



# QGIS GML application schema toolbox guided tour-use case on French Groundwater Information Network (GIN)

Sylvain Grellet, Hugo Mercier

## ► To cite this version:

Sylvain Grellet, Hugo Mercier. QGIS GML application schema toolbox guided tour-use case on French Groundwater Information Network (GIN). 2017 Southampton TC/PC, Sep 2017, Southampton, United Kingdom. hal-02003996

**HAL Id: hal-02003996**

**<https://brgm.hal.science/hal-02003996>**

Submitted on 1 Feb 2019

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A detailed geological map of the area around Monte Reggina. The map shows various geological units in different colors: red for the main mountain area, green for the surrounding hills, and blue for the river. Topographic features include Monte Reggina (1313m), Monte di Felce (195m), and Monte Pozzo (881m). The map also shows the course of the river and several small settlements like Felce and Casale Mattino.



# French GIN – linked data use case

## > Objectives

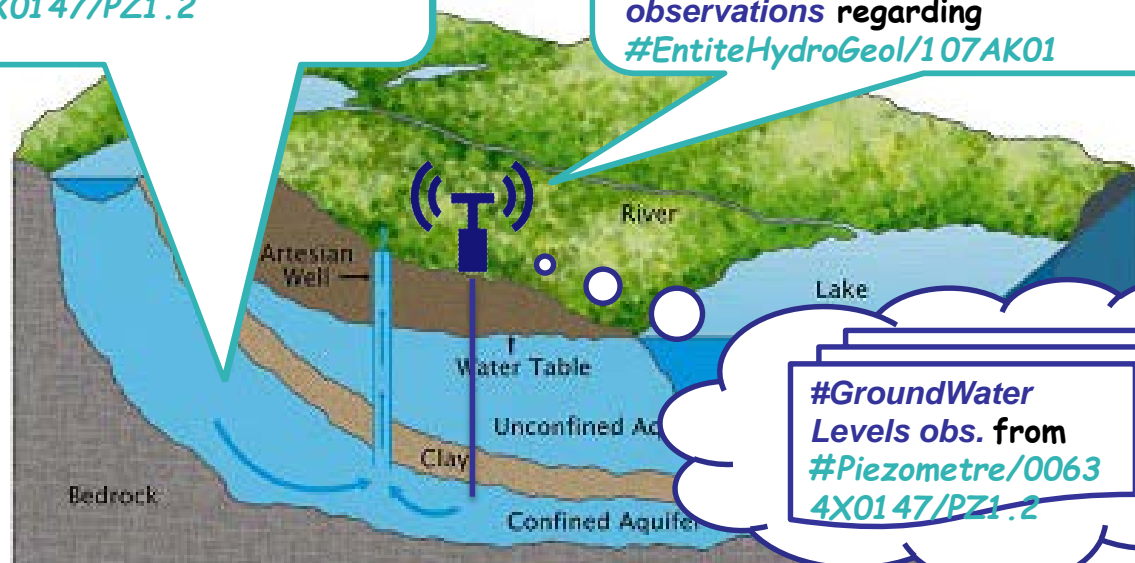
- To provide stable and resolvable links to resources
- To allow reference / data citation
- Independent from underlying technologies used to provide data

I am [#EntiteHydroGeol/107AK01](#)

I am monitored by  
[#Piezometre/00634X0147/PZ1.2](#)

I am [#Piezometre/00634X0147/PZ1.2](#)  
attached to [#Borehole/00634X0147/PZ1.2](#)

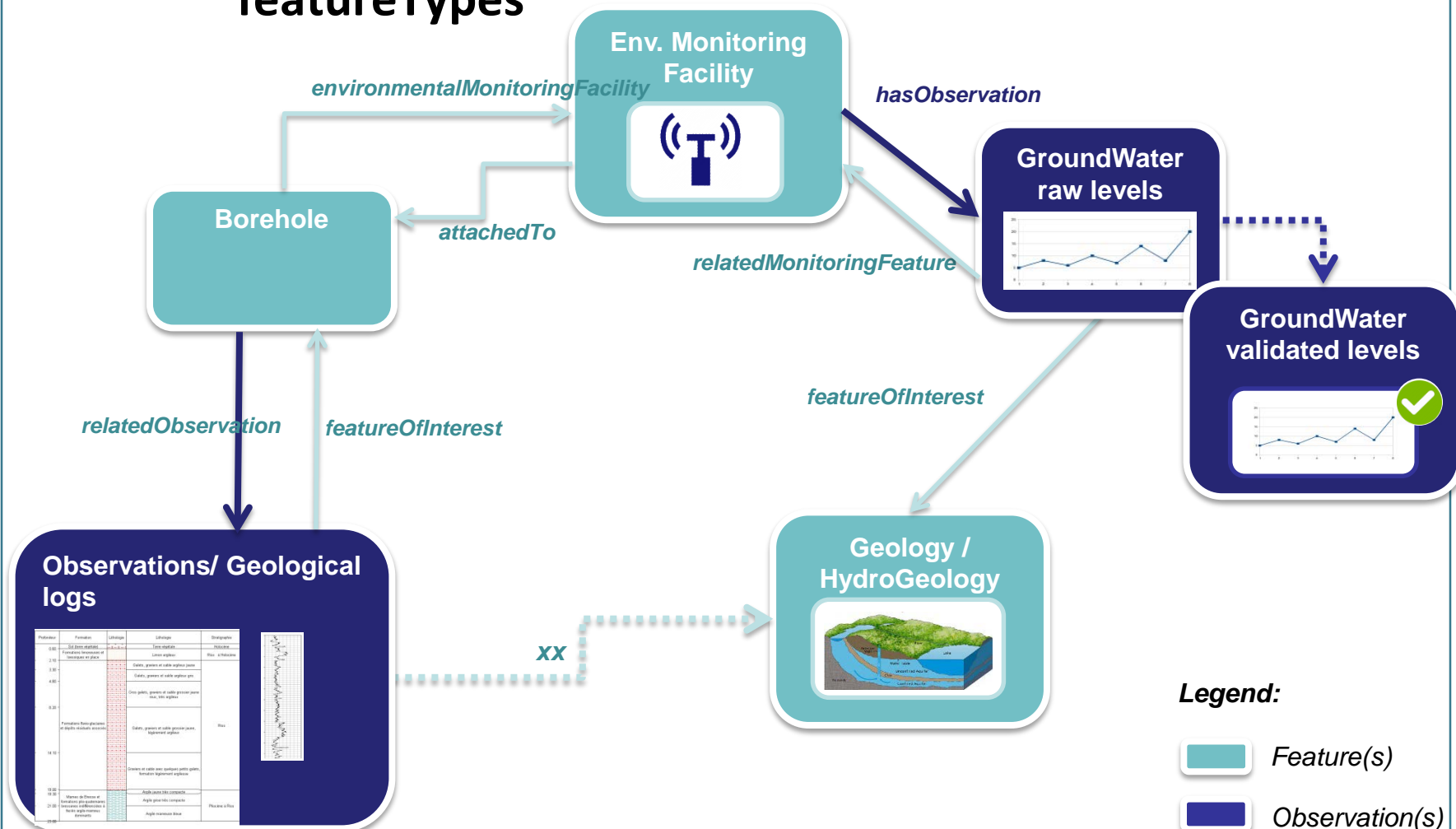
I have a lot of [#GroundWater Levels](#)  
[observations](#) regarding  
[#EntiteHydroGeol/107AK01](#)



[#GroundWater Levels obs. from #Piezometre/00634X0147/PZ1.2](#)

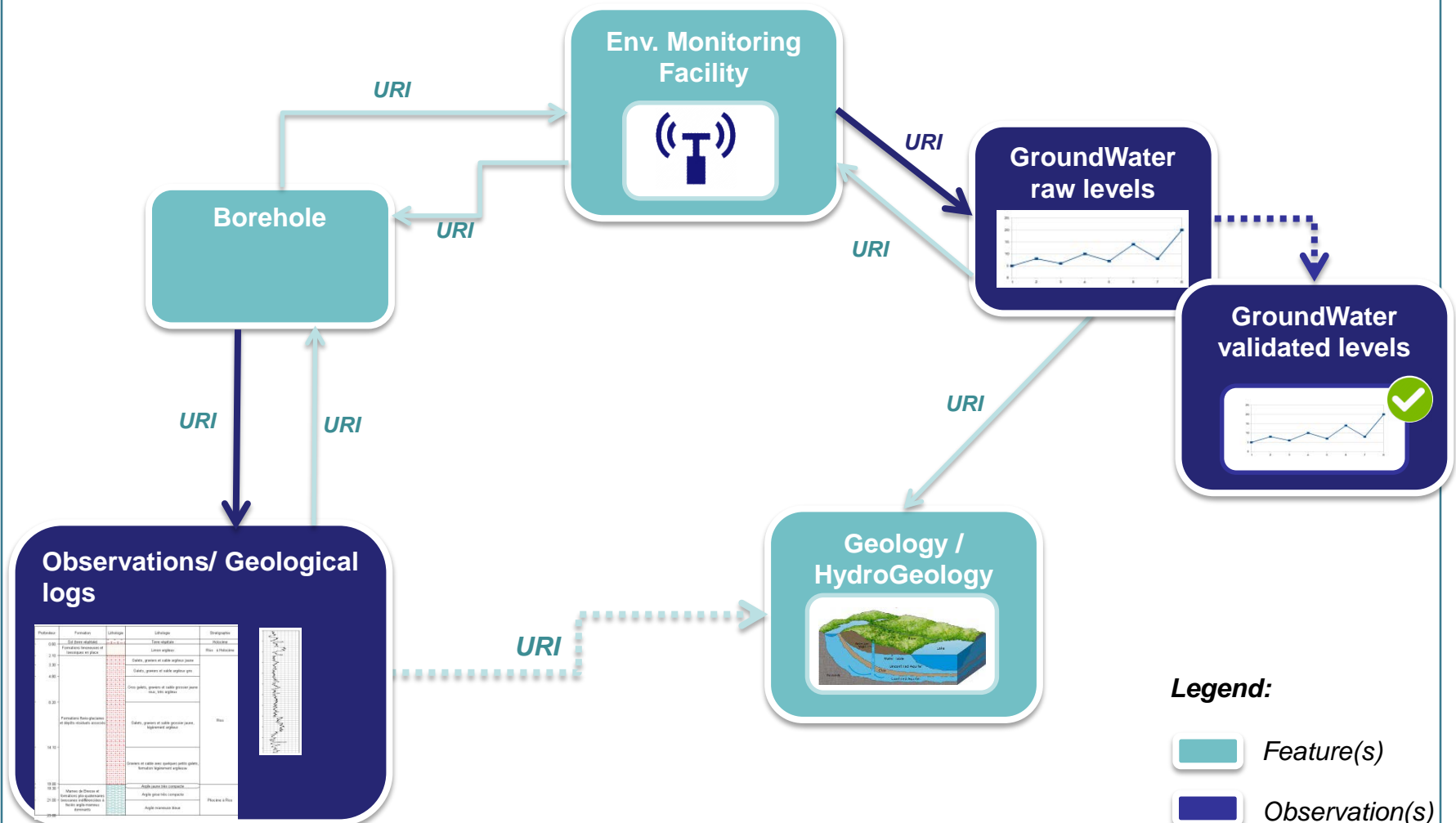
# French GIN – linked data use case

## > Flows based on OGC and INSPIRE defined featureTypes



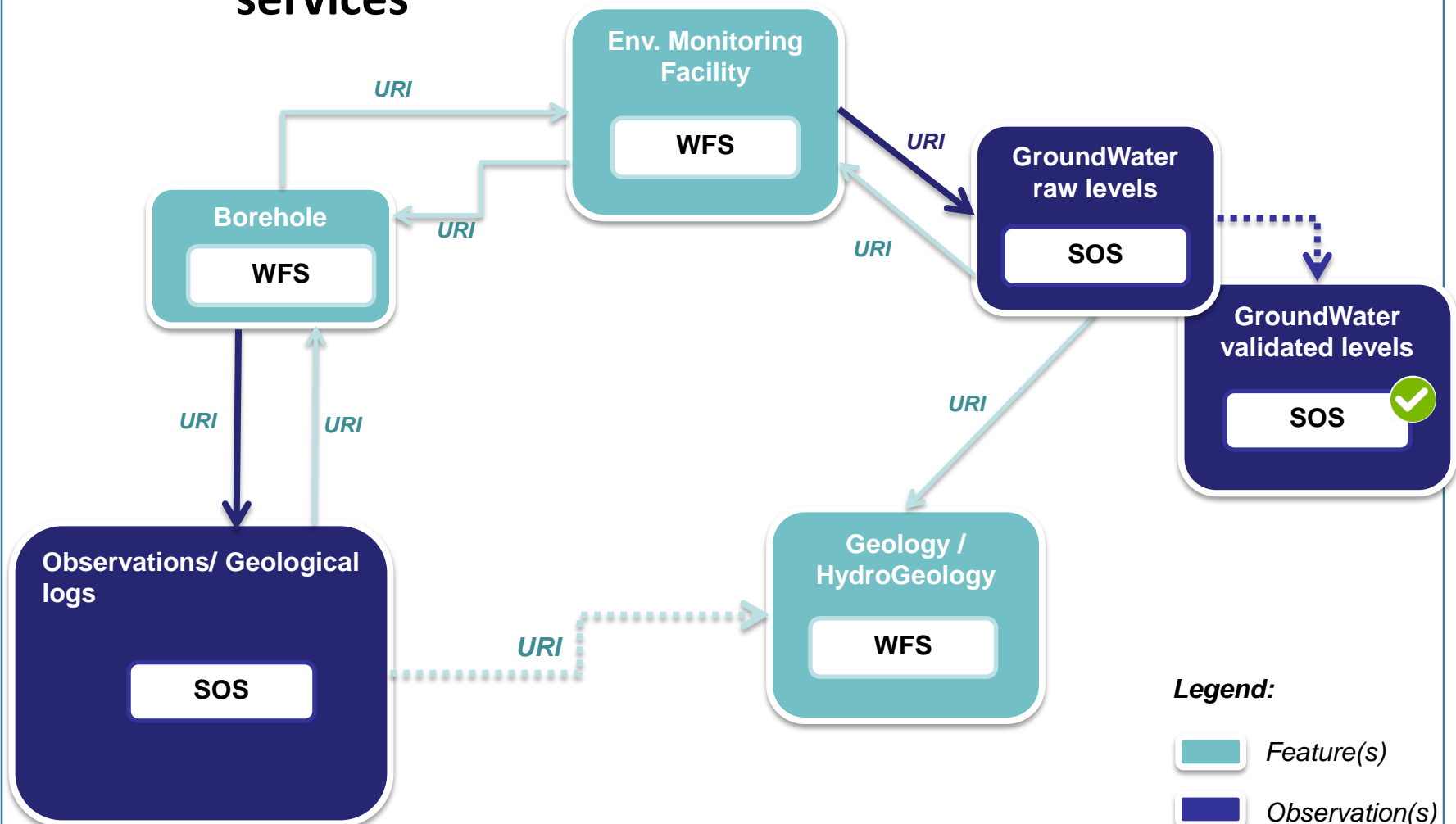
# French GIN – linked data use case

## > Object instances are associated by their URI



# French GIN – linked data use case

- URI allowing to dereference content exposed by OGC services



# GML application schema toolbox - overview

## > Initial idea

- Reuse information available in XML compliant to xsd(s) to handle this content with no hardcoded configuration -> XML aware and database generation on the fly.

## > Retrieve objects of interest described according to an interoperable standard

- = semantic and geographical representation
- interacts with the content (XML and Database). Database -> plug other tools

## > Resolve XLinks to add more content

- vocabulary registry definitions (multilinguism is handled)
- linked domain features / observation

# GML application schema toolbox - overview

## > **Trigger custom widgets based on interoperability standards**

- working: Waterml 2 timeseries, Inspire PointTimeSeries
- drafty: GW\_GeologyLogCoverage
- on-going EU AirqualityDirective timeseries

## > **Writes content (file not WFS-T)**

## > **Standalone OGR/GDAL driver -> reuse**



# GML application schema toolbox use – QGIS 3

GML App Schema Toolbox

Download Convert Export Help

Method: Import using GMLAS driver

**Source GML file**

Input file or URL: /home/hme/Bureau/projets/gml

GMLAS config: gins/gml\_application\_schema\_toolbox/conf/gmlasconf.xml

Edit or create custom configuration files based on [GMLAS config file schema](#) for more advanced options.

☒ Remove unused layers

☒ Remove unused fields

Load layer list

**Layers**

☐ Filter by extent

xmin,ymin,xmax,ymax,EPSG:srs\_id

**Miscellaneous options**

☒ Create OGR metadata tables

☐ Create null constraints

☒ Convert to linear geometry

☐ Skip failures

Swap coordinates: AUTO

Language: en

**Target database**

☒ SQLite ☐ PostgreSQL

Path:

☐ Source SRS: projection invalide

☐ Reproject to: EPSG:4326 - WGS 84

Write mode: ☒ Create ☐ Update ☐ Append ☐ Overwrite

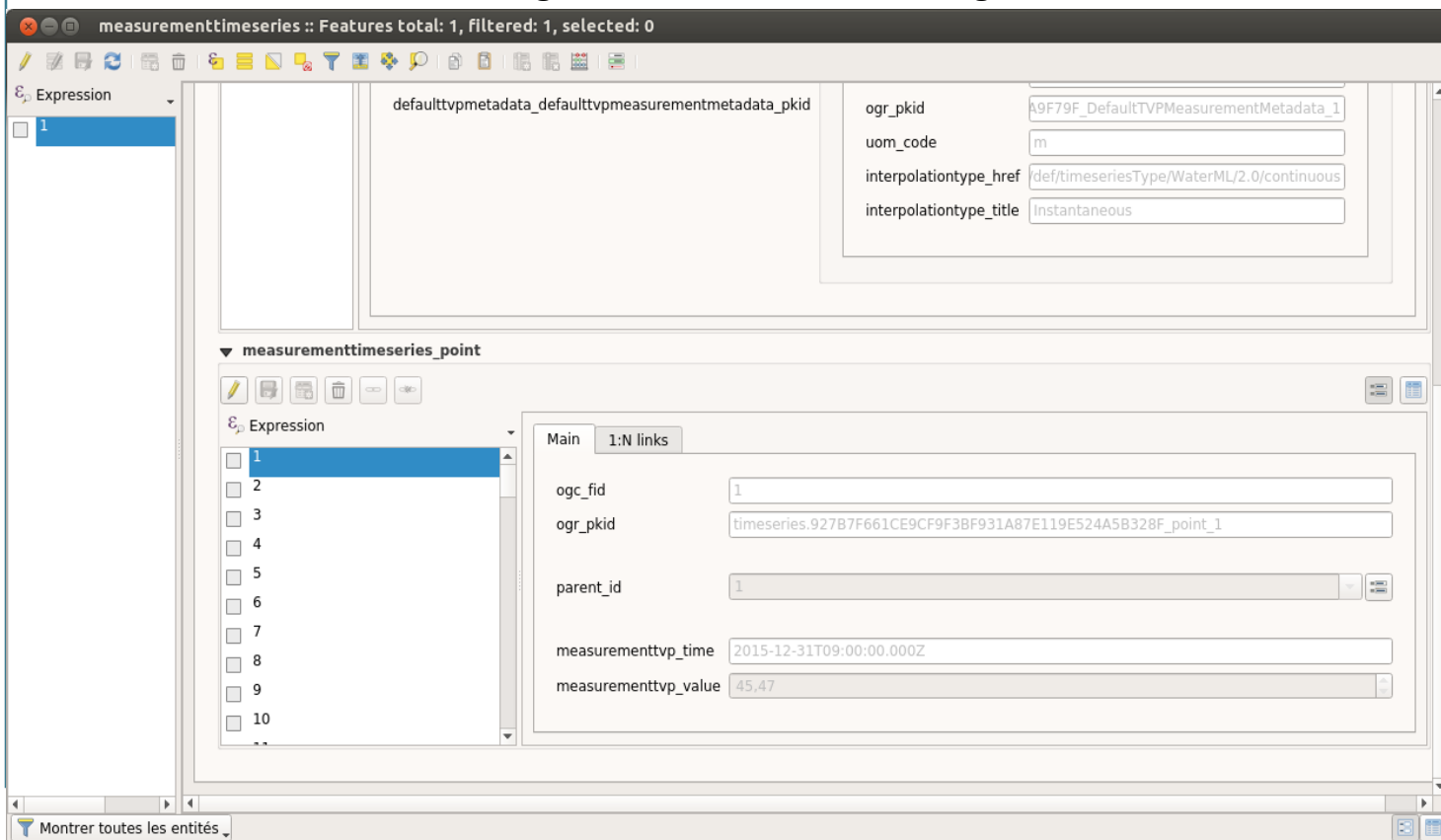
Convert

Load and configure layers

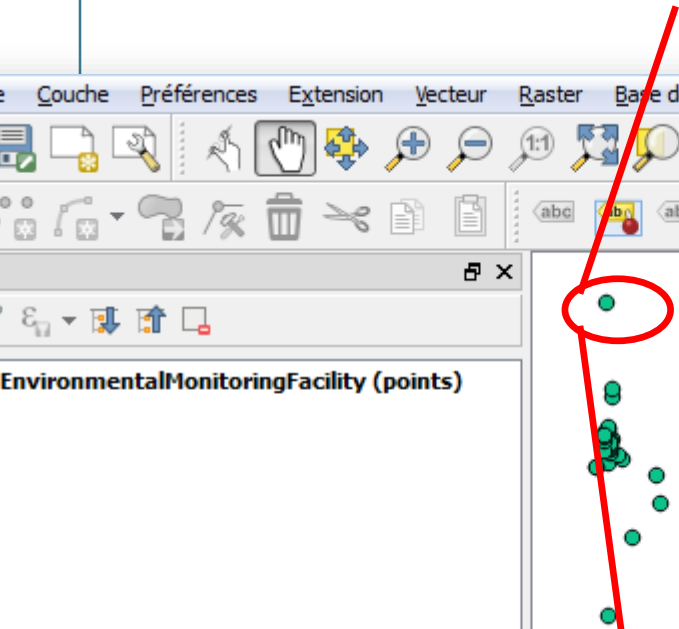
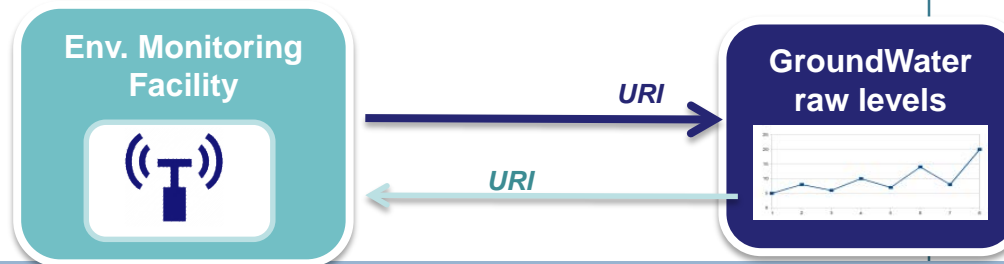
# GML application schema toolbox - overview

## > Two modes

- XML mode
- “relational” mode, thanks to GMLAS GDAL driver
  - QGIS project automatic configuration (layers / relations / editor widgets)
  - navigation in the model through standard QGIS forms



# GML application schema toolbox use – XML



EnvironmentalMonitoringFacility (points) - Attributs d'entités

fid <http://ressource.brgm-rec.fr/data/Piezometre/06988C0281/F.2>

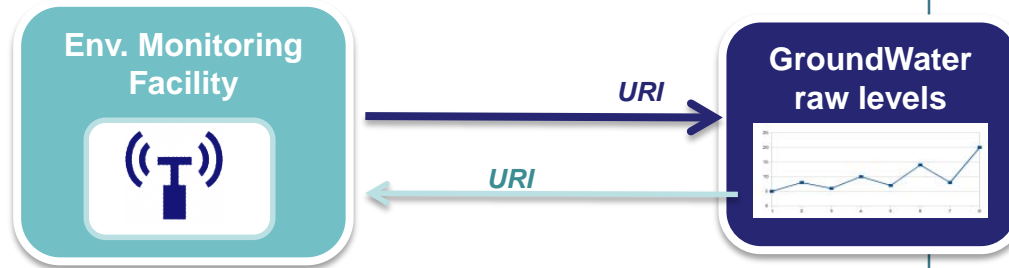
Element	Value
@gml:id	Piezometre.06988C0281.F.2
gml:description	Water well from national BSS (Banque du Sous-Sol) Data database. Piezometer monitoring ground water level
gml:identifier	
@codeSpace	<a href="http://ressource.brgm-rec.fr/data/Piezometre/06988C0281/F.2">http://ressource.brgm-rec.fr/data/Piezometre/06988C0281/F.2</a> <a href="http://www.ietf.org/rfc/rfc2616">http://www.ietf.org/rfc/rfc2616</a>
ef:inspireId	
ef:name	Piezomètre molasse piscine Chassieu - 69
ef:additionalDescription	
ef:mediaMonitored	
@xlink:href	<a href="http://inspire.ec.europa.eu/codelist/MediaValue/water">http://inspire.ec.europa.eu/codelist/MediaValue/water</a>
@xlink:title	water
ef:legalBackground	
ef:geometry	
gml:Point	
@srsName	urn:ogc:def:crs:EPSG::4326
@gml:id	Piezometre.geom.2.06988C0281-F
@srsDimension	2
gml:pos	45.7423745780909 4.96918640527985
ef:onlineResource	<a href="http://fichebssseau.brgm.fr/bss_eau/fiche.jsf?code=06988C0281/F">http://fichebssseau.brgm.fr/bss_eau/fiche.jsf?code=06988C0281/F</a>
ef:purpose	
@xlink:href	<a href="http://www.sandre.eaufrance.fr/?urn=urn:sandre:donnees:148::CdElement:2::referentiel:3.1:xml">http://www.sandre.eaufrance.fr/?urn=urn:sandre:donnees:148::CdElement:2::referentiel:3.1:xml</a>
@xlink:title	Ground water level measurement
ef:broader	
ef:supersedes	
ef:supersededBy	
ef:reportedTo	
ef:hasObservation	
@xlink:href	<a href="http://ressource.brgm-rec.fr/obs/RawOfferingPiezo/06988C0281/F.2&amp;responseFormat=http://www.openqgis.net/waterml/2.0&amp;temporalFilter=om%3Aphenomenon">http://ressource.brgm-rec.fr/obs/RawOfferingPiezo/06988C0281/F.2&amp;responseFormat=http://www.openqgis.net/waterml/2.0&amp;temporalFilter=om%3Aphenomenon</a>
@xlink:title	Latest value (WaterML 2.0 format): Raw groundwater level measurement from piezometer 06988C0281/F.2
ef:hasObservation	
@xlink:href	<a href="http://ressource.brgm-rec.fr/obs/RawOfferingPiezo/06988C0281/F.2&amp;responseFormat=application/json&amp;temporalFilter=om%3Aphenomenon">http://ressource.brgm-rec.fr/obs/RawOfferingPiezo/06988C0281/F.2&amp;responseFormat=application/json&amp;temporalFilter=om%3Aphenomenon</a>
@xlink:title	Latest value (JSON format): Raw groundwater level measurement from piezometer 06988C0281/F.2
ef:hasObservation	
@xlink:href	<a href="http://ressource.brgm-rec.fr/obs/RawOfferingPiezo/06988C0281/F.2&amp;responseFormat=http://www.openqgis.net/waterml/2.0">http://ressource.brgm-rec.fr/obs/RawOfferingPiezo/06988C0281/F.2&amp;responseFormat=http://www.openqgis.net/waterml/2.0</a>
@xlink:title	All observations (WaterML 2.0 format): Raw groundwater level measurement from piezometer 06988C0281/F.2
ef:hasObservation	
@xlink:href	<a href="http://ressource.brgm-rec.fr/obs/RawOfferingPiezo/06988C0281/F.2&amp;MergeObservationsIntoDataArray=true">http://ressource.brgm-rec.fr/obs/RawOfferingPiezo/06988C0281/F.2&amp;MergeObservationsIntoDataArray=true</a>
@xlink:title	Raw groundwater level measurement from piezometer 06988C0281/F.2
ef:involvedIn	
ef:representativePoint	

XML


2

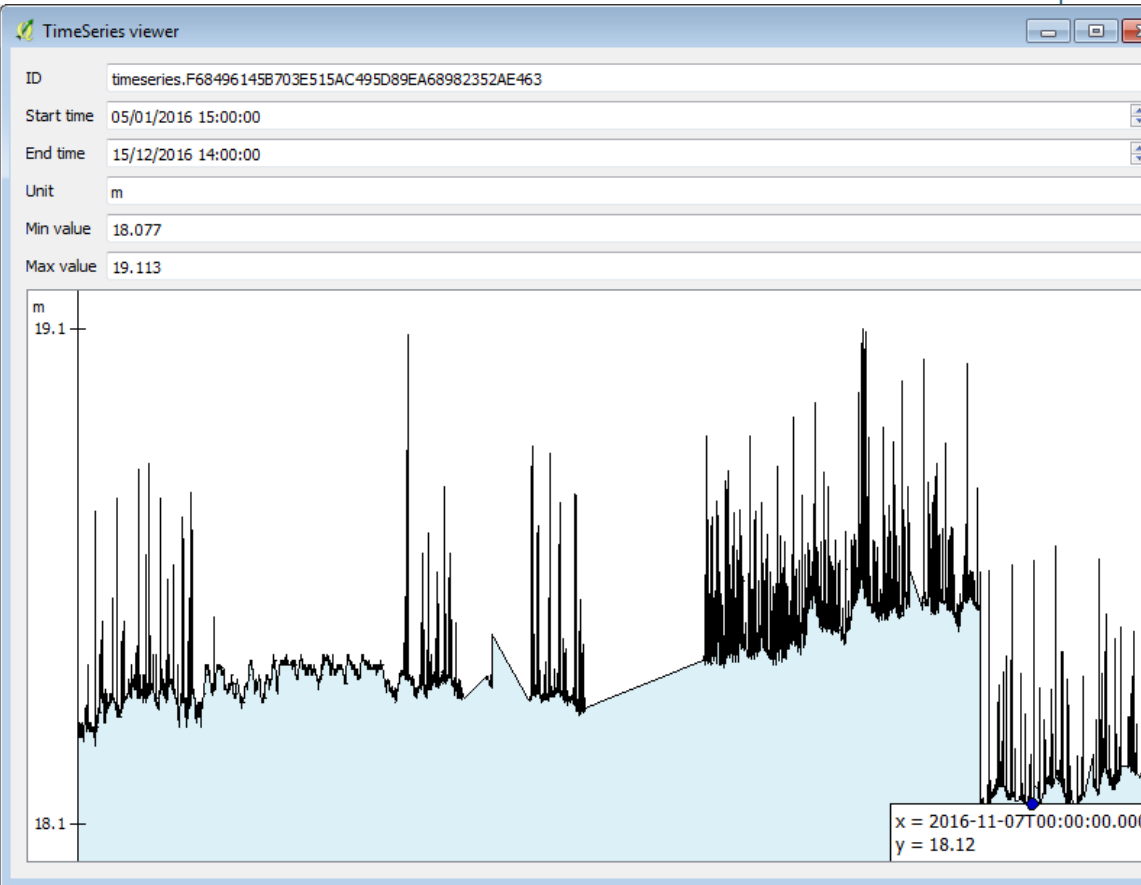
Copy value  
Copy XPath  
Resolve external  
Embedded  
As a new layer  
Add to layer

# GML application schema toolbox use – XML



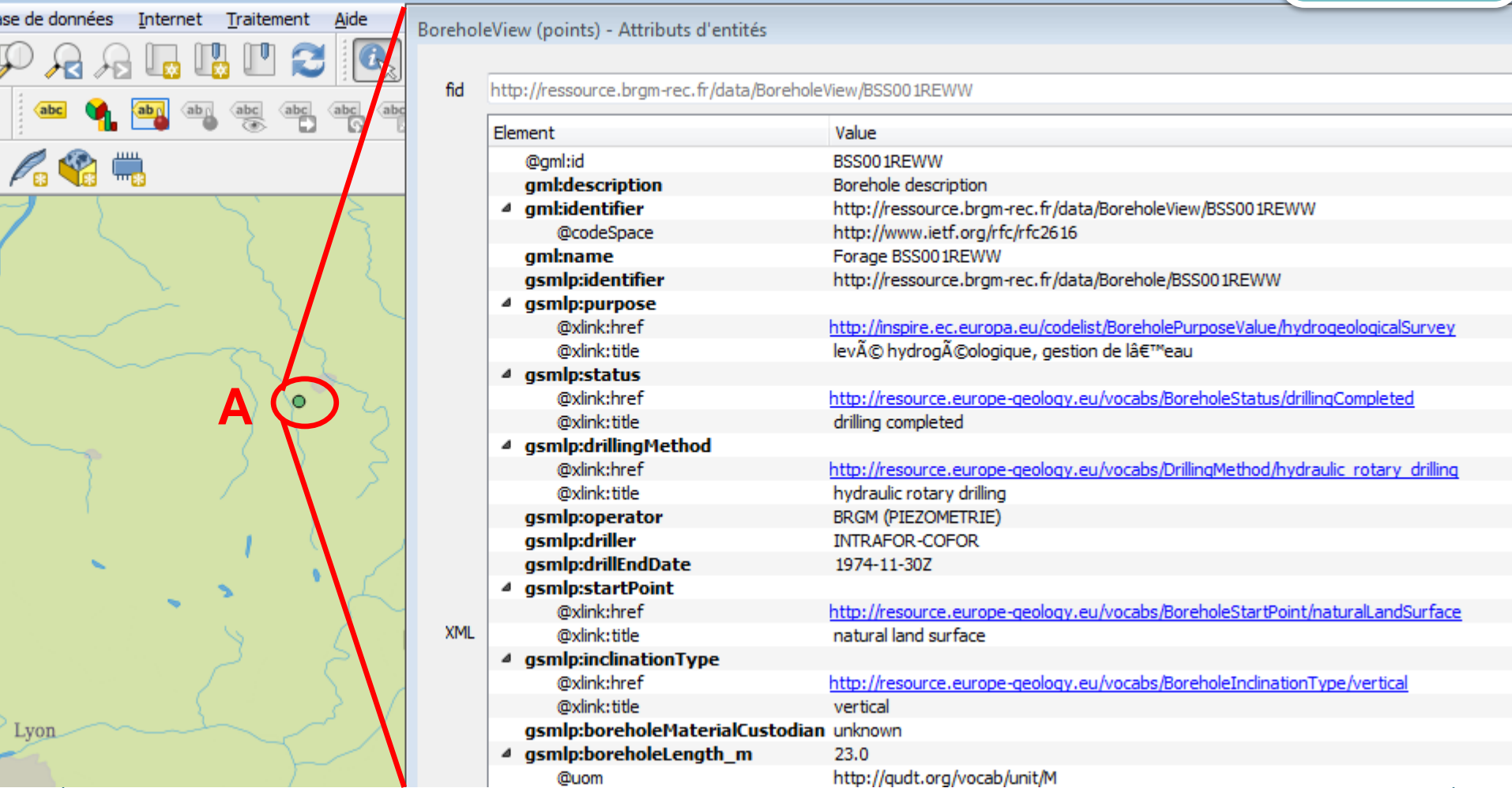
XML Schema Tree:

- om:resultTime
  - gml:TimeInstant
    - @gml:id: ti\_A5B605235028277DAC699731065C39B5E0F1
    - gml:timePo...: 2016-12-15T14:00:00.000Z
  - om:procedure
    - @xlink:href: <http://id.eaufrance.fr/met/403.xml>
    - @xlink:title: Electronic piezometric probe
  - om:parameter
  - om:observedPrope...
    - @xlink:href: <http://id.eaufrance.fr/par/1689.xml>
    - @xlink:title: GroundWaterLevel
  - om:featureOfInter...
    - wml2:Monitori...
      - @gml:id: mp\_4C6129829F7C1C2DE4A2FB853F56C5B1A
      - gml:identifier: <http://ressources.brgm-rec.fr/data/Piezometre>
      - gml:name: Piezo 06988C0281/F.2
      - sf:sampledF...
      - sams:shape
  - om:result
    - wml2:Measure...  3



# GML application schema toolbox use – XML

Borehole



The screenshot displays a software interface for managing GML data. On the left, a map view shows a geographical area with a red circle and the letter 'A' highlighting a specific point. A red line connects this point to the XML view on the right. The XML view, titled 'BoreholeView (points) - Attributs d'entités', shows the structure of a borehole entity. The 'fid' field is set to 'http://ressource.brgm-rec.fr/data/BoreholeView/BSS001REWW'. The XML structure is as follows:

Element	Value
@gml:id	BSS001REWW
<b>gml:description</b>	Borehole description
▸ <b>gml:identifier</b>	http://ressource.brgm-rec.fr/data/BoreholeView/BSS001REWW
@codeSpace	http://www.ietf.org/rfc/rfc2616
<b>gml:name</b>	Forage BSS001REWW
<b>gsmlp:identifier</b>	http://ressource.brgm-rec.fr/data/Borehole/BSS001REWW
▸ <b>gsmlp:purpose</b>	
@xlink:href	<a href="http://inspire.ec.europa.eu/codelist/BoreholePurposeValue/hydrogeologicalSurvey">http://inspire.ec.europa.eu/codelist/BoreholePurposeValue/hydrogeologicalSurvey</a>
@xlink:title	levÃ© hydrogÃ©ologique, gestion de lâ€™eau
▸ <b>gsmlp:status</b>	
@xlink:href	<a href="http://resource.europe-geology.eu/vocabs/BoreholeStatus/drillingCompleted">http://resource.europe-geology.eu/vocabs/BoreholeStatus/drillingCompleted</a>
@xlink:title	drilling completed
▸ <b>gsmlp:drillingMethod</b>	
@xlink:href	<a href="http://resource.europe-geology.eu/vocabs/DrillingMethod/hydraulic_rotary_drilling">http://resource.europe-geology.eu/vocabs/DrillingMethod/hydraulic_rotary_drilling</a>
@xlink:title	hydraulic rotary drilling
<b>gsmlp:operator</b>	BRGM (PIEZOMETRIE)
<b>gsmlp:driller</b>	INTRAFOR-COFOR
<b>gsmlp:drillEndDate</b>	1974-11-30Z
▸ <b>gsmlp:startPoint</b>	
@xlink:href	<a href="http://resource.europe-geology.eu/vocabs/BoreholeStartPoint/naturalLandSurface">http://resource.europe-geology.eu/vocabs/BoreholeStartPoint/naturalLandSurface</a>
@xlink:title	natural land surface
▸ <b>gsmlp:inclinationType</b>	
@xlink:href	<a href="http://resource.europe-geology.eu/vocabs/BoreholeInclinationType/vertical">http://resource.europe-geology.eu/vocabs/BoreholeInclinationType/vertical</a>
@xlink:title	vertical
<b>gsmlp:boreholeMaterialCustodian</b>	unknown
▸ <b>gsmlp:boreholeLength_m</b>	
@uom	http://qudt.org/vocab/unit/M

# GML application schema toolbox use – XML

<http://resource.europe-geology.eu/vocabs/BoreholeStartPoint/naturalLandSurface>

Element	Value
<b>gsmlp:drillEndDate</b>	1974-11-30Z
▴ <b>gsmlp:startPoint</b>	
@xlink:href	<a href="http://resource.europe-geology.eu/vocabs/BoreholeStartPoint/naturalLandSurface">http://resource.europe-geology.eu/vocabs/BoreholeStartPoint/naturalLandSurface</a>
@xlink:title	natural land surface
▴ <b>gsmlp:inclinationType</b>	
@xlink:href	<a href="http://resource.europe-geology.eu/vocabs/BoreholeInclinationType/vertical">http://resource.europe-geology.eu/vocabs/BoreholeInclinationType/vertical</a>
@xlink:title	vertical
<b>gsmlp:boreholeMaterialCustodian</b>	unknown
▴ <b>gsmlp:boreholeLength_m</b>	
@uom	<a href="http://qudt.org/vocab/unit/M">http://qudt.org/vocab/unit/M</a>
▴ <b>gsmlp:elevation_m</b>	
@uom	<a href="http://qudt.org/vocab/unit/M">http://qudt.org/vocab/unit/M</a>
<b>gsmlp:elevation_srs</b>	<a href="http://www.opengis.net/def/crs/EPSSG/0/5720">http://www.opengis.net/def/crs/EPSSG/0/5720</a>
<b>gsmlp:source</b>	<a href="http://ficheinfoterre.brgm.fr/InfoterreFiche/ficheBss.action?id=06512X0037/STREMY">http://ficheinfoterre.brgm.fr/InfoterreFiche/ficheBss.action?id=06512X0037/STREMY</a>
<b>gsmlp:metadata_uri</b>	<a href="http://www.geocatologue.fr/Detail.do?fileIdentifier=BR_BSS_BAA">http://www.geocatologue.fr/Detail.do?fileIdentifier=BR_BSS_BAA</a>
<b>gsmlp:genericSymbolizer</b>	Not provided
▴ <b>gsmlp:shape</b>	
▴ <b>gml:Point</b>	
@srsDimension	2
@srsName	urn:ogc:def:crs:EPSG::4326
@gml:id	gsmlp.shape.BSS001REWW
<b>gml:pos</b>	46.1909541655103 5.18713262971692
<b>gsmlp:cored</b>	false
<b>gsmlp:accessToPhysicalDrillCore</b>	false
▴ <b>gsmlp:boreholeUse</b>	
@xlink:href	<a href="http://inspire.ec.europa.eu/codelist/BoreholePurposeValue/groundwaterLevelMonitoring">http://inspire.ec.europa.eu/codelist/BoreholePurposeValue/groundwaterLevelMonitoring</a>
@xlink:title	surveillance du niveau de la nappe phrÃ©atique
▴ <b>gsmlp:detailedDescription</b>	
@xlink:href	<a href="http://www.opengis.net/def/nil/OGC/0/template">http://www.opengis.net/def/nil/OGC/0/template</a>
@xlink:title	template
▴ <b>gsmlp:geophysicalLogs</b>	
@xlink:href	<a href="http://www.opengis.net/def/nil/OGC/0/unknown">http://www.opengis.net/def/nil/OGC/0/unknown</a>
@xlink:title	unknown
▴ <b>gsmlp:geologicalDescription</b>	
@xlink:href	<a href="http://ressource.brgm-rec.fr/obs/RawGeologicLogs/BSS001REWW">http://ressource.brgm-rec.fr/obs/RawGeologicLogs/BSS001REWW</a>
@xlink:title	Borehole BSS001REWW geologic log available.
▴ <b>gsmlp:groundWaterLevel</b>	
@xlink:href	<a href="http://ressource.brgm-rec.fr/data/Piezometre/06512X0037/STREMY.2">http://ressource.brgm-rec.fr/data/Piezometre/06512X0037/STREMY.2</a>
@xlink:title	Description of Piezometer attached to BSS001REWW. Provides link to SensorObservationService offering

Borehole

# GML application schema toolbox use – XML

## gsmlp:shape

### gml:Point

@srsDimension 2  
 @srsName urn:ogc:def:crs:EPSG::4326  
 @gml:id gsmlp.shape.BSS001REWW  
 gml:pos 46.1909541655103 5.18713262971692

gsmlp:cored false  
 gsmlp:accessToPhysicalDrillCore false

### gsmlp:boreholeUse

@xlink:href <http://inspire.ec.europa.eu/codelist/BoreholePurposeValue/groundwaterLevelMonitoring>  
 @xlink:title surveillance du niveau de la nappe phrÃ©atique

### gsmlp:detailedDescription

@xlink:href <http://www.openqgis.net/def/nil/OGC/0/template>  
 @xlink:title template

### gsmlp:geophysicalLogs

@xlink:href <http://www.openqgis.net/def/nil/OGC/0/unknown>  
 @xlink:title unknown

### gsmlp:geologicLog

@xlink:href <http://ressource.brgm-rec.fr/obs/RawGeologicLogs/BSS001REWW>  
 @xlink:title Borehole BSS001REWW geologic log available.

### gsmlp:groundWaterChemistry

@xlink:href <http://www.openqgis.net/def/nil/OGC/0/unknown>  
 @xlink:title unknown

### gsmlp:rockGeochemistry

@xlink:href <http://www.openqgis.net/def/nil/OGC/0/unknown>  
 @xlink:title unknown

### gsmlp:poreGasChemistry

@xlink:href <http://www.openqgis.net/def/nil/OGC/0/inapplicable>  
 @xlink:title inapplicable

### gsmlp:geoTechnicalInfo

@xlink:href <http://www.openqgis.net/def/nil/OGC/0/unknown>  
 @xlink:title unknown

Borehole

URI

URI

Observations/ Geological logs



B

# GML application schema toolbox use – XML

Geology log viewer

Description Lithologic observation for this level of borehole BSS001REWW

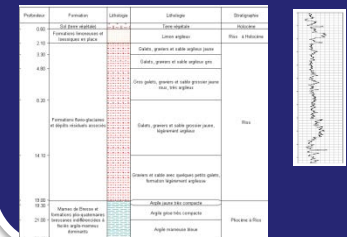


Borehole

URI

URI

Observations/ Geological logs





http://ressource.brgm-rec.fr/data/BoreholeView/BSS001REWW

Element	Value
<b>gsmlp:drillEndDate</b>	1974-11-30Z
▴ <b>gsmlp:startPoint</b>	
@xlink:href	<a href="http://resource.europe-geology.eu/vocabs/BoreholeStartPoint/naturalLandSurface">http://resource.europe-geology.eu/vocabs/BoreholeStartPoint/naturalLandSurface</a>
@xlink:title	natural land surface
▴ <b>gsmlp:inclinationType</b>	
@xlink:href	<a href="http://resource.europe-geology.eu/vocabs/BoreholeInclinationType/vertical">http://resource.europe-geology.eu/vocabs/BoreholeInclinationType/vertical</a>
@xlink:title	vertical
<b>gsmlp:boreholeMaterialCustodian</b>	unknown
▴ <b>gsmlp:boreholeLength_m</b>	
@uom	<a href="http://qudt.org/vocab/unit/M">http://qudt.org/vocab/unit/M</a>
▴ <b>gsmlp:elevation_m</b>	
@uom	<a href="http://qudt.org/vocab/unit/M">http://qudt.org/vocab/unit/M</a>
<b>gsmlp:elevation_srs</b>	<a href="http://www.opengis.net/def/crs/EPSG/0/5720">http://www.opengis.net/def/crs/EPSG/0/5720</a>
<b>gsmlp:source</b>	<a href="http://ficheinfoterre.brgm.fr/InfoterreFiche/ficheBss.action?id=06512X0037/STREMY">http://ficheinfoterre.brgm.fr/InfoterreFiche/ficheBss.action?id=06512X0037/STREMY</a>
<b>gsmlp:metadata_uri</b>	<a href="http://www.geocatalogue.fr/Detail.do?fileIdentifier=BR_BSS_BAA">http://www.geocatalogue.fr/Detail.do?fileIdentifier=BR_BSS_BAA</a>
<b>gsmlp:genericSymbolizer</b>	Not provided
▴ <b>gsmlp:shape</b>	
▴ <b>gml:Point</b>	
@srsDimension	2
@srsName	urn:ogc:def:crs:EPSG::4326
@gml:id	gsmlp.shape.BSS001REWW
<b>gml:pos</b>	46.1909541655103 5.18713262971692
<b>gsmlp:cored</b>	false
<b>gsmlp:accessToPhysicalDrillCore</b>	false
▴ <b>gsmlp:boreholeUse</b>	
@xlink:href	<a href="http://inspire.ec.europa.eu/codelist/BoreholePurposeValue/groundwaterLevelMonitoring">http://inspire.ec.europa.eu/codelist/BoreholePurposeValue/groundwaterLevelMonitoring</a>
@xlink:title	surveillance du niveau de la nappe phrÃ©atique
▴ <b>gsmlp:detailedDescription</b>	
@xlink:href	<a href="http://www.opengis.net/def/nil/OGC/0/template">http://www.opengis.net/def/nil/OGC/0/template</a>
@xlink:title	template
▴ <b>gsmlp:geophysicalLogs</b>	
@xlink:href	<a href="http://www.opengis.net/def/nil/OGC/0/unknown">http://www.opengis.net/def/nil/OGC/0/unknown</a>
@xlink:title	unknown
▴ <b>gsmlp:geologicalDescription</b>	
@xlink:href	<a href="http://ressource.brgm-rec.fr/obs/RawGeologicLogs/BSS001REWW">http://ressource.brgm-rec.fr/obs/RawGeologicLogs/BSS001REWW</a>
@xlink:title	Borehole BSS001REWW geologic log available.
▴ <b>gsmlp:groundWaterLevel</b>	
@xlink:href	<a href="http://ressource.brgm-rec.fr/data/Piezometre/06512X0037/STREMY">http://ressource.brgm-rec.fr/data/Piezometre/06512X0037/STREMY</a>
@xlink:title	Description of Piezometer attached to BSS001REWW. Provides link to SensorObservationService offering

→ back to slides 9, 10

Borehole

URI

URI

Env. Monitoring  
Facility



# GML application schema toolbox use – Database

- > **WaterML2 flow (see slide 10, Timeseries viewer) but client in database mode**

The screenshot shows the QGIS Desktop interface. On the left, the 'Couches' (Layers) panel lists several layers, including 'EnvironmentalMonitoringFacility representativePoint Point' and 'EnvironmentalMonitoringFacility geometry Point'. The main canvas displays a data model diagram with several tables: 'MonitoringPointType\_sampledFeature', 'MonitoringPointType\_name', 'MonitoringPointType', 'MeasurementTimeseriesType\_point', 'MeasurementTimeseriesType', and 'OM\_Observation'. A red box highlights the 'MeasurementTimeseriesType\_point' table, and a red arrow points from it to an attribute table window. The attribute table window, titled 'Table attributaire - MeasurementTimeseriesType\_point :: Total des entités: 5000, filtrées: 5000, sélectionnées:', displays a table with the following columns: 'MeasurementTVP\_value', 'MeasurementTVP\_time', 'id', and 'MeasurementTimeseriesType'. The table contains 10 rows of data, showing values for 'MeasurementTVP\_value' (ranging from 45.41 to 45.4), 'MeasurementTVP\_time' (ranging from 2016-01-10T02:00:00.000Z to 2016-01-10T14:00:00.000Z), 'id' (ranging from 233 to 246), and 'MeasurementTimeseriesType' (all values are 'timeseries.927B7...').

# GML application schema toolbox - Custom viewers API

## > Custom viewer?

- a piece of code able to present some data in a visually appealing way  
e.g. : timeseries as plot rather than list of (x,y) values

## > Main ideas

- a simple and common way to express access to data: **XPath** on the xsd
- a common graphical API: **PyQT**
- a simple way to add new viewers for specific application schemas (targeted to Python dev audience for now)
  - Just create a new .py file in a given directory
  - With a common base Python class

# GML application schema toolbox - Custom viewers API

example.py

Raw

```
1 class GeologyLogViewer(QWidget):
2     @classmethod
3     def name(cls):
4         return "GW Geology log"
5
6     @classmethod
7     def xml_tag(cls):
8         # the XML tag (with namespace) this widget is meant for
9         # the second element of the tuple is an XPath filter
10        return ("http://www.opengis.net/om/2.0}OM_Observation",
11               ".//om:type[@xlink:href='http://www.opengis.net/def/observationType/OGC-GWML/2.2/GW_GeologyLog']")
12
13    @classmethod
14    def icon(cls):
15        return QIcon(os.path.join(os.path.dirname(__file__), "drill.svg"))
16
17    @classmethod
18    def init_from_xml(cls, xml_tree):
19        # parse data
20        data = []
21        description = resolve_xpath(xml_tree, "description/text()")
22        logs = resolve_xpath(xml_tree, "result/GW_GeologyLogCoverage/element/LogValue")
23        data = []
24        for log in logs:
25            fromDepth = float(resolve_xpath(log, "fromDepth/Quantity/value/text()"))
26            toDepth = float(resolve_xpath(log, "toDepth/Quantity/value/text()"))
27            value_text = resolve_xpath(log, "value/DataRecord/field/Text/value/text()")
28            value_cat = resolve_xpath(log, "value/DataRecord/field/Category/value/text()")
29            value = value_text if value_text is not None else value_cat
30            data.append((fromDepth, toDepth, value))
31        return cls(description, data)
32
33    def __init__(self, title, data, parent = None):
34        QWidget.__init__(self, parent)
35        # ...
```

# Useful links

- > [https://plugins.qgis.org/plugins/gml\\_application\\_schema\\_toolbox/](https://plugins.qgis.org/plugins/gml_application_schema_toolbox/)
- > [https://github.com/BRGM/gml\\_application\\_schema\\_toolbox](https://github.com/BRGM/gml_application_schema_toolbox)
  - Documentation, GUI presentation
- > **Multilinguism handling**
  - INSPIRE registry: same flow asking for English then Greek definitions  
<https://www.youtube.com/watch?v=EeAyyUOykVE>
- > **How to test under QGIS3 until its official release**
  - [OSGeo4W](#)
    - Use [OSGeo4W](#) installer
    - Advanced install \ Desktop -> add qgis-dev
    - Then install the plugin from QGIS repository
  - Virtualbox : [http://hekla.oslandia.net/qgis\\_gmlas\\_box/](http://hekla.oslandia.net/qgis_gmlas_box/)

# Conclusion

## > **Generic work successfully tested on**

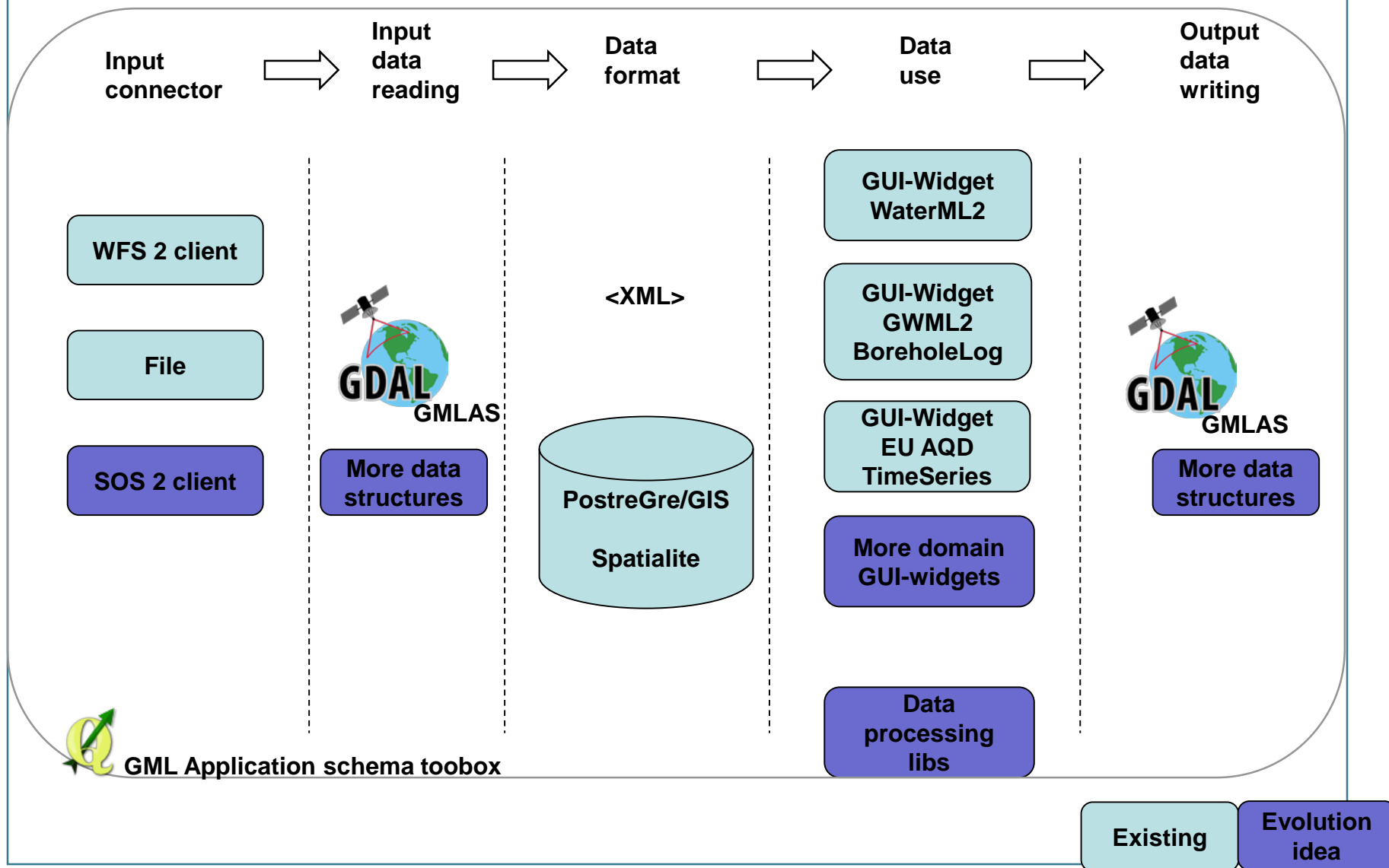
- OGC : GroundWaterML2, GeoSciML4, WaterML2
- INSPIRE : EnvironmentalMonitoringFacilities, BioGeographicalRegions, LandCover, ProtectedSites, MineralResources, PointTimeSeriesObservation

## > **Our domain colleagues can now finally make use of standardized content 😊**

## > **Next steps**

- Address (some) SWE specificities
- Have more domain widgets
- Handle other content type (JSON-LD ?)
- Workshop at Foss4G-E : [github ticket](#) to gather content to play with
- Feel free to use, test, enhance it, propose evolutions

# Conclusion - wishlist



# Thank you

[s.grellet@brgm.fr](mailto:s.grellet@brgm.fr)

[m.beaufils@brgm.fr](mailto:m.beaufils@brgm.fr)

[hugo.mercier@oslandia.com](mailto:hugo.mercier@oslandia.com)