On-line Metadata Editor

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December 2006

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I. Introduction

According to its Statute, the Committee is a governmental body, which is responsible for the coordination of any environmental activities of other local governmental bodies. Therefore, the Committee is responsible for accumulating environmental information originating from different sources. In this view the Committee has concluded the following agreements: "Agreement on information exchange with the Committee for the City Property Management" dated 14.03.03, "Agreement on information exchange with the Committee for Land Resources Management" dated 11.08.03, Agreements on information exchange with most significant City district administrations. Agreements are available in Russian, and copies can be provided.

Besides, the Committee signed contracts with all federal, regional and local services producing environment-related information, e.g. the Centre for Hydrometeorology and Environmental Monitoring for St. Petersburg, Sanitary and Epidemiological Service for St. Petersburg, "North-West Geology" Federal State Unitary Enterprise, State Hydrological Institute, Regional Geo-Environmental Centre, etc.

The project developed a metadata application in compliance with ISO19115 norm requirements where parameters such as the origin of data and copyrights are mandatory fields.

II. Justification

According to the proposal, the project technical objectives are to[1] facilitate and speed-up the decision-making process by:

- Unifying information systems in use by several city authorities;

- Organising access to existing sources of information owned by several city organisations;

- Allow for quick exchange of data among organisations, easy update, friendly-user access and flexibility of information management structure.

The development of the on-line metadata editor has been stated in tasks 3-2 and 3-5 of the project proposal :

3-2. **Development of a metadata management model** — Action: determine the way in which metadata will be used in the future, according to the three types of metadata currently distinguished (ISO 11179 Annex B): for Discovery necessary for data users to search, locate and access the related data for Inventory, internal to an organisation to be able to manage its information assets, and for Use (Exploitation), a fuller description of the information resource that enables users to asses the relevance and fitness for use for a certain type of application. — Targets: MIS hosting organisation. — Progress indicator: model ready and approved by the Steering Committee. — Constraints and assumptions: metadata collected according to ISO 19115

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1   See technical description of the propject, project proposal May 2004, page 17 of 62

3-5. **Metadata management software and on-line access** — Action: develop on-line application between the Committee for Nature Use and other stakeholders. — Method: on-line applications will provide for Inventory (i.e. internal to an organisation), discovery, and Use of data resources. On-line application will undergo trial for testing reliability and easy-use of the system before the start of users' training. It will test for data exchange between environmental data bases and up-dating facilities. — Targets: city and local authorities, environment stakeholders. — Constraints and assumptions: knowledge in database management acquired during the training cycle (see task 5.1, Training in MIS). — Awaited results: on-line collaboration of city and local authorities in data management, access of stakeholders to data resources.

III. Technical references

III.1- Metadata standards

The metadata standards used is the one currently in use at the European Environmental Agency[2], which is a subset of the ISO 19115 Metadata standard (first edition 2003-05-01); more information is available at: http://www.eionet.europa.eu/gis/geographicinformationstandards.html

III.2- Requirements

The on-line editor has been developed on open-source and free software to allow maximum re-use and distribution. To run the editor,

- Server (Apache recommended)

- PHP version 5.0 or higher

- MySQL version 4.1 or higher

III.3- User Profiles

Three user profiles have been defined for the metadata editor:

- Owner: the organisation owning the data ;

- Processor: The technical producer or processor of the data;

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2 European Environment Agency – Metadata Standard for Geographic Information (EEA-MSGI) , Version 1.1a (18 August 2004), EEA reference: Thor Jessen (thor.jessen@eea.eu.int)

– Originator: Information about intellectual creator (person and/or organisation with intellectual rights) of the dataset;

Moreover, a particular type of user is defined as Point of contact, i.e. responsible organisation and individual for maintaining the metadata. This is not a profile *per se* as the Point of Contact has to be either the Owner, or the data processor or originator.

⚠️ ***When creating or importing new metadata, the Point of contact is set automatically as being the user performing the input. All references to any former point of contact are overwritten.***

Moreover, when importing metadata, references to Owners and Processors are not automatically imported, but have to be added manually from the application's users database.

This is justified by the necessity to secure consistency between individuals effectively registered in the application and those listed in metadata.

III.4- User access

User access is restricted by a login and a password required to enter the application. In case a non-registered user attempts to access the editor, a warning message is first displayed inviting him to log in; the login page is then displayed where a registered user may enter is login/password.

Users' rights is managed from within the application. Only Owner can perform operations on users (adding, deleting, modifying profile, etc.)

Your are currently not logged; you are being redirected to the login page!
(If your browser doesn't support this, click here)

Screenshot 1: warning message displayed

┌─Login Information──────────────────────
│   You must be logged in to view this page.
│   Username: houix
│   Password: *******
│   login
└──

Screenshot 2: The login box

III.5- Browsers' compatibility

Despite the always growing development of Internet, important issues concerning browsers' compatibility and compliance to the standards still remain.

A IE7 is a JavaScript library developed by Edward Dean is currently being used to make Microsoft Internet Explorer behave like a standards-compliant browser. It fixes many issues and makes transparent PNG work correctly under IE5 and IE6.

The library is available from Edward's website : http://dean.edwards.name/IE7/

> **No test have been performed with the newly released Microsoft Explorer 7. However, IE7 is said to be more compliant to standards than it predecessor, see:**
>
> **http://blogs.msdn.com/ie/archive/2006/02/02/523679.aspx**

IV. Using the Metadata Editor

IV.1- Application Menu

The user menu differs according to users' access level. Only Owner is granted a full access to the application. See Table 1, page 7 for a summary of site accessibility according to user's profile.

The following sections present in detail operations a user may perform using the application.

Level	Sub-level	Main functions	Access		
			Originator	*Processor*	*Owner*
Metadata	Add data	Input metadata	X	X	X
	Browse	Browse existing metadata. Owner and processor may also edit them.	X	X	X
	Export	Export metadata into different format: pdf, csv, txt, and xml.	X	X	X
	Import	Import ArcGIS EEA xml metadata file		X	X
	Set Contributor	Set contributors for each metadata set. This action is similar to **Set metadata.**			X
	Constants	Adding, deleting, or editing constants in use (i.e. keywords, topics, language, user profile, restrictions, role and status)			X
Templates	Metadata	Use pre-formatted metadata template	X	X	X
	Dictionary	Use pre-formatted dictionary template	X	X	X
Users	Add user	Add new user			X
	Browse users	Browse and edit existing users.			X
	Set metadata	Set metadata sets for each users, this action is similar to **Set contributors.**			X
	Address book	Contact address and profile of appkication's users.	X	X	X
Navigation	Logout	Use when tired.	X	X	X

Table 1: User menu according to user access rights

> ⚠️ *A help section is obviously missing, but is yet under development, in parallel with a user manual. These items will be completed when the application will have been thoroughly tested.*

IV.2- Metadata

2.a) Add data

Adding data is done in four steps:

Metadata form for spatial dataset

GIS-data or original geodata in this context can be all data sets containing geographical coordinates firstly commonly know GIS data formats e.g. shapefile, Arc Coverage, Geodatabase, SDE database, geotiff file, imagine-file and vpf, secondly other files which can contain location information (points) such as xls, dBASE file, access database, text files.

The form should only be used for datasets and not for maps or graphs.

This page and the followings will allow you uploading your data and provide its metadata.

You will be requested to proceed in the following order:

1. Metadata on metadata;
2. Dataset identification;
3. Other Information
4. Upload the data set
5. Validate the information

Make sure that you have all the information requested. If you are ready, click here to continue.

Screenshot 3: an introduction to what is metadata; will be skipped in the future and user will be taken directly to the next page to ease data input

Step 1: Contact information

Check you personal information:

Firstname: Houix
Lastname: Jean-Pierre
Position: Expert
Phone: Country code: 372   Area code: 5   Number: 3440510
Fax: Country code: 372   Area code: 5   Number: 3440510
E-mail: jp.houix@gmail.com

Check you professionnal address:

Organisation name: Poyry Environment
Delivery address: Jaakontkatu 3
City: Helsinki
Postal code: 01621
Country: Finland

Update

Screenshot 4: the user is then asked to check his/her own personal data and to update it if necessary

Step 2: Dataset Identification and Access Rights

Errors have been detected. All fields are mandatory. Please, check your inputs.

Dataset Identification

Dataset title: Title for the First Dataset
Data Alternative title: Alternative Title for the First Dataset
Brief abstract (100 char.): Brief Abstract for the First Dataset
Abstract:
Abstract for the First Dataset

Keywords: Base map
Topic Category farming
Dataset version 0.1
Reference date (input as mm/dd/yy) 01/10/07
Dataset language ...Languages

Access Rights

Type of constraint copyright
Other restrictions Othe rrestrictions for the First Dataset

Back   Reset   Add

Screenshot 5: the user may then start inputting metadata by completing the first form. Control is performed over user's input and a warning appears in case errors have been detected.

Step 3: Other Information

Dataset processing

Methodology description
Methodology description for the First Dataset

Changes:
Change for the First Dataset

Process steps

Description:
Description for the First Dataset

Ressources name: name for the First Dataset
Ressources date (mm/dd/yy): 01/10/07

Dataset precision

Data scale: 1:100000
Geographic accuracy: 1 meter(s)

Metadata references

Metadata standard: EEA MEGI/ISO19115 (First Edition)
Metadata version 1.1c

Back   Reset   Add

Screenshot 6: The last form to provide metadata

Step 4: Upload your dataset

Browse and select the file to upload. Then push the *upload* button. repeat the operation as many times as you have file to upload for that dataset.

[_____] Browse...   Upload

The user browses his/her disk drive to retrieve the dataset

Uploaded files are zip archived by the application

Content of the file folder:

Name Size

Murmansk_Drainage.zip589.4 KiB   Remove

Nenetski_Drainage.zip723.8 KiB   Remove

Uploaded files are listed as well as their size

The result of the action is shown to the user, the file has been uploaded

Action:

File *Nenetski_Drainage.zip* successfully uploaded.

Submit   Add new   Logout

The user may submit the metadata or add a new metadata dataset

Screenshot 7: File upload

Screenshot 8: Another way to control user's input is to use drop-down menu

Screenshot 9: When the dataset is submitted, a pdf file is produced listing the metadata provided as well the name and the size of the files uploaded

2.b)   Browse metadata

Browse Metadata

This section provide you the ability to browse existing metadata.

Indicate first the parameters to sort metadata, then push the "Show metadata" button to display the results.

Keyword: ...Keywords

Status: ...Status

Starting from (mm/dd/yyyy): 12/31/04

Ending before (mm/dd/yyyy): 01/10/07

Show metadata

Screenshot 10: The user is provided with criteria to retrieve the metadata, either by keywords, by status, or by date range; leaving the criteria unchecked will bring up all the metadata of the application

Title: Title for the First Dataset
Abstract: Abstract for the First Dataset

Created on 2007-01-10   **Modified on** 2007-01-10   **Contact:** Houix Jean-Pierre   **Organisation:** Poyry Environment

Title: Title for the First Dataset
Abstract: Abstract for the First Dataset

Created on 2007-01-10   **Modified on** 2007-01-10   **Contact:** Houix Jean-Pierre   **Organisation:** Poyry Environment

Title: Title for the First Dataset
Abstract: Abstract for the First Dataset

Created on 2007-01-10   **Modified on** 2007-01-10   **Contact:** Houix Jean-Pierre   **Organisation:** Poyry Environment

Title: Title for the sixth dataset
Abstract: Abstract for the sixth dataset

Created on 2007-01-08   **Modified on** 2007-01-08   **Contact:** Houix Jean-Pierre   **Organisation:** Poyry Environment

Title: Water intakes
Abstract: The map shows the location of St. Petersburg groundwater intakes. Attribute data provides a unique ID for each point, the ID of the well according to the well database, the type of water intake (well, spring, observation well), the yield of the...

Created on 2007-01-09   **Modified on** 2007-01-09   **Contact:** Houix Jean-Pierre   **Organisation:** Poyry Environment

Title: Приостановка транзита росс
Abstract: Приостановка транзита российской нефти через территорию Белоруссии по нефтепроводу «Дружба» вызвала панику в Европе.

Created on 2007-01-09   **Modified on** 2007-01-09   **Contact:** Houix Jean-Pierre   **Organisation:** Poyry Environment

View/edit   Delete   Publish   History

Screenshot 11: The result of the query is listed and a user with Owner's rights is provided the possibility to view/edit, delete, publish or see the history of the changes brought to the metadata

2.c) Browse / View/Edit

When selecting a metadata set for viewing or editing, the whole metadata will be provided to the user (see

The user may then choose the groups of metadata he/she wants to modify.

This option allows displaying only the part of the metadata set that needs to be edited.

```
┌Dataset precision──────────────┐
│                               │
│   Data scale: 1:100000        │
│                               │
│   Geographic accuracy: 10     │
│                               │
│   Edit ☐                      │
└───────────────────────────────┘
```
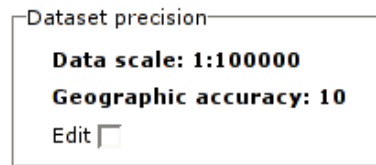
Screenshot 12: An option at the bottom of each metadata group allows user with appropriate rights to edit and modify the content of the metadata

Water intakes

Metadata Contact

Organisation's name: Poyry Environment
Individual's name: Houix Jean-Pierre
Contact's position: Expert
Contact information:

Address:

Delivery point: Jaakcntkatu 3
City: Helsink
Postal Code: 01621
Country: Finland
e-mail address: jp.houix@gmail.com

Contact's role: Owner

Edit ☐

Metadata about Metadata

Last update: 2007-01-09
Name of the metadata standard in use: EEA-MSGI/ISO19115 (First Edition)
Version of the metadata standard: 01/09/07
Publication status: Created
Creation date: 2007-01-09

Dataset Identification

Title: Water intakes
Alternative title: Groundwater intakes in St. Petersburg City
Brief abstract: The map shows the location of St. Petersburg groundwater intakes
Abstract: The map shows the location of St. Petersburg groundwater intakes. Attribute data provides a unique ID for each point, the ID of the well according to the well database, the type of water intake (well, spring, observation well), the yield of the water intake (cubic meter per seconds), the lowering of the water table (in meter), the absolute level of the water table, the level of mineralization, the year of observation.
Dataset language: English
Keyword information: Base map
Theme or category of the resource: inlandWaters

Edit ☐

Access Rights

Access constraints: restricted
Other constraints: Access restricted to Committee

Edit ☐

Process Steps

Lineage statement: Water intakes production according to data reported by water users.
Changes: File name has been changed from vodopat divsion to Water_intakes
Edition: 1.0

Edit ☐

Dataset precision

Data scale: 1:100000
Geographic accuracy: 10

Edit ☐

Points of Contact:

Contact's role: Owner
Organisation's name: Poyry Environment
Individual's name: Houix Jean-Pierre
Contact's position: Expert
Contact information:

Address:

Delivery point: Jaakcntkatu 3
City: Helsink
Postal Code: 01621
Country: Finland
e-mail address: jp.houix@gmail.com

Edit ☐

Edit   Delete   Publish   Back to Query

Screenshot 13: When choosing the edit/view option, the user may see the whole metadata

Edit page for the dataset

Modify Dataset Identification

Dataset title: Water intakes

Data Alternative title: Groundwater intakes in St. Petersburg City

Brief abstract (100 char.): The map shows the location of St. Petersburg groundwater intakes

Abstract:

The map shows the location of St. Petersburg groundwater intakes.
Attribute data provides a unique ID for each point, the ID of the well
according to the well database, the type of water intake (well, spring,
observation well), the yield of the water intake (cubic meter per seconds),
the lowering of the water table (in meter), the absolute level of the water

Keywords: Base map

Topic Category: inlandWaters

Dataset version: 1.0

Reference date (mm/dd/yyyy) 2007-01-09 00:0

Dataset language English

Dataset precision

Data scale: 1:100000

Geographic accuracy: 10 meters

Reset Cancel Submit

Screenshot 14: The user may then edit only that part of the metadata that needs to be edited.

Update results

The system reports that **no changes** have been brought to the dataset!

Note in particular that:

No changes have been brought to the **dataset title**

No changes have been made to the **alternative title**

No changes have been made to the **brief abstract**

No changes have been made to the dataset **abstract**

No changes have been made to **dataset's keyword**

No changes have been made to dataset's **topic**

No changes have been made to dataset's **language**

No modification has been made to dataset's **scale value.**

No modification has been made to dataset's **accuracy value.**

This can be the result of a mistake, a dysfunction, or simply your own decision not to modify anything.

Please, proceed as required:

Go back to the view/edit page for that dataset;

Report the dysfunction to the webmaster;

Choose any other action from the left menu.

Screenshot 15: When pushing the submit button, the user sees the changes he made to the dataset. Here, no changes have been brought to the metadata, and the user is provided options accordingly: go back to the edit page or report dysfunction if any.

Update results

Changes have been successfully applied.

Attributes that were modified are listed below. Feel free to add/delete comments to keep a record as accurate as possible of the changes you made:

> *** The title of the dataset has been modified to Modified title for Water intakes
> I modified the dataset title to make a demonstration on the way changes were handled by the application.

Save description

Please, note:

No changes have been made to the **alternative title**
No changes have been made to the **brief abstract**
No changes have been made to the dataset **abstract**
No changes have been made to **dataset's keyword**
No changes have been made to dataset's **topic**
No changes have been made to dataset's **language**

Screenshot 16: Once changes have been brought to the dataset, the application lists the changes and allows the user to add comments ; items that have not been modified are also listed.

> **This feature is particularly useful taking into account the collaborative environment. Other users need to be informed not only of the changes brought, but also of the reasons that drove the modifications.**

Thank You!

Changes description has been registered. You are being redirected to the Edit page (if your browser doesn't support this, click here)

Screenshot 17: If the description of the changes have been successfully registered, a message is shown to user

2.d)   Browse / Delete metadata set

Delete metadata references

The metadata you have choosen to delete concern the following dataset :

Title: Title for Second dataset

Brief abstract: Brief Abstract for Second dataset;

Created on: 2007-01-08.

Deleted data can not be recovered! Confirm deletion?

Delete   Cancel

Screenshot 18: If deleting a dataset, the user sees a warning and the application asks him/her to confirm ; the title, two first lines of the summary and the creation dates appear as a reminder of the metadata set chosen for deletion

Delete metadata references

The metadata references have been successfully deleted!
Choose an action from the left menu to continue.

Screenshot 19: the deletion is confirmed

2.e)   Browse / History

Changes record

(1). Modified on: 2007-01-10 00:00:00
Modifications brought:

By: HouixJean-Pierre

*** The title of the dataset has been modified to Modified title for Water intakes

(2). Modified on: 2007-01-10 00:00:00

Modifications brought:

By: HouixJean-Pierre

*** The title of the dataset has been modified to Modified title for Water intakes
I modified the dataset title to make a demonstration on the way changes were handled by the application

Screenshot 20: The history provides user the list of changes that have been brought to a particular dataset. It stipulates the date the changes has been made, by whom, and gives description of the changes.

2.f)   Export metadata

Export metadata

Retrieve the metadata you want to export.

Indicate first the parameters to sort metadata, then push the "Show metadata" button to display the results.

In the next window, select the metadata you want to export, and then export format.

Keyword: ...All keywords

Status: ...Status

Starting from (mm/dd/yyyy): 12/31/04

Ending before (mm/dd/yyyy): 01/11/07

Show metadata

Screenshot 21: The export metadata interface is similar as the browse metadata interface. It allows user selecting metadata sets using keywords, status, or date of creation.

Title: bridges
Abstract: The map shows bridges suitable for transportation.Attribute data provides a code for the bridge function,two object classes:simple bridge or opening bridge,and the bridge name if any.
Created on 2006-12-14   **Modified on** 2006-12-14   **Contact:** Igor Bogatyrev   **Organisation:** SC Mineral

Title: districts
Abstract: The map shows the administrative districts of St.Petersburg City.Attribute data provides the official name of the district as well as the district\'s code.
Created on 2006-12-18   **Modified on** 2006-12-18   **Contact:** Dmitry Frank-Kamenetsky   **Organisation:** P�yry Environment Oy

Click to export the data:

pdf   xml   csv   txt   Cancel

Screenshot 22: The process of exporting is rather straightforward: choose one or more metadata to export and choose the export format files by clicking one of the buttons.

Export metadata

File successfully created
Right click here and *save as* to download.
File successfully created
Right click here and *save as* to download.
File successfully created
Right click here and *save as* to download.

Screenshot 23: The application creates as many file as metadata were selected.

2.g) Import metadata

Import metadata

This section allows you to import ESRI xml metadata (EEA metadata standard only).

Browse and select the xml file to upload. Then push the *upload* button. The xml will be validated against ESRI xml scheme. If successfull, the file will be uploaded;if unsuccessfull, you will have to input the data manually.

[_____] [Browse...]   [**Upload**]

Screenshot 24: This option allows users importing files meeting the EEA standard. Browse your hard disk, select the file you want to import, click upload.
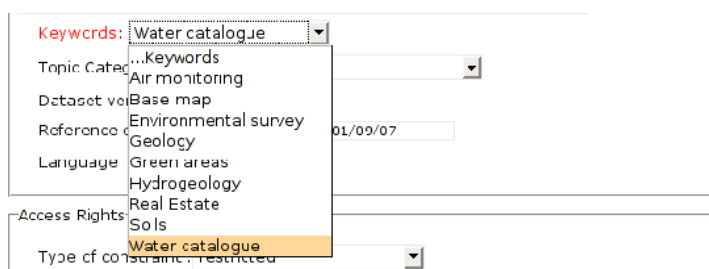
Import metadata

Can not read from xml file. The uploaded file is not a valid xml file.

Screenshot 25: In case the file being uploaded is not xml, an error message is sent back to user.

⚠️ **The import functions has limitations:**

— **it does not import keywords[3] as these are pre-defined in our case. This limitation could be easily removed, but the list of keywords would then be unlimited, i.e. meaningless;**

— **it does not import users: this is to secure database integrity. Contributors are to be assigned manually.**

Keywords: [Water catalogue ▼]
   ...Keywords
Topic Categ Air monitoring
Dataset ve Base map
    Environmental survey
Reference Geology   01/09/07
    Green areas
Language Hydrogeology
    Real Estate
Access Rights Sols
    Water catalogue
Type of constraint : restricted

Screenshot 26: The application does not import keywords, they have to be set manually

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3 Keywords are actually an issue. Predefined list of keywords are not standardized and basically any word can be use, making comparison and collation almost impossible. Moreover, actual databases support full text search and indexing, making the use of keywords meaningless.

Import metadata

Errors have been detected. All fields are mandatory. Please, check your inputs.

Dataset Identification

Dataset title:
Water_intakes

Data Alternative title:
Groundwater intakes in St. Petersburg City

Screenshot 27: It can also happen that the imported fields contain characters not allowed by the application. In this example, the title contains an underscore and will have to be modified.

Import metadata

Metadata successfully imported!

Choose an action from the menu to continue.

Screenshot 28: Once modifications have been made, push the Add button. A message appears if the import has been successful.

2.h)   Set Contributors / Assign user

Assign Contributors

This section provide you the ability to assign or remove Contributors to/from existing metadata sets.
Choose the parameters to sort metadata, then push the *Show metadata* button to display a list of metadata you may choose from to add/remove Contributors.

Keyword: ...Keywords

Status: ...Status

Starting from (mm/dd/yyyy): 12/31/04

Ending before (mm/dd/yyyy): 01/12/07

Show metadata

Screenshot 29: Choose first the metadata for which you want to assign contributors. If you want to do the other way around (assigning metadata sets to a contributor), use the Set metadata option under the Users' menu.

Title: Water intakes
Abstract: The map shows the location of St. Petersburg groundwater intakes. Attribute data provides a unique ID for each point, the ID of the well according to the well database, the type of water intake (well, spring, observation well), the yield of the...

Created on 2007-01-11   **Modified on** 2007-01-11   **Contact:** Jean-Pierre Houix   **Organisation:** Pöyry Environment Oy

Title: bridges
Abstract: The map shows bridges suitable for transportation.Attribute data provides a code for the bridge function,two object classes:simple bridge or opening bridge,and the bridge name if any.
Created on 2006-12-14   **Modified on** 2006-12-14   **Contact:** Igor Bogatyrev   **Organisation:** SC Mineral

Title: districts
Abstract: The map shows the administrative districts of St.Petersburg City.Attribute data provides the official name of the district as well as the district\'s code.

Created on 2006-12-18   **Modified on** 2006-12-18   **Contact:** Dmitry Frank-Kamenetsky   **Organisation:** Pöyry Environment Oy

| Assign user | Remove user | Reset | Cancel |

Screenshot 30: The application displays a list of metadata sets to which you may assign user, or from which you may remove user.

Assign Contributors

Select users from the list to assign them as Contributors for the selected metadata set:

☑ **Name:**   Jean-Pierre Houix   **Organisation:** Pöyry Environment Oy

☑ **Name:**   Arto Vuorela   **Organisation:** Pöyry Environment Oy

☑ **Name:**   Dmitry Frank-Kamenetsky   **Organisation:** Pöyry Environment Oy

☑ **Name:**   Igor Bogatyrev   **Organisation:** SC Mineral

| Assign user | Reset | Cancel |

Screenshot 31: Choose one or more users to assign to that metadata set, click the "assign user" button.

Assign Contributors

The following users were already **Contributors** for that metadata set:

Dmitry Frank-Kamenetsky (Pöyry Environment Oy);

The following users have been successfully named as **Contributors** for the selected metadata set:

Jean-Pierre Houix (Pöyry Environment Oy);

Arto Vuorela (Pöyry Environment Oy);

Igor Bogatyrev (SC Mineral);

The following individuals are now *Contributors* for the dataset:

Name: Jean-Pierre Houix	**Organisation:** Pöyry Environment Oy
Name: Arto Vuorela	**Organisation:** Pöyry Environment Oy
Name: Dmitry Frank-Kamenetsky	**Organisation:** Pöyry Environment Oy
Name: Igor Bogatyrev	**Organisation:** SC Mineral

To continue, choose an action from the left menu.

Screenshot 32: In our example, the first user was already contributing to that metadata set and the application displays a warning message. The three other users can be assigned as contributors, and well be granted the rights to work on this metadata set. At last, the application lists all contributors for that dataset.

The way users are managed by the application explains why it is not possible to simply import metadata contacts from an xml file.

The application is a collaborative environment developed to keep metadata updated and accurate. This implies that any person, listed in a metadata file as a contact, should actually be a registered user of the application.

If not, it means that this person can not effectively manage the metadata, i.e. it should not be listed in the file as a contact.

If the person is listed in the metadata, but is not yet an effective user of the application, he/she should be granted access, a procedure that requires Owner rights level and can not be simply achieved during an upload.

Once contributors have been assigned, they are listed as Point of Contacts in the metadata file (see Screenshot 33, page 23)

Points of Contact:

Contact's role: Owner
Organisation's name: Pöyry Environment Oy
Individual's name: Jean-Pierre Houix
Contact's position: EU Expert
Contact information:

Address:

Delivery point: Jaakonkatu 2
City: Helsnk
Postal Code: 01521
Country: Finski
e-mail address: jp.houix@gmail.com

Contact's role: Owner
Organisation's name: Pöyry Environment Oy
Individual's name: Arto Vuorela
Contact's position: EU Expert
Contact information:

Address:

Delivery point: Jaakonkatu 2
City: Helsnk
Postal Code: 01521
Country: Finski
e-mail address: arto.vuorela@poyry.com

Contact's role: Owner
Organisation's name: Pöyry Environment Oy
Individual's name: Dmitry Frank-Kamenetsky
Contact's position: Head of nformation service
Contact information:
Delivery point: Jaakonkatu 2
City: Helsnk
Postal Code: 01521
Country: Finski
e-mail address: arto.vuorela@poyry.com

Contact's role: Owner
Organisation's name: Pöyry Environment Oy
Individual's name: Dmitry Frank-Kamenetsky
Contact's position: Head of nformation service
Contact information:

Address:

Delivery point: Jaakonkatu 2
City: Helsnk
Postal Code: 01521
Country: Finski
e-mail address: jo.jngf@jhgsc.ru

Contact's role: Owner
Organisation's name: SC Minora
Individual's name: Igor Bogatyrev
Contact's position: Expert
Contact information:

Address:

Delivery point: Veselnaya 6
City: Saint Petersburg
Postal Code: 199105
Country: Russia
e-mail address: igor.bogatyrev@scmin.spb.ru

Edit ☐

Edit   Delete   Publish   Back to Query

Screenshot 33: Users assigned to a metadata set as contributors are now listed in the metadata file together with their role and address. This allows to know who is granted the rights to work on that metadata set.

2.i)   Set Contributor / Remove Users

Screenshot 34: The process of removing a Contributor is similar as adding one. Choose the metadata set for which you want to remove the contributor and click on "Remove user".

Screenshot 35: The application lists all existing contributors, and to you choose one or more from the list to be removed.

Screenshot 36: If the operation was successful, a short message appears.

```
┌─ Points of Contact: ──────────────────────────────────────────────────┐
│                                                                        │
│   Contact's role: Owner                                                │
│   Organisation's name: Pöyry Environment Oy                            │
│   Individual's name: Jean-Pierre Houix                                 │
│   Contact's position: EU Expert                                        │
│   Contact information:                                                  │
│                                                                        │
│   Address:                                                             │
│                                                                        │
│   Delivery point: Jaakonkatu 2                                         │
│   City: Helsinki                                                       │
│   Postal Code: 01621                                                   │
│   Country: Finski                                                      │
│   e-mail address: jp.houix@gmail.com                                   │
│   Edit □                                                               │
│                                                                        │
└────────────────────────────────────────────────────────────────────────┘
```

Edit **Delete** **Publish** **Back to Query**

Screenshot 37: After deletion, the metadata file lists only one individual as a contact person.

2.j)   Constants

Constants are used in different parts of the applications. These are usually fixed by standards and can not be modified without modifying the standard itself. Therefore, the right to manage constants is granted to Owner only.

Constants are:

– Keywords
– Topics
– Restrictions
– Languages
– Roles
– Status

> ⚠️ *In order to secure application's integrity, a constant can not be deleted if it is used to describe one or more data sets.*
>
> *Also, users' roles as Owner, Originator, and Processor belong to the core of the application and can not be deleted at all.*
>
> *However, the definitions of existing constants (including in use and core constants) may be modified, and new constants may be added.*

We will detail the modification that can be brought to one constant only, as others work a similar way.

Manage Metadata constants

In this section you can manage **constants** used for metadata, e.g you may add/delete[1] constant parameters or change constant description

Select from the list the constant you want to modify and click the *Modify* button:

- ⦿ Keywords
- ○ Topics
- ○ Restrictions
- ○ Languages
- ○ Roles
- ○ Status

Modify

[1]Note that to be deleted a constant should not be in use.

Screenshot 38: Choose the constant yuo want from the list and lick on "modify".

Keywords management

Modify an existing keyword

Choose a keyword from the dropdown menu and then an action *Edit* or *Delete*:

    ...Keywords   ▼

Edit   **Delete**

Add a new keyword

Provide the necessary attributes and then *Add* ; You may clean your input at any time choosing *Reset*

Keyword :

Keyword definition:

Add   **Reset**

Screenshot 39: The user is provided the possibility to modify an existing keyword, or to add a new keyword

Add a new keyword

Provide the necessary attributes and then *Add* ; You may clean your input at any time choosing *Reset*

Keyword : New Keyword

Keyword definition:

This is a new keyword to demonstrate the possibility to add/delete keywords from the application.

[Add]   [Reset]

Screenshot 40: To add a new keyword, simply give it a name and a definition, and click the "add" button

Keywords management

Keyword successfully added!

Choose an action from the menu to continue.

Screenshot 41: A confirmation message is displayed.

Keywords management

Modify an existing keyword

Choose a keyword from the dropdown menu and then an action *Edit* or *Delete*:

...Keywords

...Keywords
Air monitoring
Base map
Environmental survey
Geology
Green areas
Hydrogeology
New Keyword
Real Estate
Soils
Water catalogue

A   ord

Pr   uutes and then *Add* ; You may clean your input at any time choosing *Reset*

[Add]   [Reset]

Screenshot 42: The new keyword appears in the list of existing key word and can be modified as any other one...

Keywords management

Modify an existing keyword

Choose a keyword from the dropdown menu and then an action *Edit* or *Delete*:

New Keyword ▾

Edit   Delete

Screenshot 43: Choose the keyword you want to modify and click on "edit".

Keywords management

Modify Keyword:

New Keyword Modified

Modify Keyword Definition

This is a new keyword to demonstrate the possibility to add/delete keywords from the application. The definition can also be modified...

Click *Save* button to save your changes, *Reset* to retrieve original data, or *Cancel* to return to the *Constant* page:

Save   Reset   Cancel

Once you pushed the *Save* button you can not use the *Reset* button anymore!

Screenshot 44: User may modify both the Keyword and its definition. In case the new definition is not right, pushing the cancel button will bring back the original one. However, when the "saved" button is pushed, no changes can be reset.

Keywords management

Your changes have been successfully applied.

Choose an action from the menu to continue.

Screenshot 45: A message appears to say that changes were successfully applied.

Keywords management

Modify an existing keyword

Choose a keyword from the dropdown menu and then an action *Edit* or *Delete*:

Air monitoring ▼

Edit   Delete

Take note! To be deleted a constant should not be in use!

Screenshot 46: When putting the mouse over the delete button, a warning message appears reminding the user that a constant in use can not be deleted.

Keywords management

The following dataset(s) contain(s) that keyword:

Linear sources (Map showing air pollution linear sources in St. Petersburg City);

Title of the buggy dataset (Title for that dataset);

The **Air monitoring** keyword will not be deleted!

Choose an action from the left menu or go back to the Keyword page by pressing the *back* button:

Back

Screenshot 47: When trying to delete a constant in use, the application lists the metadata sets using that constant and warn the user it can not delete it.

Keywords management

Modify an existing keyword

Choose a keyword from the dropdown menu and then an action *Edit* or *Delete*:

New Keyword Modified ▼

Edit   Delete

Take note! To be deleted a constant should not be in use!

Screenshot 48: You may however delete a constant that is not in use (e.g. the constant we created in the Screenshot 40, page 25)

Keywords management

The selected keyword has been successfully deleted.

Choose an action from the menu to continue.

Screenshot 49: If successfully deleted, the application displays a message.

IV.3- Users Management

3.a) Add users

Add User

To add user, first fulfill the forms below. Note that all fields are mandatory:

1. Fill in personal information
2. Fill in company information
3. Set user role and access rights
4. Assign metadata the user should contribute to.

Personnal Information
Firstname:
Lastname:
Position:
Phone: Country code: Area code: Number:
Fax: Country code: Area code: Number:
E-mail:

Professionnal Address
Choose an organisation from the list:
...Organisations
Or enter a new organisation:
Organisation name:
Delivery address:
City:
Postal code:
Country:

User role and access rights
User role: ...Roles
User login:
User password:
Confirm password:

Reset   Add

Screenshot 50: To add user, first fulfil the form and click on the add button. Only users with Owner profiles may add users.

Add User

User successfully created!

Retrieve the metadata you want to assign to this newly created user.

Indicate first the parameters to sort metadata, then push the "Show metadata" button to display the results.

In the next window, select the metadata you want to assign.

Note that assigning metadata to user is *not* mandatory at this stage.

Keyword: ...All keywords ▼

Status: ...Status ▼

Starting from (mm/dd/yyyy): 12/31/04

Ending before (mm/dd/yyyy): 01/15/07

Show metadata

Screenshot 51: If the user has been added successfully, a message is displayed. The Owner has now the possibility to assign metadata sets to the just created user, if the latter has Owner or Processor profile. Retrieve metadata sets using criterion.

Title: Title of the buggy dataset

☐ **Abstract:** Abstract for that dataset

Created on 2006-12-11   Modified on 2006-12-14   Contact: Arto Vuorela   Organisation: Pöyry Environment Oy

Title: Water intakes

☑ **Abstract:** The map shows the location of St. Petersburg groundwater intakes. Attribute data provides a unique ID for each point, the ID of the well according to the well database, the type of water intake (well, spring, observation well), the yield of the...

Created on 2007-01-11   Modified on 2007-01-11   Contact: Jean-Pierre Houix   Organisation: Pöyry Environment Oy

Title: bridges

☑ **Abstract:** The map shows bridges suitable for transportation.Attribute data provides a code for the bridge function,two object classes:simple bridge or opening bridge,and the bridge name if any.

Created on 2006-12-14   Modified on 2006-12-14   Contact: Igor Bogatyrev   Organisation: SC Mineral

Title: districts

☑ **Abstract:** The map shows the administrative districts of St.Petersburg City.Attribute data provides the official name of the district as well as the district\'s code.

Created on 2006-12-18   Modified on 2006-12-18   Contact: Dmitry Frank-Kamenetsky   Organisation: Pöyry Environment Oy

Assign   **Reset**   **Cancel**

Screenshot 52: A list of metadata appears and you may choose to assign one or more metadata sets to the newly created user.

Add User

The new user has been successfully named as **Contributor** for the following metadata:

Water intakes (The map shows the location of St. Petersburg groundwater intakes);

bridges (The map shows bridges suitable for transportation);

districts (The map shows the administrative districts of St.Petersburg City);

Choose an action from the left menu.

Screenshot 53: Once metadata sets, a message is displayed confirming that metadata sets have been assigned.

3.b)   Browse users

Browse Users

This section provide you the ability to browse existing users.

Indicate first the parameters to retrieve users, then push the *Show users* button to display the results.

Select an individuals:
    ...All individuals

...or choose an Organisation:
    ...Organisations

...or choose a Role:
    ...Roles

Show users

Screenshot 54: The application displays criterias to retrieve users

3.c) Browse / See contributions

Browse Users

○ Lastname: Organisation:	Houix Pöyry Environment Oy	Firstname: Role:	Jean-Pierre Owner
○ Lastname: Organisation:	Vuorela Pöyry Environment Oy	Firstname: Role:	Arto Owner
○ Lastname: Organisation:	Frank-Kamenetsky Pöyry Environment Oy	Firstname: Role:	Dmitry Owner
○ Lastname: Organisation:	Roivas Pöyry Environment Oy	Firstname: Role:	Vesa Owner
○ Lastname: Organisation:	Bogatyrev SC Mineral	Firstname: Role:	Igor Owner

[Contribution] [Edit] [Delete] [Cancel]

Screenshot 55: Users meeting the search criteria are then listed. Chossing a user and clicking the contribution *button will show all metadata sets to which the user collaborates*

Browse Users

Jean-Pierre Houix from Pöyry Environment Oy is a contributor for the following metadata sets :

Title: Title for the test metadata
Abstract: Title for the test metadata

Title: Changed New Title for that dataset
Abstract: Change Abstract for that dataset

Title: Linear sources
Abstract: Map showing air pollution linear sources in St. Petersburg City. Attribute data provides the ID code of the sources in the air pollution monitoring software (Ekologgorod), the code of the area, the code of the factory, the name of the type of the...

Title: districts
Abstract: The map shows the administrative districts of St.Petersburg City.Attribute data provides the official name of the district as well as the district\'s code.

Title: Water intakes
Abstract: The map shows the location of St. Petersburg groundwater intakes. Attribute data provides a unique ID for each point, the ID of the well according to the well database, the type of water intake (well, spring, observation well), the yield of the...

Screenshot 56: The application lists all metadata sets to which the chosen user collaborates.

3.d)   Browse / Edit

Browse Users

Personal Information

Firstname: Jean-Pierre

Lastname: Houix

Position: EU Expert

Phone: Country code: 372   Area code: 5   Number: 3440510

Fax: Country code: 372   Area code: 5   Number: 3440510

E-mail: jp.houix@gmail.com

Role: Owner

Organisation: Pöyry Environment Oy

Access Information

Login: houix

Set new password: *******

Confirm password: *******

Save   Reset   Cancel

Screenshot 57: Editing a user allows to modify his/her profile. Note that only users with Owner profile may do so.

Browse Users

User profile successfully updated

Choose an action from the menu to continue.

Screenshot 58: A short message is displayed to confirm that user's profile has been updated.

3.e) Browser user / Delete

Browse Users

The user you intend to delete is a contact person for the following dataset:

Title for the test metadata (Title for the test metadata);

Linear sources (Map showing air pollution linear sources in St. Petersburg City);

Water intakes (The map shows the location of St. Petersburg groundwater intakes);

If you want to remove *Jean-Pierre Houix* from the users' list, you have first to name somebody else as a contact person.The user will not be deleted.

Choose an action from the left menu or go back to the *Browse Users'* page by pressing the *back* button:

Back

Screenshot 59: A user who is a contact person for metadata sets can not be removed from the application. Somebody else has to be named contact person first. If the Owner attempts to delete such user, the application displays a warning message.

Browse Users

You are about to delete the following user:

Lastname: Roivas

Firstname: Vesa

Role: Owner

Organisation: Pöyry Environment Oy

Please, confirm you choice.

Confirm   **Cancel**

Screenshot 60: A user who is not a contact person for a metadata set can be remove. The application requires confirmation before removing the user.

Browse Users

The selected user has been successfully deleted.

Choose an action from the menu to continue

Screenshot 61: The application displays a confirmation message.

3.f)   Browse users / Set metadata

Set Metadata

This section provide you the ability to assign or remove metadata sets to/from existing users.

Choose the user:

Select an individual:

...Choose from the list ▾

Assign metadata sets

Choose the parameters to sort metadata, then push the *Show metadata* button to display the list of metadata you may assign to the user.

Keyword: ...Keywords ▾

Status: ...Status ▾

Starting from (mm/dd/yyyy): 12/31/04

Ending before (mm/dd/yyyy): 01/15/07

Show metadata

Remove metadata sets

Click on the button below to display a list of metadata assigned to that user.You will be able to remove any metadata set from this list.

List metadata

Screenshot 62: Metadata sets can be assigned to, or removed from, one user. Select first the user, and then the criteria to retrieve metadata sets to be added, or push the delete button in case you want to remove the metadata sets from that user.

Title: **Title of the buggy dataset**
☑ **Abstract:** Abstract for that dataset
Created on 2006-12-11   Modified on 2006-12-14   **Contact:** Arto Vuorela   **Organisation:** P�yry Environment Oy

Title: **Water intakes**
Abstract: The map shows the location of St. Petersburg groundwater intakes. Attribute data provides a unique
☑ ID for each point, the ID of the well according to the well database, the type of water intake (well, spring,
observation well), the yield of the...
Created on 2007-01-11   Modified on 2007-01-11   **Contact:** Jean-Pierre Houix   **Organisation:** P�yry Environment Oy

Title: **bridges**
☑ **Abstract:** The map shows bridges suitable for transportation.Attribute data provides a code for the bridge
function,two object classes:simple bridge or opening bridge,and the bridge name if any.
Created on 2006-12-14   Modified on 2006-12-14   **Contact:** Igor Bogatyrev   **Organisation:** SC Mineral

Title: **districts**
Abstract: The map shows the administrative districts of St.Petersburg City.Attribute data provides the official
☑ name of the district as well as the district\'s code.
Created on 2006-12-18   Modified on 2006-12-18   **Contact:** Dmitry Frank-Kamenetsky   **Organisation:** P�yry Environment Oy

[Assign]   [Reset]   [Cancel]

Screenshot 63: When assigning metadata sets to a user, the application displays first a list of metadata to choose from. Select one or more metadata sets to assign them to the user.

Set Metadata

The user was already **Contributor** for the following metadata sets:

Water intakes (The map shows the location of St. Petersburg groundwater intakes);

districts (The map shows the administrative districts of St.Petersburg City);

The user has been successfully named as **Contributor** for the following metadata sets:

Title of the buggy dataset (Title for that dataset);

bridges (The map shows bridges suitable for transportation);

The user is now a **Contributor** for the following metadata sets:

Screenshot 64: The application shows a warning message in case the user was already a contributor for a certaina metadata set.

The user is now a **Contributor** for the following metadata sets:

Title: Title for the test metadata
Abstract: Title for the test metadata

Title: Changed New Title for that dataset
Abstract: Change Abstract for that dataset

Title: Linear sources
Abstract: Map showing air pollution linear sources in St. Petersburg City. Attribute data provides the ID code of the sources in the air pollution monitoring software (Ekologgorod), the code of the area, the code of the factory, the name of the type of the...

Title: districts
Abstract: The map shows the administrative districts of St.Petersburg City.Attribute data provides the official name of the district as well as the district\'s code.

Title: Water intakes
Abstract: The map shows the location of St. Petersburg groundwater intakes. Attribute data provides a unique ID for each point, the ID of the well according to the well database, the type of water intake (well, spring, observation well), the yield of the...

Title: bridges
Abstract: The map shows bridges suitable for transportation.Attribute data provides a code for the bridge function,two object classes:simple bridge or opening bridge,and the bridge name if any.

Screenshot 65: Then, the application displays the list of metadata sets to which the user is presently collaborating.

Remove metadata sets

Click on the button below to display a list of metadata assigned to that user.You will be able to remove any metadata set from this list.

List metadata

Screenshot 66: To remove a metadata set from a user, choose first the user and then click the List metadata button.

Set Metadata

The system reports that **no user** has been selected!

Hit the *Back* button and select a user.

Back

Screenshot 67: Note that if you forgot to select a user, the application will remind you about it.

Set Metadata

The user is a contributor for the metadata sets listed below. Select the one(s) you want to remove and click the *Remove* button.

☐ **Title: Title for the test metadata**
Abstract: Title for the test metadata

☐ **Title: Changed New Title for that dataset**
Abstract: Change Abstract for that dataset

☐ **Title: Linear sources**
Abstract: Map showing air pollution linear sources in St. Petersburg City. Attribute data provides the ID code of the sources in the air pollution monitoring software (Ekologgorod), the code of the area, the code of the factory, the name of the type of the...

☑ **Title: districts**
Abstract: The map shows the administrative districts of St.Petersburg City.Attribute data provides the official name of the district as well as the district\'s code.

☑ **Title: Water intakes**
Abstract: The map shows the location of St. Petersburg groundwater intakes. Attribute data provides a unique ID for each point, the ID of the well according to the well database, the type of water intake (well, spring, observation well), the yield of the...

☑ **Title: bridges**
Abstract: The map shows bridges suitable for transportation.Attribute data provides a code for the bridge function,two object classes:simple bridge or opening bridge,and the bridge name if any.

☑ **Title: Title of the buggy dataset**
Abstract: Abstract for that dataset

[Remove]   [Reset]   [Cancel]

Screenshot 68: You may then choose to remove one or more metadata sets from that user.

Set Metadata

Metadataset have been successfully deleted.
Choose an action from the menu to continue.

Screenshot 69: The application displays a message to confirm the operation.

3.g) Browse users / Address book

Address Book

Role	Name	Position	Phone	Fax	Email	Organisation	Address	Country
Owner	Frank-Kamenetsky Dmitry	Head of information service	7 812 457845	7 812 745152	jo.jhqf@jhqsd.ru	Pöyry Environment Oy	Jaakonkatu 2, 01621 Helsinki	Finland
Owner	Houix Jean-Pierre	Expert	372 5 3440510	372 5 3440510	jp.houix@gmail.com	Pöyry Environment Oy	Jaakonkatu 2, 01621 Helsinki	Finland
Owner	Vuorela Arto	EU Expert	358 1 568926	358 1 235689	arto.vuorela@poyry.com	Pöyry Environment Oy	Jaakonkatu 2, 01621 Helsinki	Finland

Screenshot 70: The address book allows to retrieve easily users' contact information. Table's columns may be sorted by clicking column's field name.

IV.4- Navigation

4.a) Logout

Good bye **Jean-Pierre**!

Hope to see you soon on board!

Screenshot 71: A short message is displayed to inform the user he/she logged out.

V. Conclusion

The application is still under development and will be modified after having being tested in the frame of the project. It gives however a good overview of what a collaborative and on-line environment could be. The most important improvements to be brought concern :

– data security: protect the data;

– user interface: improve design and accessibility;

– data dictionary: develop a data dictionary to describe data attributes.