Directions for Deliverables of EDIT's Second reporting period (covering Month March 2007 – March 2008)

The deliverables are often written reports but can also take another form, for example the completion of a prototype, etc. In such cases the deliverable should nevertheless also be documented in a written record of the achievement of the deliverable in addition to being listed as an achieved deliverable in the Periodic Activity Report, including any available supporting material (e.g. photos of the prototype, the report of the conference….).

Any delay in the submission of a deliverable must be reported in the Periodic activity report, in the section **"Section 2 - Workpackage progress of the period",** where both the due date and the actual submission date (or the foreseen date, if the deliverable is not yet submitted) are reported.

Please note that the following front page is a standard provided by the EC, all requested information on this page must be filled in.

Max. 2 pages (front page excluded) per deliverable in "Garamond" 12 points. As far as possible please do not change the lay out of the standard front page.

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"

C5.49
First test results in the EDIT review environment

Due date of component: Month 19
Actual submission date: Month 19

Start date of project: 01/03/2006   Duration: 5 years

Organisation name of lead contractor for this component: **MNHN 2**

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)	

OBJECTIVES OF WP 5.6

The aim of WP5.6 is to identify, test and document available descriptive tools for taxonomists, and to collaborate with WP5.2 to integrate these tools as components of the Internet Platform for Cybertaxonomy. We have selected 5 to-be-tested descriptive tools. This selection was based on 4 main criteria:

- Availability (easiness to obtain and to instal the software)
- Suitability (i.e., is it really a taxonomic application?)
- Documentation
- Functionality (identification or analysis alone, editor tool to collect and to manage descriptive data …)

The present document is built according the following plan:

1. Tool providers point of view. We present results coming from taxonomic tool providers. They were asked to fill in the milestone "Criteria for descriptive tools" about their own tool.

2. Taxonomic point of view about taxonomic tools. Summary of 11 taxonomist's interviews made by the MNHN.

3. First test results: comparison of the tool providers point of view and the taxonomists point of view in order to extract the important points for each tool and propose a table to summarize these criterias.

4. Update the EDIT BDTracker with current tool/ service specifics (i.e. Updates, new versions etc.) as well as providing taxonomist reviews for each tool.

I. Tool providers point of view

On a previous work (Document called: "Criteria for descriptive tools agreed and published") submitted on month 15, we proposed a list of criteria for comparing taxonomic tools. This document has being filled by the tools providers and results are compiled in the following table for the 5 selected programs.

DELTA-ACCESS According to Gregor Hagedorn-BBA	DELTA-INTKEY According to Mike Dallwitz-CSIRO	LINNAEUS II According to Huub Veldhuijzen-ETI	LUCID According to Kevin Thiele-CBIT	XPER2 According to Guillaume Dubus

I. TECHNICAL PROPERTIES

I.A. GENERAL QUESTIONS

CONFIGURATION REQUIRED

Operating system/Is the taxonomic tool able to run on multiple platforms?

Windows only	Windows (Mac under Windows emulation)	Windows 98, XP, Vista Mac OS X	Multiplatform	Multiplatform Windows 9x / XP / Vista Linux MacOS X

Application(s) required/Does the tool need other softwares to be installed on the computer?

Microsoft Access is required in version 97, 2000, 2002, or 2003. 2007 is expected to work, but not yet tested.	No	Quicktime	Java Virtual Machine	Java Virtual Machine (min 1.4.2)

HOW TO GET THE PRODUCT?

Distribution: CD, downloadable online

Downloadable online http://www.diversityworkbench.net/Portal/wiki/DiversityDescriptions	Downloadable	Downloadable on-line (http://www.eti.uva.nl/products/linnaeus/obtain.php)	Downloadable online, CD	Downloadable on-line, CD on demand

License/List the licence type (free, GPL, commercial etc.)

GPL	Free	License is free for taxonomists. Linnaeus II software is available for free to ETI partners. Scientists who work at a university, natural history museum, herbarium, research institution or such may obtain Linnaeus free of charge. They will be asked to join the ETI Partner Network.	License	Free of use

Price (for commercial software)

		459 euros for a single user version including the detailed users manual and online technical support.	659$ for a single license	

INSTALLATION AND USAGE

Installation/Can the tool be easily installed (e.g. « plug and play », portable)

Yes, both database for multiple datasets and software are self-contained in a single file.	Yes	Yes	Yes	Yes Setup for Windows Application for Mac Zip archive for Linux

Is documentation or technical support available for installation? What about the quality of this documentation?

The documentation is out-of-date, referring to version 1.6, whereas 2.0 is current.	Yes. Quality is good :-)	Yes, extensive and detailed information available, through User Guide on PDF and ReadMe file.	Yes, help provided in Lucid Builder and Player. Technical support and a Helpdesk is available via www.lucidcentral.org	Documentation and help available online: in french http://lis.snv.jussieu.fr/apps/xper2/aide/ Or in english http://lis.snv.jussieu.fr/newlis/xper2/

DELTA-ACCESS	DELTA-INTKEY	LINNAEUS II	LUCID	XPER2
Does the system run offline, online or both?				
Only local or local-area-lan operation (up to 20 concurrent users per datasets is practical). No internet version; online identification is provided through collaboration with Navikey (www.navikey.net, GPL Java software)	Offline. Interactive key (Intkey) can run as helper application online.	Builder only runs offline; Runtime is for offline use on CD-ROM/DVD; Web publisher for online use.	Builder only runs offline; player runs both on- and off-line	Builder only runs off-line Player (Computer Aided Identification) runs both on-line and off-line

I.B. FORMATS

NATIVE FORMAT

DELTA-ACCESS	DELTA-INTKEY	LINNAEUS II	LUCID	XPER2
Type of storage files (XML, text files, binary files, database etc.)				
Native storage is a database format. A variant of this format supports only backup and restore operations (smaller file size)	Text, convertible to binary	Toolbook/Supercard MySQL/PHP for web publisher	XML	XML, text
Which character sets are supported (ANSI, ASCII-OEM, Unicode)?				
All three	ANSI	ANSI, ASCII-OEM	All	ASCII-OEM ISO-8859 Unicode
Other software able to load this native format/ Is the native format of the tool adopted or recognized by other tools?				
Yes, it is a JET database and can be opened by Excel, Access, or most ODBC enabled programs.	Yes. See http://delta-intkey.com/www/programs.htm under 'Other DELTA programs'.	No	Custom native format	Custom native format

IMPORTING FORMAT

DELTA-ACCESS	DELTA-INTKEY	LINNAEUS II	LUCID	XPER2
Is the tool able to import other formats (CSV, DELTA, SDD, other XML schema etc.)?				
CSV, DELTA, SDD 1.1 (SDD support since DiversityDescriptions version 2.0), Tab-separated, Excel, etc.	DELTA is the native format	NEXUS format, RTF, plain text	Lif, lif3, sdd, xml, csv, DELTA, ascii text (some data)	CSV, Tab-separated, old XPER format, SDD 1.1 (in beta version)
For each importing format what are the constraint or limits to be compatible with the native format?				
DELTA and SDD supported automatically as far as the different approaches allow compatibility (which is usually satisfying even for complex data sets). CSV, TSV, Excel, etc. support complete data extraction, but require detailed knowledge of the underlying information model	n/a	Number of characters per character or state name (31 characters including spaces for character/state or species name) This is a limitation of the Nexus format not of Linnaeus. Linnaeus supports longer names.	DELTA – not all DELTA data are imported – internal comments are stripped; weights are not used; many DELTA directives are ignored ASCII text – only used for importing character and taxon lists CSV – core character/taxon lists and matrix data only Lif, Lif3, SDD – full support	64 characters 256 states by characters No support of qualitative values, (accept only intervals)

EXPORTING FORMAT

DELTA-ACCESS	DELTA-INTKEY	LINNAEUS II	LUCID	XPER2
Is the tool able to export a large set of formats (CSV, DELTA, SDD, other XML schema etc.)?				
CSV, DELTA, SDD 1.1 (SDD support since DiversityDescriptions version 2.0), Tab-separated, Excel etc.	Nexus. Data matrix can be copied to Excel and thence to CSV	Nexus, RTF, Plain text, XML for webpublisher	Lif3, SDD, XML, CSV, ASCII text (some data)	Html, CSV, Xper format

DELTA-ACCESS	DELTA-INTKEY	LINNAEUS II	LUCID	XPER2
What are the limits of the export for each type of format (e.g. Xper2 doesn't export images and character dependencies in CSV format)?				
DELTA and SDD export are close to complete, only unavoidable omissions are made. All other formats require some knowledge of the information model to export all data, but due to the open architecture this is possible in principle	Limited by capabilities of Nexus format.	Limited by capabilities of Nexus format. No limits for XML export.	CSV, ASCII text – as for import. Lif3, SDD – full support	CSV and tab-separated don't export images and characters dependencies

II. KNOWLEDGE REPRESENTATION

II.A. OBJECTS THAT CAN BE REPRESENTED

TAXA

Are taxa represented as a simple list or hierarchical list?

DELTA-ACCESS	DELTA-INTKEY	LINNAEUS II	LUCID	XPER2
Simple list	Simple	Match percentage Alphabetical order Entry order All Ascending or Descending	Simple list or hierarchical (views allow user to switch between)	Simple list. Alphabetical sort or entry sort

Can specimens or part of objects be described separately? Can stages, sexes, etc. be described separately?

DELTA-ACCESS	DELTA-INTKEY	LINNAEUS II	LUCID	XPER2
Descriptions can refer to specific specimens, taxa, diseases, stages, sexes, geographical or seasonal scope, and specific published sources (i.e. multiple publications may be recorded separately, to be combined later by the separate aggregation/summarize function.	I'm not sure what 'separately' means here. All these things can be done.	Yes	No formal provision, but can be incorporated as 'pseudotaxa'	No By coding as distinct taxa

Can the scope of a description be restricted to a geographical area or season (« Swiss trees in winter »)?

DELTA-ACCESS	DELTA-INTKEY	LINNAEUS II	LUCID	XPER2
Yes	No	Yes	Yes, by coding geography/season as characters	Yes, by coding geography/season as characters

CHARACTER

Does the tool support character applicability rules (i.e. Controlling plus dependent characters)? Are both « applicable-if » and « inapplicable-if » (positive/ negative) rules supported? Can the controlling character be only categorical (qualitative) or also quantitative?

DELTA-ACCESS	DELTA-INTKEY	LINNAEUS II	LUCID	XPER2
Only categorical controlling characters, only inapplicable-if rules (DELTA applicable char directive is converted on import)	Yes. Either, but not both together. Qualitative only. Note. You need to ask whether the applications *enforce* the dependency rules. For example, our DELTA software does, some others (e.g. Lucid) don't.	No	Manages dependencies between characters, both positive and negative; only qualitative characters can control. Also supports non-character-based positive dependencies – ie, characters can be made to appear based on the membership of the taxon list rather than the character states chosen	Yes Dependence hierarchy (only qualitative)

DELTA-ACCESS	DELTA-INTKEY	LINNAEUS II	LUCID	XPER2
Character groups / Support available for descriptive concepts (character groups)?				
Yes, may be hierarchical	Intkey only	No	Yes, in two ways (1) through builder-defined subsets (2) through hierarchically nested characters (ie grouping nodes)	Yes
Is it possible to represent quantitative data? Which statistical measures (min, max, mean, mode, unknown range, confidence intervals, variance, standard deviation, std. Error, sample size, etc.) are supported?				
Yes Yes, flexible system with many statistical measures (min, max, mean, mode, various ranges, s.d.,s.e., sample size, etc.	Yes Up to 5 values, e.g. (3-)5-7-10(-15), representing extreme values, 'normal' values, and measure of central tendency. Interpretation (e.g. percentiles for the 'normal' values) could stated informally by the author. Other information recordable as comments.	Yes, min, max and standard deviation.	Yes Outside minimum, Normal minimum, Normal maximum, outside maximum	No In comments only
Polymorphism/Is support for polymorphism in the case of categorical (qualitative) data available?If so, is it possible to code the frequency of a state (rarely, sometimes, often, etc.)? In what form is it possible (system-defined frequency categories, user-define frequency categories, quantitative values or ranges)?				
Yes User-defined categorical values, for which a quantitative interpretation may be given	Yes Frequency expressible only as comments (e.g. 'rare', 'usually').	No	Yes Common score, rare score, State qualifiers are not user-defined. Note also that polymorphism can be expressed in quantitative characters – e.g. can express disjunct ranges (2-10/50-100) A tool is provided to identify levels of polymorphism in taxa (highly polymorphic taxa are problematical in such keys)	No In comments text only
Expressibility extension/Can the standard expressibility (i.e. Based on a controlled vocabulary) be extended through freeform text comments on qualitative or quantitative data?)				
Yes, notes on states and statistical measure values are supported	Yes	No	Yes (qualitative characters only)	No
Missing data/Is it possible to explain reason why descriptive data are missing (« coding status », e.g.data unavailable, inapplicable, not interpretable, out-of-scope/not-to-be-coded, withheld for legal reasons)? Which coding status values are supported?				
Natively All three DELTA status values : Unknown, not applicable, variable. The system is in principle extensible to support SDD, but methods will not recognize these.	Only by comments	Manages unknown values, missing data, inapplicable	Absent/Uncertain/Out-of-scope are score values. Any data unavailability comment can be attached as a « comment » on a score (for Builder use only)	Manages unknown values (boolean), missing data (empty data), applicable/inapplicable values

DELTA-ACCESS	DELTA-INTKEY	LINNAEUS II	LUCID	XPER2
Other types of characters/descriptors/ Is free-form text (« text character ») supported? Are free-form text supported?				
Yes	Text	Yes	Misinterpretable data are captured as a score value in the Builder ; Player can be modulated to determine behaviour of these scores.	Text
Are molecular sequences supported?				
Only has text.	No	No	No	No In comments text
Manage numerical data				
	Yes		Yes	No
Manage misinterpretation (risque d'erreur)				
	In prototype form	No	Yes, in several ways (1) using Misinterpreted Score (see above) (2) using Matched rather than Filtered taxon rankings – ie rank taxa by their percent match to the input data – flexibly allows for input errors	No

<div align="center">MEDIA SUPPORT</div>

DELTA-ACCESS	DELTA-INTKEY	LINNAEUS II	LUCID	XPER2
Images : a. Is it possible to add a picture of the taxa? b. Is is possible to add a picture of the characters? c. Is it possible to add a picture of the character states? d. Is it possible to add a picture of the character groups?				
a. several b. several c. several d. none	a. several taxon images b. several character images c. several state images d. several images for character groups	a. several images b. several images c. several images d. none	It's possible to attach multiple pictures to taxa, characters, character states, character groups	a. several images b. several images c. several images d. several images Possible to add a title, a text description and a focus on each association : object + picture
Links to external resources, web files, references, texts, images/ Does the tool allow to link taxonomic concepts to external resources?				
Yes, through general scope mechanism	Link to any external source that can be handled by file-type associations, e.g. Web files, Word documents	No	Yes all Html file, html url, image file, image url	Yes in comments text: Html text, html url, image url
Possibility to add videos				
	Yes	Yes	Video supported through html attachments	Through url attachments
Possibility to add sounds				
	Yes	Yes	Sounds supported through html attachments	Through url attachments

DELTA-ACCESS	DELTA-INTKEY	LINNAEUS II	LUCID	XPER2

III. FUNCTIONALITIES

Allows editing and identification/Does the tool allow edition and/or identification and/or other functionalities (e.g. Descriptive data tools like Mesquite support editing and phylogenetic analysis, but not identification)?

DELTA-ACCESS	DELTA-INTKEY	LINNAEUS II	LUCID	XPER2
Yes	Editing, natural-language descriptions, interactive identification, conventional keys, phenetic analysis. Phylogenetic analysis via export to Nexus and Hennig86 formats.	Yes	Editing and identification	Xper2 allows editing and identification Old XPER functionalities allows keys generation, natural language description, similarities calculation, etc.

A. EDITOR of a KNOWLEDGE BASE

Editor for single item/taxon (multiple characters)?

DELTA-ACCESS	DELTA-INTKEY	LINNAEUS II	LUCID	XPER2
Yes	Yes	Yes	Yes	Yes

Editor for multiple items/taxa (single characters)?

DELTA-ACCESS	DELTA-INTKEY	LINNAEUS II	LUCID	XPER2
Yes	No	Yes	Yes	Yes

Are revisions in the character or character states automatically reflected in the knowledge base?

DELTA-ACCESS	DELTA-INTKEY	LINNAEUS II	LUCID	XPER2
Yes		No	Yes	Yes

Are tools to reorganize the data provided (e.g. move state values to a different character for all items)?

DELTA-ACCESS	DELTA-INTKEY	LINNAEUS II	LUCID	XPER2
Yes	Some	Yes	Yes – full drag and drop, cut, copy and paste (copied/moved states carry their score data with them)	Yes Drag and drop to change characters dependencies (Keep the data values) Fusion of states

Are tool for data checking (redundancy, etc.) available?

DELTA-ACCESS	DELTA-INTKEY	LINNAEUS II	LUCID	XPER2
Yes	Yes	No	Yes – particularly tools to analyse the data set to identify taxon groups that are poorly differentiated on the data provided	Yes Checks the use of all characters, the use of applicable/not applicable characters, if some data are unknown, if taxa are equals, etc.

Check consistency of the description (in respect to logical dependencies between descriptors)

DELTA-ACCESS	DELTA-INTKEY	LINNAEUS II	LUCID	XPER2
Yes	Yes	No		Yes

Support for multilingual character sets/How is it accomplished? Original DELTA supported multilingual data, but at a great cost (need to synchronize separate files manually). Other tools integrate this into a database.

DELTA-ACCESS	DELTA-INTKEY	LINNAEUS II	LUCID	XPER2
Yes, a primary language plus any number of translations.	Yes. Separate character lists or within a single character list.	No, not standard, but Spanish, Italian, German and Dutch runtime versions have been made.	Interface is fully multilingual; multilingual support for characters/taxon names not yet supported	Interface is fully multilingual : English, French, Spanish But a knowledge base is written in one language

Possibility to read the same knowledge base from several computers concurrently?

DELTA-ACCESS	DELTA-INTKEY	LINNAEUS II	LUCID	XPER2
Yes	Probably not (not tested). No.	Yes, in online version	No	Yes in identification mode if the knowledge base is on-line

Possibility to edit the same knowledge base from several computer concurrently?

DELTA-ACCESS	DELTA-INTKEY	LINNAEUS II	LUCID	XPER2
Yes	Probably not (not tested). No.	No	No	No

Can bibliographic references be added to descriptive data in the tool, on the methods etc.?

DELTA-ACCESS	DELTA-INTKEY	LINNAEUS II	LUCID	XPER2
Yes	Only as comments	Yes	Yes	Yes as comments text

DELTA-ACCESS	DELTA-INTKEY	LINNAEUS II	LUCID	XPER2

B. IDENTIFICATION

Knowledge management: uncertainty management (uncertainty occurs in both data collection and identification)
Is it possible to qualify data with uncertainty (probably, perhaps, etc.)?

DELTA-ACCESS	DELTA-INTKEY	LINNAEUS II	LUCID	XPER2
Yes in editing, but not yet evaluated in identification	Yes. No (except as comments).	No	Possibility to express uncertainty	No

Does the tool explain how the result was reached?

DELTA-ACCESS	DELTA-INTKEY	LINNAEUS II	LUCID	XPER2
Partly, a history of identification steps is recorded and can be manipulated	Yes	Yes		Partly, History of steps

If no taxa remains in an identification attempt, can the tool report taxa that do not fully satisfy all criteria?

DELTA-ACCESS	DELTA-INTKEY	LINNAEUS II	LUCID	XPER2
No	Yes	Yes	Yes Yes (percentage match reported in Matching mode)	No

Does it explain which observations are not full filled for a given taxon?

DELTA-ACCESS	DELTA-INTKEY	LINNAEUS II	LUCID	XPER2
	Yes	Yes	Yes – ask for report on chosen states that caused a given taxon to be discarded	No the user can compare with the complete forms of the taxa

Multi-access key/Is it possible to choose the sequence of characters during the identification or is it an imposed process?

DELTA-ACCESS	DELTA-INTKEY	LINNAEUS II	LUCID	XPER2
Free choice	Yes	Yes, sequence is free, a suggestion is given for the character with the best separation capacities.	Multi-access	Multi-access

Description of the identical taxon/Is it possible to have access to a complete descriptive card of the identified taxon?

DELTA-ACCESS	DELTA-INTKEY	LINNAEUS II	LUCID	XPER2
More or less, access to full data is provided, but not in free-text overview form (which would be desirable)	Yes	Yes	Yes	Yes

Possibility to sort characters (groups or hierarchical views, filtering by groups, father/son characters)

DELTA-ACCESS	DELTA-INTKEY	LINNAEUS II	LUCID	XPER2
Largely. It is unclear to me what father/son characters are.	No	Yes Character type, number of states, alphabetical, separation coefficients	Yes – characters may be viewed as trees or lists (with full support for alternative language representations in these contexts)	Yes Filtering by groups Father/son characters

Does the tool support data set creators in providing for anticipated misinterpretations by users (e.g. Can a plant be found, even if the flower bracts are misinterpreted as petals (as in dogwood)?

DELTA-ACCESS	DELTA-INTKEY	LINNAEUS II	LUCID	XPER2
Yes, supported in machine-readable way. Information will be always be used in identification (no choice to ignore this feature is yet available).	Yes (in prototype form).	Yes, the tool does not exclude any combination, it only gives a percentage of the score so far. In the process of identification the intention should be to retain to a 100 % score but with a misinterpretation the 100% will not be made. If there are no objects left with a 100% score, the user should reconsider the chosen states.	Yes – full support. Handling of misinterpretations can be modulated in the Player (ie – exclude/include taxa scored as misinterpretable for a given state)	Yes

DELTA-ACCESS	DELTA-INTKEY	LINNAEUS II	LUCID	XPER2
IV. USER INTERFACE-DOCUMENTATION-AVAILABLE APPLICATIONS				
Online help/Does the tool provide an online help?				
Yes	Yes in Intkey	Yes	Online KnowledgeBase help provided through Lucidcentral	Yes http://lis.snv.jussieu.fr/apps/xper2/aide/
How do you estimate the quality of this help?				
Extensive, but highly out-of date and problematic because often users with a background of working with DELTA are addressed.		General information		Good in French FAQ in english too
Does the tool provide offline help?				
	Yes	Yes Helpdesk support@eti.uva.nl Yes, http://www.eti.uva.nl/support, Manual/ FAQ/ Updates	Offline help provided – high quality.	No
How do you estimate the quality of this help?				
		Good		
Available languages for the interface /Is the tool available in several languages?				
User interface is English-only	Intkey only. English, French, German, Portuguese, Spanish.	English only There is no local entry version available. We made some runtime products in different languages; Spanish, German and Italian and Dutch.	A lot of languages available	English, French, Spanish Upcoming: Portuguese, Vietnamese
Friendliness of the user interface/Is it easy to do the job with the « tool interface »?				
Not optimal, but graphical UI with menus/switchboard throughout	Very simple	Yes	Yes	Yes very simple
Do we find functionalities quickly?				
	Yes	Yes	Yes	Yes
Loading time/How much time does it take to install it?				
Short	Download and install Intkey 1 minute. (Whole DELTA package ~ 2 minutes.)	Minutes	Installation: around 25 min	Minutes
How much time does it take to launch it?				
Short	Launch 2 seconds	Seconds	Launch time: quick	Minutes

DELTA-ACCESS	DELTA-INTKEY	LINNAEUS II	LUCID	XPER2
When using it, does the tool have latency times of more than 1 or 2 seconds for some operations?				
Depending on the size of the dataset. No for small keys, yes for very large keys.	Latency for most operations < 0.1 second - including generation of 'best' characters for typical datasets, and diagnostic description for a single taxon. Generating diagnostic descriptions for the complete set of taxa can take a few seconds, depending on the size of the dataset, but this is not used during identification.	Depends on size of the matrix, suggested size?	Latencies of <1 sec for keys up to 10,000 taxa	Depending on the size of the dataset. Displaying all pictures Checking all data consistency
Dynamic community (mailing list, blog, etc.)/ Is there a website which provides news, dynamic forum and mailing list?				
No News / updates only	DELTA-L mailing list. See link at http://delta-intkey.com	Yes, http://www.eti.uva.nl/support	Yes – Lucidcentral.org	Website : http://lis.snv.jussieu.fr/apps/xper2/ Xper mailing-list : xper@lis.snv.jussieu.fr
Number of knows users (for commercial packages that are sold and accounted)/ Which other users use the tool?				
A few dozen throughout the world		1500 – 2000 users	Worldwide, thousands of licenses	Worlwide : France, USA, Vietnam 80 users in mailing list
Known knowledge bases created with the tool (examples)				
Large datasets: LIAS, DEEMY	Examples available at http://delta-intkey.com	100⁺ CD-ROM/DVD titles produced. (http://www.eti.uva.nl/products/catalogue.php)	See Lucidcentral for database of known keys	Http://lis.snv.jussieu.fr/viewxper.cgi http://lully.snv.jussieu.fr/xperbotanica/
Can the major operations be run from other applications without human user intervention? Which scripting languages or interoperable object models are supported?				
Yes Probably all Windows languages, through COM (Component Object Model)	No	No	No	No
Configurable / Can the user modify tool bars and create keyboard short cuts?				
Yes	Tool bars	No, shortkeys already assigned for most functions	No	No
Known bugs				
None. But certainly a number present…	A few, mostly minor.	None, see fixes of older versions on download section of the support page. http://www.eti.uva.nl/support	Few at present (and handled quickly)	A few but fixed as soon as possible
Possible future developments / Can new features be expected to become available soon?				
No concrete plans, new version just released.	No	- Relational database environment - Web integration, multiple user - Allow dependant characters	Yes – Server-side Player available soon (to add to the applet and application Players). SS Player written using Ajax technologies to minimise postback delays New versions of all applications come out regularly – under active	A web portal A better help documentation Import/Export functionalities

development

Main projected developments (next 12 months) include full natural-language build support; support for score inheritance in the hierarchy; integration of desktop Builder with IdentifyLife web service.

II. Taxonomist's point of view - Interviews results

Some taxonomists interviews were done, mainly at the MNHN in Paris but also at the NHML and at RBGK in London. These 11 interviews covered several fields of research in biology. The main objective was to learn more about taxonomists requests in regard to the existing taxonomic tools and especially to take these requests into account for the building of the cybertaxonomic platform.

The main taxonomist's requests are mentioned below:

1) Possibility to work remotely on the same knowledge base, to easily updated data of a knowledge base on a website; as data are in constant evolution the base must be easily accessible. It should be possible to have an access to data where ever one is located in the world. The software must be available off and online (not in constant dependency of internet).

2) Link to data bases, compilation of taxonomic and phylogenetic aspects one of a software (e.g. *Tolkin* is a web based tool which manages molecular, bibliographic, morphologicical, taxonomic data, and also collections that could be within the platform).
The same software should also be able to manage informations in link with geographic distribution (SIG).

3) The option to link a barcode to a specimen within an entire database.

4) For some groups possibility to add sounds or videos and the possibility to add a list of images to descriptors, states and taxa.

5) Links to museum collections.
Link to a descriptive information page of the species (systematic of the taxon); possibility to associate a description to each character, state, and taxa.

6) Import/export properties

7) Indication on the discrimination power of a character.
Characters must be able to discriminate between taxa.

8) Doubt management.

9) Friendly and intuitive interface.

10) Multi-access key.

11) Description of the advantages/disadvantages of each software available on the platform in order to choose the most adapted.

12) Mother/daughter dependencies i.e. dependent characters.

In the coming months MNHN and CUB will pursue these interviews.

III. First tests results

Finally based on the two previous parts it is possible to distinguish two main conclusions:
– Taxonomist's requests are already provided by some of the tools.
– Future improvements are necessary to enlarge taxonomist's possibilities.

Presently, most of the taxonomist's requests can be managed by one or more existing programs. For example, all our five selected tools have multi-access keys and manage dependent characters. The five programs are able to manage doubt (only during identification process for Xper2). To link taxonomic concepts to external resources is possible for 4/5 tools. It's possible to add videos and sounds in Delta-Intkey, Linnaeus II, Lucid and Xper2. Concerning the import/export formats, CSV is managed by Delta-Access, Delta-Intkey, Lucid and Xper2. Delta format by Delta-Access and Delta-Intkey. SDD by Delta-Access, Lucid and Xper2.

But except Delta-Access it is not possible to edit the same knowledge base from several computers in a collaborative way. A collaborative on line editor for CDM format would be an important improvement in the future. The link to databases (collection databases and molecular databases) have also to be added.
During identification, more information about the discrimination power of a character and the reason of the elimination of taxa could be helpful.

These potentials improvements have to be considered for the cybertaxonomy platform. An important point is also to give more help to users to choose the most adapted tool.

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