Excel2wisxml guide
(An excel to WMO XML conversion tool)

METEO-FRANCE

10 February 2017
Version 3.0

Creation

Responsable	Name/service	Date
Written by	B. Saclier	
Approval		
Approval		
Approval		
Authorize		

Modifications

N°	Date	Modified	Pages	Description of the evolution
1.0		B. Saclier	n.a.	Initial version
2.2		B. Saclier		Expert mode description
2.3		B. Saclier		
2.4		B. Saclier		
2.5		B. Saclier		Mime type, filename
3.0		B. Saclier		Add the translation part, update the extent temporal

1 Introduction

1.1 Background

excel2wisxml tool has been developed by Météo-France and allows the generation of large set of metadata WMO Core 1.3 profile issue from excel document. The software is under the free open source GNU license: GPL v3
For any information, please contact: gisc_support@meteo.fr

1.2 Requirements

The excel2wisxml is a script application written in Python. It main purpose is to help create large set of metadata compliant with WMO Core 1.3 profile.
The script has been tested with:

- Python 2.6.6
- Excel 2003

excel2wisxml requires 4 python libraries:

- xlrd 0.9.4 (https://pypi.python.org/pypi/xlrd)
- xmltodict 0.9.2 (https://pypi.python.org/pypi/xmltodict)
- xlwt 1.0.0 (https://pypi.python.org/pypi/xlwt)
- argparse 7.1.2 (https://pypi.python.org/pypi/argparse)

1.3 Features of excel2wisxml

File	Description
Metadata-guide-record.xls	Excel document for input metadata content.
excel2wisxml_template.xml	XML style sheet to format the contents of the generated XML file.
excel2wisxml.py	Python script to generate the WMO Core 1.3 metadata from the excel document: Metadata-guide-record.xls.
excel2wisxmlutils.py	Python module call by excel2wisxml.py for generic metadata generation.

1.3.1 Command line interface

From a Linux station, save the python script, the template and the excel document in a dedicated directory.
Give the execution permission to the script and execute it by passing in argument the excel file.
Example:

```
./excel2xml.py Metadata-guide-record.xls
```

The generation xml files will be stored in the same directory, with filename format: MD_*uniqueid*_YYYYMMDDHHMMSS.xml

2 Guide on Excel document for metadata generation

The excel document is composed of four sheets:

1. MD Fields: main sheet from where user will input most of metadata information.
2. Help: Help information about MD Fields sheet.
3. MD Generic: Generic metadata information will be report on each metadata.
4. MD Thesaurus: List of thesaurus uses in specific cells on MD Fields sheet.

2.1 Sheet 1: MD Fields

From this sheet you should insert all the relevant information for the metadata creation. Each column contain a metadata element, help is available on the second sheet.

To be known:

- Some of the columns are mandatory (title cell in green colour) others optional (title cell in orange colour).
- For multiple choice columns, values shall be separated by comma.
- For date columns, the format shall be yyyy-mm-dd where yyyy (4 digits) is the years, mm: the month (2 digits) and dd the day (2 digits).
- For number, decimal separator shall be ".". If comma is configured, you may changing it see annex: 4.1 How to change decimal separator in Excel 2003
- Some of the columns are linked with thesaurus (fourth sheet), in that case editor shall select a (or some) value(s) from a list. In case of multi-choice cell editor can remove a selection by selecting again the value from the list.

The columns are classified in 9 themes:

2.1.1 Identification

The section will identify the metadata. The resource Title and the resource Abstract are the two most relevant elements in the metadata record, in the context of the WIS Product catalogues, as those two elements are presented to the users in the search results and product description page. They therefore need to focus on highlighting the product's key characteristics, to assist users searching for relevant products.

The following metadata elements shall be provided:

N°	Identification	Description
1.1	**Resource Title**	This a characteristic, and often unique, name by which the resource is known. The value domain of this metadata element is free text. The title should be as specific about the product as is possible. If the product only contains one parameter, for instance, this can be stated in the title; however, if the product contains many parameters, then a more general term should be used in the title, and the parameters stated elsewhere in the metadata record (the abstract and/or the keywords).For a satellite product

		offering one main data parameter, the title will typically define which parameter is contained in the product, and from which instrument or instrument type it originates. For instance "AMSR-2 Sea Surface Temperature" or "SLSTR L1B radiances and brightness temperatures".
1.2	**Resource abstract**	This is a brief narrative summary of the content of the resource. The value domain of this metadata element is free text. Note that the abstract should provide a clear and concise statement that enables the reader to understand the content of the dataset. For guidance when completing the abstract, consider these points: • State what the "things" are that are recorded. • State the key aspects recorded about these things. • State what form the data takes. • State any other limiting information, such as time period of validity of the data. The resource abstract should complement the title by more accurately explaining the title's content, and should provide further detail, where appropriate, describing the product and in particular the source of the data (such as the instrument type or model when applicable), the coverage, production frequency (hourly, every 3 minutes, etc.), the data processing level (near real-time, derived, quality controlled), the available formats, and the data access services when relevant.
1.3	**Unique Identifier**	* for metadata records describing GTS products in bulletins or named according to the WMO file - naming convention P-flag = "T" or P-flag= "A", the unique identifier is "«TTAAii»«CCCC»" * for metadata records describing products named according to the WMO file naming convention P-flag = "W", the unique identifier should be a truncated version of the WMO product identifier field of the associated data-files, excluding the date stamp and any other varying elements as necessary * for metadata records describing other products, the unique identifier may be assigned by the citation authority so as to be unique among the identifiers assigned by the citation authority
1.4	**File name (optional,multiple value)**	When using a WMO file naming convention, this field is standardized regular expression syntax will be used to express the linkage between the metadata record and the associated data-files. Example: Unique Identifier: fr-meteofrance-Toulouse_AMSUA_rars_noaa16_pap of P-flag "W" product identifier could be linked with following regular expression: ^W_fr-meteofrance-Toulouse,AMSUA,rars\+noaa16\+pap.* If the data-file is available in different format, multiple values shall be provided, separated by comma, example: "^AROME_NWP_00H_\d{16}\.grib2"," ^AROME_NWP_00H_\d{16}\.netcdf" In that case the resource format column 2.2 shall describe the format for of files following the same order (in our example GRIB and NETCDF)

2.1.2 Classification

From this section, according to thesaurus, the metadata will be high-level classify to assist in topic-base web searching.

All the resources are multiple values. To select multiple values, just click on it from the list, to remove a value click again on it from the list.

N°	Identification	Description
2.1	**Theme Keywords (multiple value)**	Each WIS Discovery Metadata record shall include at least one keyword from the WMO_CategoryCode code list. Multiple selection list (to remove a value, select it again).
2.2	**Resource Format (optional, multiple value)**	Provides a description of the format of the data to be distributed. Multiple selection lists (to remove a value, select it again). If nothing match, enter your resource format like: *name,version,specification link,mime-type* or update the format thesaurus (see section 3.3).

2.1.3 Geographic

The requirement for geographic location shall be expressed with the metadata element geographic bounding box.
Please note that the decimal separator shall be ".". If comma is configured on your Excel, you may changing it see annex: 4.1 How to change decimal separator in Excel 2003.

N°	Identification	Description
4.1	**Geographic bounding box Lat min (°)**	This is the extent of the resource in the geographic space, given as a bounding box. The bounding box shall be expressed with westbound and eastbound longitudes, and southbound and northbound latitudes in decimal degrees, with a precision of at least two decimals. Please note that "done is better than perfect". The bounding box is useful because any kinds of geospatial data have in common. So impreciseness is built-in virtue, not problem. Even if you don't know exact city of the observing station or if it is moving frequently, that's no problem. Simply fill the bounding box of rough maximum possible range of lat/longs. Bounding boxes that cross the 180 degree meridian can be differentiated from bounding boxes that do not, by the following rule: • In a dataset that does not cross the 180 degree meridian, the western-most longitude shall always be less than the eastern-most longitude; • Conversely, if a bounding box crosses the 180 degree meridian, then the western-most longitude shall be greater than the eastern-most longitude Other constraints on geographic bounding boxes: • Geographic points shall be designated with the northern-most and southern-most longitudes equal, and the western-most and eastern-most longitudes equal; • Except for a geographic point, the total longitudinal span shall be greater than zero, and less than or equal to 360 degrees;
4.2	**Geographic bounding box Lon min (°)**	
4.3	**Geographic bounding box Lat Max (°)**	
4.4	**Geographic bounding box Lon Max (°)**	

		• The northern-most latitude shall always be greater than or equal to than the southern-most latitude; • Longitude and latitude shall be recorded in a coordinate reference system that has the same axes, units and prime meridian as WGS84.

2.1.4 Temporal

This metadata element addresses the requirement to have information on the temporal dimension of the data.

N°	Identification	Description
5.1.1	**Temporal Extent starting date**	This element describes the period of time that the available product covers. Where the product has a clear start and end date, and where the entire set of data is available, the specific start Date and end Date should both contain a date or dateTime. The date information is constructed as YYYY-MM-DD; while the date and time information is constructed as YYYY-MM-DDTHH:MM:SSZ (for UTC time). For example: 2016-04-17T13:42:54Z.
5.1.2	**Temporal Extent end date**	
5.1.3	**Temporal Extent duration**	To describe an on-going dataset the following time indeterminate attributes can be used: • "unknown" indicates that no specific value for temporal position is provided. • "now" indicates that the specified value shall be replaced with the current temporal position whenever the value is accessed. • "before" indicates that the actual temporal position is unknown, but it is known to be before the specified value • "after" indicates that the actual temporal position is unknown, but it is known to be after the specified value. The encoding of duration allows the expression of time intervals such as: A number of years (nY), and/or months (nM), and/or (nD) days, or hours (nh), or minutes (nm), or seconds (ns), where "n" represents a number. For example: a duration of 4 hours is expressed asP0Y0M0DT4h0m0s or PT4h Note that duration can be expressed as either the long form (eg P0Y5M0DT0h0m0s) or short form, but the short form must include "T" for intervals of hours, minutes or seconds (e.g. P5M is 5 months, PT5m is 5 minutes). For more information on encoding a 'duration', see the "Durations" segment, at https://en.wikipedia.org/wiki/ISO_8601. Example : 1/ Observations available on the last 5 days : beginPosition = before endPosition = now

		duration = P5D 2/ For a dataset which is ongoing (that is, new data is continuously produced), but for which only the latest file is available (e.g. data is only ever available for a "rolling" window of time), the temporaExtent should reflect the period covered by the available data, in this case, the period that the latest file covers. For instance, where only the latest file is ever available, and the latest file is a forecast for the next 7 days, it would be encoded as follows: beginPosition = now endPosition = after duration = P7D 3/ For a numerical forecast, in case of several runs are availables(for next 5 days), each run goes until +114h, with variable time steps depending on the forecast deadline.You should express the most "useful" information : beginPosition = now endPosition = after duration = PT114H
5.1.4	**Temporal resource update frequency**	Frequency with which modifications and deletions are made to the data after it is first produced. Keyword choice : • Continual : data is continual updated • Daily : data is updated each day • Irregular : Data is updated in intervals that are uneven in duration • …
5.1.5	**Temporal Resource Update frequency duration**	The frequency duration, example for a product which is available every 6 hours : PT6H
5.2	**Date of creation**	This is the date of creation of the resource. There shall not be more than one date of creation.
5.3	**Date of publication**	This is the date of publication of the resource when available, or the date of entry into force. There may be more than one date of publication.
5.4	**Date of last revision**	This is the date of last revision of the resource, if the resource has been revised. There shall not be more than one date of last revision.

2.1.5 Constraints

A constraint related to access and use shall be either or both of the following:

- a set of conditions applying to access and use;
- a set of limitations on public access.

N°	Identification	Description

6.1	**Distribution policy**	Scope of distribution for data published for exchange within WIS. The scope of distribution for data within WIS shall be expressed using the following controlled vocabulary: - "**GlobalExchange**": Data are published for global exchange via the WIS. Data shall be incorporated into the GISC Cache. - "**RegionalExchange**": Data are published for regional exchange via a GISC. - "**OriginatingCentre**": Data are published for exchange directly via the originating centre.
6.2	**Data policy**	WMO Data License applied to the data resource – derived from WMO Resolution 25 and Resolution 40 (http://www.wmo.int/pages/about/exchangingdata_en.html), shall be expressed using the following controlled vocabulary: - **WMO Essential** Data: free and unrestricted international exchange of basic meteorological data and products. - **WMO Additional** Data: free and unrestricted access to data and products exchanged under the auspices of WMO to the research and education communities for non-commercial activities. A more precise definition of the data policy may be additionally supplied within the metadata. In all cases it shall be the responsibility of the data consumer to ensure that they understand the data policy specified by the data provider - which may necessitate dialogue with the data publisher for confirmation of terms and conditions. - **WMO others**: Data that is not covered by WMO Resolution 25 or WMO Resolution 40; e.g. aviation OPMET data. Data marked with "WMO Other" data policy shall be treated like "WMO Additional" where a more precise definition of the data policy may be additionally supplied within the metadata.
6.3	**GTS Priority**	Product category used for prioritising messages on the WMO Global Telecommunications System (GTS), shall be expressed using the following controlled vocabulary: - GTS Priority 1 highest priority products - GTS Priority 2 - GTS Priority 3 - GTS Priority 4 Used only if 6.1 Distribution policy equal to GlobalExchange or RegionalExchange
6.4	**Condition of apply and used (Limitations on public access)**	This metadata element defines the conditions for access and use of spatial data sets and services, and where applicable, corresponding fees. The value domain of this metadata element is free text. The element must have values. If no conditions apply to the access (ie WMO essential and additionnal data) and use of the resource, "no conditions apply" shall be used. If conditions are unknown, "conditions unknown" shall be used. This element shall also provide information on any fees necessary to access and use the resource, if applicable, or refer to a uniform resource locator (URL) where information on fees is available.
6.5	**Condition of apply and used , Use constraint**	This metadata element defines the conditions for access and use of spatial data sets and services, and where applicable, corresponding fees. If no conditions apply to the access and use of the resource (ie WMO essential and additionnal data), "otherRestrictions" is recommended. If a licence text/url has been defined on section 6.4, select the keyword "licence".
6.6	**Access constraints**	This metadata element defines the conditions for access and use of spatial data

		sets and services, and where applicable, corresponding fees. Recommendation : otherRestrictions
6.7	**Others Constraints**	other restrictions and legal prerequisites for accessing and using the resource or metadata. If no conditions apply to the access (ie WMO essential and additionnal data) "no limitation" shall be used.

2.1.6 Spatial resolution

N°	Identification	Description
7.1	**Resolution distance**	Spatial resolution refers to the level of detail of the data set. It shall be expressed as a set of zero to many resolution distances (typically for gridded data and imagery-derived products) or equivalent scales (typically for maps or map-derived products). An equivalent scale is generally expressed as an integer value expressing the scale denominator. A resolution distance shall be expressed as a numerical value associated with a unit of length. Example : for a numerical weather prediction resolution : 0.025°, resolution distance is : '0.025'
7.2	**Unit of measure**	Spatial resolution refers to the level of detail of the data set. It shall be expressed as a set of zero to many resolution distances (typically for gridded data and imagery-derived products) or equivalent scales (typically for maps or map-derived products). An equivalent scale is generally expressed as an integer value expressing the scale denominator. A resolution distance shall be expressed as a numerical value associated with a unit of length. Example : for a numerical weather prediction resolution : 0.025°, unit of measure is : 'deg' (for degree)

2.1.7 Free keywords

N°	Identification	Description
8.1	**Place (optional, multiple value)**	Where products include data from Stations which have been assigned a WIGOS Station Identifier, include these as keywords. Where metadata records previously included WMO Station numbers as keywords, the WIGOS Station Identifier should now be used. Example : 0-20000-0-94287; CAIRNS AERO [http://data.wmo.int/wigosid=0-20000-0-94287], 0-20000-0-94294; TOWNSVILLE AERO [http://data.wmo.int/wigosid=0-20000-0-94294]
8.2	**Data parameters (optional, multiple value)**	Where feasible, a list of the data parameters may be added as keywords.

8.3	**Free keyword (optional, multiple value)**	The keyword value is a commonly used word, formalised word or phrase used to describe the subject. While the topic category is too coarse for detailed queries, keywords help narrowing a full text search and they allow for structured keyword search. The value domain of this metadata element is free text. Keywords shall be separated by comma. Example : radiosounding,TEMP

2.1.8 Free link

In this section you will be able to add additional url links if necessary.

N°	Identification	Description
9.1	**Free Link (optional, multiple value)**	The resource locator defines the link(s) to the resource and/or the link to additional information about the resource. The value domain of this metadata element is a character string, commonly expressed as uniform resource locator (URL) and an associated name. The combinaison of name + url, shall be delimiter by quote, starting with the name and following the http:// url. Example: "My data web site http://mydata.fr","WMO web site http://www.wmo.int". *Please note that if the same link shall be apply to all of your metadata, prefer the use of fields Resource locator in MD generic sheet.*

2.1.9 Inspire

In this category you will find others resources which is relevant for INSPIRE directive (European directive for spatial information).

N°	Identification	Description
10.1	**Inspire Theme**	for spatial dataset or spatial dataset series, it shall describe the relevant INSPIRE spatial data theme

2.2 Sheet 2: Help

Note: nothing shall be modified on this sheet (except if you want to make changes on the XML WMO Core 1.3 output)
From this sheet you have access on the help for the columns of sheet MD Fields. By expanding the columns (click outline symbol):

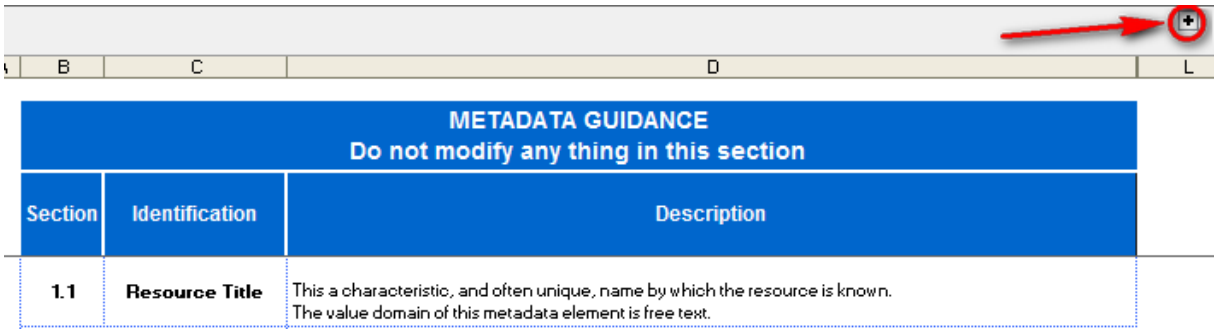


Figure 1: Button to expand Help table

More columns will be display; these information are necessary for the generation of WMO Core 1.3 metadata files, do not change anything.

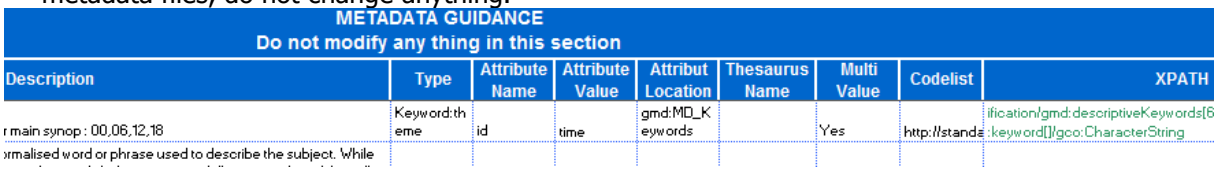


Figure 2: Help sheet after expanding

2.3 Sheet 3: MD Generic

This sheet contains all generic resources that we find in all the xml metadata.

Identification	Description
portal	Resource localisation, url to get more information on resources. Example : http://gisc.meteo.fr
permanent link	URL link to access to the resource Example :http://gisc.meteo.fr/openwis-user-portal/srv/en/main.home?urn=
permanent link title	Title of the permanent link
location (address) for on-line access	Example: http://gisc.meteo.fr/openwis-user-portal/srv/en/iso19139.xml?uuid=
Unique identifier	Use for the creation of unique identifier (add at the beginning of value from "1.3 MD Fields"), in most of case shall be : **urn:x-wmo:md:int.wmo.wis::**
Metadata Language	Language of the metadata, most of case shall be: **eng**
Metadata Second language (optional)	Second language, if use you need to fill the "MD Fields Translate" sheet
Resource Language	Language of the resource be careful, different from the metadata language. This is about the language of the product.
Inspire compatible	Leave this cell empty
Spatial reference system	Spatial reference system of resource, Recommended value :: **EPSG:4326**
Organisation Name	Organisation name of the resource provider Example : NMC FRANCE - Météo-France
Organisation Role	Recommended value : **resourceProvider**
Data point of contact Role	Role of data contact, Recommended value : **pointOfContact**
Data point of contact Organisation Name	This is the description of the organisation responsible for the data. This description shall include at least: the name of the organisation as free text, a contact e-mail address as a character string. Fill the required information about the data contact point
Data point of contact Individual Name	
Data point of contact Delivery point	
Data point of contact City	
Data point of contact Postal Code	
Data point of contact Country	
Data point of contact Phone	
Data point of contact	

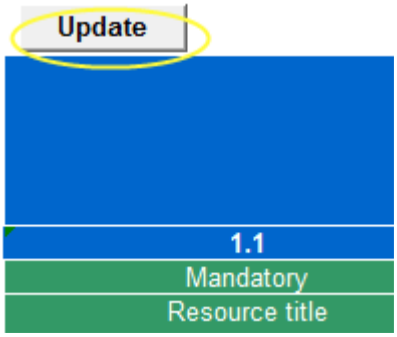
Fax	
Data point of contact Email	
Data point of contact Online	
Distribution point of contact Role	Role of distribution contact, Recommended value : **pointOfContact**
Distribution point of contact Organisation Name	This is the description of the organisation responsible for the distribution of the data. This description shall include at least: the name of the organisation as free text, a contact e-mail address as a character string. Fill the required information about the distribution contact point
Distribution point of contact Individual Name	
Distribution point of contact Delivery point	
Distribution point of contact City	
Distribution point of contact Postal Code	
Distribution point of contact Country	
Distribution point of contact Phone	
Distribution point of contact Fax	
Distribution point of contact Email	
Distribution point of contact Online	
Metadata point of contact Role	Role of metadata contact, Recommended value : **pointOfContact**
Metadata point of contact Organisation Name	This is the description of the organisation responsible for the creation and maintenance of the metadata. This description shall include at least: the name of the organisation as free text, a contact e-mail address as a character string. Fill the required information about the metadata contact point
Metadata point of contact Individual Name	
Metadata point of contact Delivery point	
Metadata point of contact City	
Metadata point of contact Postal Code	
Metadata point of contact Country	
Metadata point of	

contact Phone	
Metadata point of contact Fax	
Metadata point of contact Email	
Metadata point of contact Online	
Metadata date	DateStamps of the metadata, if leave blank, the generation script will get the date of the server where is running. Please note that datestamps are provided to support incremental harvesting, if you put a date in the past , you metadata may not be harvest by GISC. Recommended value :*leave blank*
Metadata Standard Name	Name of the metatada standard, recommended value : **WMO Core Metadata Profile of ISO 19115 (WMO Core), 2003/cor.1 :2006 (ISO 19115), 2007 (ISO/TS 19139)**
Metadata Standard version	WMO Version of the metadata, recommended value : **1.3**
QualityInfo Provides overall assessment of quality of a resource	Provides overall assessment of quality of a resource. Recommended value: **High data quality controlled according to the procedures of the GTS**
QualityInfo Date of publication	Reference date of publication of the specification, example : 2013-12-10
QualityInfo level	Level of quality info, recommended value : **dataset**
QualityInfo Title	Citation of the product specification or user requirement against which data is being evaluated.Title of the quality information, recommended text: **WMO PUBLICATION No. 306 - MANUAL ON CODES**
QualityInfo Explanation	Conformity explanation, recommended text : **See the referenced specification**
QualityInfo Degree	For Inspire, the metadata shall include information on the degree of conformity with the implementing rules, recommended value: **true**
Classification	Classification of the metadata, recommended value : **climatologyMeteorologyAtmosphere**
Scope code	Recommended value : **series**
Document format	Format of the data, recommended value : **documentDigital**
Resource locator 1 url	The resource locator defines the link(s) to the resource and/or the link to additional information about the resource. The value domain of this metadata element is a character string, commonly expressed as uniform resource locator (URL).
Resource locator 1 name	The resource locator defines the link(s) to the resource and/or the link to additional information about the resource. The value domain of this metadata element is a character string, commonly expressed the associated name to the url input in "**Resource locator 1 url"**.
Resource locator 2 url	Same as above if you need to enter multiple url
Resource locator 2 name	Same as above if you need to enter multiple url
OpenWIS only: DCPC	Do not use

local data source	
OpenWIS only: DPCP local data policy	Do not use
ExcelVersion (do not modify)	Do not change anything, version of the excel template used by script to check the compatibility.

2.4 Sheet 4: MD Fields Translate

This sheet is used to create bilingual metadata. To activate this option you should define a second language value in "MD Generic" sheet for "**Metadata Second language (optional)"**line.
It is necessary to first fill the "MD Fields" sheet. Then go to sheet "MD Fields Translate" and click on "Update" button:



The information which needs to be translated will be extract from "MD Fields" sheet and insert in "MD Fileds Translate" sheet. You need to complete now the second language columns.

2.5 Sheet 5 : MD Thesaurus

This sheet contains all thesaurus used to controlled the vocabulary of specific keywords. A keyword may be described as a free text or may originate from a controlled vocabulary dictionary: Thesaurus.

3 Excel modification (expert mode)

3.1 How to add a generic metadata resource

Generic resource will affect with the same resource value all the metadata generate from the excel document.

1. Go to excel sheet "MD generic".
2. On **Tag** column add a name of the new generic resource that you want to create (this name won't be use in metadata, only use to help excel editor).
3. On **Value** column insert the generic resource value that you want to affect to all metadata
4. On **XPath** column add the XPath resource to use on metadata
5. Update the WMO XML template file "excel2wisxml_template.xml" to define the position of the new resource.

If the value is associated to codelist, the codelist url shall be input in "**Codelist**" column.
If you want to add an "**anchor**" element (link,hyperlink between resources), you shall fill the columns Attribut:

- **Attribute: name**: Define the type of attribute and the prefix anchor (usually "**xlink**").The value must be one of "href", "role", "arcrole", "show", "title", or "actuate". The format is prefix:name
- **Attribute: value**: the value associate to the type
- **Attribue: location:** Specify in which node the attribute shall be inserted in the xpath. If empty, the attribute will be inserting at the last node of the xpath.

Please note that multiple values are separated by "comma".

Example, the code resource referring to the latitude/longitude reference system may be specified on metadata as an anchor. By fill the excel generic sheet with following information:

- **Value:** 4326
- **Attribute: name**: xlink:href,xlink:title
- **Attribute: value**: http://www.opengis.net/def/crs/EPSG/0/4326,WGS84

The xml output would be the following :

```
<gmx:Anchor xlink:href="http://www.opengis.net/def/crs/EPSG/0/4326"
xlink:title="WGS84">4326</gmx:Anchor>
```

3.2 How to add a none generic metadata resource

If you want to add a new metadata resource, three steps are necessary done:

1. Adding the new resource column on sheet "MD Fields"
2. Define the new xml tag on sheet "Help"
3. Updating the xml template file : "excel2wisxml_template.xml" (optional)

3.2.1 Adding resource on "MD Fields" sheet

You shall insert a new column for your resource on "MD Fields" sheet. If the new resource is link to an existing category (i.e Identification or classification or geographic …), insert the new column in the corresponding category.
Then :

1. On line 4 of the excel template add a new **unique** section number (like in step 1 of the example screenshot). This number will be the link with the xml tag of the resource which be defined in "Help" sheet.
2. On line 5 of the excel template specify if the value shall be mandatory or optional (like in step 2 of the screenshot).
3. On line 6 add a free title for your new column (like in step 3 of the screenshot).

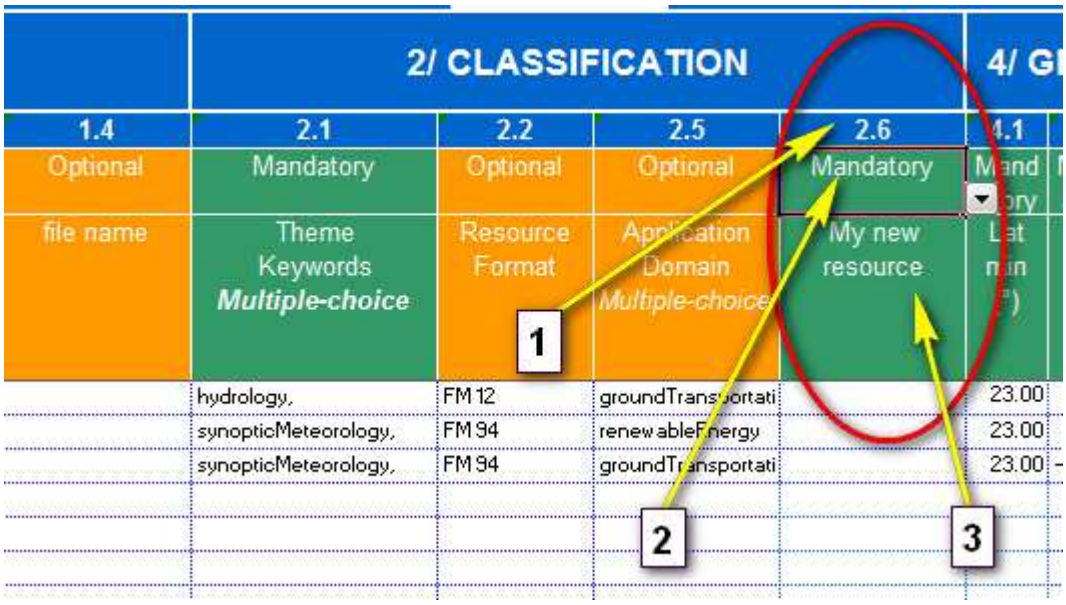


Figure 3: Example of new column insertion

3.2.2 Define the xml tag

It's in the "help" sheet that the link between the resource and the xml tag will be defined.
To do that:

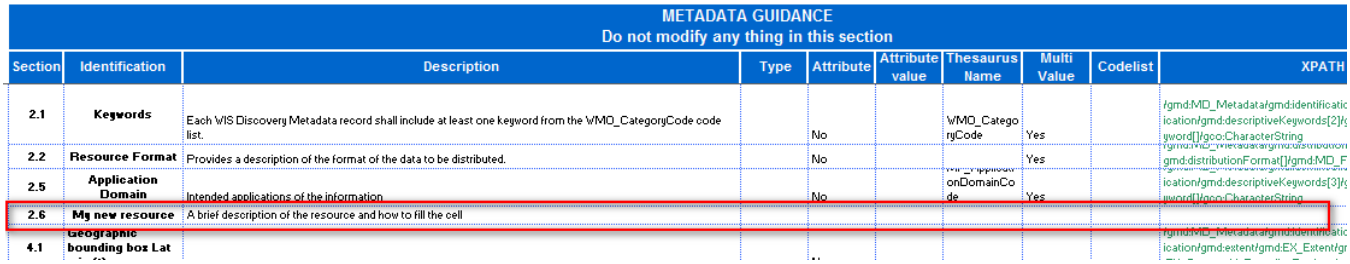
1. Go to "help" sheet and insert a line between the two sections of your new resource.
2. Fill the columns to describe your new element (see following table for explanation of the columns)

Column	Description
Section	(Mandatory) Report the section number of your resource that has been defined in "MD Fields" sheet. Carefully, if the section number does not match the one from the "MD Fileds" the metadata generation will fail.

Identification	(Mandatory) you may report the title of the resource.
Description	(Mandatory) a brief description of the resource and how to fill the cell.
Type	(Optional) Describe the type for date or keyword resource. Format shall be Keyword:type or Date:type . More details in annex 4.2 Usage of Type column in "Help" sheet
Attribute Name	(Mandatory) default value is "no". This column is used to define an element attribute. These attributes provide additional information about an element. Example : The "uom" attribute provides an identifier of the unit of measure used: *<gmd:distance>* *<gco:Distance **uom**="meter">10000.0</gco:Distance>* *</gmd:distance>* Note that if attribute prefix need to be add, the format of the element will be : prefix:name See annex 4.3 for example.
Attribute value	(Mandatory if Attribute Name != "No") If an attribute is defined in previous column, the attribute value shall be filling. Example: *<gmd:distance>* *<gco:Distance uom="**meter**">10000.0</gco:Distance>* *</gmd:distance>* Note that if the attribute value is defined in the "MD Fields" sheet, the link shall be expressed as *MD_Fields:X.X* where X.X is the column section which contains the value. See annex 4.3 for example.
Attribute location	Specify in which node the attribute shall be inserted in the xpath. If empty, the attribute will be inserting at the last node of the xpath. See annex 4.3 for example.
Thesaurus Name	(Optional) If the metadata element is a keyword value from a registered thesaurus, this cell shall contain the name of the referring thesaurus which has been described in sheet "MD Thesaurus". For more details see 0 How to add a new Thesaurus
Multi value	(Optional) "Yes" or "No" (default). Specify if the element accept multiple values. If "yes": 1. The "comma" shall be used as a delimiter value in "MD Fields" sheet in corresponding section. 2. The XPATH multiple value starting point shall be identified by "[]" characters, for example: /gmd:MD_Metadata/gmd:distributionInfo/gmd:MD_Distribution/**gmd:distributionFormat[]**/gmd:MD_Format/gmd:name/gco:CharacterString
Codelist	(Optional) If the metadata elements is a standardize value from an ISO metadata codelists, specify in this column the "codelist" url.
XPATH	(Mandatory) Insert the XPATH of the metadata element. Note that for elements which are used in several sections (i.e. : gmd:descriptiveKeywords, gmd:otherConstraint and gmd:date) , the xpatch used a table format to define the element order in the xml template. For example in XPATH of section 2.1 (keywords):

	*/gmd:MD_Metadata/gmd:identificationInfo/gmd:MD_DataIdentification/**gmd:descriptiveKeywords[2]**/gmd:MD_Keywords/gmd:keyword[]/gco:CharacterString* The ***descriptiveKeywords[2]*** defined that the value of section 2.1 shall be inserted in the second descriptiveKeywords inside template "excel2wisxml_template.xml".

In the previous example our new resource has been added between section "2.5" and "4.1"



METADATA GUIDANCE
Do not modify any thing in this section

Section	Identification	Description	Type	Attribute	Attribute value	Thesaurus Name	Multi Value	Codelist	XPATH
2.1	Keywords	Each WIS Discovery Metadata record shall include at least one keyword from the WMO_CategoryCode code list.		No		WMO_CategoryCode	Yes		/gmd:MD_Metadata/gmd:identification/gmd:descriptiveKeywords[2]/gmd:keyword[]/gco:CharacterString
2.2	Resource Format	Provides a description of the format of the data to be distributed.		No			Yes		gmd:distributionFormat[]/gmd:MD_F
2.5	Application Domain	Intended applications of the information		No		onDomainCode	Yes		ication/gmd:descriptiveKeywords[3]/gmd:keyword[]/gco:CharacterString
2.6	My new resource	A brief description of the resource and how to fill the cell							
4.1	Geographic bounding box Lat								/gmd:MD_Metadata/gmd:identification/gmd:extent/gmd:EX_Extent/gmd:geographicElement

Figure 4: Example of "Help" sheet modification

3.2.3 Update the xml template

Finally you should update the xml template file: "excel2wisxml_template.xml", to define "the location" of your new element in the metadata. Update the template carefully to respect the ISO metadata schema/hierarchy constraints.

3.3 How to update the thesaurus used by "resource format" column

If you need to add a new resource format (column 2.2 of MD Fields sheet), you should:

1. Go to the sheet "MD Thesaurus".
2. On column "C" (Code_Form) add the new resource format at the end of the existing list, the format shall be the following: *name,version,specification,mime type* where:
   a) Name : is the format name ie: BUFR, GRIB, GIF …
   b) Version: format version
   c) Specification : link to the specification of the format
   d) Mime type: the mime type of the resource
3. Update the excel "Named range" **Code_Form** to include new value in the list choice**.** To do that in Excel 2003 from the menu go to : Insert / Name /Define , select the define name "Code_Form" and increment the cell in "**Refers to**" box, for example *='MD Thesaurus'!$C$9:$C$56* would be updated to *='MD Thesaurus'!$C$9:C**57***

3.4 How to add a new Thesaurus

If you need to add a new Thesaurus, open the sheet "MD Thesaurus" and insert a new column.

Line	Description
Name	(Mandatory) Insert a name for the Thesaurus, this name will be used in Help page as a reference.

Link	(Optional) The url to access to the Thesaurus.
Version	(Optional) The version of the Thesaurus.
Date Type	(Optional) Type of date, value shall be "creation", "publication" or "revision"
Date	(Optional) The date of the thesaurus version.
Date Type codelist	(Optional)

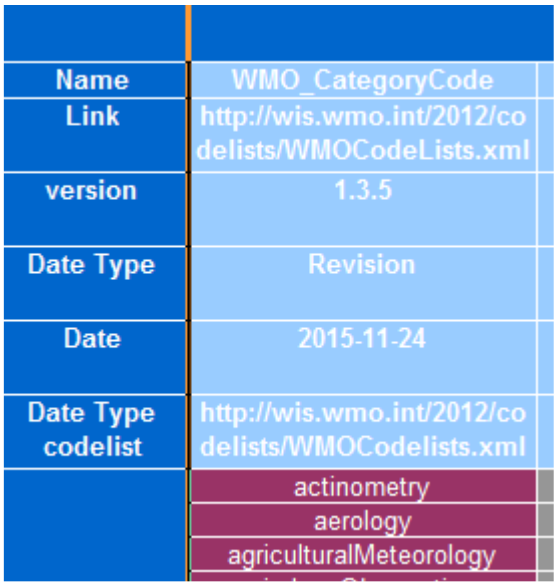


Figure 5: Thesaurus screenshot

4 Annex

4.1 How to change decimal separator in Excel 2003

In excel 2003 from menu : Tools/Options, select International tabs and update "Decimal separator" to "." :

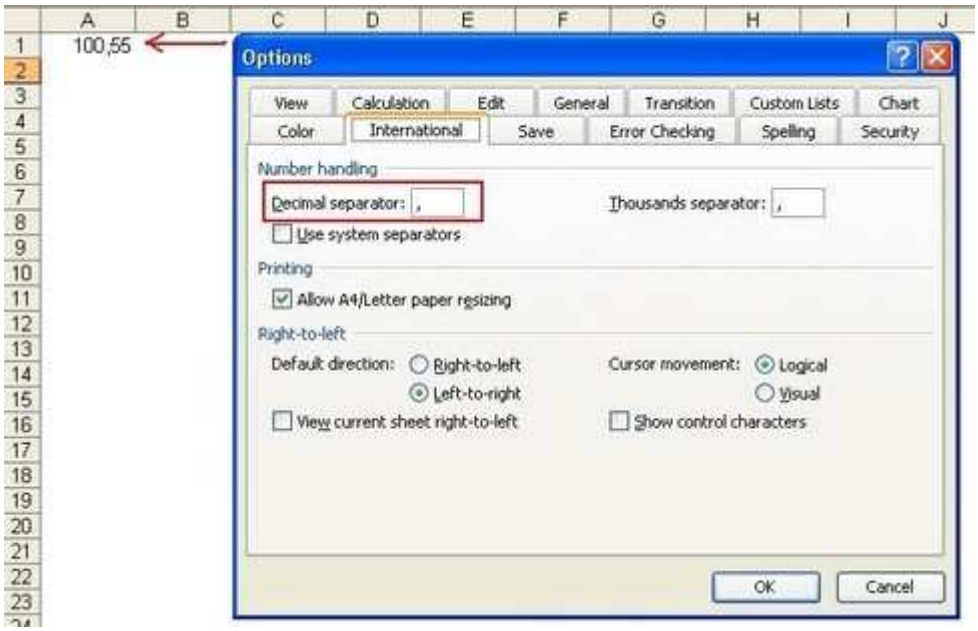


Figure 6: Screenshot of excel Options

4.2 Usage of Type column in "Help" sheet

Type: the column may be filling for keyword or date resources.

Format	Value
Date:*value*	This format is used to describe the type of a date resource. The value shall be one of "creation" or "publication" or "revision". For example if you enter : "Date:publication" the xml output of your date resource may be like : *<gmd:date><gmd:CI_Date>* *<gmd:date>* *<gco:Date>2013-12-10</gco:Date>* *</gmd:date>* ***<gmd:dateType>*** ***<gmd:CI_DateTypeCode codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO_19139_Schemas/resources/codelist/gmxCodelists.xml#CI_DateTypeCode" codeListValue="publication">publication</gmd:CI_DateTypeCode>*** ***</gmd:dateType>*** *</gmd:CI_Date>*

	</gmd:date>
Keyword:*value*	This format is used to describe the type of a resource keyword (a MD_keywords may be associated with a Thesaurus and a Type). The value is a free keyword. For example if you enter: "Keyword:DataCentre, the xml output of your keyword may be like: *<gmd:MD_Keywords>* *<gmd:keyword>* *<gco:CharacterString>GlobalExchange</gco:CharacterString>* *</gmd:keyword>* ***<gmd:type>*** ***<gmd:MD_KeywordTypeCode codeListValue="dataCentre" codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO_19139_Schemas/resources/codelist/gmxCodelists.xml#MD_KeywordTypeCode">dataCentre</gmd:MD_KeywordTypeCode>*** ***</gmd:type>***

4.3 Example of attribute usage

The following example shows the usage of attribute "place". The attribute definition (name and value) will be place at the level "gmd:MD_Keywords" in xpath.

Type	Attribute Name	Attribute Value	Attribute Location	Thesaurus Name	Multi Value	Codelist	XPATH
Keyword:theme	id	place	gmd:MD_Keywords		Yes	http://standa	ification/gmd:descriptiveKeywords[5]/gmd:keyword[]/gco:CharacterString

```
<gmd:descriptiveKeywords>
        <gmd:MD_Keywords id="place">
          <gmd:keyword>
            <gco:CharacterString>50236</gco:CharacterString>
          </gmd:keyword>
          <gmd:keyword>
            <gco:CharacterString>ALBI</gco:CharacterString>
          </gmd:keyword>
          <gmd:keyword/>
          <gmd:type>
            <gmd:MD_KeywordTypeCode codeListValue="theme"
codeList="http://standards.iso.org/ittf/PubliclyAvailableStandards/ISO_19139_Schemas/resources
/codelist/gmxCodelists.xml#MD_KeywordTypeCode">theme</gmd:MD_KeywordTypeCode>
          </gmd:type>
        </gmd:MD_Keywords>
      </gmd:descriptiveKeywords>
```

4.4 Example of multiple filename usage

```
<gmx:MX_DataSet>
```

```
      <gmx:dataFile>
        <gmx:MX_DataFile>
          <gmx:fileName>
            <gmx:FileName>CHIMERE_FORECAST_ALLLEVELS_CO_0H_24H_\d{18}\.grib2</gmx:FileName>
          </gmx:fileName>
          <gmx:fileDescription>
            <gco:CharacterString>Chimere model hourly forecasts of CO concentration from
validity time D 00 UTC to validity time D+1 00 UTC on Europe, from surface up to 5000m. Format
GRIB2.</gco:CharacterString>
          </gmx:fileDescription>
          <gmx:fileType>
            <gmx:MimeFileType type="application/octet-stream">application/octet-
stream</gmx:MimeFileType>
          </gmx:fileType>
          <gmx:fileFormat>
            <gmd:MD_Format>
              <gmd:name>
                <gco:CharacterString>GRIB2</gco:CharacterString>
              </gmd:name>
              <gmd:version>
                <gco:CharacterString>XXX</gco:CharacterString>
              </gmd:version>
            </gmd:MD_Format>
          </gmx:fileFormat>
        </gmx:MX_DataFile>
      </gmx:dataFile>
      <gmx:dataFile>
      <gmx:MX_DataFile>
          <gmx:fileName>
            <gmx:FileName>CHIMERE_FORECAST_ALLLEVELS_CO_0H_24H_\d{18}\.netcdf</gmx:FileName>
          </gmx:fileName>
          <gmx:fileDescription>
            <gco:CharacterString>Chimere model hourly forecasts of CO concentration from
validity time D 00 UTC to validity time D+1 00 UTC on Europe, from surface up to 5000m. Format
NetCDF.</gco:CharacterString>
          </gmx:fileDescription>
          <gmx:fileType>
            <gmx:MimeFileType type="application/octet-stream">application/octet-
stream</gmx:MimeFileType>
          </gmx:fileType>
          <gmx:fileFormat>
            <gmd:MD_Format>
              <gmd:name>
                <gco:CharacterString>NETCDF</gco:CharacterString>
              </gmd:name>
              <gmd:version>
                <gco:CharacterString>XXX</gco:CharacterString>
              </gmd:version>
            </gmd:MD_Format>
          </gmx:fileFormat>
        </gmx:MX_DataFile>
        </gmx:dataFile>
    </gmx:MX_DataSet>
```