GEOGRAMA
GIS & MAPPING SERVICES

Control de calidad en metadatos, datos y servicios INSPIRE

Cómo utilizer los conjuntos de pruebas abstractos y ejecutables

AGENDA

- El bueno
- El feo
- El malo

ATS: EL BUENO

GEOGRAMA
GIS & MAPPING SERVICES

- Set of conformance classes that define tests for all requirements of a specification [derived from OGC Specification Model and ISO 19105]
- https://inspire.ec.europa.eu/id/document/tg/metadata-iso19139
- Lineage: https://github.com/inspire-eu-validation/metadata/blob/2.0/datasets-and-series/lineage.md
- Data encoding: https://github.com/inspire-eu-validation/metadata/blob/2.0/isdss/data-encoding.md
- Bounding box: https://github.com/inspire-eu-validation/metadata/blob/2.0/common/bounding-box.md

Guía técnica

TG Requirement 1.11: metadata/2.0/req/datasets-and-series/lineage

The lineage statement for the described data set or data set series shall be given. It shall be included in the *gmd:dataQualityInfo/gmd:DQ_DataQuality* element scoped to the entire described data sets or data sets series as specified by TG Requirement 1.9.

The lineage shall be encoded using the *gmd:lineage/gmd:LI_Lineage/gmd:statement* element with a Non-empty Free Text Element content, and it shall contain the description of the lineage of the described data set or series.

The multiplicity of this element is 1.

ATS

Lineage

Purpose: If the type of the resource was dataset or series, exactly one explanation about the lineage of a dataset must be given

Prerequisites

- Resource Type

Test method

This test case only applies to records with a hierarchyLevel value 'dataset' or 'series'.

The test first checks if a valid lineage statement is given and it is not an empty characterstring. It then validates that exactly one lineage statement like the one above is given.

Reference(s)

- TG MD 3.1.4.3, Req 1.11

Test type: Automated

Notes

The "Test method" requires to validate "that exactly one lineage statement like the one above is given" and talks about a "valid lineage statement". It is not clear if there are additional requirements on the value of a lineage statement, other than that it shall not be empty.

##Contextual XPath references

The namespace prefixes used as described in README.md.

Abbreviation	XPath expression (relative to gmd:MD_Metadata)
Hierarchy Level	./gmd:hierarchyLevel/gmd:MD_ScopeCode/@codeListValue
statement	./gmd:dataQualityInfo/*/gmd:lineage/*/gmd:statement

Guía técnica

TG Requirement 2.6: **metadata/2.0/req/isdss/data-encoding**

The encoding and the storage or transmission format of the provided data sets or data set series shall be given using the *gmd:distributionFormat/gmd:MD_Format* element.

The multiplicity of this element is 1..*.

The *gmd:name* and *gmd:version* child elements of *gmd:MD_Format* are mandatory. Both of these elements shall contain Non-empty Free Text Elements.

If the version of the encoding is unknown or if the encoding is not versioned, the *gmd:version* shall be left empty and the nil reason attribute shall be provided with either value "unknown" or "inapplicable" correspondingly[51].

ATS

Data Encoding dataset or series

Purpose: Evaluate encoding and the storage or transmission format for data sets and datasets.

Prerequisites

Test method

- The coding and storage or transmission format of the provided data sets or series of data sets through the element is tested Distribution Format.
- The multiplicity of this element is one or more.
- It is verified that the child elementschild exist and their value is free text but not empty.

Reference(s)

- TG MD 3.2.3.1, Req 2.6

Test type: Automated

Notes

Contextual XPath references

The namespace prefixes used as described in README.md.

Abbreviation	XPath expression (relative to gmd:MD_Metadata)
hierarchyLevel	./gmd:hierarchyLevel/gmd:MD_ScopeCode/@codeListValue
Distribution Format	./gmd:distributionInfo/*/gmd:distributionFormat/gmd:MD_Format
Name	./gmd:distributionInfo/*/gmd:distributionFormat/*/gmd:name/text()
Version	./gmd:distributionInfo/*/gmd:distributionFormat/*/gmd:version/text()

Guía técnica

TG Requirement C.19: metadata/2.0/req/common/bounding-box

A minimal containing geographic bounding box of the data set or data set series shall be described. This bounding box shall be encoded using one or more *gmd:extent/gmd:EX_Extent/gmd:geographicElement/gmd:EX_GeographicBoundingBox* elements.

The multiplicity of this element is 1..* for data sets and data set series, and 0..n for services.

The bounding coordinate values for west and east bound longitudes and south and north bound latitudes shall be given in decimal degree values using WGS 84 Coordinate Reference System, as specified for the EX_GeographicBoundingBox class of the [ISO 19115] data model. The coordinates shall be given with at least 2 decimal precision.

ATS

Bounding Box

Purpose: Specify the extent of the resource in the geographic space, given as a geometric bounding box..

Prerequisites

Test method

Check if it's a valid geographic extend. It is described by 4 elements: westBoundLongitude, eastBoundLongitude, southBoundLatitude and northBoundLatitude. The test performs the following checks on them:

- Is a correctly formatted westBoundLongitude given at gmd:westBoundLongitude/gco:Decimal.
- Is the following constraint given: -180.00 ≤ westBoundLongitude ≤ 180.00
- Is a correctly formatted eastBoundLongitude given at gmd:eastBoundLongitude/gco:Decimal.
- Is the following constraint given: -180.00 ≤ eastBoundLongitude ≤ 180.00
- Is a correctly formatted southBoundLongitude given at gmd:southBoundLongitude/gco:Decimal.
- Is the following constraint given: -90.00 ≤ southBoundLatitude ≤ northBoundLatitude
- Is a correctly formatted northBoundLongitude given at gmd:northBoundLongitude/gco:Decimal.
- Is the following constraint given: southBoundLatitude ≤ northBoundLatitude ≤ 90.00;

The bounding box shall be expressed in decimal degree with a precision of at least 2 decimals.

The bounding box shall be as small as possible. This requires a manual check.

Reference(s)

- TG MD, 2.3.8 , Req c.19

Test type: Automated

Notes

*The multiplicity of this element is one or more for data sets and data set series, and zero or more for services.

Contextual XPath references

The namespace prefixes used as described in README.md.

Abbreviation	XPath expression (relative to gmd:MD_Metadata)
extent	gmd:identificationInfo[1]/*/gmd:extent/*/gmd:geographicElement/gmd:EX_GeographicBoundingBox

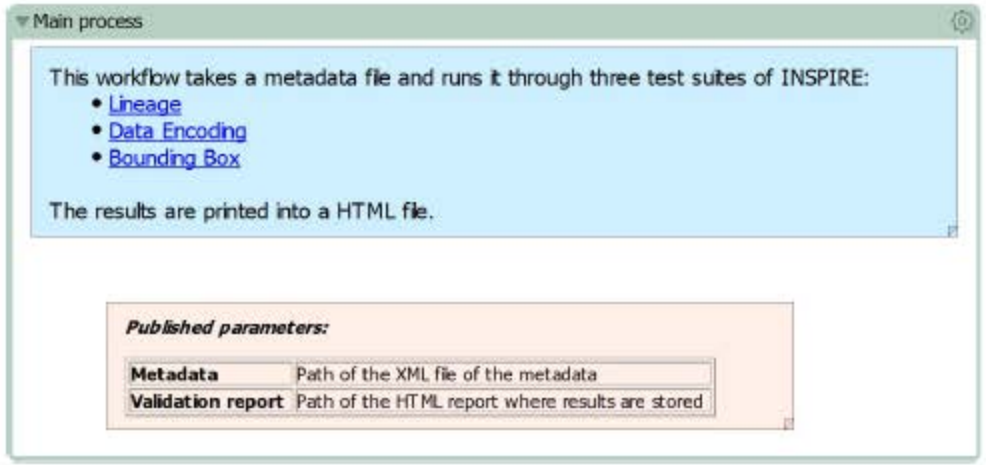
ETS: EL FEO

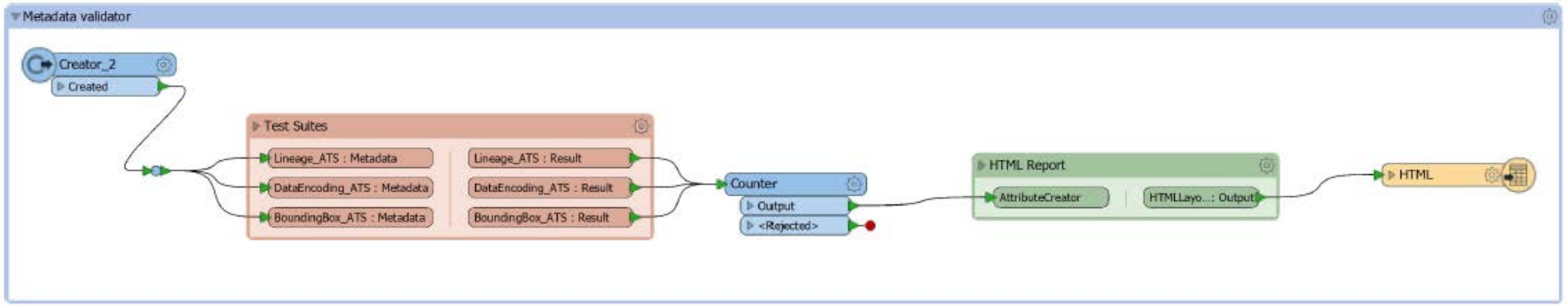
GEOGRAMA
GIS & MAPPING SERVICES

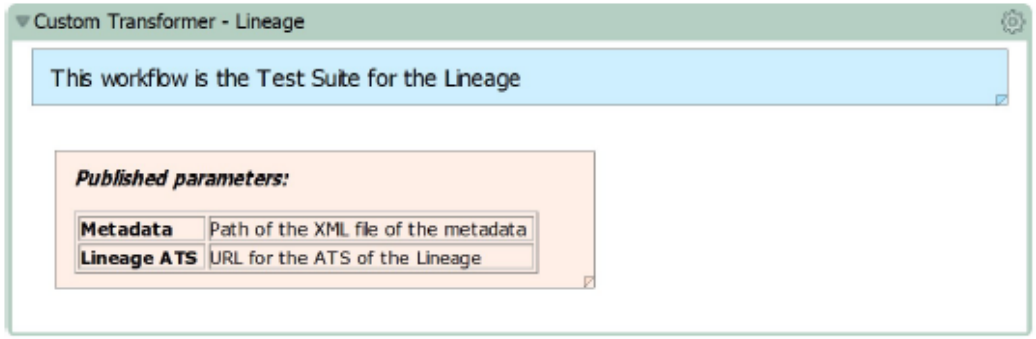
Set of executable test cases [ISO 19105].

1. Elegir herramienta o lenguaje
2. Construir la consulta Xquery con los elementos del ATS
3. Evaluar resultados

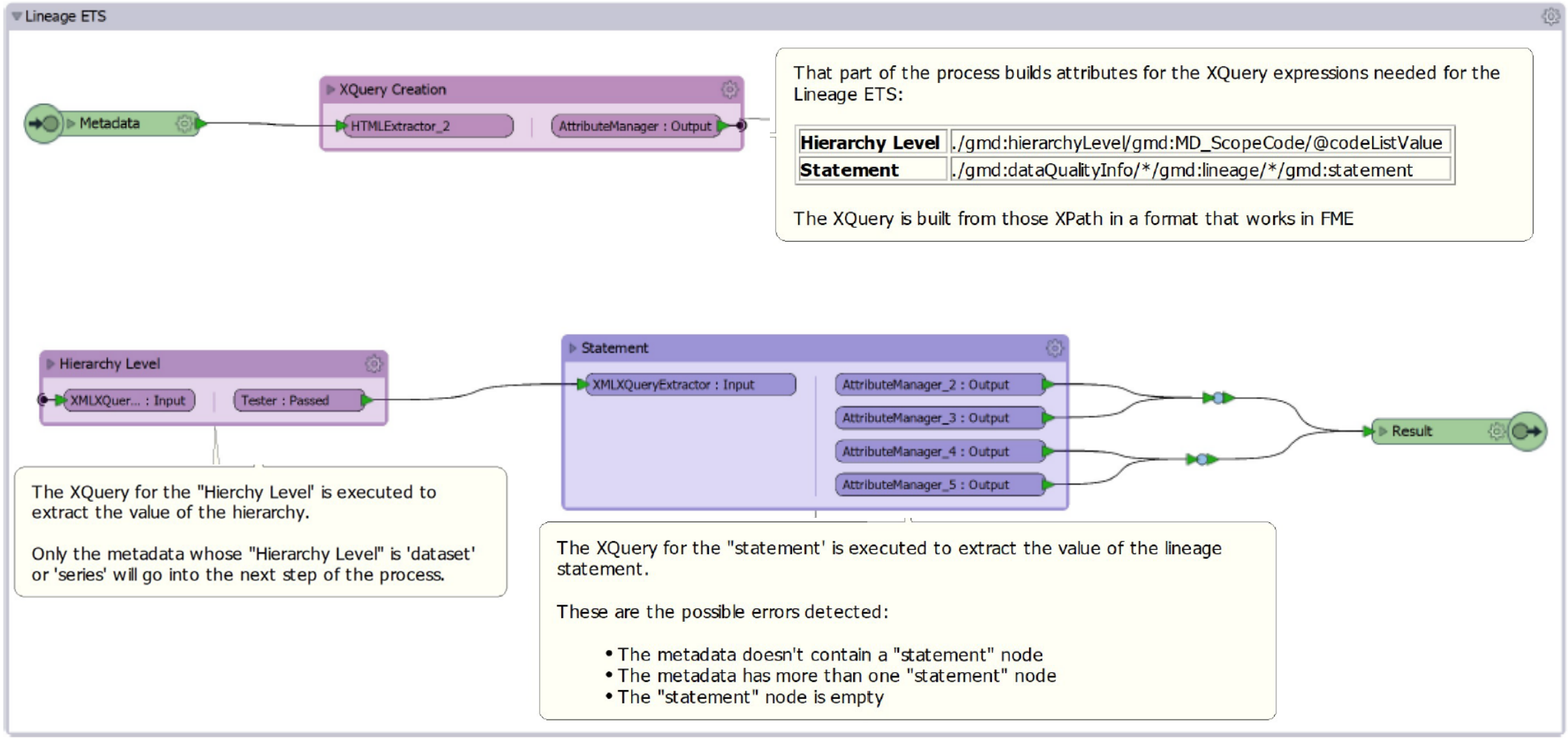
ETS: Lineage, Data encoding y Bounding box





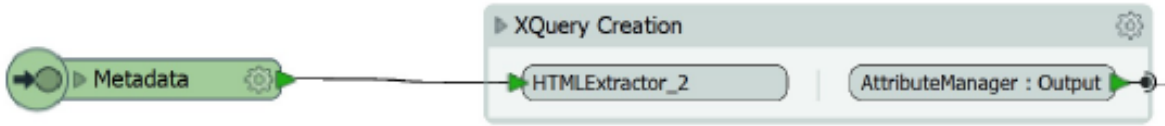


GEOGRAMA
GIS & MAPPING SERVICES



DATA ENCODING

GEOGRAMA
GIS & MAPPING SERVICES



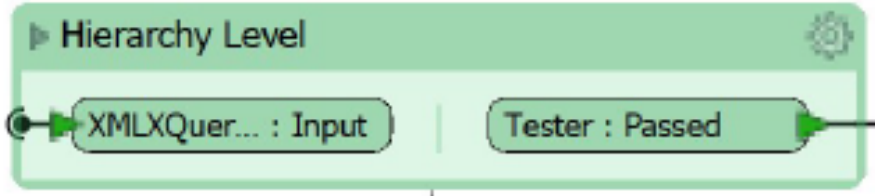
That part of the process builds attributes for the XQuery expressions needed for the Data Encoding ETS:

Hierarchy Level	./gmd:hierarchyLevel/gmd:MD_ScopeCode/@codeListValue
Distribution Format	./gmd:distributionInfo/*/gmd:distributionFormat/gmd:MD_Format
Name	./gmd:distributionInfo/*/gmd:distributionFormat/*/gmd:name/text()
Version	./gmd:distributionInfo/*/gmd:distributionFormat/*/gmd:version/text()
Version null reason	./gmd:distributionInfo/*/gmd:distributionFormat/*/gmd:version/@gco:nilReason

The XQuery is built from those XPath in a format that works in FME

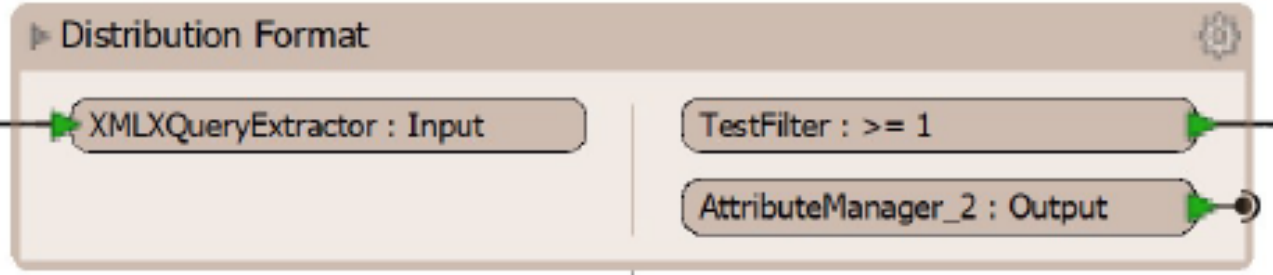
DATA ENCODING

GEOGRAMA
GIS & MAPPING SERVICES



The XQuery for the "Hierchy Level' is executed to extract the value of the hierarchy.

Only the metadata whose "Hierarchy Level" is 'dataset' or 'series' will go into the next step of the process.

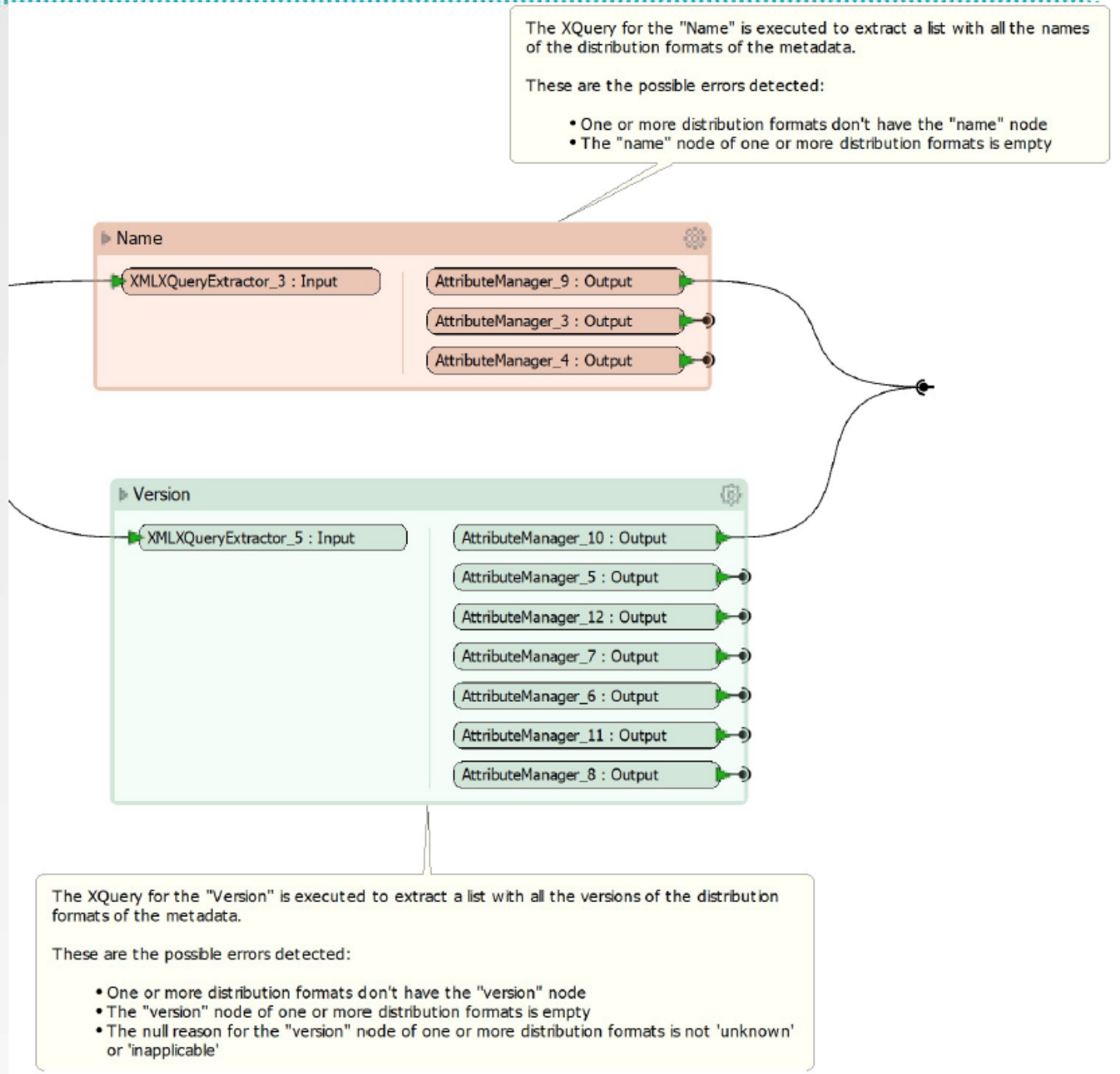


The XQuery for the "Distribution Format' is executed to extract a list with all the distribution formats of the metadata.

These are the possible errors detected:

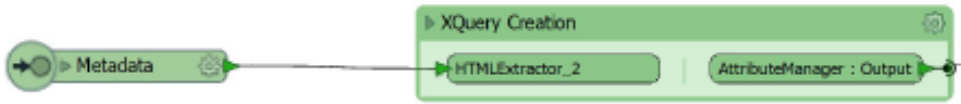
- The metadata doesn't contain any "Distribution Format"

DATA ENCODING



BOUNDING BOX

GEOGRAMA
GIS & MAPPING SERVICES



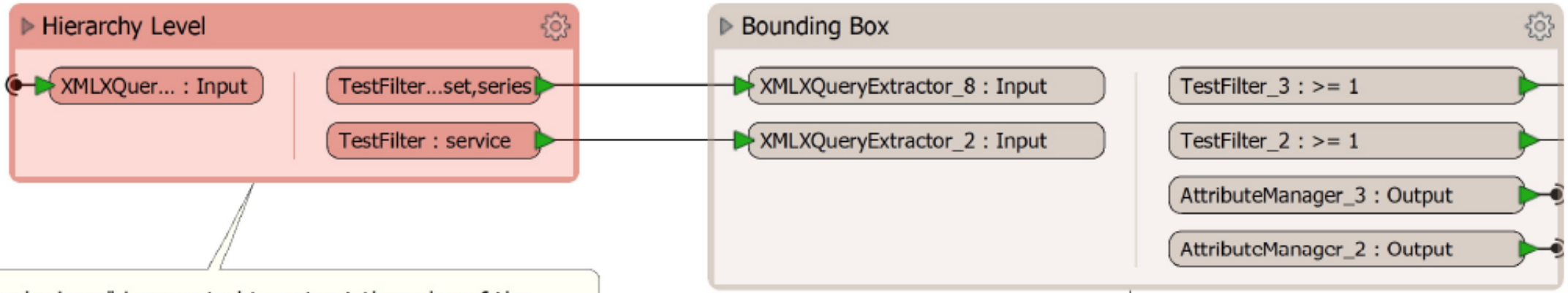
That part of the process builds attributes for the XQuery expressions needed for the Bounding Box ETS:

Hierarchy Level	./gmd:hierarchyLevel/gmd:MD_ScopeCode/@codeListValue
Extent	gmd:identificationInfo[1]/*/gmd:extent/*/gmd:geographicElement/gmd:EX_GeographicBoundingBox
West	gmd:identificationInfo[1]/*/gmd:extent/*/gmd:geographicElement/gmd:EX_GeographicBoundingBox/gmd:westBoundLongitude/gco:Decimal/text()
East	gmd:identificationInfo[1]/*/gmd:extent/*/gmd:geographicElement/gmd:EX_GeographicBoundingBox/gmd:eastBoundLongitude/gco:Decimal/text()
South	gmd:identificationInfo[1]/*/gmd:extent/*/gmd:geographicElement/gmd:EX_GeographicBoundingBox/gmd:southBoundLongitude/gco:Decimal/text()
North	gmd:identificationInfo[1]/*/gmd:extent/*/gmd:geographicElement/gmd:EX_GeographicBoundingBox/gmd:northBoundLongitude/gco:Decimal/text()

The XQuery is built from those XPath in a format that works in FME

BOUNDING BOX

GEOGRAMA
GIS & MAPPING SERVICES



The XQuery for the "Hierchy Level' is executed to extract the value of the hierarchy.

If the hierarchy level is 'dataset' or 'series', there must be at least one bounding box.

If the hierarchy level is 'service', the bounding box is optional.

The XQuery for the "Extent" is executed to extract a list with all the bounding boxes of the metadata.

These are the possible errors detected:

- The metadata for 'dataset' or 'series' must have at least one bounding box

The XQuery for the "West" coordinates is executed to extract a list with all the west coordinates of the bounding boxes.

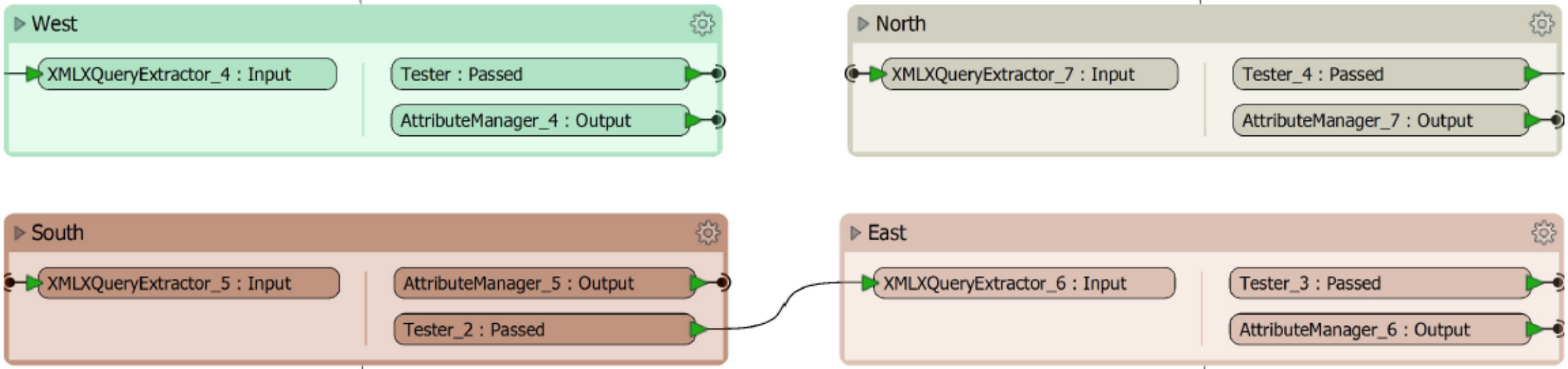
These are the possible errors detected:

- One or more bounding boxes have less than four coordinates

The XQuery for the "North" coordinates is executed to extract a list with all the north coordinates of the bounding boxes.

These are the possible errors detected:

- One or more bounding boxes have less than four coordinates



The XQuery for the "South" coordinates is executed to extract a list with all the south coordinates of the bounding boxes.

These are the possible errors detected:

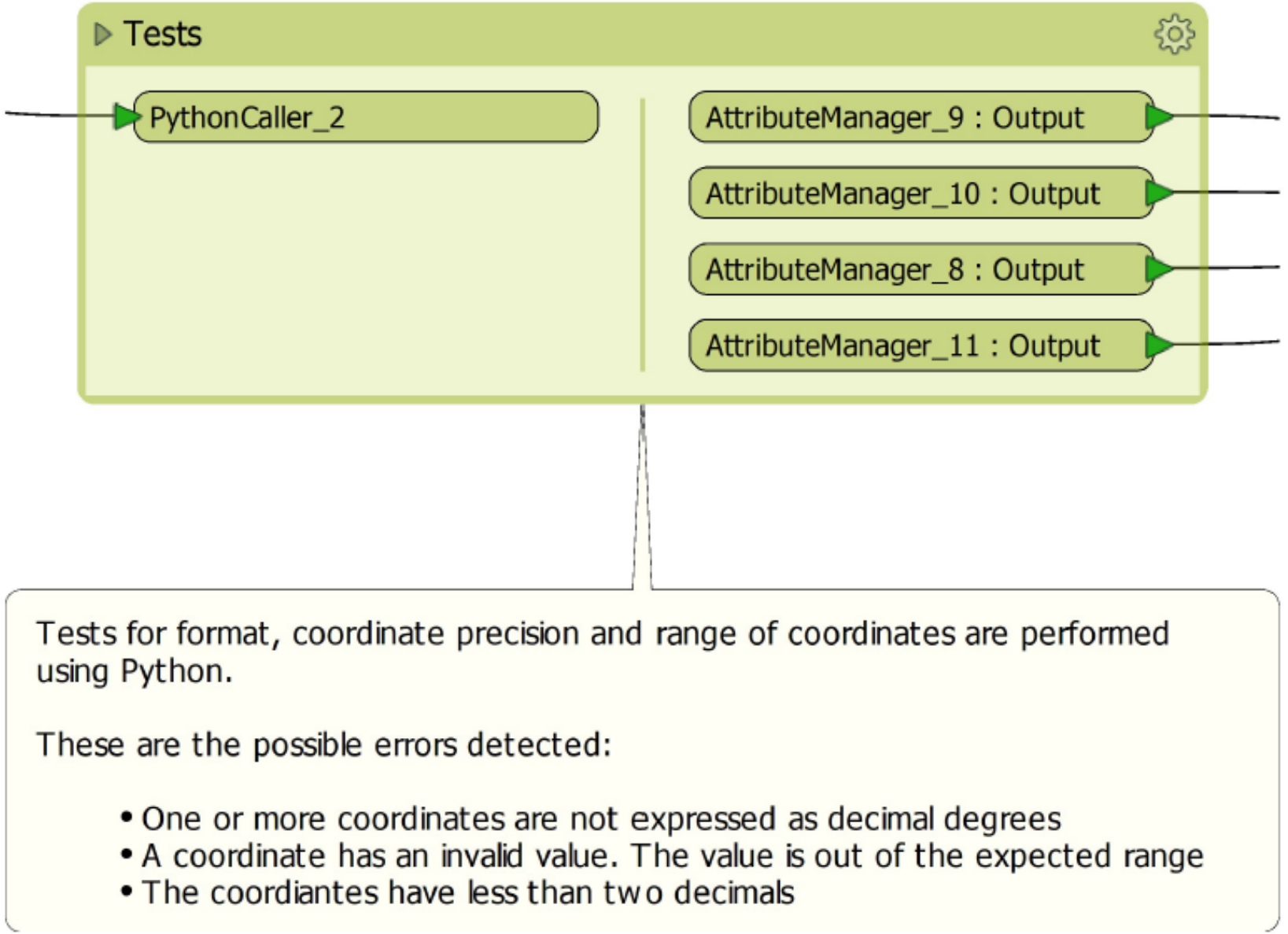
- One or more bounding boxes have less than four coordinates

The XQuery for the "East" coordinates is executed to extract a list with all the east coordinates of the bounding boxes.

These are the possible errors detected:

- One or more bounding boxes have less than four coordinates

BOUNDING BOX



El MALO

GEOGRAMA
GIS & MAPPING SERVICES

Lineage

Passed

Bounding Box

The West value -1900.00 is incorrect

Data Encoding

All 'gmd:distributionFormat' elements must have a 'gmd:name' element

Data Encoding

The 'gco:nilReason' of the element 'gmd:version' must have the value 'unknown' or 'inapplicable'

LA PELÍCULA

Guías Técnicas

ATS

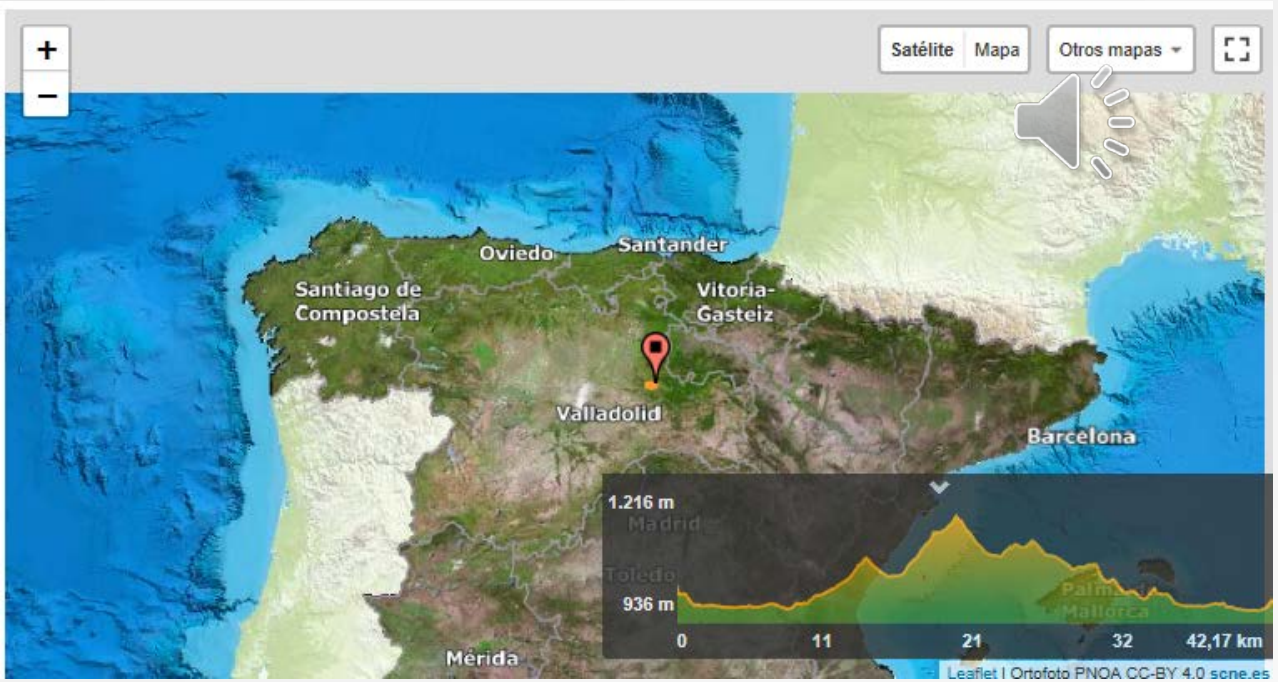
ETS

- *Obtener datos del XML*
- *Evaluar*

Resultados

LOCALIZACIÓN DE LA PELÍCULA

- https://es.wikiloc.com/rutas-mountain-bike/el-bueno-el-feo-y-el-malo-3401327



Alejandro.guinea@Geograma.com