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**C3.5.7 Proposal for a communication mechanism with other networks of excellence and international networks within Europe and South/North America or East Asia**

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**Contributors**

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**Acronyms**

ABRS	Australian Biological Resources Study
ALA	Atlas of Living Australia
AVH	Australia's Virtual Herbarium
BGBM	Botanical Garden and Botanical Museum
BR	National Botanic Garden of Belgium
CHAH	Council of Heads of Australian Herbaria
E	Royal Botanic Garden Edinburgh
EDIT	European Distributed Institute of Taxonomy
FCA	Flora of Central Africa
FM	Flora Malesiana
FUB	Freie Universitaet Berlin
K	Royal Botanic Garden Kew
MOBOT	Missouri Botanical Garden
NCB-Naturalis	Netherlands Centre for Biodiversity Naturalis (section NHN)
NHML	Natural History Museum London
SANBI	South African National Biodiversity Institute

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## Executive summary

In the framework of international cooperation activities as described in C3.5.6 (EDIT-ABRS-SANBI Agreement to Collaborate), EDIT WP3.5 organized an EDIT E-flora workshop in Leiden (January 21-22, 2010).

The objectives of the workshop were:

1. To discuss the needs of different flora projects for electronic tools
2. To make an inventory and integration of what is already available concerning electronic tools with the aim of avoiding redundant developments, searching for common goals and synergies
3. To create a consortium of international institutions committing to the various e-flora activities by liaising with other large tropical flora projects and developers of e-taxonomy tools
4. To discuss network funding opportunities

An exchange of views on the general concept of an e-flora platform was based on a discussion support document dealing with data management issues, desirable community tools for contributors and users, and technical issues.

Representatives from taxonomic institutions focused on the state of the art of their floras: Flora of South Africa (SANBI), Flora of Madagascar (MOBOT), African e-Floras (RBG Kew), Flora of Central Africa (BR), Flora of Nepal (RBG Edinburgh), Flora Malesiana (NCB Naturalis-NHN section), and Flora of Australia (ABRS, ALA).

Technical solutions for e-taxonomy were presented and demonstrated by representatives of the Scratchpads (NHML) and EDIT Platform for Cybertaxonomy (BGBM-FUB). The online database Tropicos (MOBOT), including a recently added set of functions relevant for e-flora work, was also demonstrated.

## Workshop outcomes

1. Agreement has been reached that the joint development of an e-flora platform will create synergies, prevent redundant or incompatible developments, contribute to the standardization of methodologies and approaches to data management in taxonomy, promote the acceptance and visibility of electronic floras, and help to secure the necessary funding for the consortium activities.
2. A consortium of institutions will be created and formalised by means of an agreement to collaborate (AtC). All delegates expressed interest for their institutions to be part of a consortium with the aims to agree on a concept of an e-flora platform (outcome 3), write the necessary funding proposals, carry out research and development activities and implement the e-flora platform provided that the end-product serves the needs of the participating institutions.
3. The consortium will develop and further support a concept for an electronic platform for large tropical floras. Such a platform would assist contributors in individual or collaborative writing of treatments, provide users with a comfortable access to content and create opportunities for other users to become involved in the flora project. The consortium members leading (a) large flora project(s) would be able to adopt the platform for management and presentation of data that would be administered on their respective server(s).

4. An EU-COST proposal will be jointly written by the consortium members in order to obtain necessary funding for the necessary networking activities (meetings, training, workshops, etc).
5. Representatives of flora projects currently without an elaborate electronic data management tool or online data presentation will collaborate with technology developers to advance in their e-flora developments whilst contributing to the further development of existing IT tools. Exemplar groups from FCA and FM will be selected in order to start trial outs of the tools and the future implementation of the e-flora platform. These activities will be carried out in a way to allow for easy merging with the e-flora platform at a later stage.
6. The EDIT CDM platform will play an essential role in the creation of the e-flora platform.
7. Scratchpads will be important for creating a network of users working on the exemplar groups, discussing content and obtaining community support.

## Preface

EDIT WP3.5 (NCB Naturalis-NHN section) has been in contact with several botanic taxonomic institutions in Europe, South Africa, Asia, and Australia that are interested in e-taxonomy. These institutions would like to further discuss and be involved with the areas of collaboration as defined in an Agreement to Collaborate among EDIT, ABRS and SANBI, Appendices 5 and 6. The appendices deal with: Developing scratchpads as a systematic tool and publication issues, digitization and electronic dissemination of taxonomic products. The AtC is available for download as [http://www.e-taxonomy.eu/files/C3.5.6 Agreement to Collaborate on International collaboration.pdf](http://www.e-taxonomy.eu/files/C3.5.6_Agreement_to_Collaborate_on_International_collaboration.pdf).

Due to this international interest, EDIT WP3.5 has given priority within its plan of activities to the support and implementation of the above mentioned appendices.

## Context of the workshop

Several taxonomic institutions around the world involved in large floristic projects share the idea that a joint effort is needed in order to develop an e-platform for large tropical floras. They also share the opinion that there would be a strong synergetic advantage to assembling a consortium that builds on the EDIT network and its outputs; for instance, the EDIT Platform for Cybertaxonomy (WP5) and Scratchpads (WP6).

During the last Systematics Botany meeting held in Leiden (July, 2009), staff members from BR discussed with EDIT WP3.5 the possibility to start a cooperation among partners interested in developing an electronic platform that can be used for large e-flora projects like the ones they are involved with: Flora of Central Africa and Flora Malesiana, respectively. As a result BR drafted a discussion document intended to facilitate exchange on the scope and technical implementation of the e-flora platform.

EDIT WP3.5 distributed the document among the Board of Directors of the Flora Malesiana Foundation and other institutions dealing with large tropical floras (SANBI, ABRS, E and K). Their general response was very enthusiastic and supporting. In order to avoid re-invention and redundant work, they made emphasis on the importance of liaising from the beginning with representatives of existing initiatives and with initiatives and/or institutions that might contribute to the various components of the e-flora platform for large tropical floras. As a result EDIT WP3.5 and BR co-organized an EDIT E-Flora Workshop in Leiden that took place on the 21<sup>st</sup> and 22<sup>nd</sup> of January, 2010. See Annex 1 for the EDIT E-flora Workshop Agenda.

## Participants

For the workshop, a maximum of 15 delegates from institutions in US, Europe, Australia, and South Africa were invited. However, due to the interest in the topic, a total of 29 participants attended the meeting.

The participants included: 1. Botanical institutions that have already developed own solutions for many of the technological requirements to implement e-floras (MOBOT, RBG Edinburgh and ALA); 2. Botanical institutions that still lack and would like to implement such technologies (BR, RBG Kew, NCB, and SANBI); and 3. Institutions focusing on the development of e-taxonomy technologies with high relevance for e-floras (B-EDIT WP5, NHM-EDIT WP6, and MOBOT). For a detailed list of participants see Annex 2.

## Objectives

1. To discuss the needs of different flora projects for electronic tools
2. To make an inventory and integration of what is already available concerning electronic tools with the aim of avoiding redundant developments, searching for common goals and synergies
3. To create a consortium of international institutions committing to the various e-flora activities by liaising with other large tropical flora projects and developers of e-taxonomy tools
4. To discuss network funding opportunities

## Flora presentations

During the workshop representatives from taxonomic institutions focused on the state of the art of their floras: Flora of South Africa (SANBI), Flora of Madagascar (MOBOT), African e-Floras (K), Flora of Central Africa (BR), Flora of Nepal (E), Flora Malesiana (NCB Naturalis-NHN section), and Flora of Australia (ABRS, ALA). The presentations are available at: <http://www.e-taxonomy.eu/event/2010/01/22/day>

Presenters highlighted the traditions, advantages and shortcomings of their approach to data management and expressed a strong interest in networking with other initiatives. Common to all other presentations is the fact that standards and funding are a critical part for the implementation of e-floras.

### Flora of South Africa

Progress is slow; there is duplication of efforts and a lack of funds. The database being used (PRECIS) has shortcomings and is no real aid for monographers.

### Flora of Madagascar

The project uses an innovative way of presenting diverse biodiversity information based on the technology of the Tropicos database. The Madagascar Catalogue Project (independent from Tropicos) is a research tool, not an electronic book. It is uncertain whether funding can be maintained in the future.

### African e-Floras at Kew

Kew is currently dealing with several e-floras such as the: Flora Tropical Africa, Flora Capensis, Flora of West Tropical Africa, Useful Plants of West Tropical Africa, Flora Zambesiaca, Flora of Tropical East Africa, and Flora of Somalia. For FZ, they have implemented a simple name based query and a complex, usually habit or geographic based query. Deep analysis of the system logs shows that most of the users of FZ online use the system to produce name based lists, are based primarily in Europe/US, and very few so far are from Africa. The digitised floras have also been partly incorporated into a Scratchpad (<http://gateway.myspecies.info>) together with an interactive key and standardised list of names. K would like to contribute information to a continent wide system as well as share the lessons they have learned from CATE, in particular, the monocots project with respect to the development of user-requirements. Their main concern is what to do in the long term and how to ensure common standards between projects and institutions.

**Flora of Central Africa**

65% of the estimated 10.000 species has been treated in the past 60 years. The progress is slow. A fully searchable digitized version of the volumes that have already appeared in print is available.

**Flora of Nepal**

All info that is available is an amalgamation of different sources, and therefore, a dynamic resource that is changing over time. One of the major issues they are dealing with is: what would be its identity?, how will users reference it?.

**Flora Malesiana**

The project deals with the taxonomic inventory of vascular plants of a multi-national region. Its long term approach and existence depends on additional funding. Flora Malesiana would profit from interaction and communication among scientists by creating a forum of colleagues/peers (e.g., scratchpads) and links with other international networks.

**Flora of Australia**

The Council of Heads of Australasian Herbaria (CHAH) brings all the herbaria together. Most of the herbaria are fully data based and that has allowed bringing all specimens in a single virtual herbarium. The ALA has funding for infrastructure but not for content.

**Technologies presentations**

Technical solutions for e-taxonomy (data management and online presentation) were presented and demonstrated by representatives of the Scratchpads (NHML) and EDIT Platform for Cybertaxonomy (FUB-BGBM) teams.

Additionally, the online database Tropicos (MOBOT), including a recently added set of functions relevant for e-flora work, was also demonstrated.

**Scratchpads (EDIT WP6)**

Scratchpads use drupal as a content management system (best for social networking). They offer a web presence and, therefore, offer the possibility to get data mobilized and used quickly. Scratchpads work toward publishing and applying the data that is available.

Users upload the taxonomy of their group on the scratchpads website (all scratchpads run at the NHML). Images can be uploaded and manipulated. Nexus and Newick import for visualizing phylogenies. Character matrices can be filled in and distribution maps can be made using specimens and locations. Each page will support pages, forums, blogs and newsletters (it is a community support tool). Scratchpads also have multilingual support. Scratchpads collaborate with EoL.

Every scratchpad has a maintainer (the same person who will sign the ownership form). The taxa pages are created dynamically. They are dated, permanent and citable. You can cite the URL, and the reader will see what you saw, and not the latest (updated) version.

Forthcoming activities: Create automated publications and distribute scratchpads to other places.

The primary barrier to researcher's engagement is sociological, not technological: it is difficult to make people accept and use the new tools.

A scratchpad training course workbook (compiled by WP6 for the workshop) is available as <http://scratchpads.eu/sites/scratchpads.eu/files/ScratchpadDistanceBasic.doc>

### **Platform for Cybertaxonomy (EDIT WP5)**

EDIT aims at integrating taxonomic research at multiple levels. At the IT level, it wants to improve and assure reusability of data and support individual work as well as collaborative work.

Initially, the EDIT Platform for Cybertaxonomy aimed at the integration of existing applications. However, during the evaluation carried out during the first year, WP5 came to the conclusion that for core tasks of the taxonomic work process a new software had to be developed. These core Platform components were developed with the aim of (i) ensuring interoperability of data resources by means of a Common Data Model with highly structured data based on community standards; (ii) operating system independence through the use of an open source Java programming library to provide the specific software functions needed in taxonomy; (iii) database management system independence by using the open source Hibernate framework for data access, and (iv) using an open source content management system (Drupal) for data publication on the web and communication. EDIT WP5 thus attempted something new: professionalized software development for the taxonomic domain.

Early adopters of the core Platform are the EDIT Exemplar groups, Euro+Med Plantbase and Fauna Europaea within the PESI project, and CATE.

Following demonstration of the tools available, the presenters took questions from the participants relating to intended future developments and suitability for use in the framework of an e-flora platform as outlined in the concept document distributed prior to the workshop (for detailed discussion see Annex 4).

### **Scope and technical implementation of the e-flora**

#### **Why do we need an e-flora?**

Despite being of high conservation concern, many tropical floras remain understudied and progress slowly. Combining existing printed floras with an e-flora platform will help speedup the process needed for generating floras (contributor tools), create common interests, synergies, and minimize redundant work, among others.

There are conflicting stakeholder interests in Flora writing. Among the problems e-Floras face are the decreasing number of experts available to write taxonomic treatments (slow process), capacity building and how to attract to contributors.

The current E-floras include everything from checklists to digitized printed texts with clickable keys and search functions. Do we have a product that combines all these desirable features?

A discussion on the scope of the E-flora platform was based on a concept document (previously distributed to all participants), formulated questions (see Annex 3) and on the suitability of COST as a funding instrument. All participants delivered a statement of interest in the e-flora platform and COST funding proposal (for detailed discussion see Annex 4).

## **Toward the creation of an e-flora consortium**

Representatives from different institutions were asked whether they would like to form a consortium, and if that was the case, how they could help and/or contribute to the proposal.

Countries interested in forming an e-flora platform consortium:

### **Australia**

ALA

- Contributing with some of the infrastructure needed, e.g., develop tools for multi-access keys
- Sharing and using content

### **Belgium**

BR

- Designing IT tools from the perspective of flora writers
- Capacity building in tropical countries

### **Germany**

B

- Transferring existing flora projects
- Providing input on how to set up collaborative structure to COST proposal.

### **South Africa**

SANBI

- Sharing databases

### **The Netherlands**

NCB Naturalis-Wageningen University

- Bringing taxonomy to a much wider audience and helping to share responsibility of biodiversity through different bodies
- Helping to develop electronic field data entry and electronic tools for field identification

NCB Naturalis-Leiden University

- Sharing experience of SEABCIN project
- Providing feedback on various stages of development from end users perspective

### **United Kingdom**

RBG Edinburgh

- Helping to lay foundations
- Assisting on presentation of content and identity of e-floras
- Sharing experience of taxonomic databases

RBG Kew

- Sharing data for flora projects, contributing to the development of standards, building interactive keys, sharing e-taxonomy experience through projects such as CATE.

**Other potential countries that could join the consortium****France**

Muséum national d'Histoire naturelle

- Several large tropical flora projects

**Spain**

CSIC-MNCN

- GIS components for the cybertaxonomy platform

**Switzerland**

Botanical Garden Geneva

- Standard list of African flowering plants

Representatives will be contacted during the elaboration of the COST proposal.

**International collaborators (not part of the COST proposal)****USA**

MOBOT

- Tropicos

**UK**

NHML

- Scratchpads

**COST international networking grant proposal**

Funding opportunities for networking activities, with the aim to reach a common standard on electronic and online management, were presented and discussed by the FP7 LEAR of Luris-Leiden University.

Cost is an intergovernmental framework for European Cooperation in Science and Technology. Together with EUREKA and the EU framework it is one of the three pillars of joint European research activities. The total funding period is 4 years and covers travel, training and outreach; no personnel costs.

The participation in the open call involves a two-stage process: a preliminary proposal and a full proposal with a timeline of four weeks and five months, respectively. COST supports activities such as meetings (e.g., user feedback), conferences, short term exchanges and outreach activities. At least five COST countries should participate. Belgium, Germany, the Netherlands, and the UK (among other countries), are part of the COST member states. COST has also signed reciprocal agreements with Australia, New Zealand and South Africa.

The network actions should be new, innovative and interdisciplinary. A successful proposal should have a high scientific/technological quality, expected results that are of interest to important sectors (e.g., national governments), added value for national research efforts, be flexible during implementation, and encourage capacity building mobility of early stage researchers, among others.

The proposal will give the opportunity to demonstrate the strong and highly relevant connections between European expertise and developing world capacity- and infra-structure building in the context of biodiversity conservation. The COST proposal would be expected to lead to a research proposal for a Framework Grant, for example.

**Workshop outcome**

1. Agreement has been reached that the joint development of an e-flora platform will create synergies, prevent redundant or incompatible developments, contribute to the standardization of methodologies and approaches to data management in taxonomy, promote the acceptance and visibility of electronic floras, and help to secure the necessary funding for the consortium activities.
2. A consortium of institutions will be created and formalised by means of an agreement to collaborate (AtC). All delegates expressed interest for their institutions to be part of a consortium with the aims to agree on a concept of an e-flora platform (outcome 3), write the necessary funding proposals, carry out research and development activities and implement the e-flora platform provided that the end-product serves the needs of the participating institutions.
3. The consortium will develop and further support a concept for an electronic platform for large tropical floras. Such a platform would assist contributors in individual or collaborative writing of treatments, provide users with a comfortable access to content and create opportunities for other users to become involved in the flora project. The consortium members leading (a) large flora project(s) would be able to adopt the platform for management and presentation of data that would be administered on their respective server(s).
4. An EU-COST proposal will be jointly written by the consortium members in order to obtain necessary funding for the necessary networking activities (meetings, training, workshops, etc).
5. Representatives of flora projects currently without an elaborate electronic data management tool or online data presentation will collaborate with technology developers to advance in their e-flora developments whilst contributing to the further development of existing IT tools. Exemplar groups from FCA and FM will be selected in order to start trial outs of the tools and the future implementation of the e-flora platform. These activities will be carried out in a way to allow for easy merging with the e-flora platform at a later stage.
6. The EDIT CDM platform will play an essential role in the creation of the e-flora platform.
7. Scratchpads will be important for creating a network of users working on the exemplar groups, discussing content and obtaining community support.

**Plan of Activities****2010**

## February

- Sign agreement to collaborate (EDIT-SANBI-ABRS AtC) among the consortium members: Appendixes 5 & 6 of AtC
- Write COST preliminary proposal outline

## March

- Distribute COST preliminary proposal draft for comments
- Organize a meeting in Berlin with consortium representatives and IT staff to discuss trial outs of exemplar groups and e-flora platform details (12.03.2010)
- Submit COST preliminary proposal (1st round – deadline 26.03.2010)

May (if 1<sup>st</sup> round is successful)

- Organize a meeting in Leiden or Brussels with consortium representatives to discuss proposal details
- Write COST funding proposal

## August

- Participate in 8<sup>th</sup> Flora Malesiana Symposium (EDIT e-technology presentations and demonstrations)
- Distribute COST full proposal draft for comments

## September

- Submit full COST proposal

**2011 onwards** (if COST proposal is accepted)

- Start networking activities on e-flora platform

**2012/2013** (if suitable call from funding body is available)

- Submit proposal for research and development related to e-flora platform

**2014 onwards**

- Implementation of the e-flora platform

## **Annex 1. EDIT E-flora platform Workshop Agenda**

### **January 21st – Holiday Inn, Leiden**

#### **ROTTERDAM ROOM**

- 09:30-10:15 Arrival and coffee  
 10:15-10:25 Welcome (Elmar Robbrecht)  
 10:25-10:35 Self-introduction of participants

#### **Why do we need an e-flora? (chair: Marco Roos)**

##### **State-of-affairs**

- 10:35-10:45 Flora of South Africa (Matt Buys)  
 10:45-10:55 Flora of Madagascar (Peter Phillipson)  
 10:55-11:05 African floras at Kew (Don Kirkup)  
 11:05-11:15 Flora of Central Africa (Steven Dessenin)  
 11:15-11:25 Flora of Nepal (Martin Pullan)  
 11:25-11:35 Flora Malesiana (Marco Roos)  
 11:35-11:45 Flora of Australia (Kevin Thiele)  
 11:45-12:00 Form and function of the modern E-flora: where do we want to go (Thomas Janssen)

#### **Presentation of existing technologies and how they could be used to realise the e-flora platform (organizers: Dave Roberts & Walter Berendsohn)**

- 12:00-12:50 Scratchpads (Dave Roberts - EDIT WP6)  
 12:50-13:15 Demonstration and questions

#### **GARDEN RESTAURANT**

- 13:15-14:00 Lunch

#### **ROTTERDAM ROOM**

- 14:00-15:00 EDIT Platform for Cybertaxonomy (Walter Berendsohn, Andreas Kohlbecker, Katja Luther, Agnes Kirchhoff - EDIT WP5)  
 15:00-19:00 Demonstration session (Katja Luther, Andreas Kohlbecker, EDIT WP5)

#### **GARDEN RESTAURANT**

- 19:00-20:00 Dinner

#### **ROTTERDAM ROOM**

- 20:00-21:30 Tropicos demonstration (Peter Phillipson)

### **January 22nd – Holiday Inn, Leiden**

#### **ROTTERDAM ROOM**

- 08:30-09:00 Arrival and coffee

#### **Funding and technical implementation (chairs: Marco Roos, Soraya Sierra)**

- 09:00-09:20 The EU-COST funding mechanism and proposal (Anna K.Groeninx van Zoelen)  
 09:20-10:00 Discussion on adequacy of EU-COST proposal for the e-flora project  
 10:00-12:00 Discussion on scope and technical implementation of the e-flora platform  
 12:00-13:00 Next steps and tasks (Thomas Janssen, Soraya Sierra, Marco Roos, Steven Dessenin)

#### **GARDEN RESTAURANT**

- 13:00-14:00 Lunch

**Annex 2. List of participants EDIT E-flora Workshop**

<b>Surname</b>	<b>Name</b>	<b>Institution</b>	<b>E-mail</b>
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### Annex 3. Discussion on scope and technical implementation of the e-flora platform

#### Structure of the discussion

1. Are there any fundamental remarks or critiques?
2. Discussion of issues raised in the *concept document for the e-platform*  
Are there any additions, deletions, or corrections necessary?
3. Discussion of technical possibilities for the implementation of the e-platform and, if necessary, modify the concept accordingly

#### Key questions to be addressed

1. What do we want?

What do contributors as well as (expert and non-expert) users of floristic content want?  
Or: What functions should be "in" the e-flora portal?

2. How to implement it?

Which tools and building pieces are already available or could be modified to suit our needs?

Or: How can we best avoid redundant developments?

3. How to pay for it?

Discussion on funding opportunities will take place on Friday 22nd.

#### „Background“ questions (should be kept in mind during the discussion):

1. How can a printed and an electronic support best be integrated with each other?
2. How can a maximal added value be achieved for users and contributors of flora content?
3. How can we avoid asking a high learning curve from potential contributors and users?

#### Annex 4. General discussion

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KT: Do scratchpads make my life easier as a taxonomist in botany?

DR: To answer that you should keep in mind what is your goal. If your goal is to establish your credibility within your peer group, then the answer is yes. Most of the experience so far has been in zoology. In zoology it is difficult to publish species descriptions: low journal publications do not count.

MP: Taxonomist should capture data as soon as possible. They should not consider working with scratchpads as a separate activity.

MS: Who keeps an eye on the editing?

DR: That is up to the owner of the site. There are three main roles: administrator, maintainer and contributors. You can have as many maintainers as you want to.

PP: Can you enable anybody to post a message?, do you have a bit of a page were you have comments.

DR: It is possible. It is not recommended.

SD: What is the relationship within the EDIT Platform for Cybertaxonomy and scratchpads?

DR: They are two separate products. The intention is that they should come together. The EDIT internet platform is more ambitious, it is setup to work intelligent within those structures. Scratchpads is meant to work quickly, it is more flexible due to the data harvester tool.

TJ: Which technology should we use?

DR: Scratchpads and the EDIT Platform for Cybertaxonomy complement each other. As soon as you establish a community, you can make your own rules. Only the owner can change how taxa can be sorted. You should use each component for your strength.

PH: Which of the two technologies provide tools beyond covering possibilities to the users to say that a specimen is not correctly identified?

WB: The CDM has better tools than scratchpads for managing data. You can solve it by making annotations. The functionality for the data portal is not yet fully implemented.

MR: Are there routines in each of your software for generating keys?

DR: Scratchpads are looking at that.

WB: Lucid and Xper could be a possibility for Scratchpads and CDM. If the features can be implemented in time in this project it is not known.

KT: What is the role of EoL?

DR: Scratchpads collaborate with EoL (it has a five year funding).

WB: Scratchpads and CDM are guaranteed for five years of existence. CDM will go on; developing contents of projects. Edit aims at institutional integration. Having a framework has many of advantages. EDIT develops modern technology that hopefully will not go away very quickly.

DR: The issue of migration is serious. It would be ideal if all institutions could work with the same standards.

MS: How can you integrate the two systems?

WB: You can easily integrate both systems, including different philosophies, stages of development, people. The real editorial work is for the platform. Talking, wiki, communicating, is for scratchpads.

DR: You need to know the tools. There are different tools for different things.

MR: Was the first version of scratchpads compatible with the second one?  
Version 6 has a significant number of benefits. More powerful. The functionality; is provided by modules

LW: Is there a way to make public be more enthusiastic to use the tools?

WB: Institutional support is very important; it is at the core of EDIT. For any of these two projects to survive, we need support. There is a still a lot of development work, time is important.

SS: What kind of support would you like to obtain?

WB: Coordination and adaptations. Institutional commitment (like the one received by K, P, Madrid, Berlin for different parts of EDIT) is important.

KT: What would be the steps needed to embark?

DR: You need to form the project vision. Most of the effort comes from voluntary contributions. Community based tool to gather data. Can you pay people to do the work?

MS: We can also use the experience from Tropicos and others.

PP: It may have strengths or not. It is compatible to formulate a project using all different resources.

WB: The collaboration of several Europe-based floras is an interesting topic in respect to data mobilisation. There have been several network projects supported by the European Union. With specific projects there will be new requirements and increase in functionality. More than a project, it is a movement. EDIT is here because it is useful, there are other resources that can be picked up and be built upon.

DR: Scratchpads should be an open source of projects that will continue.

PP: Floras should not be seen as a source of information coming from species, but from specimens.

WB: It has to support both things. A flora without specimens is not of any use. Data is not entered in the database until a taxon has undergone revision and been published.

PP: Perhaps Tropicos could implement a tool to share data across projects.

WB: Tropicos is excellent. However, establishing a single specimen management system across institutions will be unacceptable to many institutions. It is a question of institutional policy, what specimen management system they should use. We should not try to impose a single database in this area. Experience has shown that this did not succeed. Loan policies, digitization, everything is connected. Is it really needed?. We can access different databases through existing mechanisms to do the work on the

species level. Anyhow, the taxonomic works is not restricted to your institution. You should be able to access the work others do anywhere.

KT: ALA is involved in developing web services that provided content. Services that provide: descriptions, names, establish synonymy, images, and specimen records. Binding together services in much the same way we are familiar in Google maps. Platform and content are two different discussions. We miss is the possibility to join the elaborated flora in such an e-platform. How to accommodate teams of researchers?

ER: Regarding the needs for Central Africa: Europe has the specimens, and Africa the biodiversity. We need an internet system were we can act on adding data. The Tropicos system is ideal for the specimens, not for taxon and name content. What we needs is a system that allows adding descriptive data in a dynamic way.

MS: What we want is a community service initiative. We do not want to endeavour on a new initiative that is costing the taxonomic community time, but instead, an initiative that facilitates the community an easier and time efficient job. We want a service that one can use for daily work, involving a much larger community: scientific community and amateurs that can also contribute (being supervised by editors).

PP: Tropicos should consider providing valuable functionality: content, include new components, according to the user needs. The e-platform should involve other partners. Geneva and SANBI are developing a database and their initiative has a wiliness to grow.

MP: Our institution can maintain its own data. What we can not provide is professional software and a sustainable model. We would like to be involved in any consortium that will maintain and help e-technologies to persist.

MB: SANBI does not have the resources. They rely on developments occurring on the rest of the world. The existing system is outdated. They are interested in new technologies and would like to see a consolidation of relevant data sources.

SD: Why need to avoid doing redundant work. It is better to bring resources together. Each institution can specialize in one thing. Data on specimens, species descriptions and localities has been digitized and is now available. We should work on a platform that can be brought together.

WB: What should be done is to use a technology that is working and contribute to it. Tropicos is working and, although being an institutional database, it has a tradition for collaboration. However, the degree you have influence on it is limited (institutional policy). The alternative is to develop a system for your own institution, using the technologies that are there and need to be used. If you cannot do it on our own, and if we do not want to turn it over to a specific institution, there is only one way to do it: collaboratively. We need the system to become specialized, and institutions need to have the willingness to collaborate. It is not a competition of technological systems. If we don't want to follow the Tropicos approach, then we have to go for the EDIT Platform and create international collaboration as well.

PP: It is not the intention to recruit projects. Tropicos has the willingness to collaborate in the future. We need to create common standards and create more data sharing.

TJ: We do not have three competing technologies. It is not the aim of the COST proposal to generate for the in house developments, but to develop a common platform for institutions that do not have yet an in house development. If the platform succeeds, then it might be useful for institutions that already have something.

MS: We need to create commitment from the taxonomic community and taxonomic institutions. Floras have a different level of responsibility. They are one of the most practical outputs of research, they are meant to be open for public; there is a need for that information. Our responsibility is to make descriptions and information accessible. Our focus should be to build an e-platform with all the tools that

are required needed. The next stage should be to focus on its content, as a shared responsibility with national governments and NGOs. If a central platform is available, then it is easier to involve governments and obtain funding for content.

MP: You should focus on intuitions that do not have any e-technology available and provide them with a common platform. Our institution could be involved with the consortium by bringing experience, looking at commonalities, and sharing of data.

DK: Our institution could share its experience from projects like CATE, user-requirements, and help with writing proposals (e.g., COST proposal). We could also help by bringing our floras together and jointly developing standards.

PH: We should make printable publications accessible. The work of flora writing involves:

1. Clerical work such as: registration of specimens, names, and literature citations. This activity could be speeded up if we could use the work that is already available. 2. Identification of specimens and the selection of characters to describe specimens. There should be a collaborative effort for doing the clerical work.

SD: A standard list of taxa should be flexible. However, what you need is a standard list of names, not of taxa.

KT: A consensus should be achieved.

PH: Lists represent someone opinion. A consensus can be achieved when somebody agrees to use your system.

ER: Species delimitations are based on individual questions.

TJ: Different flora platforms need to account for different floras. The only way to overcome different points of views is by trying to achieve a consensus.

PH: Either you delegate responsibility, or try to reach consensus and take full responsibility together.

KT: It is important to start a census project of concepts, not of names. The consensus census is the view of CHAH, if there are differences a voting procedure is possible. Who is the authority: the author, the institution, or a larger group?

WB: You need one editor, or an editorial committee who can take decisions.

ER: A consensus for the Flora of Australia is possible, but for African or S. American plants is too difficult.

MB: African checklists have differences of opinion. However, there is an opportunity for researchers to solve these discrepancies.

DM: In SE Asia the consensus is the researcher. In tropical areas achieving consensus is not so difficult.