



Course title: EOTIST Standard course

Course subject: Computer Sciences

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LESSON SC2 - EXERCISE METADATA ROLES



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OBJECTIVES

Document the Core ISO metadata in XML format

KEY ELEMENTS

Download, visualization. Core ISO elements.

SOFTWARE

GeM+

DATA

Camargue_Hydroperiod_2016.xml

Es_Zepa_SPA_Medalpatl_202012.shp



1. DOCUMENT CORE ISO METADATA IN XML FORMAT

Download the XML metadata from the ECOPOTENTIAL project server¹:

- <https://ecopotential.grumets.cat/>
- Camargue hydroperiod

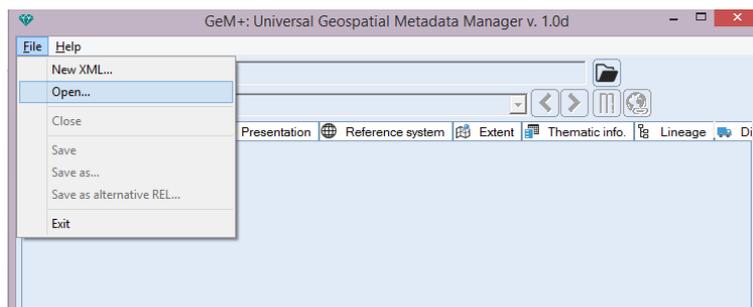
¹ In case the server is not running, you can find the XML file in the Data folder: Camargue_Hydroperiod_2016.xml

Open the file with a Notepad or with an XML editor:

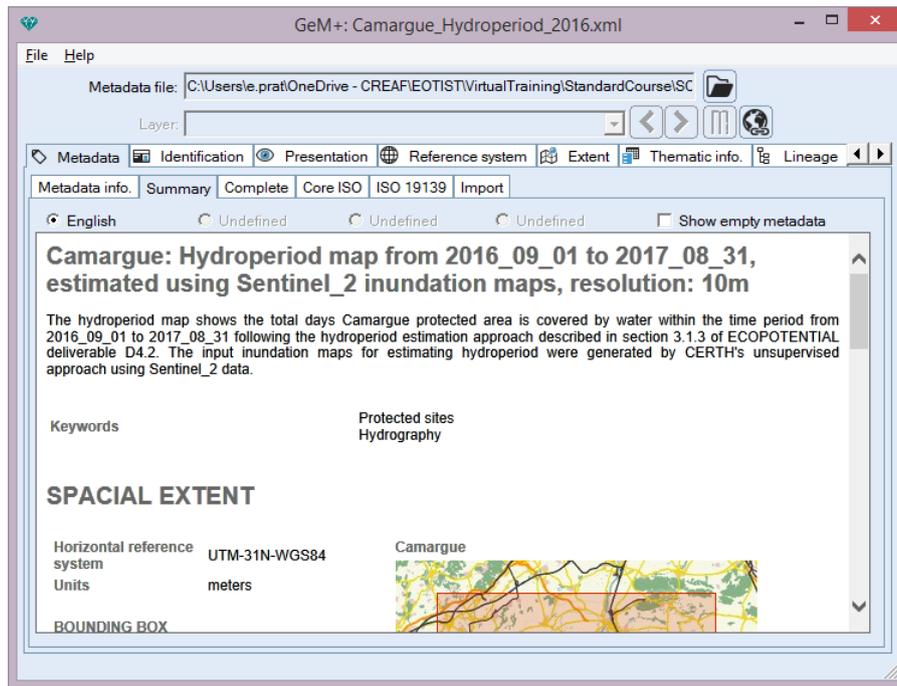


```
1 <?xml version="1.0" encoding="UTF-8"?>
2 <gmd:MD_Metadata xsi:schemaLocation="http://www.isotc211.org/2005/gmd http://schemas.opengis.net/iso/19139/20060504/gmd/gmd.xsd
  http://www.isotc211.org/2005/gmx http://schemas.opengis.net/iso/19139/20060504/gmx/gmx.xsd" xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:gco="
  http://www.isotc211.org/2005/gco" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gml="http://www.opengis.net/gml" xmlns:xlink="
  http://www.w3.org/1999/xlink" xmlns:gts="http://www.isotc211.org/2005/gts" xmlns:gmx="http://www.isotc211.org/2005/gmx">
3   <gmd:fileIdentifier><gco:CharacterString>Camargue_Hydroperiod_from_1st_Sept_2016_to_31st_Aug_2017_using_Sentinel_2_inundation_maps</gco:CharacterString></
  gmd:fileIdentifier>
4   <gmd:language><gmd:LanguageCode codeList="https://www.isotc211.org/2005/resources/Codelist/ML_gmxCodeLists.xml#LanguageCode" codeListValue="eng">eng</
  gmd:LanguageCode></gmd:language>
5   <gmd:characterSet><gmd:MD_CharacterSetCode codeList="https://www.isotc211.org/2005/resources/Codelist/ML_gmxCodeLists.xml#MD_CharacterSetCode"
  codeListValue="utf8">UTF-8</gmd:MD_CharacterSetCode></gmd:characterSet>
6   <gmd:hierarchyLevel><gmd:MD_ScopeCode codeList="https://www.isotc211.org/2005/resources/Codelist/ML_gmxCodeLists.xml#MD_ScopeCode" codeListValue="
  dataset">Layer</gmd:MD_ScopeCode></gmd:hierarchyLevel>
7   <gmd:hierarchyLevelName><gco:CharacterString>Layer-sheet</gco:CharacterString></gmd:hierarchyLevelName>
8   <gmd:contact><gmd:CI_ResponsibleParty><gmd:organisationName><gco:CharacterString>Centre for Research and Technology Hellas</gco:CharacterString></
  gmd:organisationName><gmd:contactInfo><gmd:CI_Contact><gmd:address><gmd:CI_Address><gmd:electronicMailAddress><gco:CharacterString>imanakos@iti.gr</
  gco:CharacterString></gmd:electronicMailAddress></gmd:CI_Address></gmd:address></gmd:CI_Contact></gmd:contactInfo><gmd:role><gmd:CI_RoleCode codeList="
  https://www.isotc211.org/2005/resources/Codelist/gmxCodeLists.xml#CI_RoleCode" codeListValue="pointOfContact">Point of contact</gmd:CI_RoleCode></
  gmd:CI_ResponsibleParty></gmd:contact><gmd:dateStamp><gco:Date>2018-04-05</gco:Date></gmd:dateStamp>
9   <gmd:metadataStandardName><gco:CharacterString>ISO 19115</gco:CharacterString></gmd:metadataStandardName>
10  <gmd:metadataStandardVersion><gco:CharacterString>2003/Cor.1:2006</gco:CharacterString></gmd:metadataStandardVersion>
11  <gmd:spatialRepresentationInfo>
12    <gmd:MD_Georectified>
13      <gmd:numberOfDimensions><gco:Integer>2</gco:Integer></gmd:numberOfDimensions>
14      <gmd:axisDimensionProperties>
15        <gmd:MD_Dimension>
16          <gmd:dimensionName><gmd:MD_DimensionNameTypeCode codeList="
  https://www.isotc211.org/2005/resources/Codelist/gmxCodeLists.xml#MD_DimensionNameTypeCode" codeListValue="row">Row</gmd:MD_DimensionNameTypeCode></
```

Now open the file with GeM+:



The XML metadata document is automatically displayed in a nicer and more understandable summary view:



ISO CORE ELEMENTS

Identify the ISO 19115 core elements in the different section tabs:

Role	Ind...	Individual ...	Position	Organization ...	Online reso...	Data origin	Inhe...
Point of ...	1/1			Centre for Re...		Metadata	no

- Metadata standard name (O)**
(MD_Metadata.metadataStandardName)
- Metadata standard version (O)**
(MD_Metadata.metadataStandardVersion)
- Metadata file identifier (O)**
(MD_Metadata.fileIdentifier)
- Metadata language (C)**
(MD_Metadata.language)
- Metadata character set (C)**
(MD_Metadata.characterSet)
- Metadata point of contact (M)**
(MD_Metadata.contact > CI_ResponsibleParty)
- Metadata date stamp (M)**
(MD_Metadata.dateStamp)



The screenshot shows the GeM+ interface for editing metadata. The 'Dataset title' field is highlighted with a red box and contains the text 'Camargue: Hydroperiod map from 2016_09_01 to 2017_08_31, estima'. The 'Dataset language' field is also highlighted with a red box and contains '[eng] English'. The interface includes a menu bar (File, Help), a toolbar, and several tabs (Metadata, Identification, Presentation, Reference system, Extent, Thematic info, Lineage). The 'General identification' tab is active, showing fields for 'Dataset unique identifier' (Code and URI) and 'Aggregation info.' (Aggregate file, Association type, Series, Initiative type).

Dataset title (M)
(MD_Metadata > MD_DataIdentification.citation > CI_Citation.title)

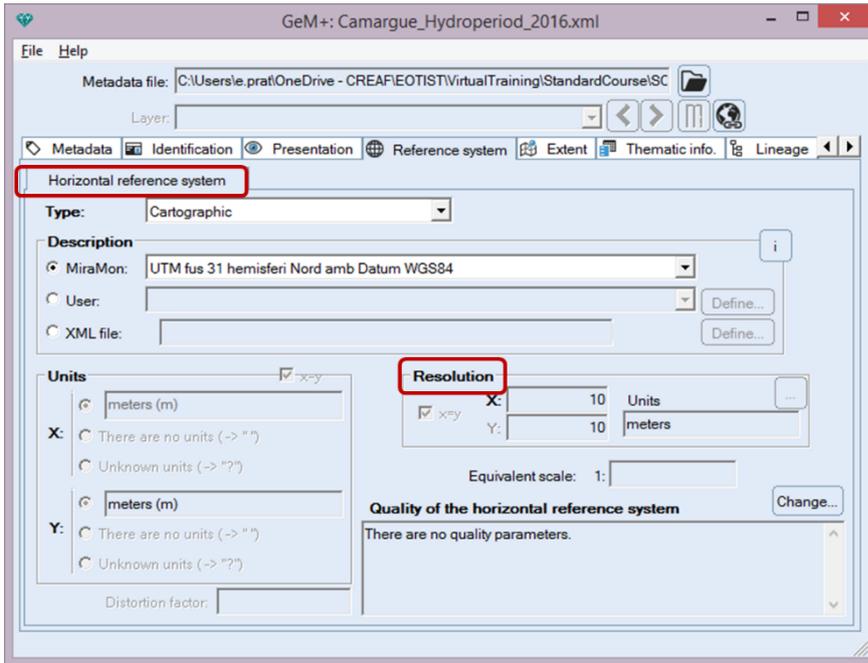
Dataset language (M)
(MD_Metadata > MD_DataIdentification.language)

The screenshot shows the GeM+ interface for editing metadata. The 'Dataset topic category' field is highlighted with a red box. Below it, a list of categories is displayed, including Farming, Biota, Boundaries, Climatology, meteorology, atmosphere, Economy, Elevation, slope, aspect, Environment, Geoscientific information, Health, Imagery, base maps, earth cover, Military, Inland waters, Location, Seas and oceans, Planning cadastre, Society, Man-made structures, Transportation, and Energy and telecommunications. The 'Keywords' table is also visible, with columns for Keyword, Type, and Thesaurus. The 'Keywords' table contains the following data:

Keyword	Type	Thesaurus
Protected sites		GEMET - INSPIRE the...
Hydrography		GEMET - INSPIRE the...

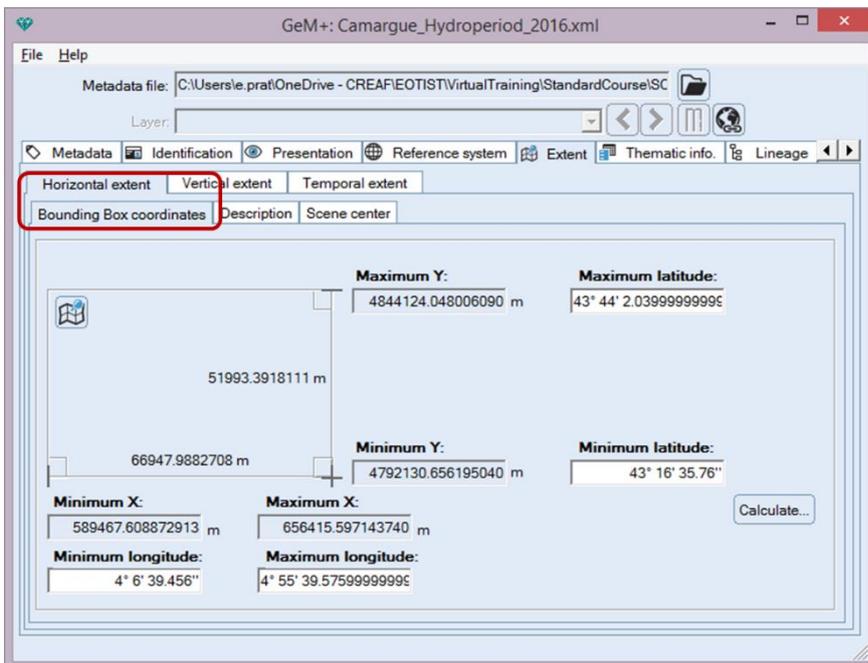
Dataset topic category (M)
(MD_Metadata > MD_DataIdentification.topicCategory)

You can select one (or more) layer theme categories from the list and add some keywords related to the base. Both categories and keywords are useful for searching in metadata catalogs.

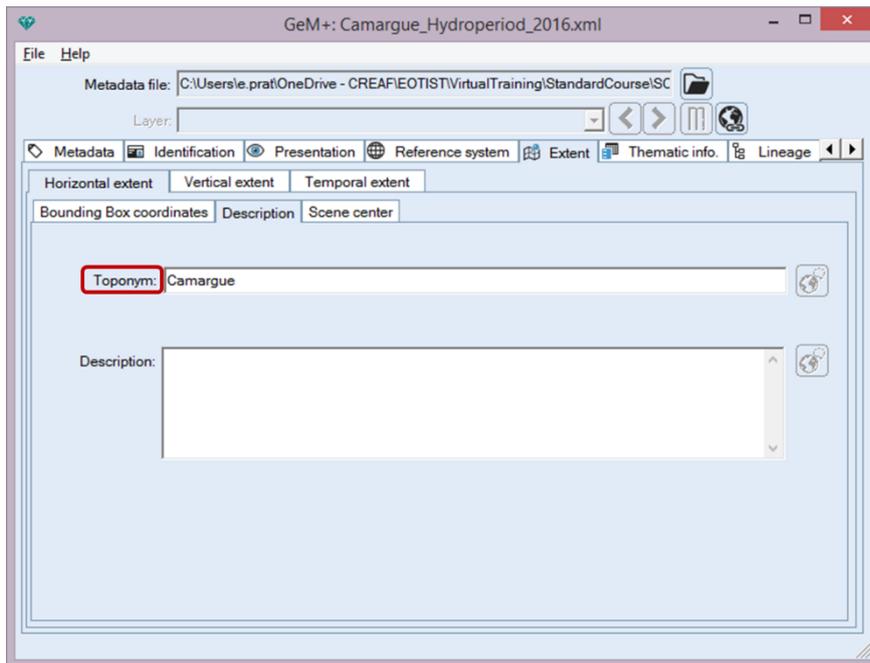


Reference system (O)
 (MD_Metadata > MD_ReferenceSystem)

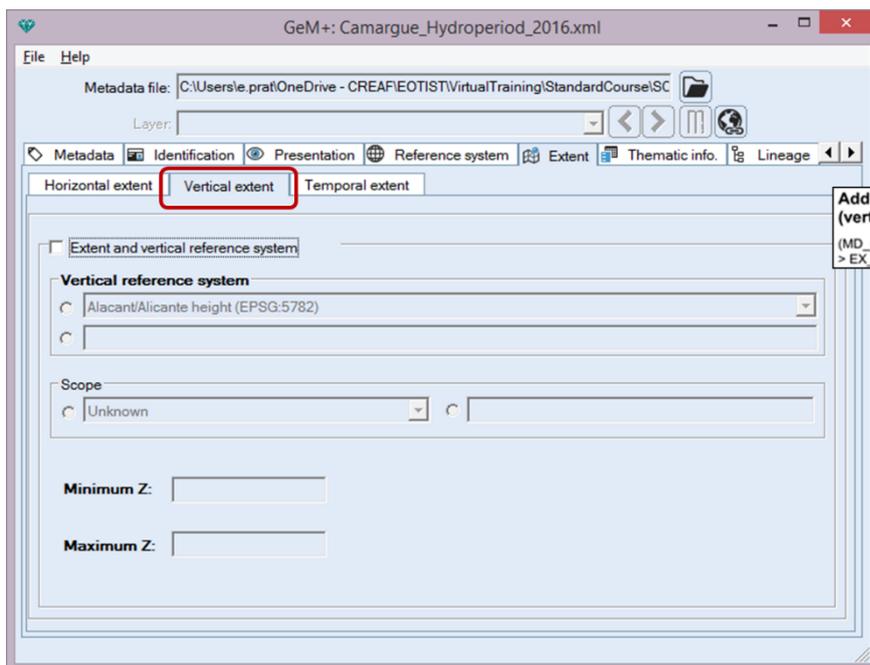
Spatial resolution of the dataset (O)
 (MD_Metadata > MD_DataIdentification.spatialResolution > MD_Resolution.equivalentScale or MD_Resolution.distance)



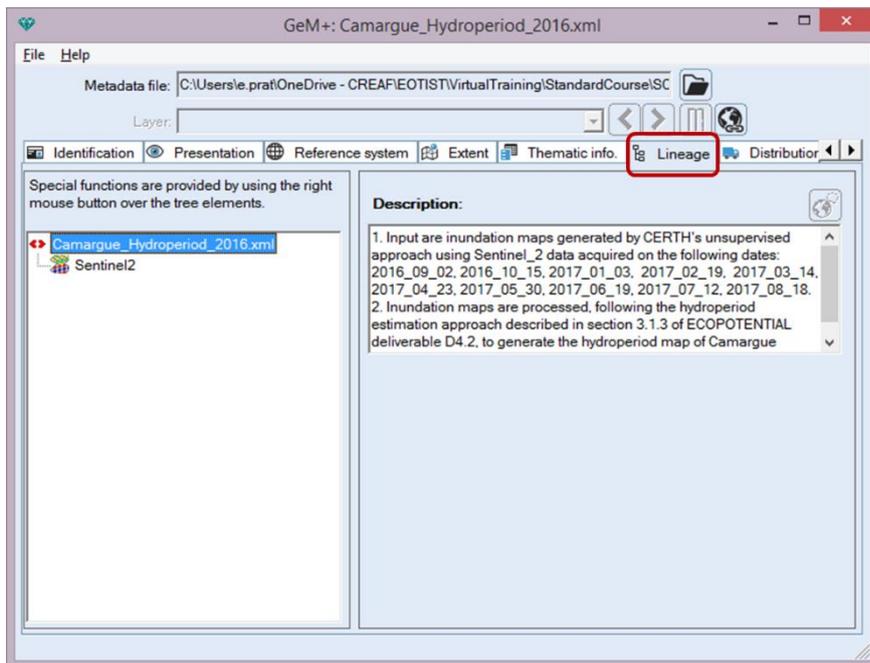
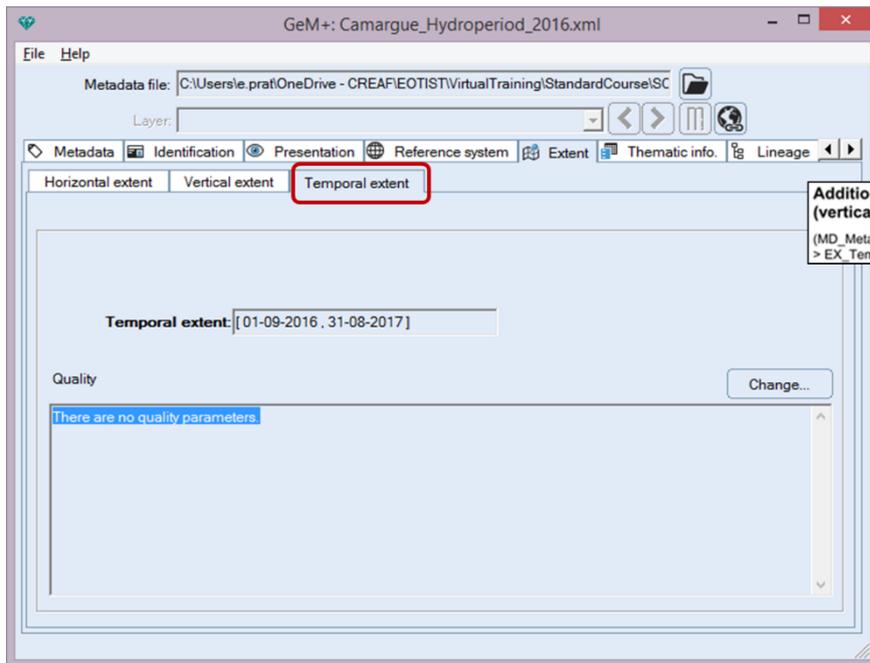
Geographic location of the dataset (by four coordinates or by geographic identifier) (C)
 (MD_Metadata > MD_DataIdentification.extent > EX_Extent > EX_GeographicExtent > EX_GeographicBoundingBox or EX_GeographicDescription)

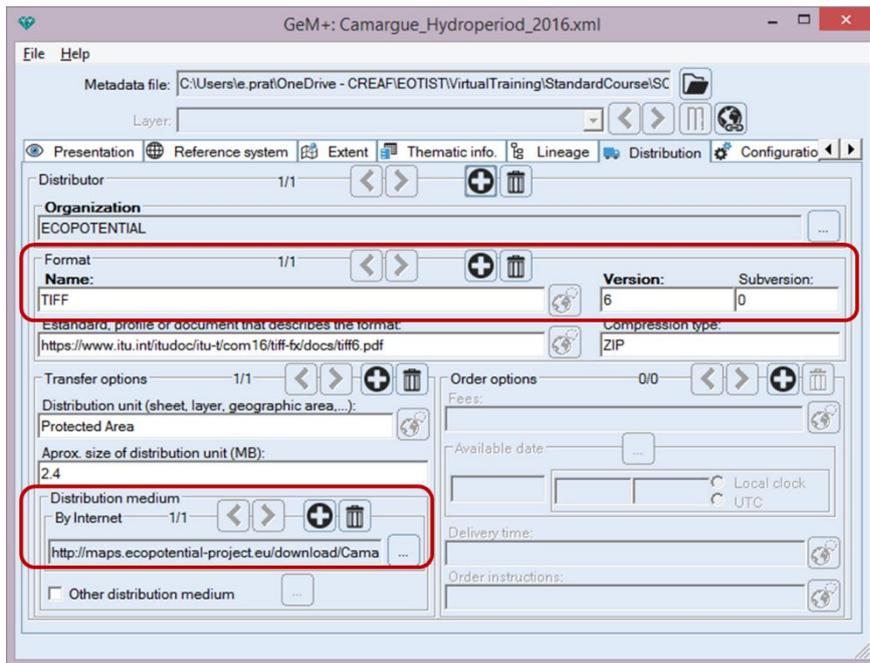


Geographic location of the dataset (by four coordinates or by geographic identifier) (C)
(MD_Metadata > MD_DataIdentification.extent > EX_Extent > EX_GeographicExtent > EX_GeographicBoundingBox or EX_GeographicDescription)



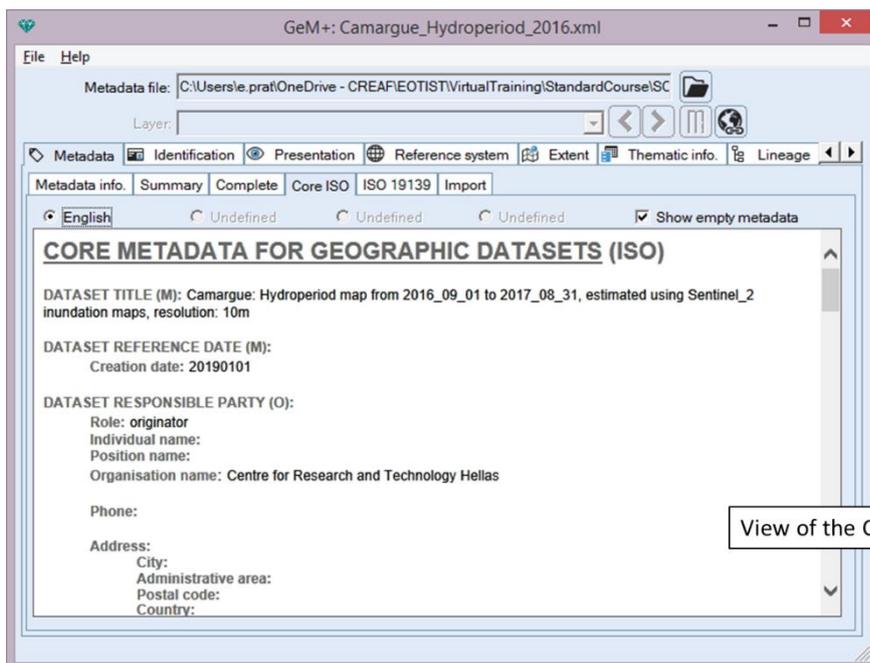
Additional extent information for the dataset (vertical and temporal) (O)
(MD_Metadata > MD_DataIdentification.extent > EX_Extent > EX_TemporalExtent or EX_VerticalExtent)





Distribution format (O)
(MD_Metadata > MD_Distribution > MD_Format.name and MD_Format.version)

On-line resource (O)
(MD_Metadata > MD_Distribution > MD_DigitalTransferOption.onLine > CI_OnlineResource)



View of the Core ISO metadata

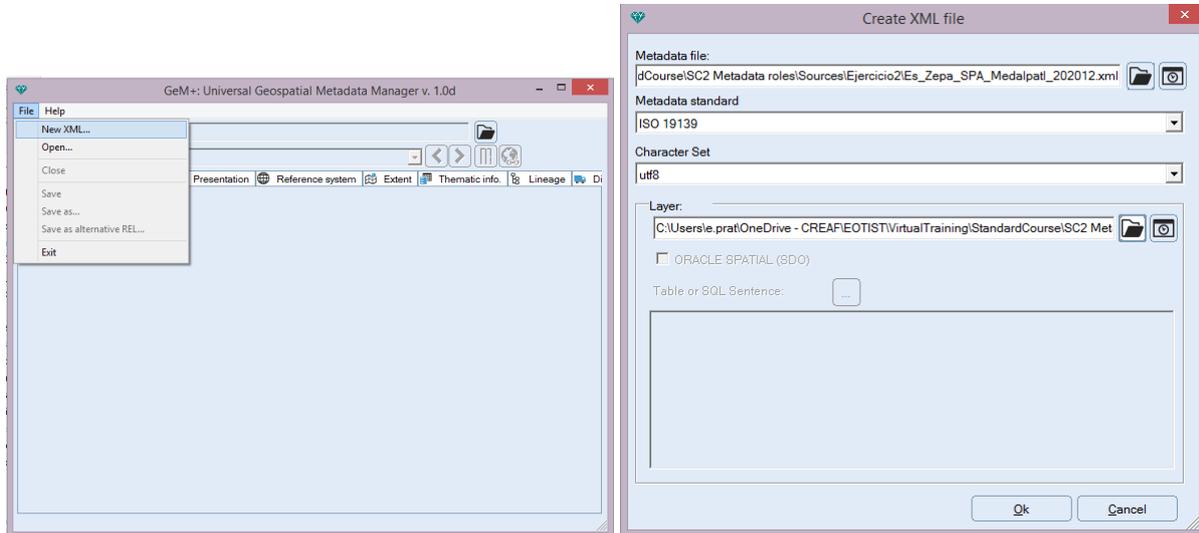
Now try it by downloading an XML file from the EEA Geospatial data Catalogue:

- <https://sdi.eea.europa.eu/catalogue/srv/eng/catalog.search#/home>

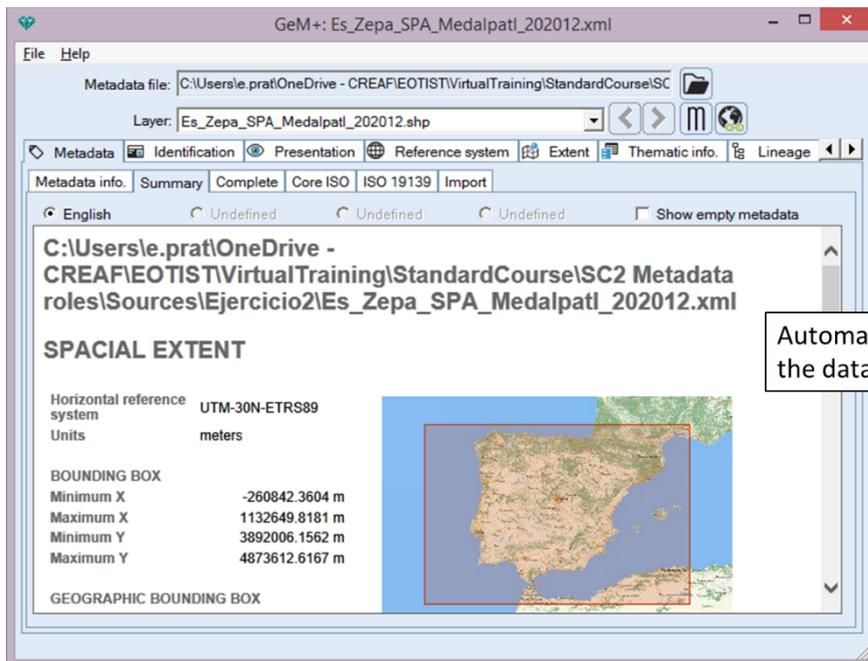
Note: The metadata files are available at the bottom of the page. If you click on the *Download metadata* button, the metadata will display in XML format in the web browser. To download the file you should click with the right button and select *Save link as...* from the drop-down menu.

2. AUTOMATIC EXTRACTION OF DATA AND METADATA EDITION IN XML

Open the GeM+ and create a New XML for the Es_Zepa_SPA_Medalpatl_202012.shp layer in the Data folder.



Some of the metadata attributes are automatically filled from the layer itself:



Now let's enrich the metadata:

- Organizations related to metadata
- Layer Title and Alternate Titles
- Base Topic Categories and Keywords
- Summary, purpose, organisms related to the base
- Distribution
- Lineage



•

Role	Ind...	Individual na...	Position	Organization ...	Online res...	Data origin	Inhe...
Proces...	1/1	Ester Prat		CREAF	https://ww...	Metadata	no

Documentation of organizations related to metadata

Organization edition

Role: Processor
Individual name: Ester Prat
Position:
Organization name: CREAM
Online resources: 1/1
URL address: https://www.creaf.cat
Protocol:
Description:
URL function: Information

GeM+: Es_Zepa_SPA_Medalpatl_202012.xml

Dataset unique identifier

Code: Namespace: URI: / Generate

Dataset title: Special Protection Areas for Birds (SPA) Natura 2000 network

Alternative title: SPA Spain SPA

Dataset language: [spa] Spanish; Castilian

Documentation of the titles and the language of the layer

Documentation of subject categories and keywords

Documentation of the summary and purpose



GeM+: Es_Zepa_SPA_Medalpatl_202012.xml

File Help

Metadata file: C:\Users\le.prat\OneDrive - CREA\FIEOTIST\VirtualTraining\StandardCourse\SC

Layer: Es_Zepa_SPA_Medalpatl_202012.shp

Identification Presentation Reference system Extent Thematic info Lineage Distributor

Special functions are provided by using the right mouse button over the tree elements.

- Es_Zepa_SPA_Medalpatl_202012.xml
 - Es_Zepa_SPA_Medalpatl_202012.dbf
 - Object identifier
 - SPA code
 - SPA name
 - AC
 - hectareas

Table type: DBF

Link type: 1 to 1 (thesaurus)

Nr. of records: 604 Nr. fields: 5

Character set: UTF-8

Name	Description	T.	Si...	D.	Vis.	Si...
OBJECTID	Object identifier	N	10	0	Yes	Yes
SITE_CODE	SPA code	C	20		Yes	Yes
SITE_NAME	SPA name	C	100		Yes	Yes
AC		C	150		Yes	Yes
hectareas		F	19		No	No