




<p>CatMDEdit</p> <p>-</p> <p>User Manual</p>
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CatMDEdit 4.5 Metadata Editor

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1. Introduction

CatMDEdit is a metadata editor tool that facilitates the documentation of resources, with special focus on the description of geographic information resources.

In order to install the application, auto-executable files (.exe for windows and .jar for Linux/Unix) ought to be stored at the hard disk. Then, it will start the set-up automatically and the user should follow the assistant advices. Those files must be downloaded from <http://catmdedit.sourceforge.net/>

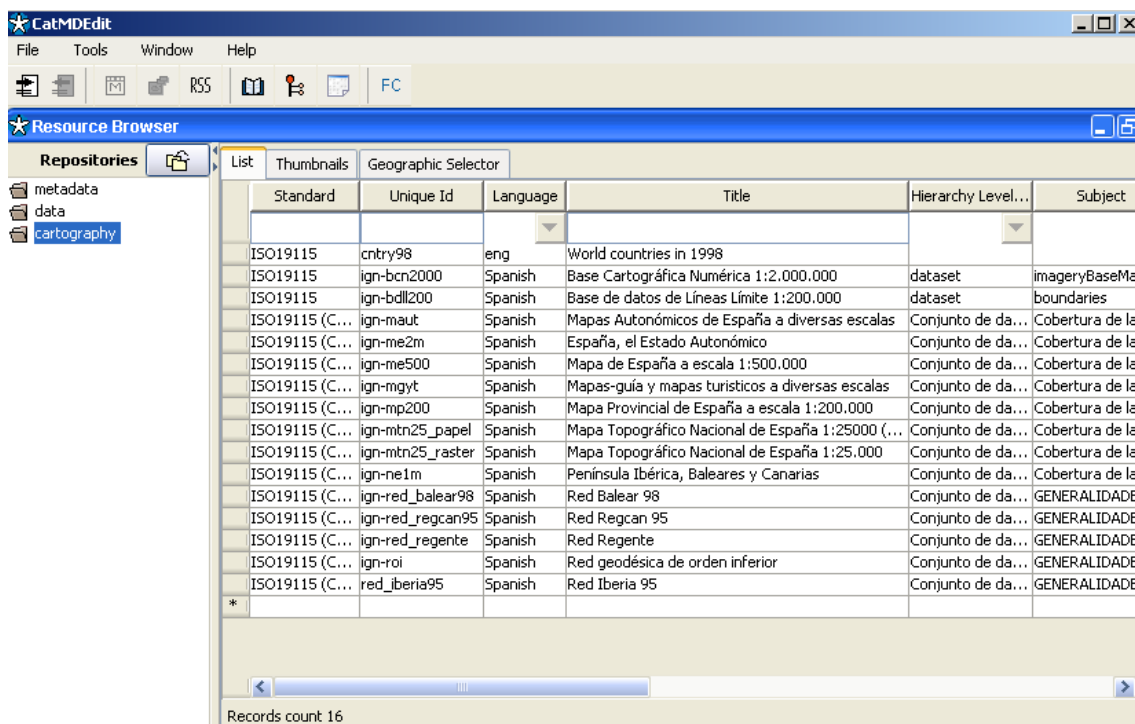


Figure 1 Main window

When the tool starts, it automatically shows the window Figure 1 that lets you browse the two basic concepts for understanding the working way of CatMDEdit: resources and repositories.

- On one hand, a **resource** is the basic information unit managed by CatMDEdit and it is composed by the data and its metadata at the same time. Like other content management tools, metadata are the instruments that allow us to describe a resource and launch tools associated with the resource, e.g. its visualization (see section 5). The purpose of CatMDEdit is promoting the metadata creation as an instrument that facilitates the process over data in a more effective way.
- On the other hand, a **repository** is a warehouse where digital data and metadata are stored. In the current version of CatMDEdit, repositories correspond to folders in the file system. In order to visualize a resource through a repository, it must have a metadata file associated.

The resource browser (Figure 1) is vertically divided in two parts:

- The repository selector on the left side allows the selection of different storage sources where the user stores resources and their associated descriptions, i.e.

their metadata. The details of repository management are described in section “3. Repository Management”.

- The resource explorer on the right side allows the selection of the resources that are stored in each repository through the metadata record associated with each one of those resources. The details of resource selection are described in section “3.2 Explore resources within a repository”.

The following sections describe the different functionalities provided by CatMDEdit:

- Section “2-Tool menus” describes the menus accesibles from the tool
- Section “3 - Management of repositories” describes the management of repositories
- Section “4 - Resource documentation” explains the edition of metadata that describes a resource. Currently, CatMDEdit supports the edition of metadata that comply with ISO 19115 standard and Dublin Core standard. Section 4.1 lists the standards and profiles supported by the tool.
- Section “5 - Visualization of resources” describes how to launch the visualizations tools
- Section “6 - Metadata Import/Export” describes how to import and export metadata.
- Section “7 - Contact directory” describes how to manage a repository of contacts information.
- Section “8 - Template selector “ describes how to manage a repository of metadata templates
- Section “9 - Thesaurus repository” describes how to browse the repository of thesaurus used to complete keywords and other controlled vocabularies in metadata.
- Section “10 - Appendix” includes a set of appendix that describes advanced functionalities of the tool, administration and configurations of it, mainly.

2. Tool menus

Tool menus are explained in the following sections and are as follows:





- File menu
- Tools menu
- Window menu
- Help menu

Additionally, CatMDEdit has the following pop up menus:

- Edition pop up menu

2.1. File menu

File menu has the following options:

-  Open metadata: It allows to display and to edit the content of metadata selected in the "List". More details in section 4.
-  Open resource: It allows opening a specific application in order to display (or editing in some cases) the resource associated to the metadata selected at the "resource explorer".
-  Import: It allows importing metadata records according to several file formats and complying with different standards (ISO 19115, FGDC, Dublin Core). For more details, see section 6.1.
-  Export: It allows exporting metadata records according to several file formats and complying with different standards (ISO 19115, FGDC, Dublin Core). For more details, see section 6.2.
- Exit: It allows exiting the tool. You also can finish by pressing X on the top right corner of the window.

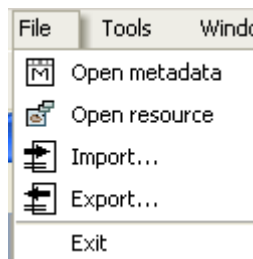


Figure 2 Menu File

2.2. Tools menu

This menu collects additional tools used to fill in some metadata elements. Included options are the followings:

- Change Application Language: allows selecting the language in which the tool labels are shown. CatMDEdit must be restarted so that this change takes effect.
- Thesaurus repository: This tool allows browsing terms that belong to thesauri, which are specialized in different types of keywords. See section 8.

- Contact directory: this directory allows visualizing existing contacts and also modifying them, adding new ones and deleting them. For more details, see section 7.
- Template Directory: this directory allows accessing the metadata template repository, creating new templates and editing the existing.
- Feature Catalogue Directory: it allows accessing a repository where metadata in standard ISO19110 documenting other metadata are stored
- GeoRSS generation: creation of a file geoRSS for a given resource repository

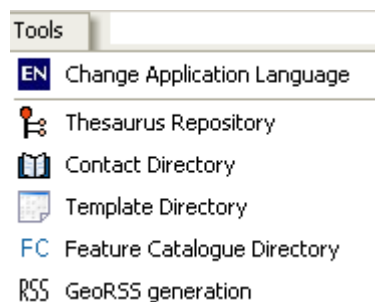


Figure 3 Menu Tools

2.3. Window menu

It shows all the windows that are open in the tool, and allows placing the one you want on the foreground.

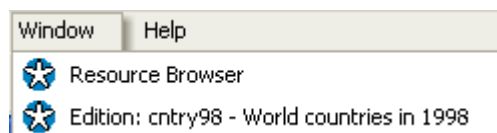


Figure 4 Menu Window

2.4. Help menu

This menu contains the following options:

- User manual: This option links to the user manual of this tool.
- About: It shows information about the version and author of this tool.

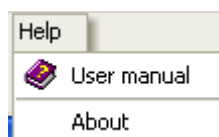


Figure 5 Menu Help

2.5. Edition Pop Up Menu

This menu allows doing the common edition operations in the resource browser window as well as in the tables that appear along the application

Insert	Insert
Delete	Delete
Replicate	F4
Refresh	F5
Open metadata	
Open resource	

Figure 6 Edition Pop Up Menu

In order to show this menu, the right button of the Mouse must be pressed in the table that is going to be edited. The options are detailed below.

- Insert: this option adds an empty row to the active table.
- Delete: this option deletes the selected row in the active table.
- Replicate: it creates an identical copy of the selected element in the metadata resource explorer window (see details in section 3.3.2).
- Refresh: this option reloads the information shown in the selected window. It is useful in multi-user environments, where there may be several people creating or modifying metadata records and where the information seen by other users can be out of date.


Other operations will be detailed in next sections: “4.1 Visualization of a metadata record” and “5. Visualization of resources”

3. Management of repositories

In CatMDEdit a repository is defined as a storage source where digital data and its associated metadata are stored. At the current version of this tool, repositories are file system folders. In order to a resource can be displayed through a repository, it must have an associated metadata file.

The following sections describe how to manage these repositories and the resources inside these repositories.

3.1. Create, modify or delete a repository

To manage repositories, the repositories icon ought to be pressed , in the main window, next to the “List” view.

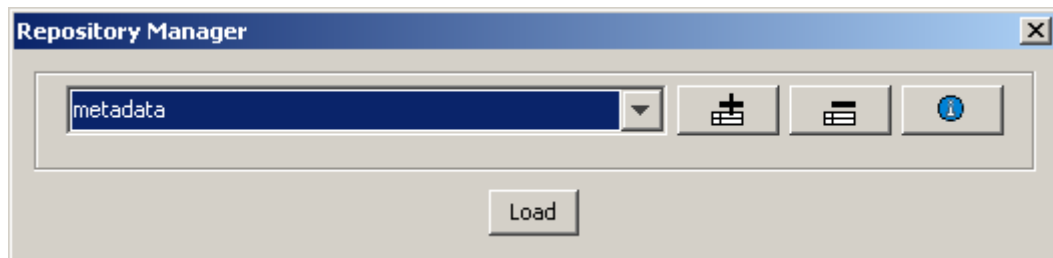





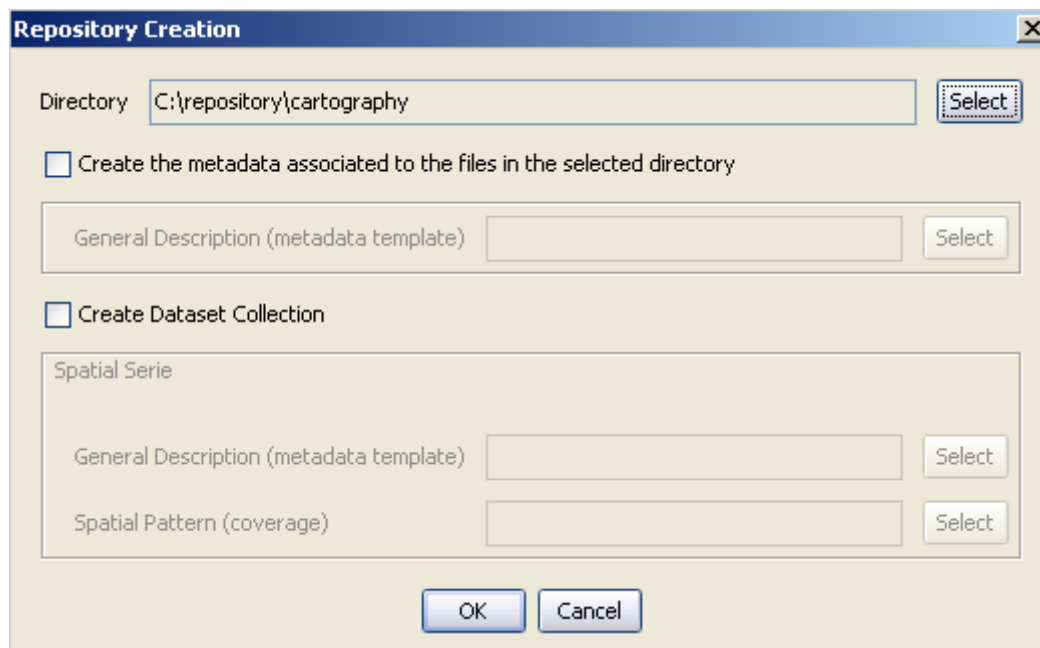
Figure 7 Repository management window

In this window (Figure 7) several actions can be performed:

- 1) Create metadata repositories by pressing the button . When it is pushed, a dialog is displayed. In this dialog must be selected the Folder in where the digital data and metadata will be stored, see Figure 8.
- 2) Delete metadata repositories by selecting a repository from the combo box and then pressing the button .
- 3) See and edit the repository description, by pressing .

It ought to be said that the new repository creation dialog (see Figure 8) allows the automation of the creation of metadata that describe aggregation of closely related resources.

For example, it will be possible either generating metadata of a set of data stored in the same directory or generating metadata about different tiles that make up spatial series. Details of this functionality are described in section 3.4.



The image shows a 'Repository Creation' dialog box. It has a title bar with a close button. The main area contains several fields and checkboxes. At the top, there is a 'Directory' text box with the path 'C:\repository\cartography' and a 'Select' button to its right. Below this is a checkbox labeled 'Create the metadata associated to the files in the selected directory'. Underneath is a 'General Description (metadata template)' text box with a 'Select' button. Further down is another checkbox labeled 'Create Dataset Collection'. Below that is a 'Spatial Serie' section containing two text boxes: 'General Description (metadata template)' and 'Spatial Pattern (coverage)', each with a 'Select' button. At the bottom of the dialog are 'OK' and 'Cancel' buttons.

Figure 8 *Creation of a new repository*

3.2. Browse resources within a repository

Once a repository is selected on the left panel of the resource explorer, the right panel allows navigating through the different resources and selecting them to make several operations.

This resource selector offers several different perspectives to explore the resources within a repository: the tabular view selection, the thumbnail selection and selections based on the geographic extension of each resource .

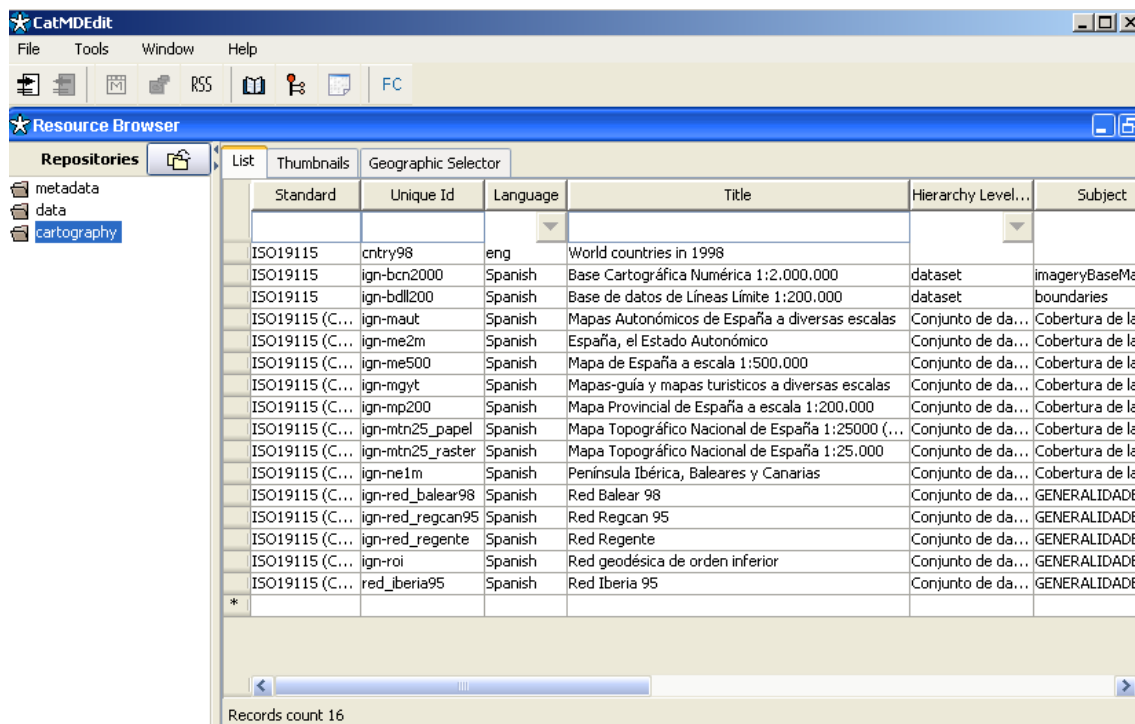


Figure 9 : Tabular view resource selection

The List view (see "List" tab in Figure 9) offers the resource selection through a table. This view allows the features cited below:

- It allows multiple and single resource selection. Multiple selection is done in the common way on Windows, CTRL + mouse click to select each one and SHIFT + mouse click to select an interval. The selected record on this window will be manipulated in the rest of the application.
- It allows to sort in alphabetical order the elements contained by each one of the columns. In order to do that a mouse click must be done in the header of the column.
- It allows filtering the visible metadata record restricting by the value from one or several columns. The value that defines the filter is the one that is put below each column header (by controlled lists or text fields).
- It allows choosing the columns to be shown. In order to do that the mouse must be placed in the header and then the right button on the mouse and select or deselect the columns.

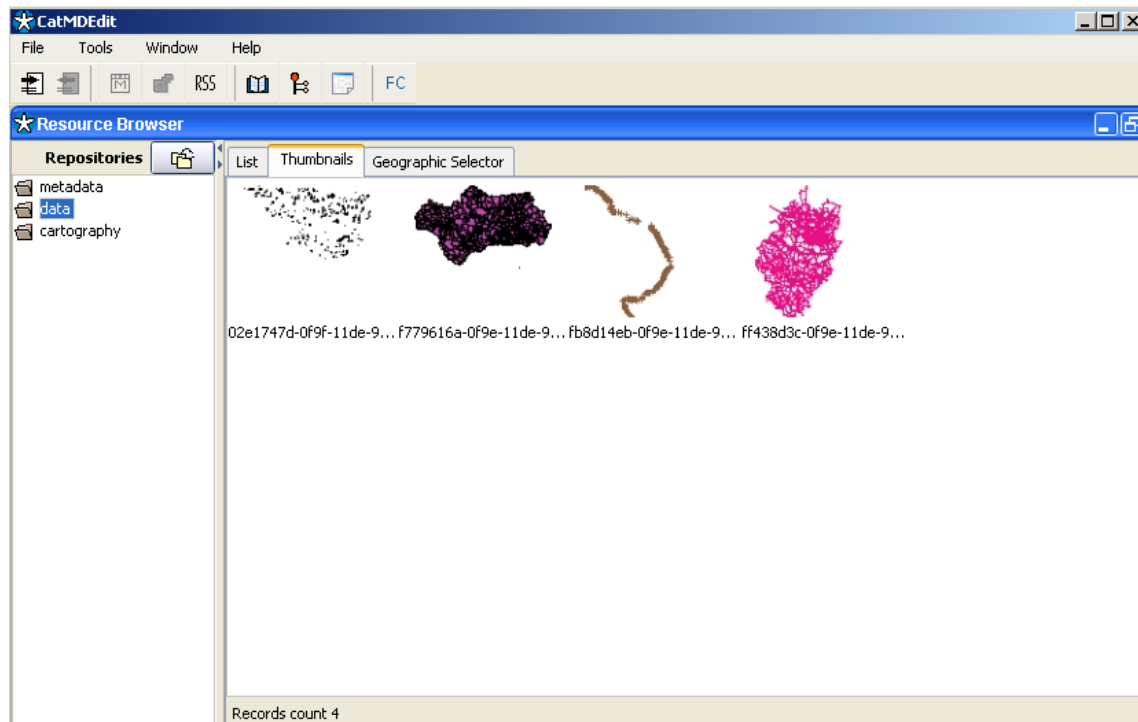


Figure 10 Thumbnails resource selection

The thumbnails selection makes possible the selection through the visualization of a graphic summary of the resources (see “Thumbnails” tab in Figure 10). If the digital product (map, orthofoto, etc) is stored at the repository, the user can view a thumbnail of this product.

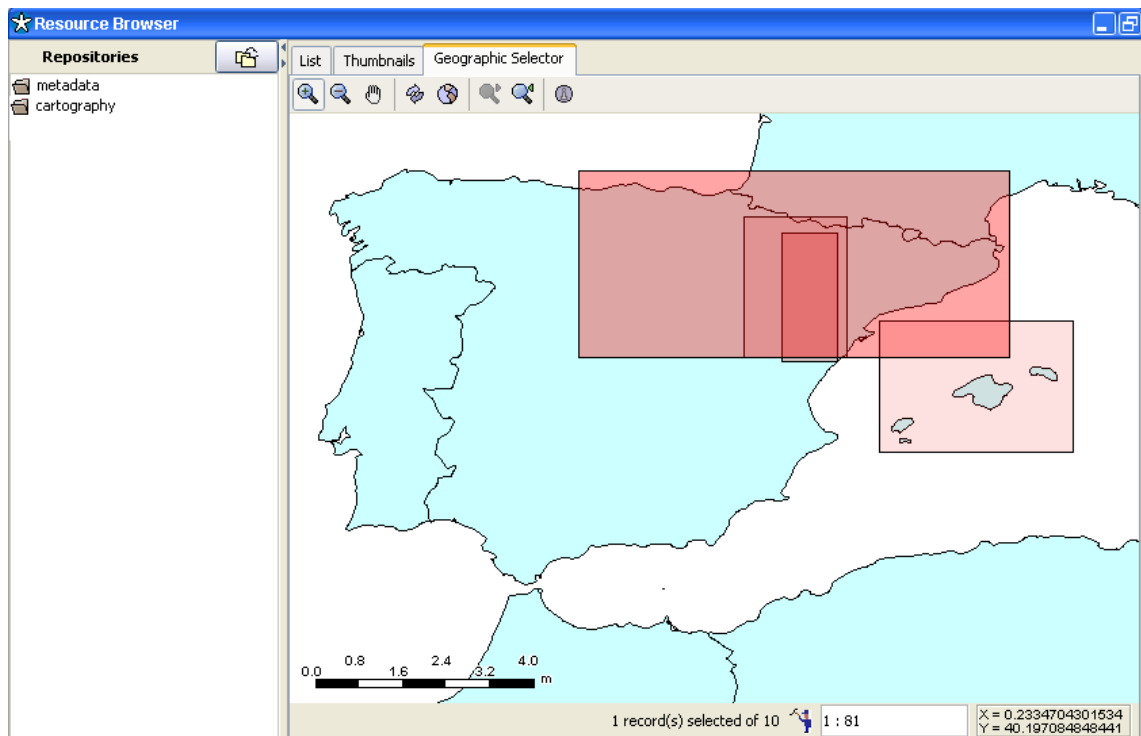


Figure 11 View through Geographic selector

Geographic selector (Figure 11) allows visualizing the geographic extensions of the catalogued resources, taking into account the geographic coordinates displayed in the metadata. If metadata don't contain any geographic extension, they won't appear in this view. This selector allows some manipulations on the map, like center it, making zoom or moving it freely.

Regardless of the chosen view, the user can operate with the selected resources as follows:

- Create, delete, replicate or refresh the repository resources through the pop up menu described in section "2.5". Section "3.3. Add a resource to a repository" describes the options to add new resources through a pop up menu.
- Visualize and modify the metadata associated with the selected resources. Section 4 details the possibilities of metadata visualization and edition.
- Visualize the selected resource. For some digital formats of the resources, it is possible to open an application that will allow the visualization of the selected resources. Section 5 details the possibilities of resource visualization.
- Import and export the metadata associated to the selected resources. Through Import/Export options in File menu it is possible to import and export metadata in several file formats and according to the different metadata standards, see more details in section "6".

3.3. Add a resource to a repository

There are three possibilities to add new resources to a repository:

1. By creating a new metadata record that describes de new resource.
2. By replicating an existing metadata record and modifying the information that describes the new resource.
3. By importing the metadata that describes the new resource through the import option in the File menu.

The first two sections are described below. The third one is described in section “6.1. Import”.

3.3.1. Create a new metadata record

User has several ways to create metadata. These options are available from the resource browser:

- Click on the asterisk that appears on the left of the blank row from the resource explorer (see Figure 12)
- Press “Insert” key on the keyboard
- Click the right button on the mouse in any metadata registry. This will show the edition pop up menu (see section 2.5) and in that menu the “Insert” option can be selected.

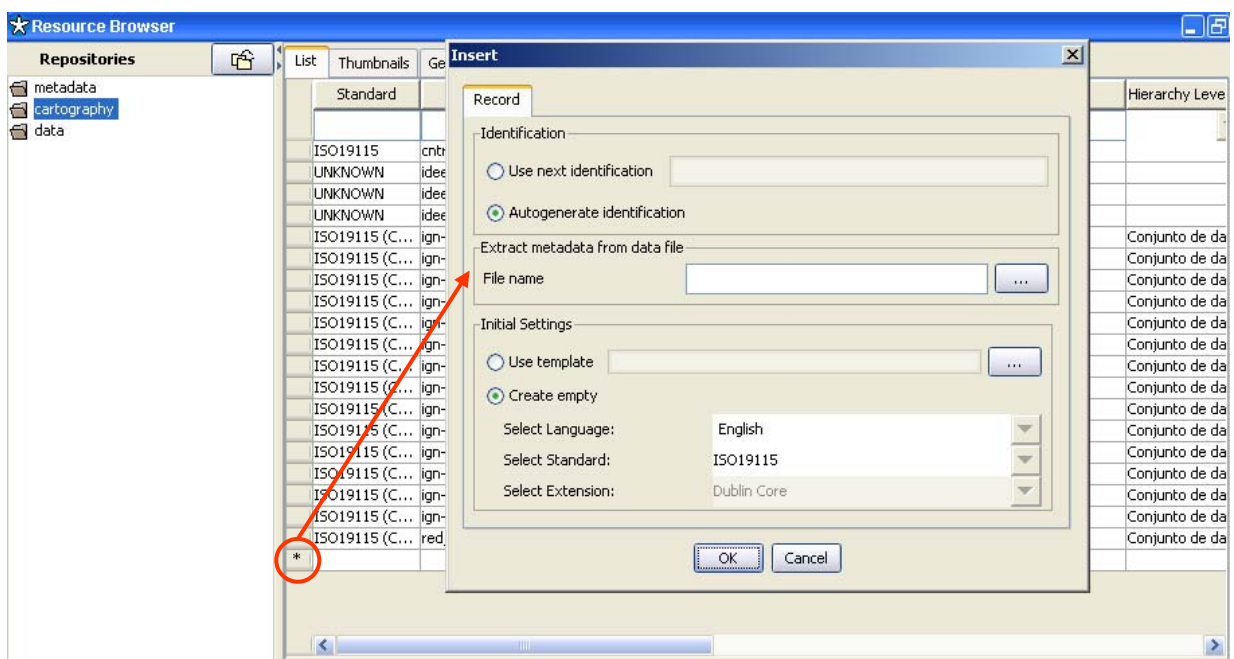


Figure 12 Metadata creation window

In the three cases will be shown the “Insert” dialog that appears in the Figure 12. Within this insertion dialog the next steps must be followed:

1. Select the identification, which is the unique and unrepeatable text string that identifies the xml metadata file. There are two options:
 - *Use next identification*: the user can choose the character string to identify the xml metadata file

- *Autogenerate identification*: the tool generates an alphanumeric code made of X characters and it ensures that it will not be repeated
2. Extract metadata from data file (Optional): The tool allows the automatic extraction of information directly from the data that is being catalogued. If the user has access to the data described by the metadata, the user can select its path by pushing the button "...". Once the path is specified, CatMDEdit generates several fields automatically. See more details in section 3.4.
 3. Use template: this option allows the creation of a metadata adopting one template of the repository. In this case, the new generated metadata will inherit all the fields completed in the selected template.
 4. Create empty: allows the generation of a completely new metadata. Only in this case the following options will be fitted out:
 - *Select language*: It is the language in which the metadata will be filled and described.
 - *Select standard*: the metadata standard that the file to be created will follow
 - *Select extension*: metadata profile inside a selected standard

In order to create the metadata of a set of resources, see details on section "3.5. Automatic creation of metadata for collections of related resources"

3.3.2. Replicate an existing metadata record

The second way to add resources to a repository is by replicating or copying another existing metadata record. In order to do that the metadata which will be replicated must be selected and then the user must push F4 key on the keyboard or "Replicate" option in the edition pop up menu (that appears by clicking the right button of the mouse). Then, the next window is shown.

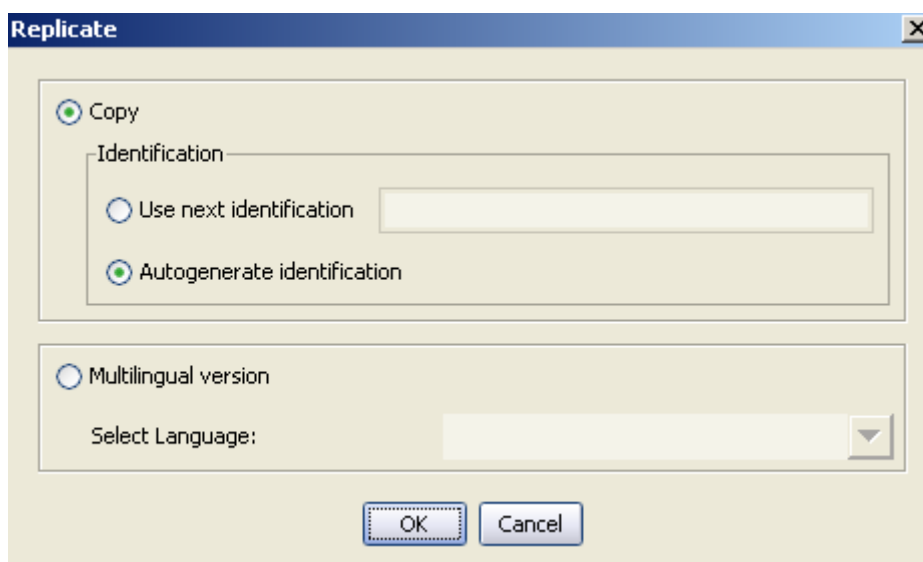


Figure 13 Metadata replication window

CatMDEdit allows two possibilities:

- Copy: exact copy of a metadata record. It is possible indicate an identification for the file or let the tool auto generate it

- Multilingual version: copy of a metadata record in a different language with respect to the original metadata language. It is not a translator, so the free text fields will be kept in their original language

3.4. Extracting automatic metadata from data files

This tool allows the automatic generation of the metadata that describe a resource from the analysis of some digital formats.

The formats from the information can be extracted are: shp, dgn, ecw, ficc, GeoTiff, gif/gfw, jpg/jgw, png/pgw.

This functionality is activated from the new metadata insert dialog described in section 3.3.1. If the user have access to the data that describes the metadata, its path can be selected by pushing the button "...". Once the path is specified, this tool generates the next metadata record fields automatically:

ISO 19115 metadata elements	SHP	DGN	ECW	FICC	GeoTIFF	GIF/ GFW	JPG/ JGW	PNG/ PGW
MD_Metadata.identificationInfo> MD_DataIdentification.extent> EX_Extent.geographicElement> EX_GeographicBoundingBox.northBoundLatitude, EX_GeographicBoundingBox.SouthBoundLatitude, EX_GeographicBoundingBox.eastBoundLongitude, EX_GeographicBoundingBox.westBoundLongitude	X	X	X	X	X	X	X	X
MD_Metadata.identificationInfo> MD_DataIdentification.spatialRepresentationType	X	X	X	X	X	X	X	X
MD_Metadata.spatialRepresentationInfo> MD_VectorSpatialRepresentation.geometricObjects> MD_GeometricObjects.geometricObjectType	X	X		X				
MD_Metadata.spatialRepresentationInfo> MD_VectorSpatialRepresentation.geometricObjects> MD_GeometricObjects.geometricObjectCount	X	X		X				
MD_Metadata.spatialRepresentationInfo> MD_GridSpatialRepresentation.numberofDimensions			X		X	X	X	X
MD_Metadata.spatialRepresentationInfo> MD_GridSpatialRepresentation.axisDimensionProperties> MD_Dimension.dimensionName			X		X	X	X	X
MD_Metadata.spatialRepresentationInfo> MD_GridSpatialRepresentation.axisDimensionProperties> MD_Dimension.dimensionSize			X		X	X	X	X
MD_Metadata.contentInfo> MD_FeatureCatalogueDescription.featureTypes MD_Metadata.applicationSchemaInfo> MD_ApplicationSchemaInformation.schemaAscii	X	X		X				
MD_Metadata.applicationSchemaInfo> MD_ApplicationSchemaInformation.schemaAscii	X							
MD_Metadata.distributionInfo> MD_Distribution.transferOptions> MD_DigitalTransferOptions.onLine> CI_OnlineResource.linkage	X	X	X	X	X	X	X	X
MD_Metadata.distributionInfo> MD_Distribution.transferOptions> MD_DigitalTransferOptions.transferSize	X	X	X	X	X	X	X	X
MD_Metadata.distributionInfo> MD_Distribution.distributionFormat> MD_Format.name	X	X	X	X	X	X	X	X

3.5. Automatic creation of metadata for collections of related resources

CatMDEdit allows the automatic creation of metadata for collections of related resources. In particular, the application now allows the generation of metadata for a directory and for resources that comprise a spatial series.

3.5.1. Automatic creation of metadata for a directory

CatMDEdit allows the automatic creation of metadata for resources stored in the same directory. This function is activated during the generation of a repository (see “3.1. Create, modify or delete a repository”)

For this, the user will activate the option “Create the metadata associated to the files in the selected directory” (see Figure 15). Additionally, it is possible to apply a metadata template by selecting one of the availables in the template repository. If the user selects a template, the new metadata will be generated according to it and will inherit the fields that the template was filled in.

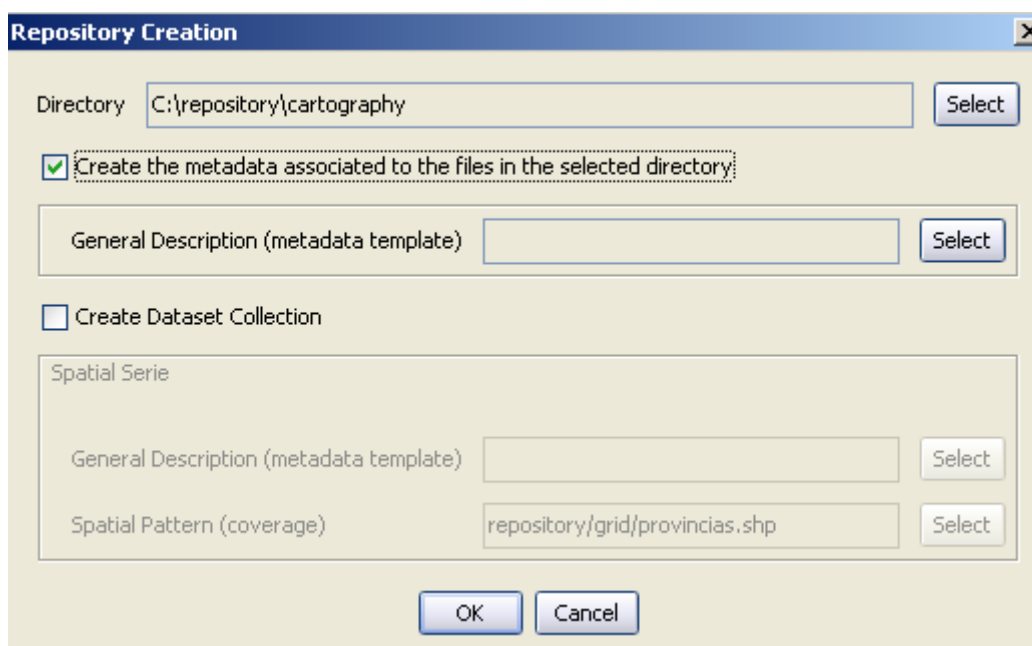


Figure 14 : Automatic creation of metadata for a directory

3.5.2. Automatic creation of metadata for a spatial series

A spatial series is a collection of spatially distributed resources that arise as a result of the fragmentation of geometric resources into datasets of manageable size and similar scale.

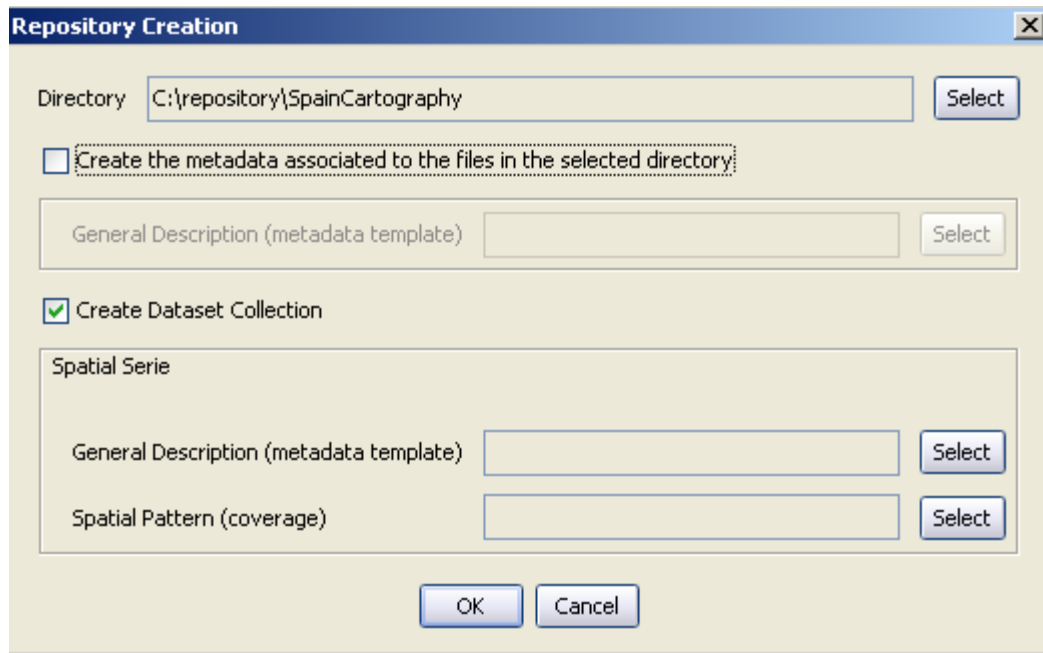


Figure 15 Configuration of spatial series

This functionality is activated during the repository creation. After following the steps for creating a repository (see section 3.1), the check box “Create Dataset Collection” must be selected. Then, the user will be able to select the rest of the options in the dialog (see Figure 15).

Inside the dialog shown in the Figure 15 the next information must be introduced to describe the collection:

- General Description (metadata template): Through the “Select” button the user must choose the metadata record that globally describes the resource collection. In addition, the information within that registry will be the info that will also have the metadata registry that describes each one of the resources in the collection. As it is shown in the dialog that appears in the Figure 17, the metadata template is selected from a preconfigured repository of templates. However, the user can insert new metadata registry or modify the existing ones.
- Spatial pattern (coverage): Through the “Select” button the user can select the coverage that defines the spatial distribution of the resources within the collection. Besides, the attribute information of this coverage will be used to automatically generate the metadata elements that describe the specific features of each resource in the collection. As it is shown in the dialog that appears in Figure 17, this coverage will be selected from a preconfigured repository. However, the user can add new coverages to that repository.

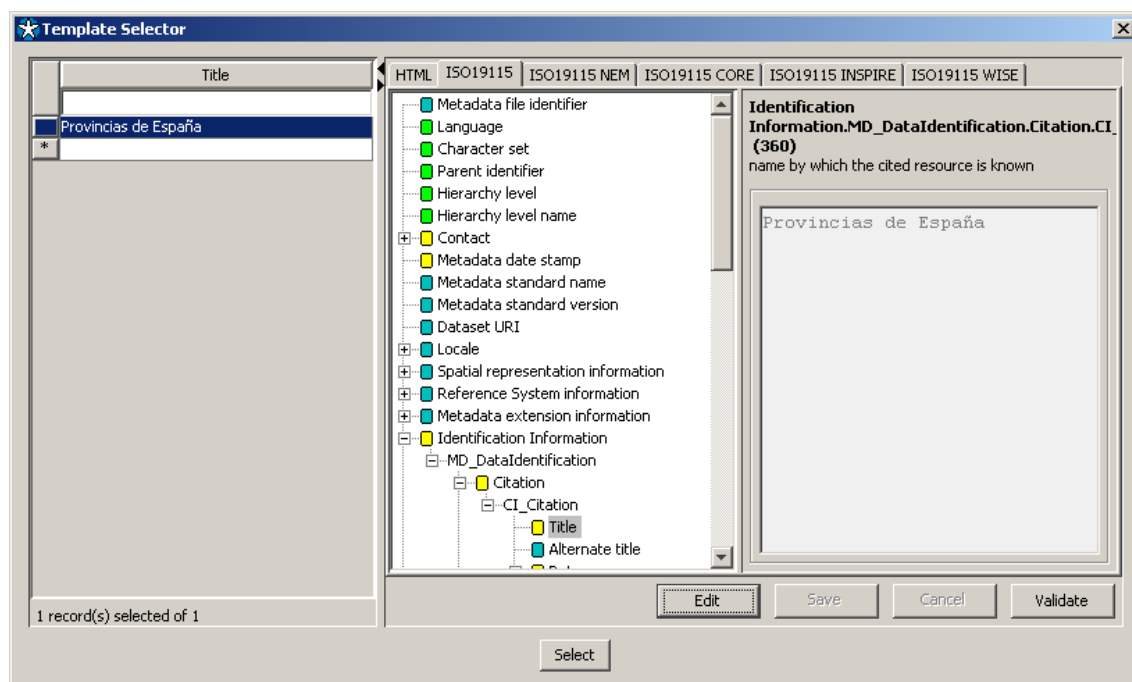


Figure 16 Template Selector

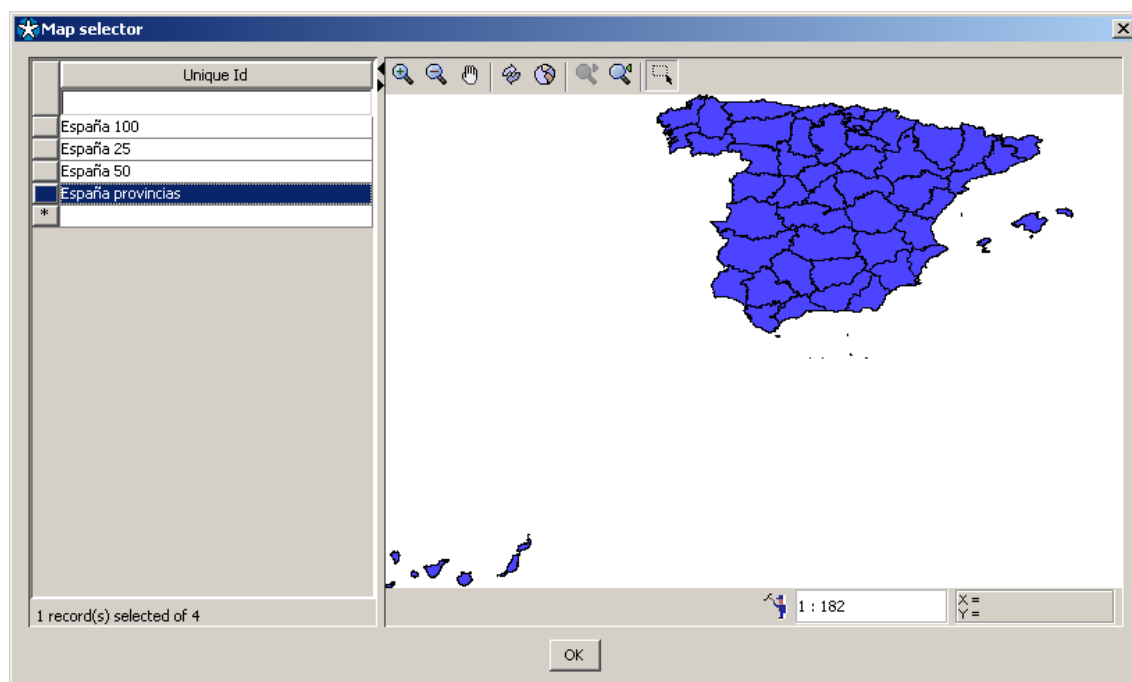


Figure 17 : Coverage selector

Once the information described before is introduced, it will appear a dialog in where the content that will be generated in the elements of the metadata that describe the specific features of each resource in the collection (see Figure 18). The left side shows the sections and fields filled in the metadata template that the user has previously selected, and the right side

shows the attribute information of the spatial coverage (in Shapefile format) that has been selected as spatial pattern.

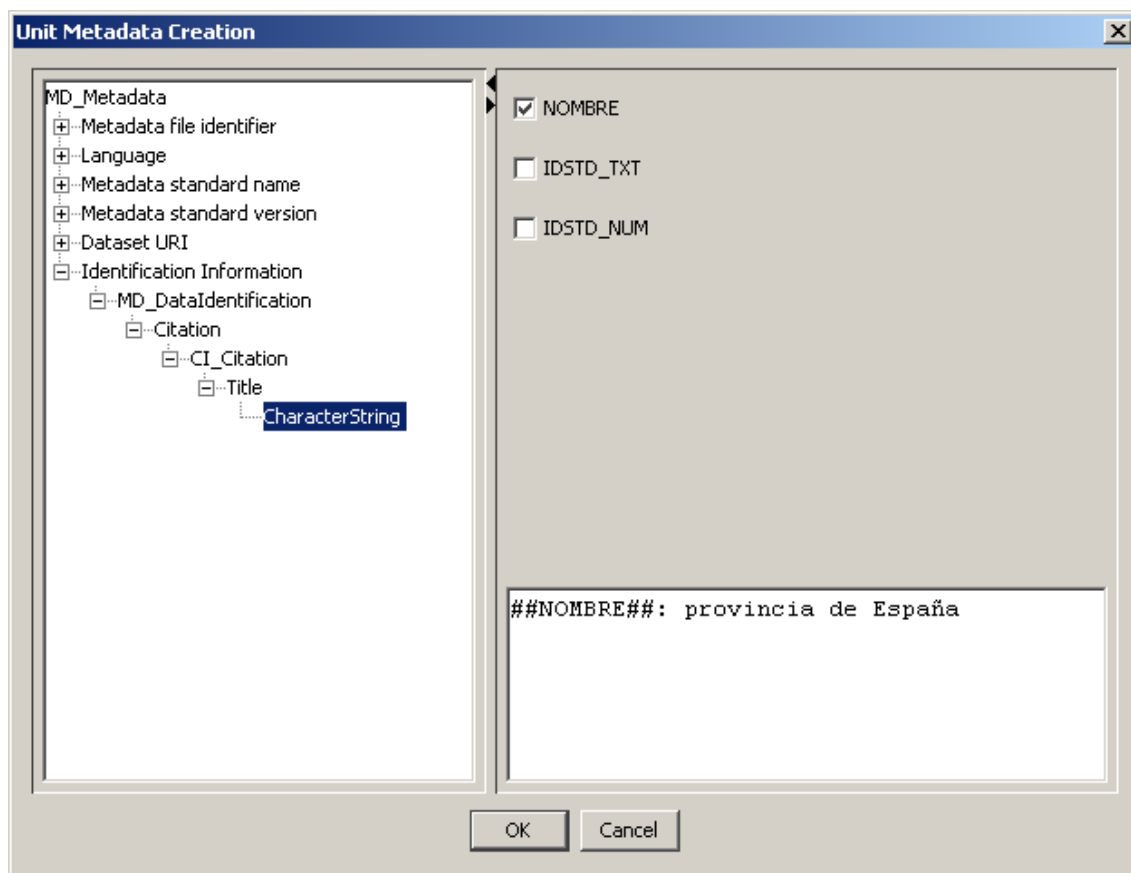


Figure 18 : Configuration of the content that will be generated in the metadata of the resources that are in the collection

At present, it is possible to configure the content of each element using, if desired, the attribute information of coverages. For example, Figure 18 shows how the value of the attribute *NOMBRE* has been introduced in the field Title. The purpose is that each resource title starts with the name of a different province. It is understood that the collection in the example is a spatial collection following the spatial distribution of the provinces in Spain.

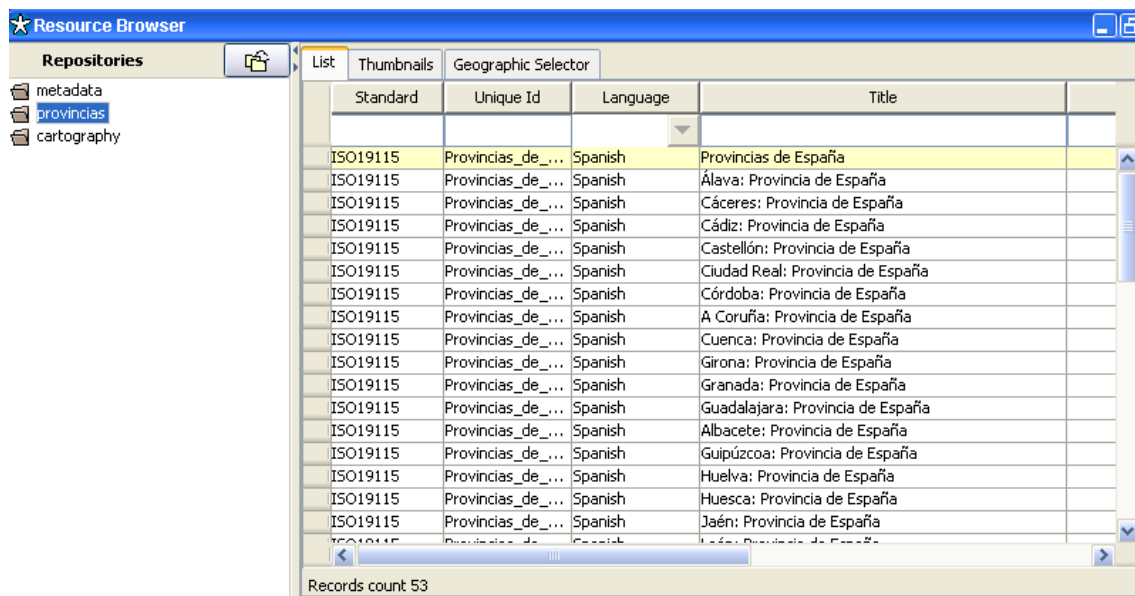


Figure 19 : Repository for a resource collection

When the content of each of the metadata element has been configured, the “Ok” button will be pressed and the metadata record that describes each resource in the collection will be created. When the repository is selected, there will be a record marked in yellow that is the metadata record that describes the whole collection and stand out over the rest of metadata records which describe the resources that compound the collection.

4. Resource documentation

This section describes how the user can visualize or modify the metadata associated to a resource.

Every action described below has as precondition that a resource in the resource explorer must be selected. In order to do that a click must be done in a record which will be marked in another colour (see Figure 20)

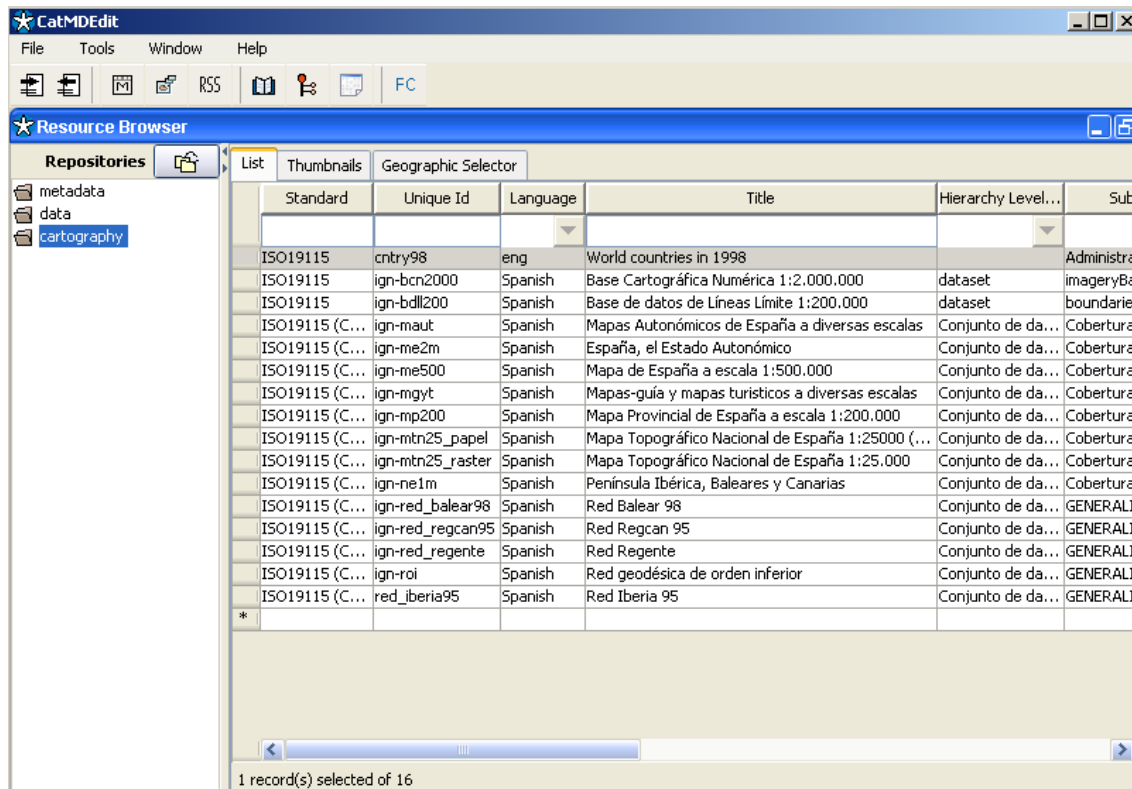



Figure 20 : Resource Selection

4.1. Visualization of a metadata record

When we select a record in the “List” view (see Figure 20), we can open it by double click on it or clicking once on  in the tool bar or selecting the menu option “File: open metadata”.

As a result of this action a window will be open with the title bar filled with the identifier followed by the title of the metadata that describes the resource selected. If the user has selected several resources, the window will only show the first selected resource.

A metadata summary (HTML) will be shown (see Figure 21). Moreover, there will be a tab for each possible edition of this metadata, which will change depending on the metadata standard.

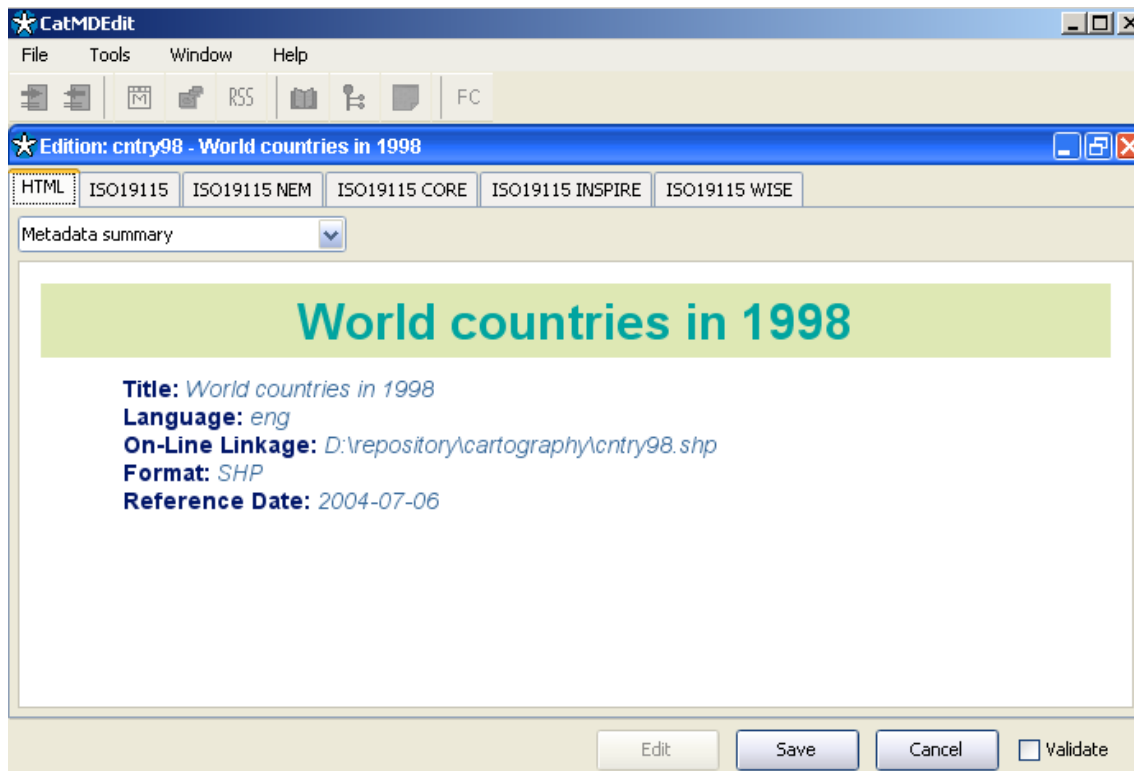


Figure 21 HTML View of a metadata registry following standard ISO19115

If metadata are in compliance with ISO19115 standard, the window in Figure 22 will be shown and its edition possibilities will be:

- ISO19115: The interface in this window follows the ISO19115 standard [ISO 2003, CSG 2003] section and subsection structure.
- ISO 19115 NEM: The interface in this window complies with the metadata elements included in the “Núcleo Español de Metadatos (NEM)” (Spanish Core metadata for Geographic Datasets) recommendation [CSG 2005], which has been defined by the Spanish National Geographical High Board ("Consejo Superior Geográfico") and that follows a subset of ISO19115 [ISO 2003, CSG 2003].
- ISO 19115 – CORE: The interface in this window complies with the minimum metadata elements defined in the standard ISO19115 as “Core metadata for geographic datasets”[ISO 2003, CSG 2003].
- ISO 19115 - INSPIRE The interface in this window complies with the metadata elements proposed by the implementation rules of INSPIRE Directive [EC 2007a]. See the document which shows the relation between ISO19115/ISO19119 and the metadata elements of implementation rules of INSPIRE Directive [EC 2007b].
- ISO 19115 WISE : The interface in this window complies with the metadata elements included in the WISE metadata profile (Water Information System for Europe) for the documentation of resources required by the European Water Framework Directive

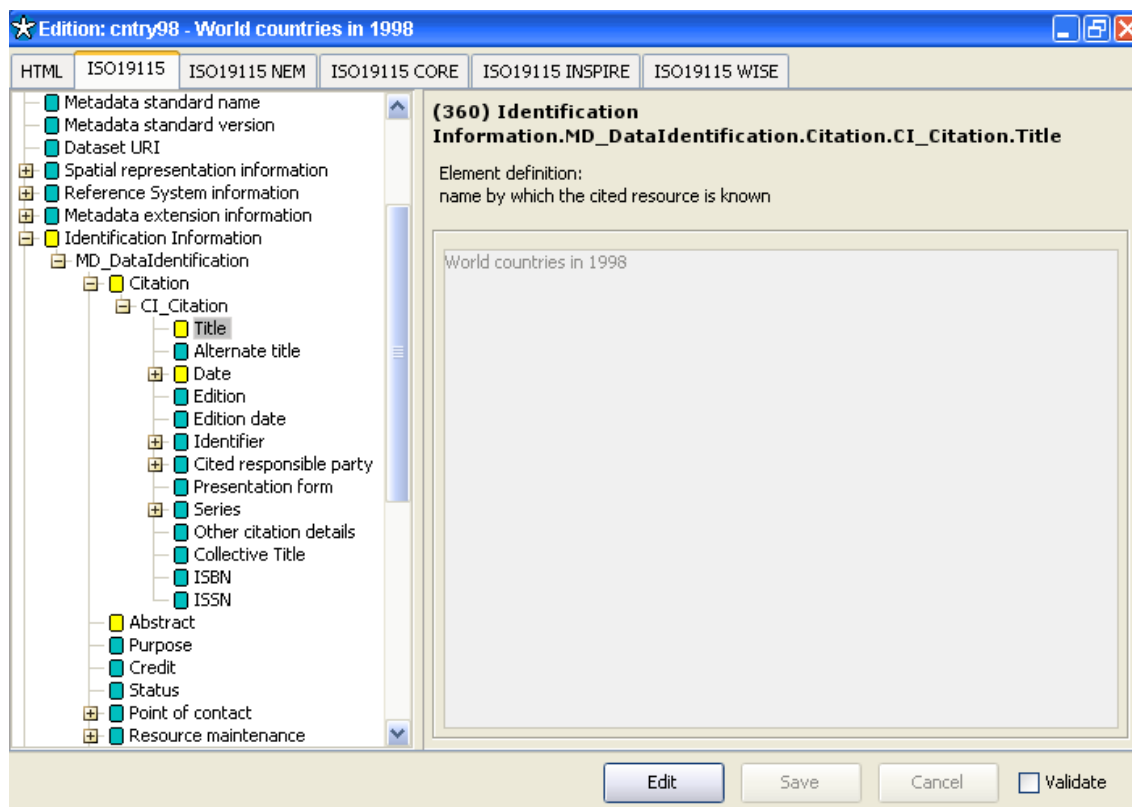


Figure 22 Visualization of metadata following the standard ISO19115

Furthermore, on each one of the sub-windows and edition areas of metadata elements in this edition window, an icon has been assigned to indicate the conditionality of each metadata element in ISO19115 standard. Colour coding can be seen in the following figure.




Colour	Description
	Mandatory
	Conditional (mandatory if applicable)
	Optional

Figure 23 : Conditionality indicator

It is also possible that the metadata that describe a resource follow the standard Dublin Core [DCMI]. In this case, the visualization window that will appear is the one shown Figure 24.

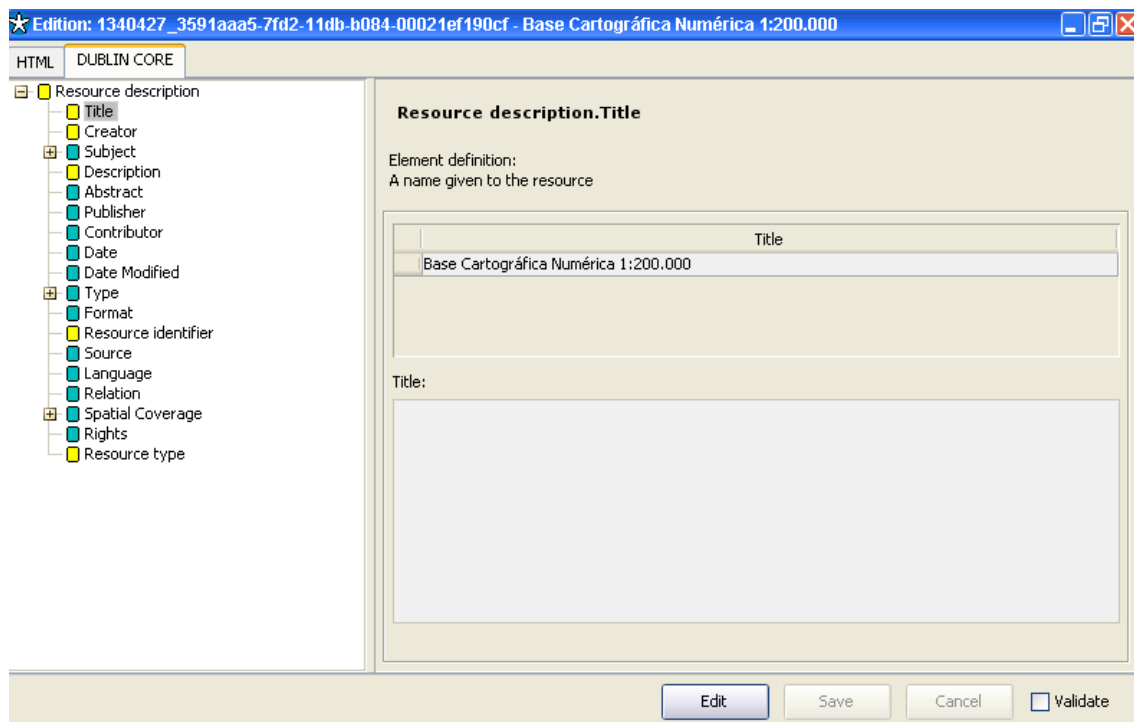


Figure 24 Visualization of metadata according to Dublin Core standard

4.2. General edition of a metadata record

The following options will be accessible from any edition window of metadata:

- **Edit:** this option enables to make changes in the selected window. It is only enabled in windows that can change to edition mode and when they are not in that mode. It locks the window so you can not close the window or select another one
- **Save:** If the selected window was in editing mode, this button saves all the changes made. It is only enabled in windows that are in editing mode. It saves the changes made and changes to visualization mode.
- **Cancel:** this button cancels the edition, leaving data as they were before all changes. It is only enabled in windows that are in editing mode. It undoes the changes made, reloads the original information and changes to visualization mode
- **Validate :** this option checks if there are mandatory elements not completed and shows a message to the user

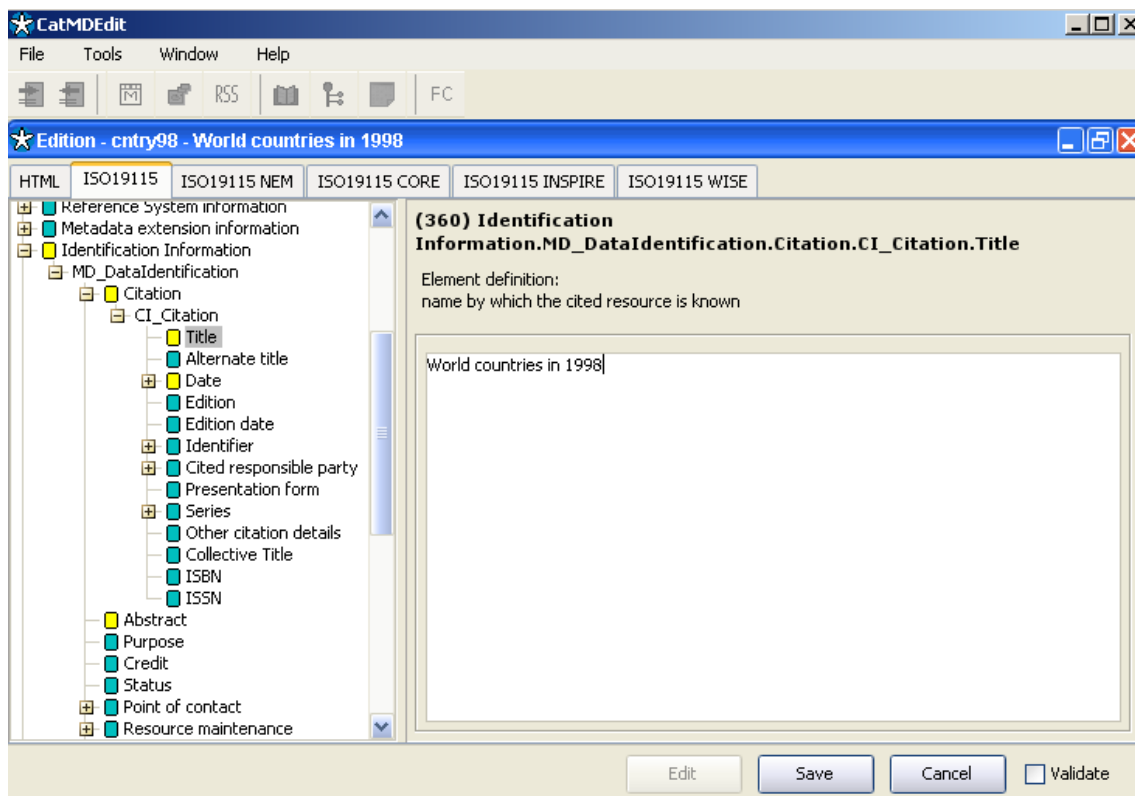


Figure 25 Metadata record edition according to the standard ISO19115


When the window is in editing mode, there are actives only the elements in that the user can actually introduce data. In example, if no row is selected in a table, the associated fields will be deactivated and its modification will not be allowed until a row in that table is selected.

At last, it is worth mentioning that in the edition window the user can easily access the next functionalities to fill some of the metadata elements:

- Edition of geographical extension (see section 4.3)
- Edition of contact information to indicate a reference to a contact inside some sections of the metadata registry (see section 4.4)
- Edition of the keywords (see section 4.5). The user access from those fields that allow being filled with a value from a controlled vocabulary.

4.3. Edition of geographical extension

Metadata standards define descriptors to indicate the geographic extension covered by a resource. For example, let us see the element “Geographic element” for a metadata record that complies with the standard ISO19115 in Figure 26.

CatMDEdit has a specified editor for this element (Figure 27). The definition of the geographic bounding box or the geographic polygons appears by pressing the button  as is shown in the Figure 26 .

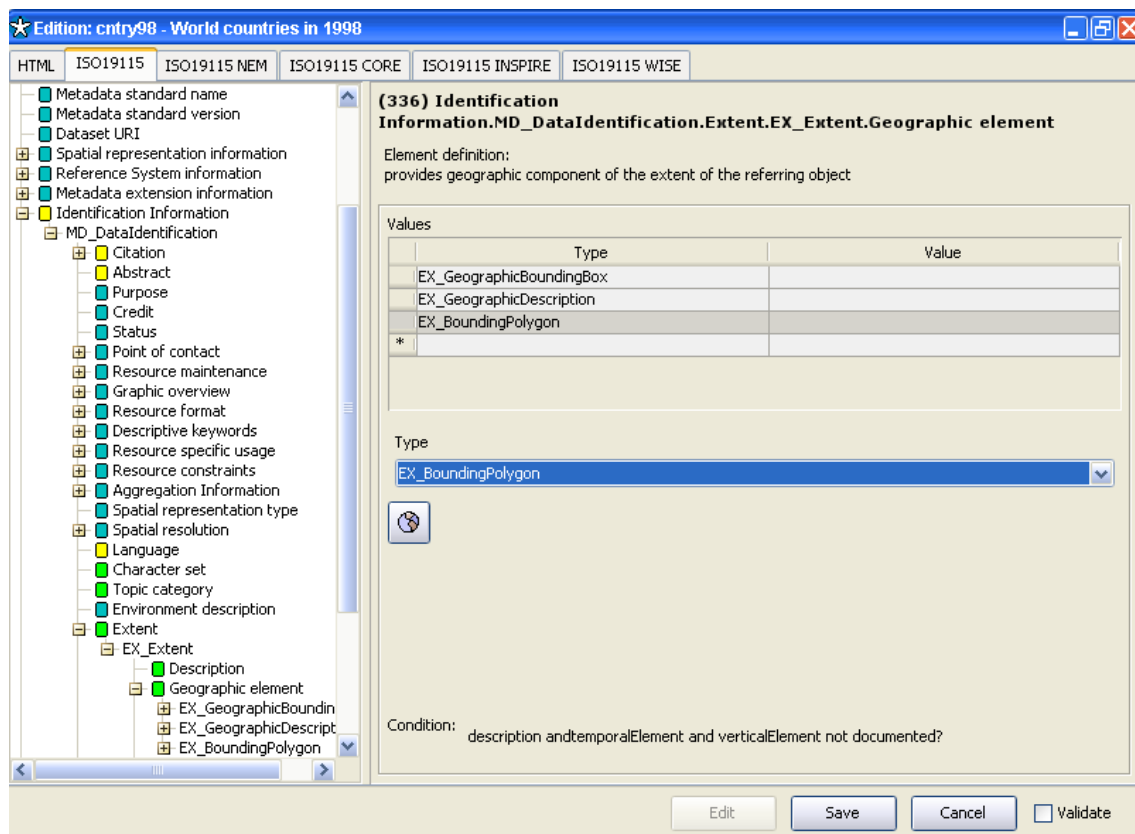



Figure 26 Edition of the geographic extension

4.3.1. Geographic extension of a bounding box

If the spread menu of Figure 26 shows a GeographicBoundingBox, the button  will access the following figure:

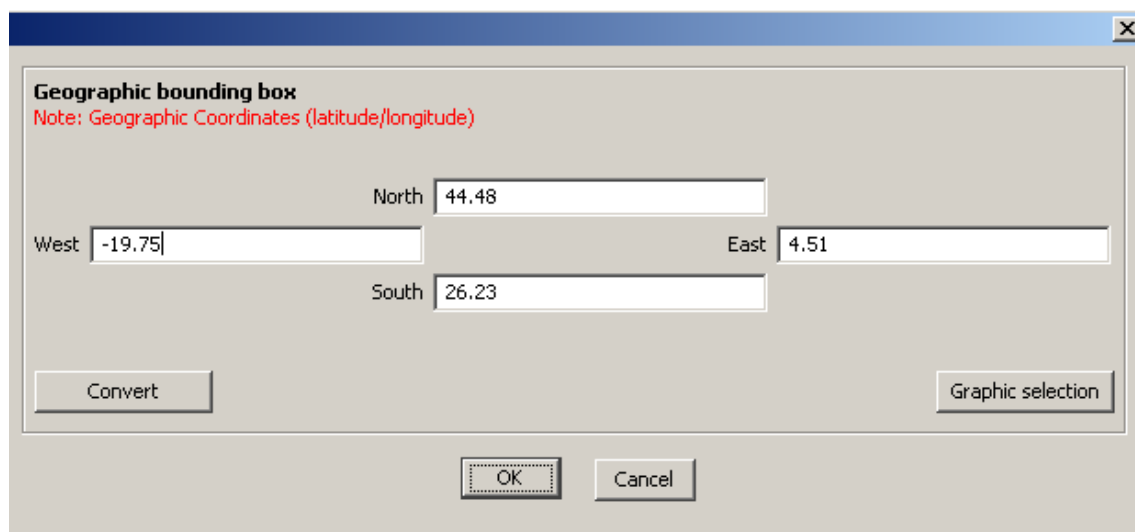


Figure 27 Geographic bounding box definition

Besides, the edition dialog shown in the Figure 27 allows the user can access to two additional tools:

- Coordinates conversion tool: You can access this tool from “Convert” button when editing “Geographic bounding box” (see Figure 28). Coordinates defining geographic bounding box must be geographic coordinates (longitude/latitude). So this tool allows converting other reference system coordinates. Figure 28 shows the conversion tool looking, where you can configure source and destination coordinates reference systems (geographic coordinates, but choosing different kinds of ellipsoids).
- Coordinates selection tool: You can access this tool from “Graphic selection” button when editing “Geographic bounding box” (see Figure 27). Figure 29 shows the graphic selection tool looking, that allows establishing with the cursor the box or rectangle that, on the displayed map, defines the spatial extension of the geographic resource.

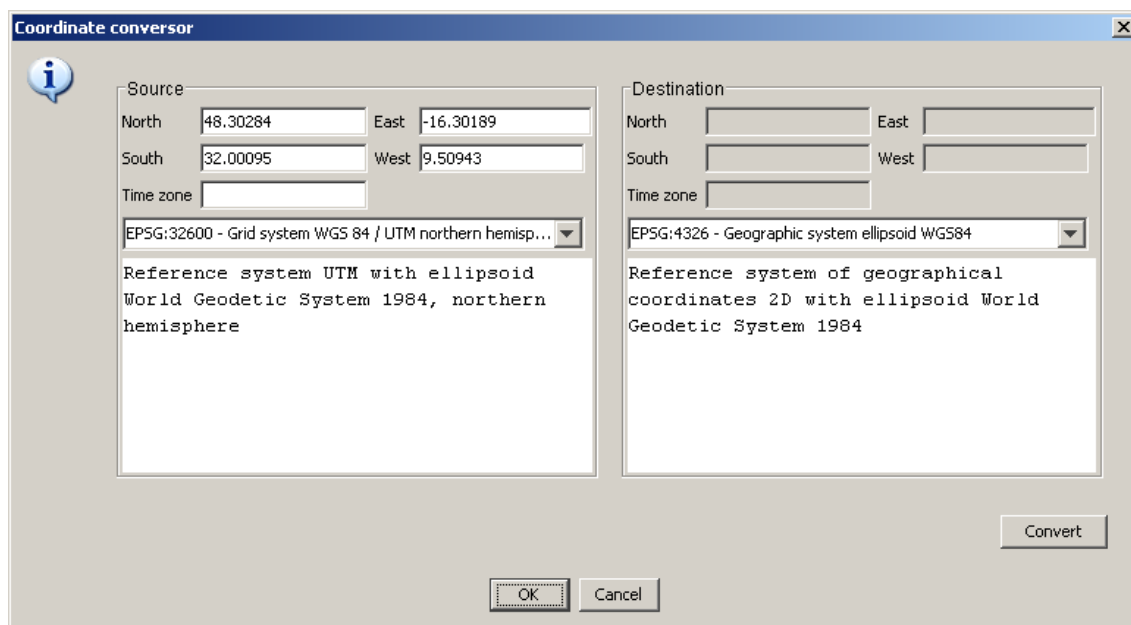


Figure 28 Coordinates conversion tool

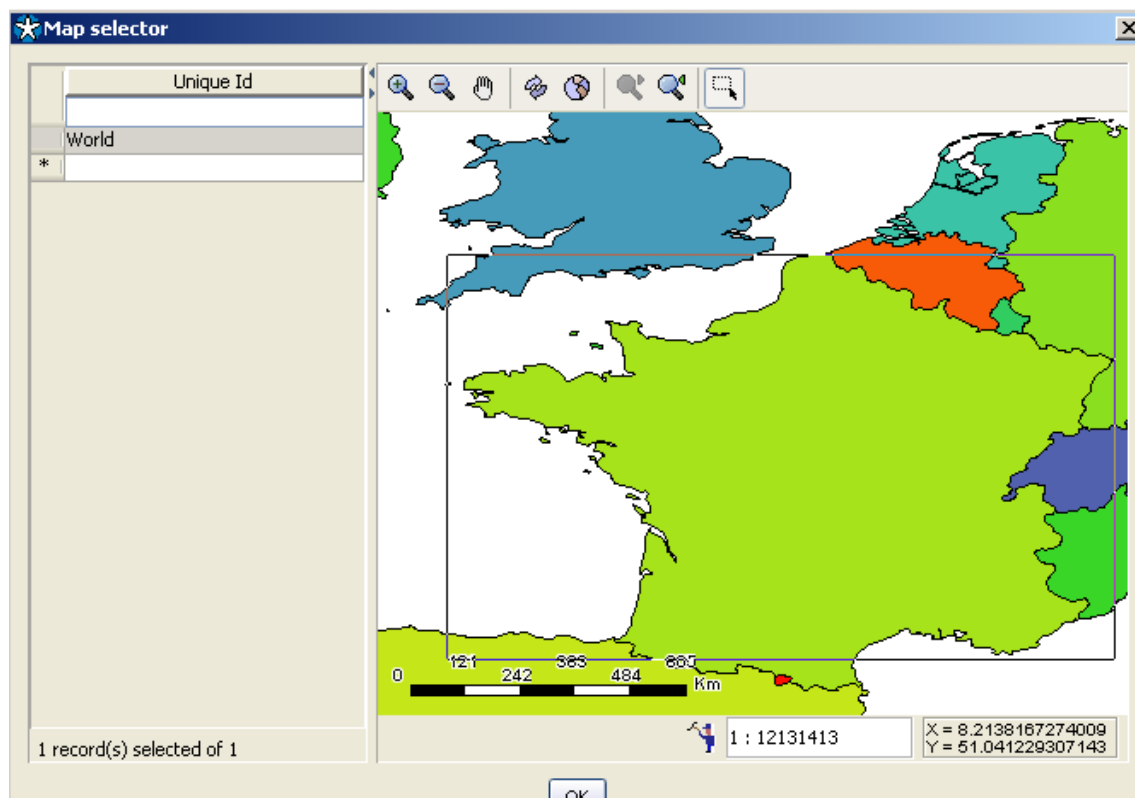






Figure 29 Coordinates selection tool

If the user has shapefiles, he can add them to the map selector by the insertion of a new line and choosing the file from a path. This way, the user can select the coordinates over his own maps

4.3.2. Geographic extension of one or several polygons

If the spread menu of Figure 26 shows a BoundingPolygon, the button  will allow:

- Selecting a polygon manually defined by the user by the button , which makes the construction of polygons easier by consecutive lines; in order to close the polygon, the right mouse button should be clicked on (see Figure 30).
- Choose the polygon corresponding to a country by the button , which allows the user to click on the country and extract automatically its coordinates (see Figure 31)

For removing the last defined polygon the button  should be used and the button  for removing all the defined polygons.

Moreover, as in the GeographicBoundingBox, the user can add his own maps en shapefile format.

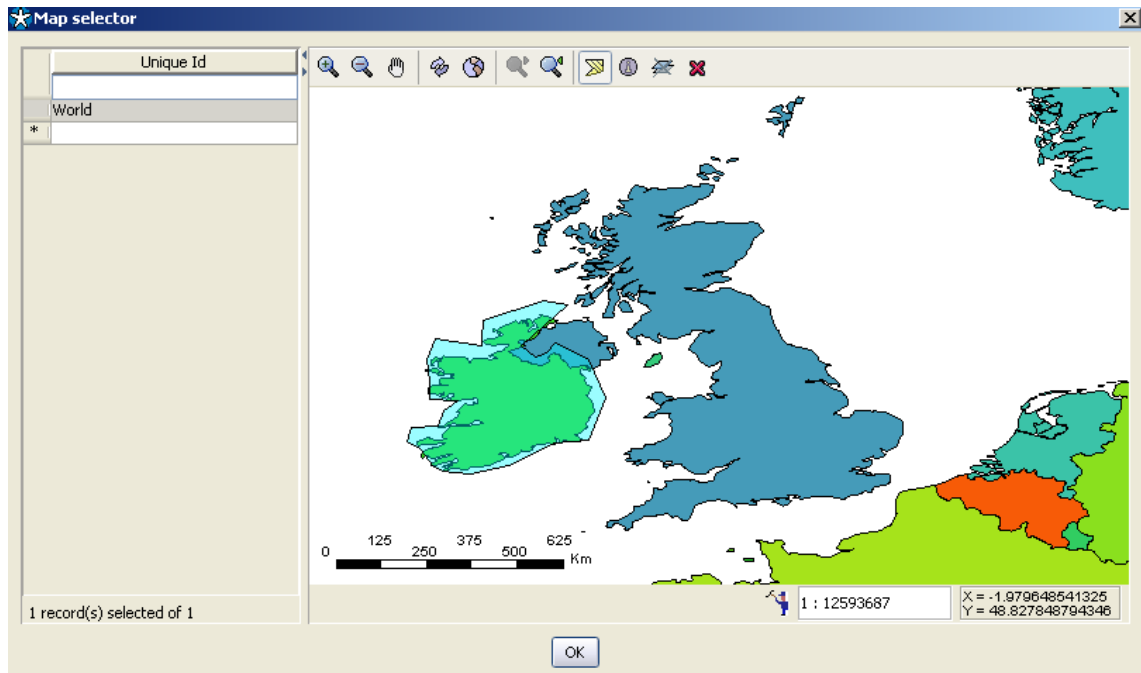


Figure 30 Manually selection of polygons

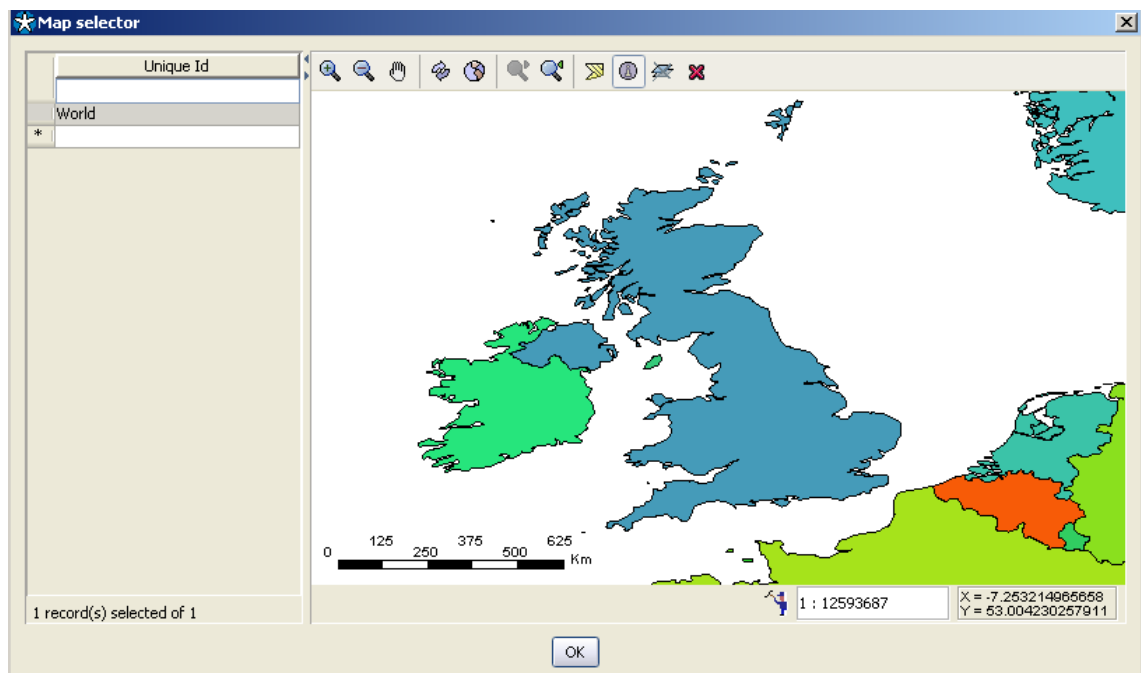


Figure 31 Automatic selection of polygons

4.4. Edition of contact information

Metadata standards include several elements that must be filled with contact information of individuals and organizations. For example, see the element “Point of contact” for a metadata record that complies with the standard ISO19115 in Figure 33.

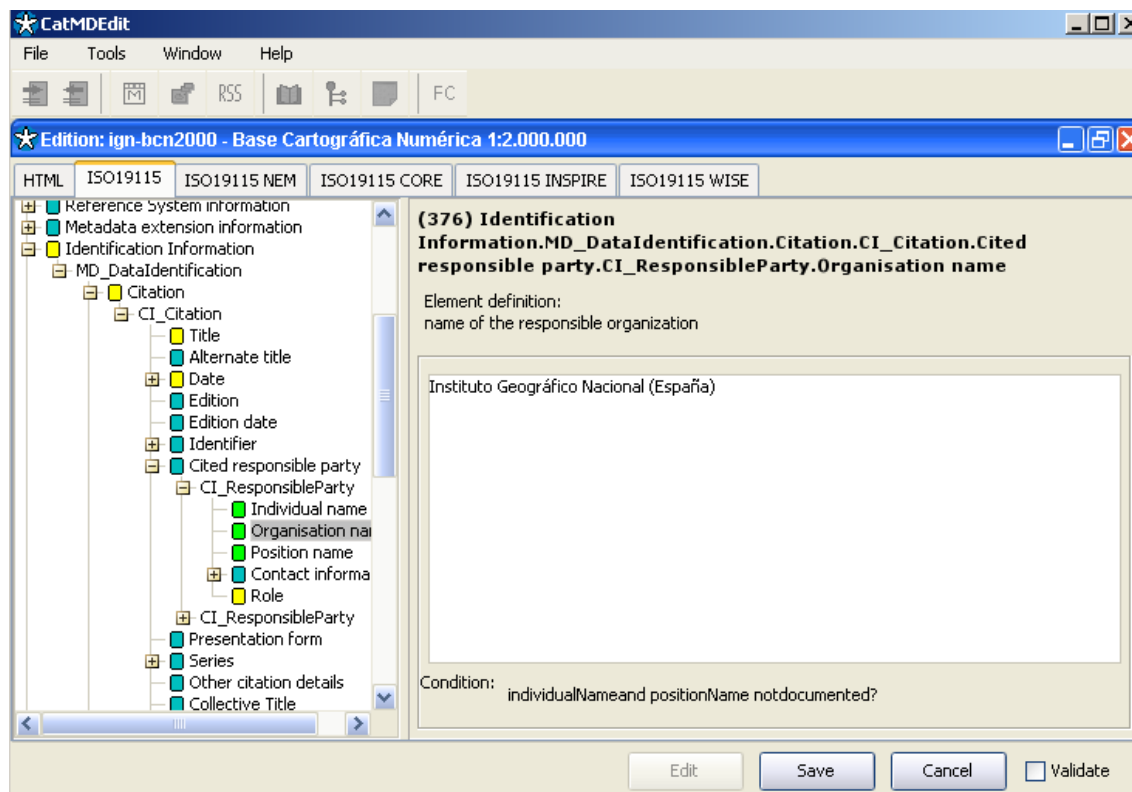



Figure 33 Edition of a contact information

For this kind of elements, CatMDEdit has a specific editor accessible through the button  as shown in Figure 33. This editor consists in the selection of a contact out of a group of contacts previously stored in a contact repository.

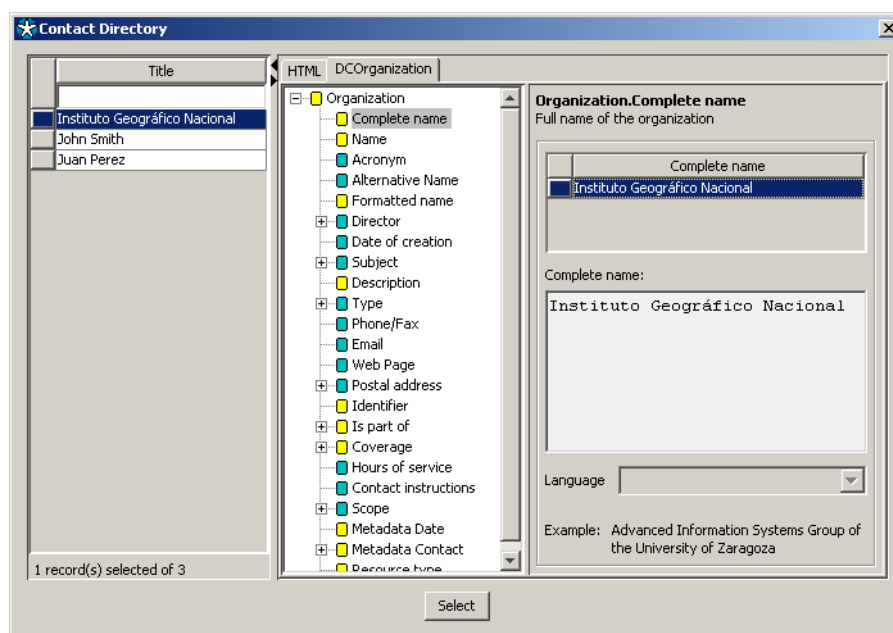


Figure 34 Contact selection

CatMDEdit includes a contact repository in order to keep a centralized repository of contact information that could be reused in the metadata record that describes the different resources, avoiding with that introducing this information each time for each registry.

This repository works in a simple way. In the table, the user selects a contact and the information of the contact selected will be displayed at the right side. Once the “Select” button has been pressed, the control will be returned to the general edition window

If the users want to modify the content of the contact repository, they must follow the instructions described in section 7.

4.5. Edition of Keywords

The edition of some elements requires the introduction of values that belongs to a controlled vocabulary, e.g. a predefined list of values from a thesaurus. For instance, see the “Descriptive keyword” element for a metadata record that follows the Standard ISO19115 in Figure 35.

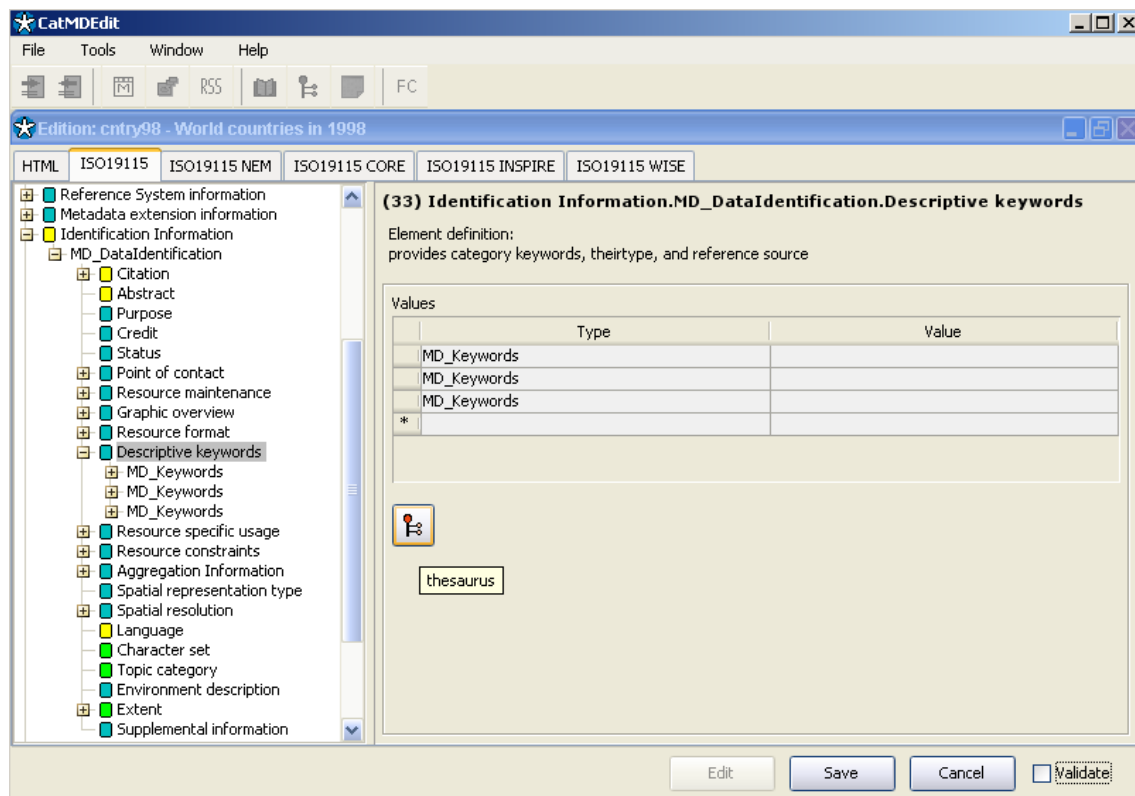



Figure 35 Keyword edition

For this type of elements, CatMDEdit supplies a specified editor through the button  as it is shown in the Figure 36. This editor allows the selection of terms from a thesaurus. A thesaurus defines the concepts used in a specified application domain and the existing relations between those concepts.

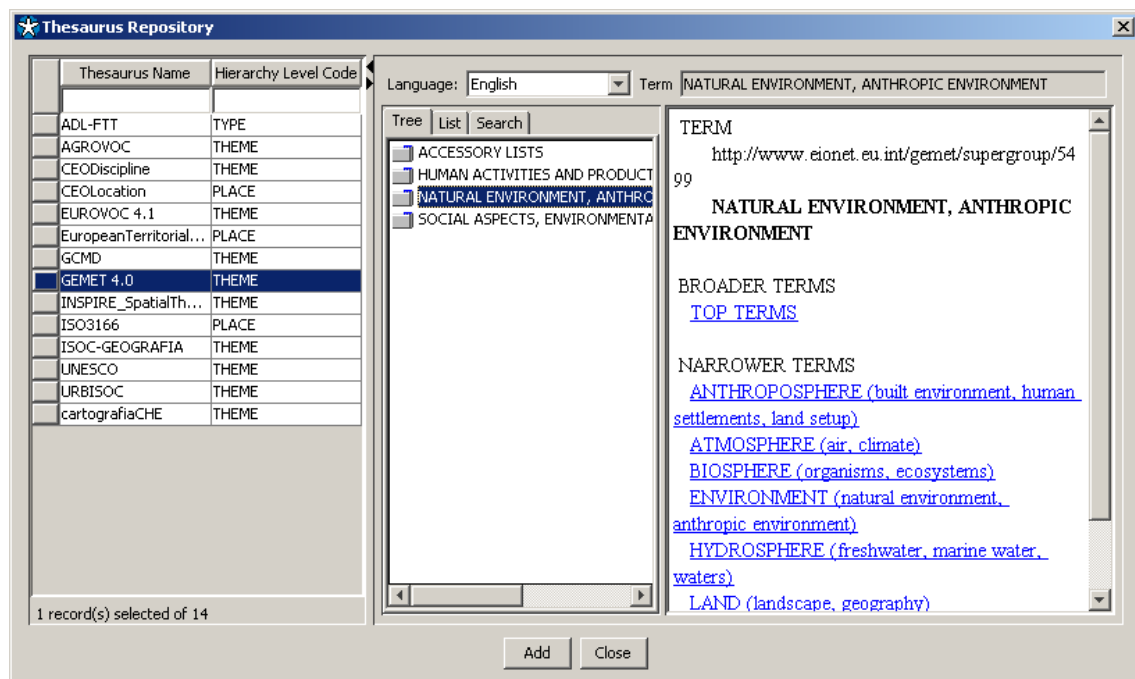


Figure 36 Term selection window

The purpose of this tool is to make easier the introduction of thesaurus terms in the edition window fields which values should be thesaurus terms. Additionally, the tool provides homogeneity in the terms selection so that these terms have a known values range and facilitates searches over all records in the catalogue.

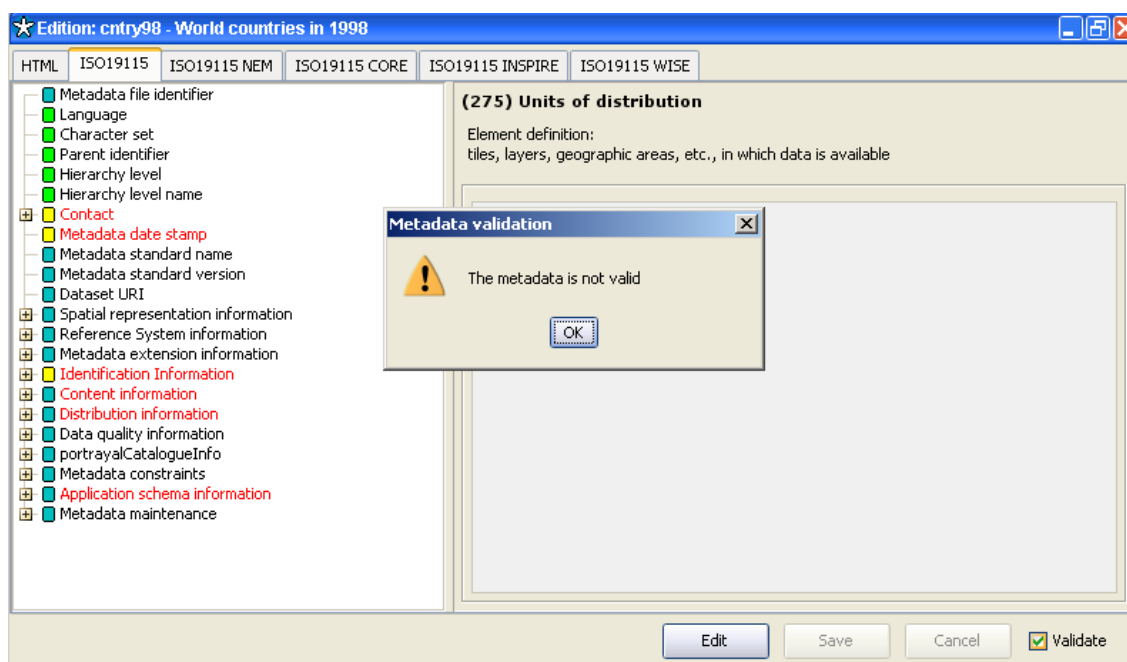
In order to select a thesaurus term, the thesaurus wanted must be clicked with the Mouse. At this moment the thesaurus terms will be displayed on the right panel, which is divided in two parts:

- On the left of the panel, you can see the thesaurus treelike structure or the thesaurus term list in alphabetical order, depending on the selection made on the top of the window: tree or list.
- Once you have selected a term, all available information for that term will be shown on the right (definition, connections with other terms...).

To introduce a term in the right field on the record edition window, you have to select it in the term selection window, press “Add” button, and then, in the record edition window, the term will be automatically inserted in the corresponding field (see Figure 36 and Figure 35).

4.6. Validation of a metadata record

CatMDEdit allows verifying for each metadata record if the user has filled all metadata elements that are defined as mandatory according to a standard or metadata application profile.


**Figure 37 Validation of a metadata registry**

Each metadata application profile supported by CatMDEdit has a “Validate” box that verifies whether all mandatory elements according to that profile have been filled. For example, Figure 37 shows the result of validating a metadata record according to the ISO19115 standard. All non filled mandatory elements are noticed by showing their labels in red.

NOTE: the recommended practice is deactivating this box during the metadata edition in order to avoid slowing down the application. The best practice is activating only when cheking the correctness of a metadata in a concrete moment.

5. Visualization of resources

For some digital formats, CatMDEdit includes the possibility to open a tool that allows the visualization of a selected resource. Some of the formats currently allowed are: shp, dgn, ecw, ficc, GeoTiff, gif/gfw, jpg/jgw, png/pgw.

Once a resource has been selected through the resource browser, the menu option “File: Open resource” (or the tool bar button ) will open a window (see Figure 38) for choosing the way to open the resource, either using GvSIG (only if the user has this application installed) or a specific visualization tool of CatMDEdit.

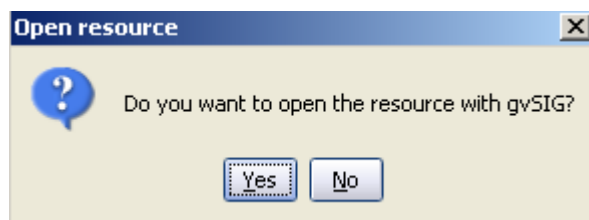


Figure 38 Selection of an application for opening the resource

In case of affirmative answer, and only the first time it happens, the user should select the path where the GvSIG is installed.

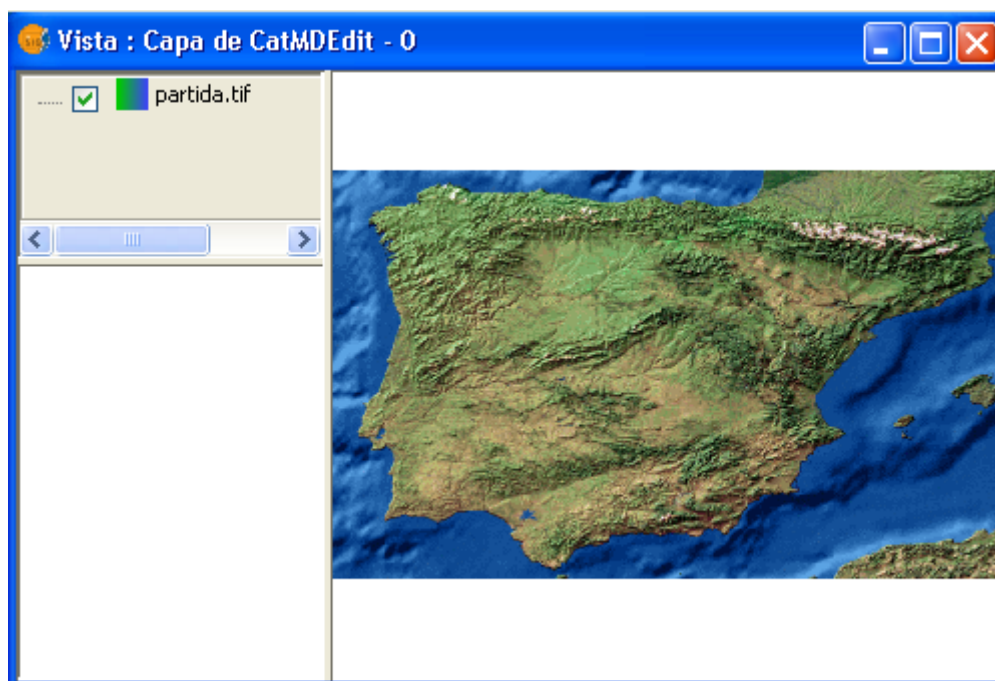


Figure 39 : Visualization of a resource using GvSIG

In case of negative answer, it will appear a window that allows the visualization of the resource inside CatMDEdit. The file in digital format that will be shown will be the one referred within the metadata elements devoted the introduction of the physical location (URL or path) of the resource. For example, Figure 40 allows the visualization of a coverage in Shapefile format.

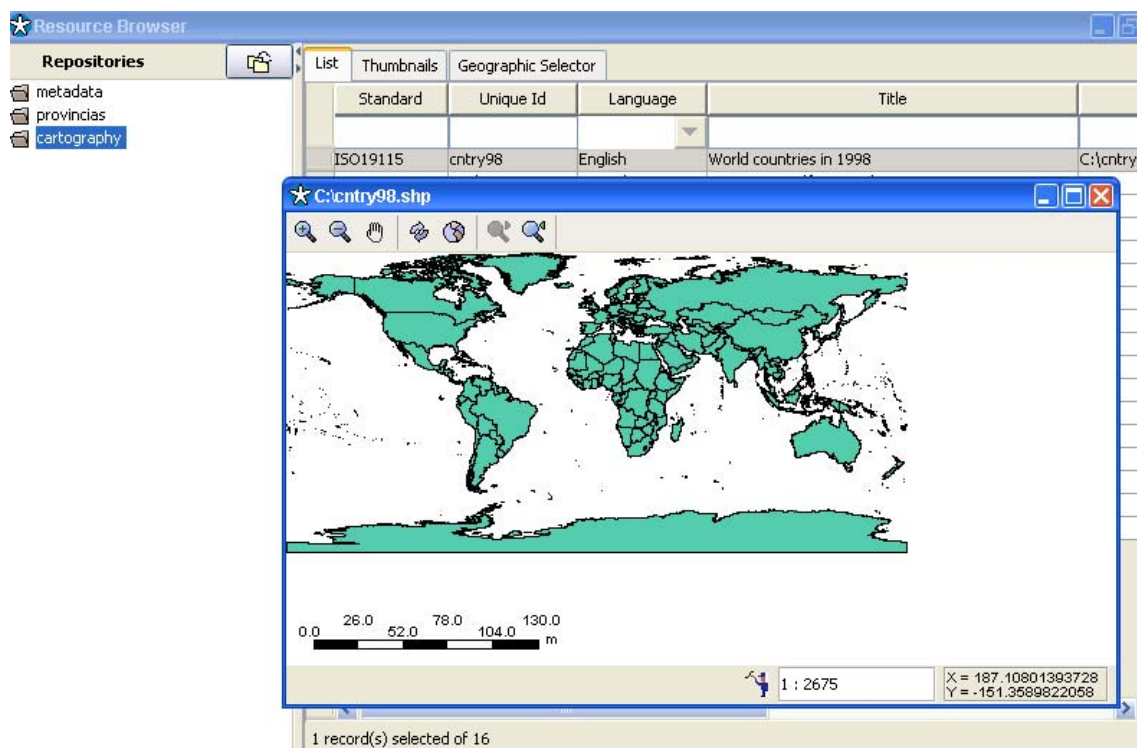


Figure 40 Resource visualization

6. Metadata Import/Export

6.1. Import

This tool allows to import metadata files following different formats (XML y Excel) and standards (ISO19115 [ISO 2003], CSDGM [FGDC 98], or Dublin Core [DCMI]). The metadata records will be added to the tool internal repository.

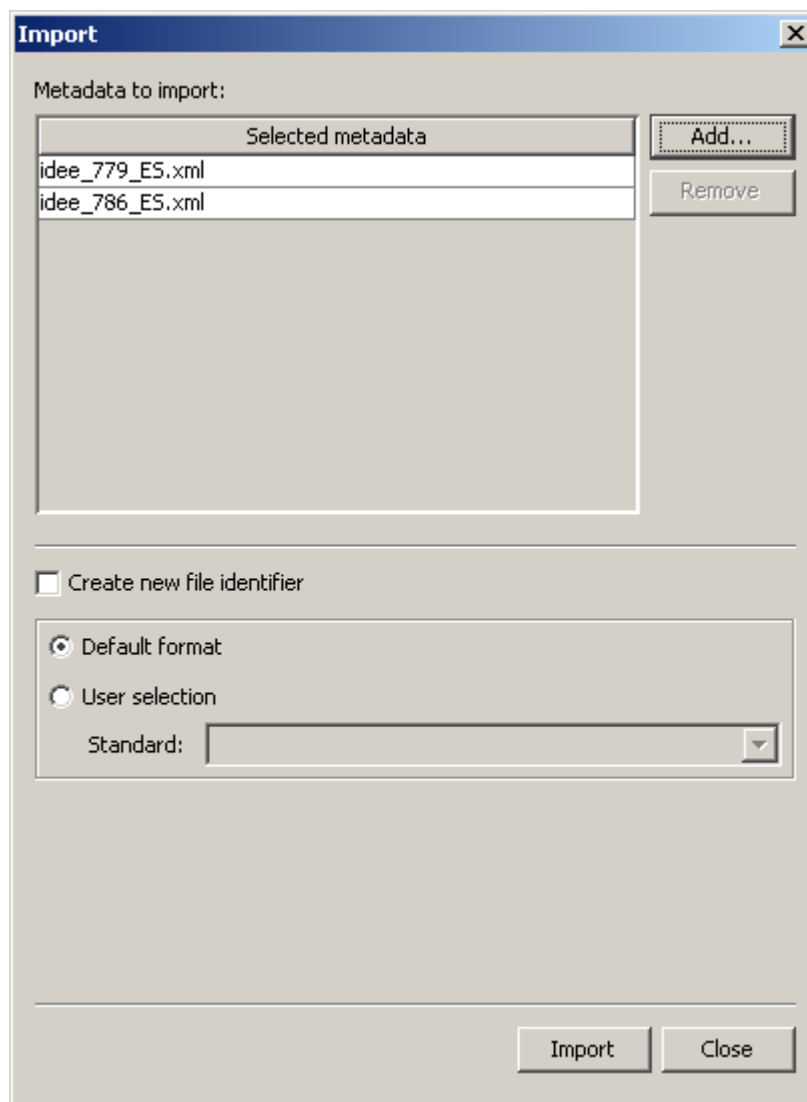


Figure 41 Import window

This tool allows to select the file you want to import, both by writing the full path of the file or by pressing the “Add” button and selecting the file to import from the file selection dialog.

If you select a directory, it will import all the XML files in the directory.

Besides, it allows maintaining the record identifier or to ignore it and generate a new one (option “Create new file identifier”)

The standards and formats of metadata files which are supported are the following:

- ISO 19115. It allows to import XML files into ISO19115 [ISO2003] standard. It allows the XML encoding used in older CatMDEdit versions, and the XML encoding approved in the ISO19139 technical specification.
- Dublin Core. It allows to import XML files according to the next encoding rules:
 - RDF encoding guidelines defined by Dublin Core [DCMI]
 - XML encoding established by the technical specification Catalogue Services for the Web (CSW) of the OGC catalogue services specification [OGC 2007].
- CSDGM (FGDC). It allows importing XML files that follow the FGDC [FGDC 98] standard.

Once you have finished these steps, you can import by pressing “Import”, in which case the record will be imported and the rest of the windows information will be refreshed so changes made will be displayed.

If in any moment you press “Close”, the window will close performing no operation.

6.2. Export

This tool allows exporting records selected in “Record Browser” window to XML, HTML or Excel format files.

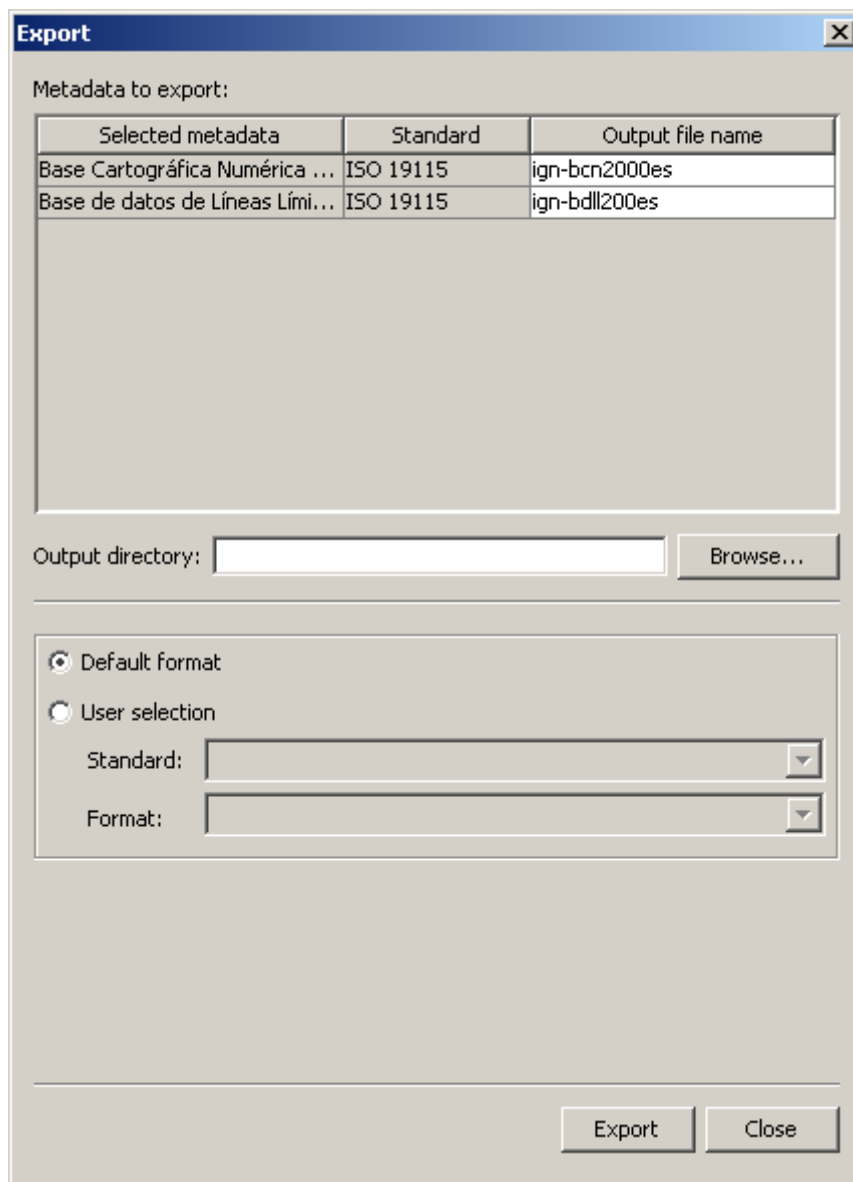


Figure 42 Export window

The export tool window shows the selected records to export, with a blank column that allows introducing, if you want, the name the .xml file will have. If no name is introduced, it will be exported to a .xml file named for the record identifier (E.g.: 2.xml, 3.xml).

Besides, you should select the directory in which the created XML files will be placed. You can both write the full path, or press the "Browse" button and select the file from the file selection dialog.

It also allows selecting the standard in which you want to export (CSDGM, ISO19115 or Dublin Core) and the sort of format that will be generated. The available formats for each standard are:

- Default: it generates an XML file whose format complies with the default encoding of standard in which the metadata has been created
- ISO 19115:


- ISO 19115 XML: It generates a XML format file in accordance with the elements defined in the technical specification ISO19139 [ISO 2007].
- ISO HTML (es): It generates a HTML format file using Spanish labels following the ISO19115 standard organization.
- ISO HTML (en): It generates a HTML format file using English labels following the ISO19115 standard organization.
- ISO HTML (fr): It generates a HTML format file using French labels following the ISO19115 standard organization.
- ISO HTML (pl): It generates a HTML format file using Polish labels following the ISO19115 standard organization.
- ISO HTML (pt): It generates a HTML format file using Portuguese labels following the ISO19115 standard organization.
- ISO HTML (MIGRA): It generates a HTML following the format established by the MIGRA regulation [AENOR 98].
- ISO Excel: It generates an Excel 97 file that contains fields specified in section 9. They will be written starting from the second row of the first page of the file.
- CSDGM (FGDC):
 - FGDC XML: It generates a XML file in accordance with the syntax defined by FGDC for CSDGM standard [FGDC 98].
 - HTML (FGDC es): It generates a HTML format file using Spanish labels following the FGDC standard according to the style used by NSDI Clearinghouse (<http://www.fgdc.gov/clearinghouse/clearinghouse.html>).
 - HTML (FGDC en): It generates a HTML format file using English labels following the FGDC standard according to the style used by NSDI Clearinghouse (<http://www.fgdc.gov/clearinghouse/clearinghouse.html>).
 - HTML (FAQ): It generates a HTML format file using English labels following the question/answer FGDC format.
 - HTML (Geography_Network): It generates a HTML format file using English labels according to the Geography Network style (<http://www.geographynetwork.com>).
 - HTML (ESRI en): It generates a HTML format file using English labels according to the style created by ESRI (default style used by ArcCatalog).
 - HTML (ESRI es): It generates a HTML format file using Spanish labels according to the style created by ESRI (default style used by ArcCatalog).
- Dublin Core:
 - XML (Dublin Core - RDF): It generates a RDF/XML format file according to the guidelines for encoding Dublin Core in RDF[DCMI].
 - XML (OGC CSW): It generates a XML format file according to the XML-Schemas established in the OGC Catalogue Services Specification for the HTTP protocol binding (Catalogue Services for the Web, CSW) [OGC 2007].
 - HTML (Dublin Core – en): It generates a HTML format file with labels on English that follows the standard Dublin Core.
 - HTML (Dublin Core – es): It generates a HTML format file with labels on Spanish that follows the standard Dublin Core.
 - HTML (Dublin Core – fr): It generates a HTML format file with labels on French that follows the standard Dublin Core.

- HTML (Dublin Core – pl): It generates a HTML format file with labels on Polish that follows the standard Dublin Core.
- HTML (Dublin Core – pt): It generates a HTML format file with labels on Portuguese that follows the standard Dublin Core.

Once you have finished the previous steps, if you press “Export”, the records will be exported and, if you press Cancel, the window will close making no operation.

7. Contact directory

Contact directory is a tool used to keep personal data of people or organizations from which geographic information exists in the catalogue, so it is possible to contact them if needed.

In order to open this contact directory it is needed to select the menu option “Tools: Contact Directory” or the tool bar button . Once this action has been done, a contact repository will be shown (see Figure 43). It allows both to visualize, create, modify and edit contacts or to link contacts to certain record fields so that to know who has created metadata, who distributes the information associated to the records or who has taken part in that information creation process.

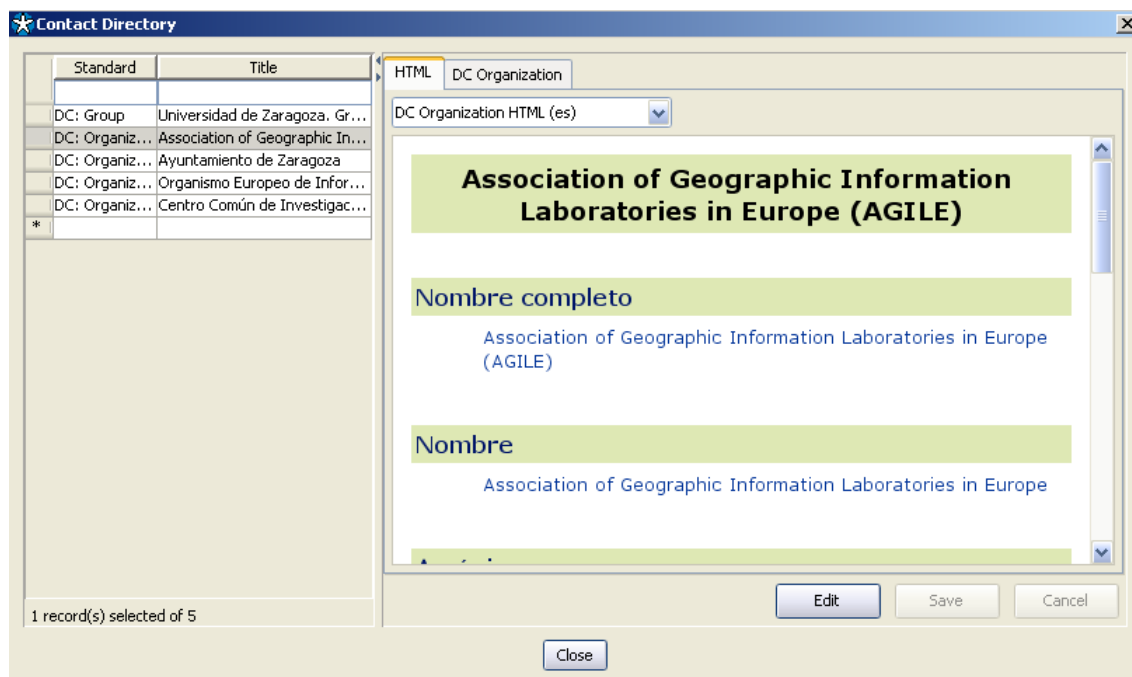



Figure 43 Contact directory

The way this tool works is very simple. You select in the table the row for the contact you want to visualize, and on the right side you will see the selected contact information. In order to include or delete contacts the user will be use the edition pop up menu described in section 2.5. In order to edit a contact the user must follow the normal procedure described in section 4.2.

8. Template selector

The template selector is a tool that allows to collect the metadata templates for being used in the creation either of other metadata or repositories of metadata. The templates are metadata that will be the base or guideline of other metadata. When a metadata repository of metadata was generated from a template, they will inherit the language and standard of the template as well as the fields that it was completed.

In order to open this tool is necessary to select either the option “Tools: templates directory” or the button  from the tools bar. Once clicked on it, a template repository will be shown (see Figure 44) allowing the visualization of the existing templates as the creation, edition or removing of them.

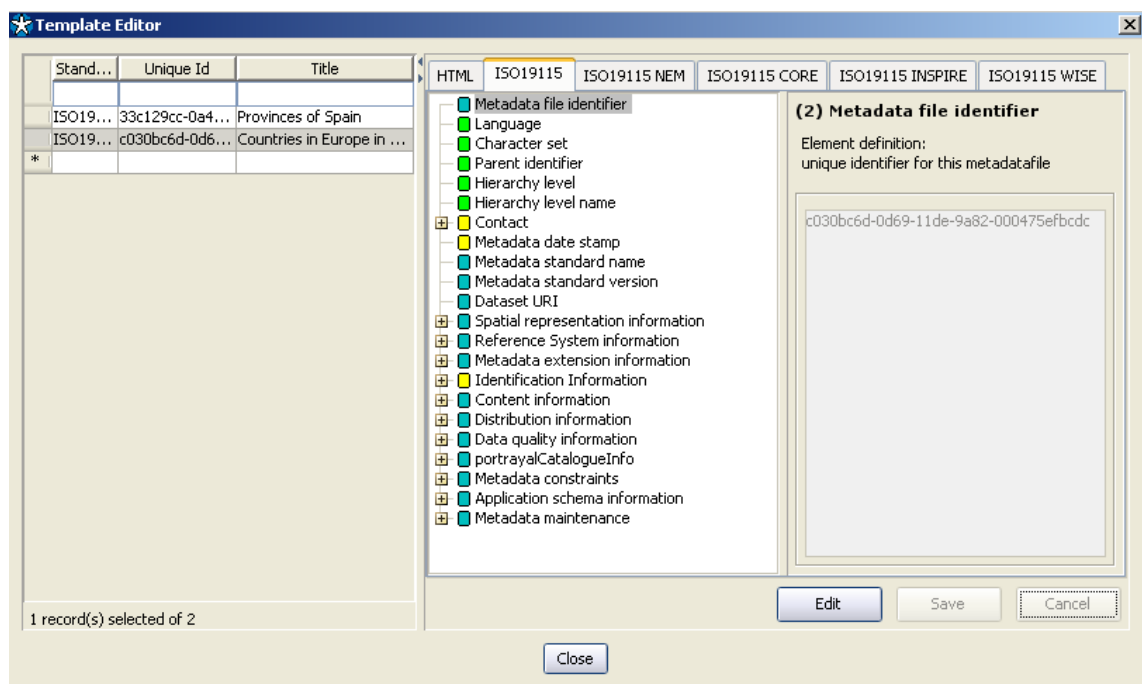



Figure 44 Template selector

The way of running is just like the “Contact directory”

9. Thesaurus repository

This tool allows accessing the thesaurus repository supported by CatMDEdit. A thesaurus is a structure that allows collecting terms and their associations in a specific domain.

This tool is used to make it easier the process of filling certain fields which values are terms belonging to a thesaurus.

In order to open this repository it is needed select the menu option “Tools: Thesaurus repository” or the tool bar button . Once this action has been made, it will be shown the thesaurus repository that appears in the Figure 45.

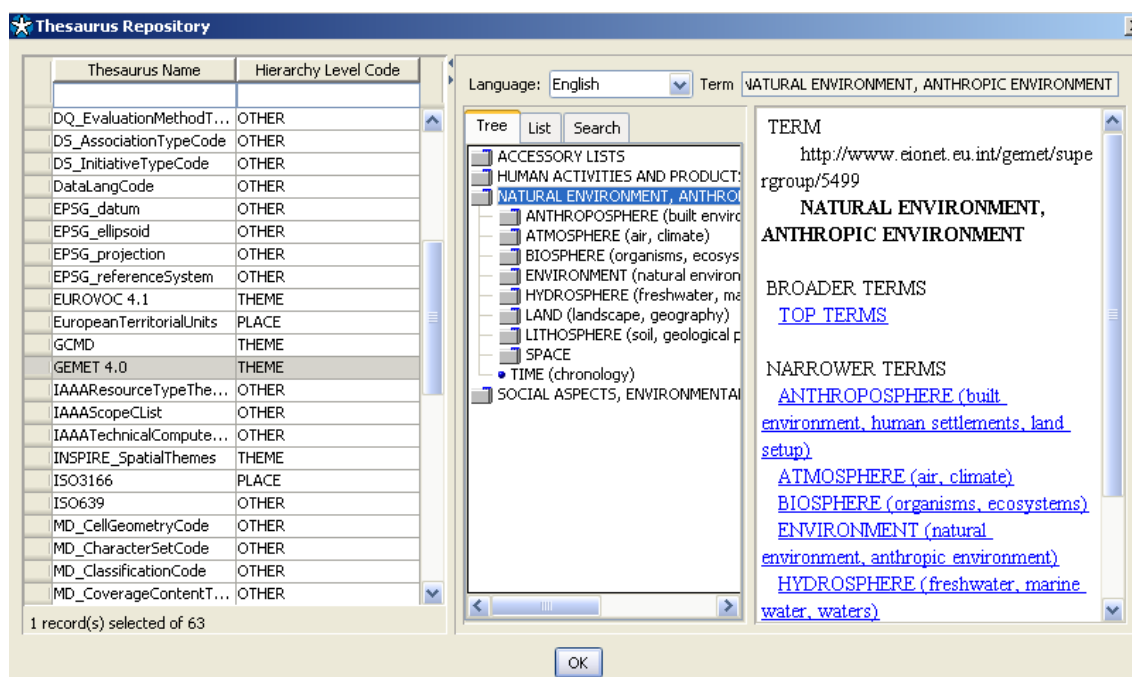


Figure 45 Thesaurus repository

The window shown in Figure 45 allows browsing the contents of the thesauri supported by CatMDEdit. In order to select a thesaurus term, the wanted thesaurus from the thesauri in the left panel must be clicked. At this moment on the right panel they will be shown the selected thesaurus terms. This right panel is divided in two parts:

- On the left side, you can see the thesaurus treelike structure or the thesaurus term list in alphabetical order, depending on the selection made on the top of the window: tree or list.
- Once you have selected a term, all available information for that term will be shown on the right side (definition, connections with other terms...).

CatMDEdit only allows visualizing the supported thesauri. If the user wants to add a new thesaurus in order to make easier the resource cataloguing, the procedure described in the appendix 9.2 must be followed.

10. Appendix

10.1. Import/Export Excel Format

CatMDEdit tool allows to import/export metadata records from/towards an Excel file (ISO19115 Excel option) according to the NEM profile (Núcleo Español de Metadatos) which is a subset of ISO 19115 [ISO 2003].

In order to achieve a correct importation, excel fields must be in a specific order. Examples are provided in the installation directory, inside the folder "doc/excel_input".

This Excel file main characteristics are as follows:

- The tool will only read first page information. A file is provided as an example, and can be used to write metadata and import them.
- The first row in the page that has the metadata records is reserved to write each column name.
- For each metadata record, you have to fill a row that has some columns, a subset of ISO19115 standard [ISO 2003]. If any of them is left blank, the metadata will also be created without this information. Dates will be introduced writing: four digit year, followed by two digit month and then two digit day of the month (v. gr. 20040216 is 2004 February, the 16th). Let's point out that if you write a date using a different format, text processing tool will not be able to reload it.

Next, it is shown a table that describes all the columns in the Excel file: name, value set, and a content example. For further information of each metadata element description in this Excel file, see ISO19115 en standard definition [ISO 2003].

Nr	Name (English)	Domain	Example
1	Dataset title (Md_Metadata>MD_Identification.citation>CI_Citation.title)	Character String	Primer metadato
2	Dataset reference date (MD_Metadata>MD_Identification.citation>CI_Citation.date)	Date (yyyymmdd)	20040216
3	Dataset responsible party (MD_Metadata>MD_Identification.pointOfContact>CI_ResponsibleParty)	Character String	IAAA
4	Geographic location of the dataset (by four coordinates) (MD_Metadata>MD_DataIdentification.extent>EX_Extent>EX_GeographicExtent>EX_GeographicBoundingBox or EX_GeographicDescription)		
	North Bound Latitude	Real (decimals with "point")	11
	South Bound Latitude	Real (decimals with "point")	11
	East Bound Longitude	Real (decimals with "point")	11

Nr	Name (English)	Domain	Example
	West Bound Longitude	Real (decimals with "point")	11
5	Dataset Language (MD_Metadata>MD_DataIdentification.Language)	Character String	Es
6	Dataset character set (MD_Metadata>MD_DataIdentification.CharacterSet)	Character String	utf-8
7	Dataset topic category (MD_Metadata>MD_DataIdentification.TopicCategory)	Character String	Transporte
8	Spatial resolution of the dataset (MD_Metadata>MD_DataIdentification.spatialResolution>MD_Resolution.equivalentScale o MD_Resolution.distance)	Character String	50000
9	Abstract describing the dataset (MD_Metadata>MD_Identification.abstract)	Character String	Comentario
10	Distribution Format (MD_Metadata>MD_Distribution>MD_Format.name y MD_Format.version)	Character String	ASCII
11	Additional extent information for the dataset (vertical) (MD_Metadata>MD_DataIdentification.extent>EX_Extent> EX_VerticalExtent)		
	Vertical extent: minimum value	Real (decimals with "point")	0
	Vertical extent: maximum value	Real (decimals with "point")	1000
	Vertical extent: units of measure	Character String	Metros
11	Additional extent information for the dataset (temporal) (MD_Metadata>MD_DataIdentification.extent>EX_Extent>EX_TemporalExtent)		
	Temporal element: begin date	Date (yyyymmdd)	19800123
	Temporal element: end date	Date (yyyymmdd)	19880522
12	Spatial Representation Type (MD_Metadata>MD_DataIdentification.spatialRepresentation Type)	Character String	Grid
13	Reference System (MD_Metadata>MD_ReferenceSystem)	Character String	
14	Lineage (MD_Metadata>DQ_DataQuality.lineage>LI_Lineage)		
	Lineage: Process step: date	Date (yyyymmdd)	20030208
	Lineage: Process step: processor	Character String	IAAA
	Lineage: Process step: description	Character String	Ejemplo
15	On-line resource (MD_Metadata> MD_Distribution >MD_DigitalTransferOption.online>CI_OnlineResource)	Character String	iaaa.cps.unizar.es

Nr	Name (English)	Domain	Example
16	Metadata file identifier (MD_Metadata.fileIdentifier)	Character String	prueba.xls
17	Metadata standard name (MD_Metadata.metadataStandardName)	Character String	ISO 19115 Geographic Information – Metadata
18	Metadata standard version (MD_Metadata.metadataStandardVersion)	Character String	2003
19	Metadata language (MD_Metadata.language)	Character String	Es
20	Metadata character set (MD_Metadata.characterSet)	Character String	utf-8
21	Metadata point of contact (MD_Metadata.contact>CI_ResponsibleParty)	Character String	IAAA
22	Metadata date stamp (MD_Metadata.dateStamp)	Date (yyyymmdd)	20000101
23	Credits (MD_Metadata.identificationInfo>MD_DataIdentification.credit)	Character String	Javier González
24	Aggregation Info (MD_Metadata.identificationInfo>MD_DataIdentification.aggregationInfo > MD_AggregateInfo)		
	Aggregation Info: Association Type	Character String	Mención del trabajo principal
	Aggregation Info: Aggregate Dataset Identifier	Character String	233545:55678
	Aggregation Info: Aggregate Dataset Name	Character String	Base cartográfica numérica 1:200.000
25	Purpose (MD_Metadata.identificationInfo>MD_DataIdentification.purpose)	Character String	El propósito es...
26	Resource Constraints (MD_Metadata.identificationInfo > MD_DataIdentification.resourceConstraints>MD_LegalConstraints)		
	Access Constraints	Character String	Patente
	Use Constraints	Character String	Patente
	Other Constraints	Character String	No hay otro tipo de constricciones

10.2. Include a new thesaurus in CatMDEdit

CatMDEdit does not include a menu to automatically add new thesauri. However, it can be done following this procedure:

1. Creation of the thesaurus: For the creation of a new thesaurus, you need to use the ThManager tool (<http://thmanager.sourceforge.net/>). You can create the thesaurus directly with the tool or import them if you have it in SKOS format.
2. Locate the thesaurus files: Once you have created or imported the thesaurus, you will find two files containing the thesaurus in the local folder of your ThManager tool called "repository\thesaurus". The two files are an .xml with the thesaurus metadata and a .dat file with the thesaurus in binary format.
3. Copy the thesaurus file to CatMDEdit repositories: copy the two previous files into the folder "repository\thesaurus" of CatMDEdit (without modifying the name or content).
4. The next time you launch the application, the new thesaurus will be available.

You have to be careful when you create the thesaurus metadata, especially when filling the <dc:type> element. The value of the <dc:type> restricts the visibility of the thesaurus in some of the metadata edition interfaces of CatMDEdit. According to the type (language, theme, place), the thesaurus is available (or not) for the edition of a particular metadata element (metadata language, theme keyword, place keyword).

Value	Visibility for metadata
language	Metadata elements requiring the introduction of a language value (e.g., metadata language).
theme	Metadata elements requiring the introduction of a thematic keyword
place	Metadata elements requiring the introduction of a place keyword.

10.3. Creation of customized metadata application profiles

The distribution of CatMDEdit is prepared to include new editors of ISO19115 based on personalized profiles. In order to define that profile, it is necessary to modify a set of property files which information needed by the application about each standard element is detailed.

The following subsections describe how to configure a profile and how activate it for edition.

10.3.1. Set the profile elements

Configuration profiles necessities for create a personalized ISO 19115 profile are in the `template\genericEditor\gui\ISO19115 - Customized Profile` subdirectory inside the installation directory. In this directory, there is an xml file for each one of languages CatMDEdit can be launched.

Each xml consist of one main element *object*, which contains as much elements as attributes the class on the ISO19115 model has. The assigned label to each element is related to its own graphic representation in the editor. The labels complex and singleComplex represent those fields of the standard that must be filled out with other classes which are, for their part, consists of another set of fields. For example, the field *citation* of *MD_DataIdentification* element is filled out through *CI_Citation* class, which contains the fields *title*, *alternateTitle*, *date*... In order to generate the editor, there will be an xml property file (one for each language) with information of the class *MD_DataIdentification*, which will have contents similar to the next:

```
<object ..... namespace="gmd" tipomd="MD_DataIdentification">

.....

  <singleComplex ... description_en="citation data for the resource(s)"
description_es="Nombre dado al recurso(s)" description_fr="" description_pl="citation
data for the resource(s)" description_pt="" element_name="citation"
element_namespace="http://www.isotc211.org/2005/gmd/" element_prefix="gmd"
example_en="" example_es="" example_fr="" example_pl="" example_pt=""
label_en="Citation" label_es="Mención" label_fr="Citation" label_pl="Wzmianka"
label_pt="Citação" number="24" hidden="false"
obligation="http://www.ukoln.ac.uk/projects/iemsr/terms/Obligation/mandatory">

    <lista>

        <option lang_en="CI_Citation" label_es="CI_Mención"
label_fr="CI_Citation" label_pl="Wzmianka" label_pt="CI_Citação"
value="http://www.isotc211.org/2005/gmd/CI_Citation"/>

    </lista>

    <attributes/>

</singleComplex>

.....

</object>
```

Additionally, there will be an xml property file with information about the class *CI_Citation*, specifying each field of it.

In order to configure a personalized ISO19115 profile, this procedure can be followed:

1. Edit the file *www_isotc211_org_2005_gmd_MD_Metadata.xml*.
2. Hide those fields you don't want to show in the profile. The attribute *hidden="false"* will be changed by *hidden="true"*. For example, if we don't want to show the field *fileIdentifier*, the following change will be enough

```
<text attribute="0" ..... description_en="unique identifier for this metadatafile"
description_es="Identificador único para el fichero de metadatos"
element_name="fileIdentifier" element_namespace="http://www.isotc211.org/2005/gmd/"
element_prefix="gmd" hidden="false" label_en="Metadata file identifier"
label_es="Identificador del Archivo de Metadatos" label_fr="Identificateur du fichier
de métadonnées" label_pl="Identyfikator pliku metadanych" label_pt="Identificador do
Ficheiro de Metadados" number="2"
obligation="http://www.ukoln.ac.uk/projects/iemsr/terms/Obligation/optional"
scheme="CharacterString" schemeNs="gco"> .....
```

By:

```
<text attribute="0" ..... description_en="unique identifier for this metadatafile"
description_es="Identificador único para el fichero de metadatos"
element_name="fileIdentifier" element_namespace="http://www.isotc211.org/2005/gmd/"
element_prefix="gmd" hidden="true" label_en="Metadata file identifier"
label_es="Identificador del Archivo de Metadatos" label_fr="Identificateur du fichier
de métadonnées" label_pl="Identyfikator pliku metadanych" label_pt="Identificador do
Ficheiro de Metadados" number="2"
obligation="http://www.ukoln.ac.uk/projects/iemsr/terms/Obligation/optional"
scheme="CharacterString" schemeNs="gco">.....
```

3. Remove the references to standard classes should not be considered in the new profile. This step is only applicable to the elements with labels *complex* and *singleComplex*. For example, if we want the section *identificationInfo* to be completed with the class *MD_DataIdentification*, but not with *SV_ServiceIdentification*, the following changes will be necessary:

```
<complex xmlns:dcterms="http://purl.org/dc/terms/"
xmlns:iaaaterms="http://purl.org/dc/IAAaterms/" columns="40" .....
element_name="identificationInfo" element_namespace="http://www.isotc211.org/2005/gmd/"
element_prefix="gmd" enabled="" example="" hidden="false"
obligation="http://www.ukoln.ac.uk/projects/iemsr/terms/Obligation/mandatory"
style="anchocolumna">

    <lista>

        <option label_en="MD_DataIdentification" label_es="Identificación de
datos" label_fr="MD_Identification des données" label_pl="Identyfikacja danych"
label_pt="MD_Identificação dos Dados"
value="http://www.isotc211.org/2005/gmd/MD_DataIdentification"/>

        <option label_en=" MD_ServiceIdentification" label_es="Identificación
de Servicios" label_fr="Identification du service" label_pl="Identyfikacja usług"
label_pt="Identificação de Serviços"
value="http://www.isotc211.org/2005/gmd/MD_ServiceIdentification"/>

    </lista>

    <attributes/>

</complex>
```

By:

```
<complex xmlns:dcterms="http://purl.org/dc/terms/"
xmlns:iaaaterms="http://purl.org/dc/IAAaterms/" columns="40" .....
element_name="identificationInfo" element_namespace="http://www.isotc211.org/2005/gmd/"
element_prefix="gmd" enabled="" example="" hidden="false"
obligation="http://www.ukoln.ac.uk/projects/iemsr/terms/Obligation/mandatory"
style="anchocolumna">

    <lista>

        <option label_en="MD_DataIdentification" label_es="Identificación de
datos" label_fr="MD_Identification des données" label_pl="Identyfikacja danych"
label_pt="MD_Identificação dos Dados"
value="http://www.isotc211.org/2005/gmd/MD_DataIdentification"/>

    </lista>

    <attributes/>

</complex>
```

4. Repeat the previous steps for each xml file which represents the standard classes we want to consider in the personalized profile.

10.3.2. Activate the profile edition

In order to the application show the editor of the personalized profile, next to the rest of ISO19115 editors, the following line should be added in the file *iso19115.xml*, sited in the subdirectory *repository/standards* of the installation directory

```
<dcterms:isFormatOf>editor=metadataManager.metadataEdition.metadataEditionGeneric.GenericMetadataEditor[GUIFile=www_isotc211_org_2005_gmd_MD_Metadata,editorName=ISO19115 - Customized Profile,allowUnknowns=false]</dcterms:isFormatOf>
```

10.4. Updating of metadata and contacts created with previous versions of the tool

In order to assure the compatibility of the new version of CatMDEdit with previous versions, there is an utility which allows the updating of metadata and contacts in the first launch of the tool.

10.4.1. Updating of metadata and contacts during the installation of CatMDEdit

To use metadata and contacts created with previous versions, CatMDEdit must be installed on the directory of the previous installation. For this, the user must uninstall the previous version of CatMDEdit, keeping the directory structure */repository/contact* and/or */repository/metadata* in which metadata will be stored.

After the installation of the new version of CatMDEdit, the user can launch the tool for the first time; in this moment, the tool will verify if there are metadata in the directories mentioned above. In case of metadata were found, the following window will be shown:



Figure 46 Update assistant

When the user presses on "Next" button, Figure 47 will show the list of metadata which the tool has detected for updating. Each row is a metadata or contact record. The first column, "Original file" corresponds to the metadata file identifier; the second one, "Standard", means the metadata standard the file complies with; the third one, "New file", shows the file identifier of the resultant metadata file after the updating; and the fourth one, "Path", shows the path in which the metadata files are stored.

The check box "Save a copy of the original metadata (extension .old)" allows the updating of metadata and stores a backup (.old) of the original file in the directory in which they were. If the user wants to get back the original metadata, he must change the extension .old by .xml.

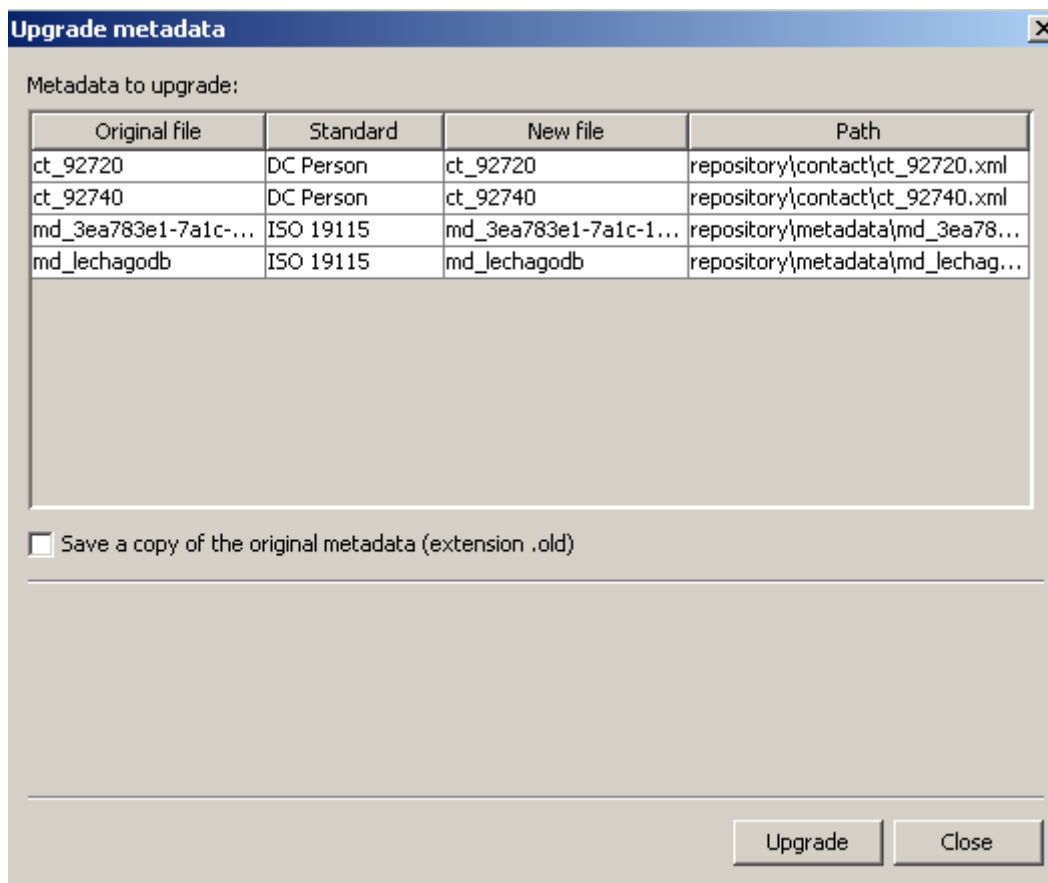


Figure 47 Updating metadata and contacts

Once the metadata transformation has been done, metadata will appear in a way of these:


1. Like metadata records in the "List" view of the resource browser (if metadata were in the path */repository/metadata*)
2. Like contacts, in the contact directory (if metadata were in the path */repository/contact*)

10.4.2. Importation of metadata records created with previous versions

The utility explained before will be available only the first time CatMDEdit is launched. If users want to work with old metadata in subsequent times, they will be to use the option Import, following the general instructions of the section 6.1 and selecting the default format of importation.

10.4.3. Importation of contacts created with previous versions

In order to get back old contacts in subsequent to the first launch, the user must create a resource repository following the instructions of section 3.1. The path of this directory must be *repository/contact* of the new tool installation directory.

Then, the user must import the old contacts following the instructions given at section 6.1 and select the default format of importation. Automatically, the imported contacts will be inserted either in the repository or in the contact directory. 

10.5. Important: Uninstallation of CatMDEdit

In order to uninstall the new version of CatMDEdit, there are 2 access paths:

1. Beginning > Programs > CatMDEdit > Uninstall CatMDEdit (installation over windows with the direct entries option activated)
2. Go to the installation directory and launch `/Uninstaller/uninstaller.jar` (in case of other operating systems or installation without direct entries)

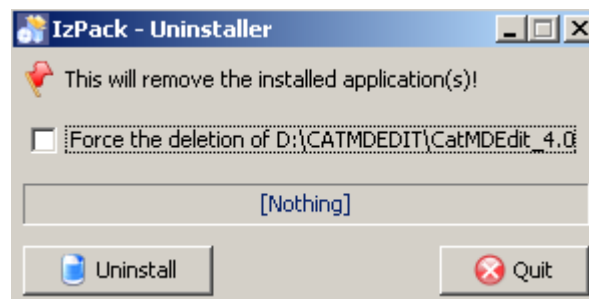


Figure 48 Uninstaller window

Once the uninstaller has been launched, there are two possibilities:

1. Uninstall: this option allows the uninstallation of the program but does not delete the folder `/repository`, so metadata will be kept.
2. Force the deletion of `[installation path]` + Uninstall: this option deletes all the installation files and folders, including `/repository`, so all metadata will be lost.

11. References

- [AENOR 98] *"UNE 148001 EXP: 1998, Mecanismo de Intercambio de Información Geográfica Relacional formado por Agregación (MIGRA), versión 1"*. Comité Técnico de Normalización 148 de AENOR (AEN/CTN 148)
- [CSG 2003] *"SGT3_2003_05v2: Documento de Metadatos (Borrador de la norma española de metadatos de información geográfica)"*. Infraestructura de Datos Espaciales Española, Consejo Superior Geográfico (Ministerio de Fomento).
- [CSG 2005] *"Núcleo Español de Metadatos (NEM v1.0). Doc. nº SGTNEM200501"*. Infraestructura de Datos Espaciales Española, Consejo Superior Geográfico (Ministerio de Fomento), <http://www.idee.es/resources/recomendacionesCSG/NEM.pdf>. (The recommendation metadata document is accessible from the Spatial Data Infrastructure of Spain (<http://www.idee.es>) under the section The SDI World > Information on IDEs > Standards)
- [DCMI] *Dublin Core Metadata Initiative*. <http://dublincore.org/>
- [EC 2007a] "Draft Implementing Rules for Metadata (Version 3)". European Commission (EC), 2007. http://inspire.jrc.it/reports/ImplementingRules/INSPIRE_Metadata_ImplementingRule_v3_20071026.pdf
- [EC 2007b] "Relation between ISO 19115 and ISO 19119 and the elements of the INSPIRE draft metadata implementing rules (informative) (v3)". European Commission (EC), 2007. http://inspire.jrc.it/reports/ImplementingRules/metadata/MD_IR_and_ISO_20071210.pdf
- [Eurostat 2007] "WISE Geographic Metadata Profile (v2)". European Commission - Eurostat, 2007. http://eea.eionet.eu.int:8980/Public/irc/eionet-circle/eionet-telematics/library?l=/technical_developments/wise_technical_group/environment_7-8607/wise_profile_v2doc/EN_1.0_&a=d
- [FGDC 98] Metadata Ad Hoc Working Group. Document FGDC-STD-001-1998 *"Content Standard for Digital Geospatial Metadata"*, Federal Geographic Data Committee (USA), 1998. <http://www.fgdc.gov/metadata/metadata.html>
- [ISO 2003] *"ISO 19115:2003. Geographic information - Metadata"*. International Organization for Standardization (ISO), 2003.
- [ISO 2007] *"ISO/TS 19139:2007. Geographic information - Metadata - XML schema implementation"*. International Organization for Standardization (ISO), 2007.
- [OGC 2007] D. Nebert, A. Whiteside, P. Vretanos (Eds.), OpenGIS – Catalogue Services Specification (version: 2.0.2), Open Geospatial Consortium Inc., OGC 07-006r1, 2007.