-in-training programme

Topic: A funding scheme to mutually give early career researchers from Australia and S. Africa the opportunity to participate in the DEST Expert-in-training programme

Purpose: To lead and skill a next generation of young taxonomists

The present expert-in-training programme offers 31 trainings, most of them still run in 2010. <http://www.e-taxonomy.eu/expertsintraining2009>. It would be necessary for matching funding to be located by the post-EDIT network of institutions. The ABRS could match with additional money in order to expand this to be eligible. During EDIT's lifetime there will not be a 3rd call (EDIT ends on 1st March 2011).

Beyond EDIT the expert-in-training concept will be continued. For this purpose, the three networks/institutions could develop a similar expert-in-training programme in Australia and South Africa with student exchange between the three continents. Student participation conditions could be different (subscription fees will be asked for). Additional funding should be searched for to award student grants.

The ABRS would be keen to develop an Expert-in-training programme in Australia for young taxonomists with scope for reciprocal arrangements with the EDIT programme. There is potentially funding that could be co-contributed with EDIT on DEST. The ABRS could also help investigating third party funding sources jointly with EDIT and SANBI. A translocation period of 6 months could take place in Europe. The rest could happen virtually.

Postdoctoral and staff-twinning programmes could probably work on two levels:

1. Early career European scientists (for instance with knowledge of scratchpads) to work with a mature South African/Australian on product extraction.
2. Early career European scientists (e.g., with knowledge of scratchpads) to work with an early career South African/Australian.

Additional to the DEST Expert-in-training programme is the DEST Modern taxonomy inter-institutional programme, however, the programme is not yet operational. At present, a curriculum has been defined and discussions started with the training providers on integration possibilities, conditions, accreditation, etc. The courses are short (max. 1 month). At first instance, EDIT wants to consolidate its European curriculum before expanding it at a larger stage. The challenge is that the courses will be accepted by universities. It would be interesting to have an “Erasmus mundus” on taxonomy to obtain masters degrees.

Immediate collaboration on this area is too early; however, information exchange between the three institutions will be started soon. In Australia, a virtual entomology course is already under development (<http://www.entomology.edu.au/>). It is a collaborative event between a number of partners including the University of Queensland, University of Adelaide and collection institutions in Australia. Modules in Europe could complement the ones in Australia and vice versa.

DEST Modern Taxonomy course programme

Topic: Develop joint on-line courses in systematics and taxonomy

Purpose: To expand the taxonomic scope and the available teaching pool to the advantage of students of all three regions and developing countries

Practicals in renowned institutions, on the spot alpha taxonomic courses, and collections practices are very important. However, they should be put together with IT products (e.g., E-distance learning). There is a necessity to have an open structure, e.g., training from EDIT towards other continents and vice versa. In this way the taxonomic community can benefit from the knowledge available elsewhere. The main criterion is to enhance the quality of taxonomy worldwide. Taxonomic institutions need to attract students to do taxonomic research.

An e-learning component is planned to be part of DEST to support taxonomy training, to facilitate resource sharing, collaborative and integrated teaching and learning, etc. During EDIT's lifetime, some of the e-learning components will be available (taxonomic resources as e.g., manuals, links to databases, library, software, etc.), but a ‘Virtual DEST Campus’ (on-line courses cfr. Open University system) could be feasible beyond EDIT.

This area is also of interest to the ABRS and SANBI and could be further explored.

3. Fieldwork and Biological Survey; role of taxonomy and collections in global change research; analysis of mega-datasets on southern African flora

Fieldwork and Biological Survey

Topic: A scheme to collaborate towards developing a common manual that specifies methods of collecting

Purpose: To develop a common manual on methods of collecting

To support the ATBI+M process, EDIT is producing a fieldwork manual that gives protocols for standard methods and has developed an electronic recording system using both hand-held systems (mobile mappers) and data logging software interfaced with the Cyberplatform (<http://dev.e-taxonomy.eu/platform>).

The ABRS has a biodiversity survey running for the next three to five years. In terms of ATBI+M, they do not have enough taxonomists who could do the work in the field (up to 50% of the taxonomic work force will be lost during the next 5 years). ABRS, SANBI and EDIT could collaborate towards developing a common manual that specifies methods of collecting (where and how to collect). In this way the material could be prepared by local technicians and be available on the web, and taxonomists would not necessarily need to go to the field.

There is a possibility of a grant funding in IT but there would be access and trust issues to be approached with an AtC. The Marie Curie scheme could be exploited to bring SA participants for sabbatical periods to Europe. If development is conducted using the agile model then foreign teams would be engaged and effectively directing development.

Role of taxonomy and collections in global change research

Topic: A South Africa or Australasian based global workshop on the role of taxonomy and natural history collections in biosecurity and climate change research

Purpose: To develop a strategy for applying the response of taxonomic experts and institutes to climate change research needs and to enhance biosecurity capacity

Biosecurity is now a significant issue in both Europe and Australia, with new species rapidly colonising and spreading in either continent. Programs that enable Australian, European and regional early career researchers to collaborate, share expertise, network and recognise regional biotas are a distinct, common global advantage.

Globally, there is a worsening paucity of in-house taxonomic expertise to deal with biosecurity threats. These issues are addressed by organising expert workshops (e.g., Hymenoptera, Coleoptera, etc.). ABRS would like to jointly support and share in the organisation of joint residential workshops held in South Africa, Europe or Australasia. If several institutions participate in the organisation of such a workshop, government attention and, hence, funding could be more successful.

Such workshops could be used as a strategy to raise public awareness and to obtain support from governments for systematics and biodiversity issues.

Analysis of mega-datasets on southern African flora

Topic: Analysis of mega-datasets on southern African flora

Purpose: To enhance capacity building through the twinning of research staff with taxonomic and data analysis expertise

SANBI has comprehensive data bases and sets on the flora of S. Africa and would like to collaborate with expertise on e.g., datamining and the modelling of spatial information, among the EDIT partners and the ABRS. The NHN would like to provide that expertise with a young post-doc working on data mining projects. Such jointly conducted analyses will considerably enhance and inform the previous topic aimed at strengthening the capacity of collections-based research teams to contribute to relevant environmental questions, such as those linked to climate change and biosecurity.

Funding would have to be sourced to accommodate both experts in South Africa, and collaborating partners.

4. Developing scratchpads as a systematic tool

Topic: Organise a public awareness workshop on the use of scratchpads as a systematic tool focusing on early career researchers

Purpose: To attract early career researchers to do taxonomic research using scratchpad technology

Developing scratchpads as a systematic tool has to do with education. An awareness workshop between Australia, South Africa and EDIT on a scratchpad training system, primarily focusing on the element of the taxonomic workforce that is willing to take this: early career researchers. Such opportunities will result in people picking up scratchpad technology.

Propagation of Scratchpads could ease the acceptance of new mechanisms of working by immediately giving taxonomists greater visibility.

After EDIT finishes, workshops could jointly be organized later on with the concept: one Australia/S. Africa/Europe training event, held at the three different locations reducing in this way the costs of participation. Funding for short modules could be obtained from the Monet Foundation.

Topic: Facilitate the interactive development of systematic products

Purpose: To train on how to use state-of-the-art tools

With technology such as that offered by scratchpads, taxonomic descriptions could be speeded up. Australia is potentially interested in developing Scratchpads and interactive development of systematic tools, potentially with the two year funding that the ALA has received.

There is a significant opportunity to effectively encourage the taxonomic community to use scratchpads. In Australia, there is a significant issue with the compatibility of older systems such as Bio-Link and new operating systems such as Vista. Scratchpads may offer a partial solution to some elements of the functionality offered by Bio-Link and other systems. It would also be useful investigating the extent to which the functionality of on-link names catalogues such as the Australian Plant Name Index and Australian Faunal Directory could be enhanced by Scratchpads.

This would need further discussion within Australia with the Taxonomy Research Information Network and the Atlas of Living Australia.

Scratchpads empower individuals to make their data available, a bottom-up model, rather than other, more common biodiversity informatics projects which lay out an objective and ask people to contribute effort. Both mechanisms have a place. Scratchpads have mobilised data not available to the larger initiatives, so they should be viewed as an element of the strategy and not an end in themselves.

Other possibilities to explore are tools in a wiki environment.

Topic: Organise a workshop on how to administer the system

Purpose: To train scratchpad maintainers on how to administer the system

Workshops on how to administer systems, like those offered in Europe could also be held in Australia or South Africa. The training is meant for scratchpad maintainers.

Within the present scope of EDIT, local training courses will be limited by the availability of the core development team (who can offer the training). A mechanism of training trainers needs to be defined.

5. Research grants

Topic: Funding for jointly agreed, priority activities

Purpose: To have a joint strategy and synergy in fund raising beyond EDIT

EDIT does not have any funding to commit to these grants. Australia could provide some co-funding as the basis for developing a joint approach to taxonomic research funding that enables collaboration between the partners.

The European Commission implements a number of international cooperation programmes on higher education in the fields of education and training, with eligibility for Australia and South Africa:

* Cooperation with industrialised countries (ICI ECP): Cooperation in education and training with Australia – Selected consortia will set up a framework for student mobility whereby EU students will typically spend one semester in the Partner Country institution and vice versa, with full recognition of the study period abroad by the home institution (for undergraduate and master level). See http://ec.europa.eu/education/programmes/eu_others/australia/index_en.html

*Jean Monnet stimulates excellence in teaching, research and reflection on European integration in higher education institutions throughout the world. 'Jean Monnet teaching modules' (higher institutions world-wide): http://ec.europa.eu/education/jean-monnet/doc617_en.htm

*EduLink fosters capacity building and regional integration in higher education in ACP States and Regions, including, South Africa, and promotes higher education as means of reducing poverty. It only supports networks of HEIs, it does not provide grants or scholarships to individuals. See: <http://www.acp-edulink.eu/index.html>

* FP7 People Marie Curie World Fellowships. For instance, Marie Curie International Research Staff Exchange Scheme. See: http://www.ukro.ac.uk/mariecurie/application_info/calls/index.htm

UNESCO could be an opportunity to explore.

6. Publication issues, digitisation and electronic dissemination of taxonomic products

Topic: Species descriptions and easy access to taxonomic information

Purpose: To establish the minimum guidelines in order to speed up description of species

Policy among the organisations should be discussed in order to be able to validly and effectively create new names electronically, on web pages. The Flora of Australia has a substantial backlog that ABRS is committed to resolving over the next few years. In order to speed up progress, it has been decided to publish online with the minimum requirements to meet the International Code. For the botanical and zoological nomenclature codes, EDIT, SANBI and ABRS could come up with the minimum publishing guidelines in order to speed up description of species and on line publishing.

Scratchpads are currently exploring direct publication mechanisms with ZooKeys and have already got data citation mechanisms. EDIT is involved with GBIF's task group on this issue.

Topic: Develop innovative applications based on systematic knowledge and taxonomic data in IT environment.

Purpose: To add functional enrichment to the scratchpads

EDIT would like to promote the use of scratchpads with international partners, so that taxonomists working on similar research projects and/or same taxa can join forces and work together more efficiently and help to improve these tools. Additionally, EDIT and the two international partners would like to develop innovative applications of systematic knowledge in combination with taxonomic data in an IT environment. In this way funding could be used to improve existing products and to develop new, innovative ones. By using a common architecture, they could create opportunities to share software.

EDIT wants to offer web services like interactive developing of systematic tools, for instance, to offer phylogenetic inference as a web service, export classifications, etc. For this reason it has added a matrix editor: an access format editor to the scratchpad system in order to accumulate descriptive style data or pragmatic style data that can be then submitted on to another tool. The editor is complete but not the export functions. EDIT will add this functionality by the end of the year.

Services need to be reliable and for this a central computer power is needed. It also needs to have jobs to do from other places. As all the scratchpads are in London, EDIT is trying to role the data base to a multisite model. There is a need to have this role worldwide. EDIT needs mirroring, this means running functional services. The level of cooperation would be to run central, reliable, and mirrored services, rather than independent.

Topic: Collaboration on digitizing taxonomic literature jointly with BHL

Purpose: To develop mechanisms to mark-up content and carry out data extraction from literature

Mechanisms to mark-up content and carry out data extraction are active fields of research associated with EDIT, but not much within it. EDIT could act as a broker here. EDIT WP6 (NHML) is engaged in improving indexing to BHL (Biodiversity Heritage Library) scans. BHL is expanding, which makes it very hard to improve BHL procedures because they are at an industrial scale (60.000 pages a month). Because the body of work is large enough there are quality control problems (some of the diagrams they scan are of limited usability).

WP6 would like to achieve agreements with publishers, make elements available and demonstrate usage. ABRS and SANBI could nominate a series of journals, if copies of African or Australian monographs exist in libraries in the BHL or BHL-Europe consortium, then they can be prioritised by negotiation with BHL. ABRS and SANBI could offer them published material post-1923, with copy right and with public access. This would be a landmark for BHL.

In terms of data mining, the Biodiversity Literature Enhancement project is exploring whether search associations can be built (e.g., can an author name be tied to a taxon name, can the bibliography and citation data from a particular article be extracted without difficulty?). However, it does not have funding for that. EDIT is very keen to work with ABRS, involve other European partners and extend the languages covered in BHL.

Another area of importance is the rationalisation of library resources (de-accessioning) and access to original copy. Where scans are not sufficient, a comparable system to the remote microscope (see above, collaboration area number one) might be used to avoid moving physical books away from collections.