GWML2.0 – Management Area proposal

# Context

In order for GWML2.0 to support EU Water Framework Directive (WFD) reporting (at least for the GroundWater part), there was a need to compare the initial GW\_ManagementArea to what was produced under Inspire “Area management/restriction/regulation zones and reporting units” theme (see: <http://inspire.ec.europa.eu/documents/Data_Specifications/INSPIRE_DataSpecification_AM_v3.0.pdf> ). This will be the specification used by every EU reporting (including WFD) in the long run.

Based on the output of the comparison between GWML2.0 and Inspire specs (see <http://external.opengis.org/twiki_public/HydrologyDWG/GWIE2-Model-Comparison> # Comparison During the Modelling Exercise), several editions were needed.

# Previous GWML2.0 - GW\_ManagementArea model





# Proposed GWML2.0 - GW\_ManagementArea model

The proposed model is presented below. Detailed explanations are provided under the schema. 

The table below provides an overview of the evolution between both models. More detailed content is provided below the table (apart from the elements labelled ‘Unchanged’).

|  |  |
| --- | --- |
| **Name** | **Status** |
| GW\_ManagementArea’ overall definition | Updated + Question |
| gwAreaFeature | Question |
| gwAreaWaterBudget | Unchanged |
| gwAreaYield | Unchanged |
| gwAreaMetatdata | Replaced by gwAreaBeginLifespanVersion, gwAreaEndLifespanVersion, gwAreaCompetentAuthority, gwAreaDesignationPeriod |
| gwAreaShape | Unchanged |
| gwAreaType | Unchanged but content must encompass Inspire |
| gwAreaEnvironmentalDomain | New |
| gwAreaSpecialisedZoneType | New |
| plan (association role) | New |
| legalBasis (association role) | New |
| gwAreaLicence | Replaced by links to DocumentCitation and LegislationCitation (depending on the context).+ Question |

##  ‘GW\_ManagementArea’ Overall definition

Generalised it a bit to anticipate potential further reuse.

“*This class and associated 'LegislationCitation’ and ‘DocumentCitation’ classes might end up in a more generic OGC specifics as, per se, they are really trans-domain.There were initiated in GWML2 work to enable the data model to cover EU WaterFrameworkDirective reportings.*

*Area of identified for management purposes and can be delineated by human factors such as policy or regulation concerns, as well as domain (ex: hydrogeological or hydrological) concerns. Does not necessarily align exactly with boundaries boundaries*.”

-> did not add the term 'reporting' as I found it a bit too much EU oriented.

* Q°: if you if you are ok, I can add it

Additional question: in Inspire, the ManagementArea carries a recursive association.

* Q°: This might prove useful shall we add it ?

## gwAreaFeature

Isn't the gwAreaFeature supposed to point at Features for which the ManagementArea is being set up ?

* Q°: If Yes, why do we have explicit associations 'gwAreaBody' and 'gwManagedUnit' ?

## gwAreaMetatdata

Not sure we mean metadata about instances in the database or about the real life managementArea itself. Replaced by the following 4 Inspire attributes:

- gwAreaBeginLifespanVersion (Inspire definition) : “*Date and time at which this version of the spatial object was inserted or changed in the spatial data set*”.

- gwAreaEndLifespanVersion (Inspire definition) : “*Date and time at which this version of the spatial object was superseded or retired in the spatial data set*”.

- gwAreaCompetentAuthority (Inspire definition) : “*Description of the organisation(s) responsible for managing, restricting or regulating measures or activities within the zone*”.

-> Inspire uses a dataType called RelatedParty (lightweight CI\_ResponsibleParty), I reused the CI\_ResponsibleParty to align with other GWML2.0 classes.

- gwAreaDesignationPeriod (Inspire definition): “*Time period defining when the management, restriction or regulation zone was legally designated or became effective in the real world.”*

## gwAreaType

Unchanged but GWML 2.0 needs at least entries from Inspire ZoneTypeCode : <http://inspire.ec.europa.eu/codelist/ZoneTypeCode/>

## gwAreaEnvironmentalDomain

New attribute; mandatory in Inspire. Will be useful in case this ManagementArea is promoted to another more generic OGC model

Definition: “*Classification of the environment domain(s) for which, through the establishment of the zone, certain environmental objectives shall be reached*”.

Description: “*A zone may be established within one environmental domain (e.g. water) or may to cover a wide range of environmental objectives that cross-cut several domains. For example, Marine Regions may relate to water, land use, sustainable development*”.

Entries in the ‘EnvironmentalDomainTypeTerm’:

<http://inspire.ec.europa.eu/codelist/EnvironmentalDomain/>

## gwAreaSpecialisedZoneType

New attribute; coming from Inspire (not mandatory)

This one goes along with ‘gwAreaType’ (called ‘zoneType’ in Inspire). It allows a finer grain typology of the ManagementArea we are handling

Exemple of use:

* gwAreaEnvironmentalDomain : ‘water’
* gwAreaType : ‘water body under the Water Framework Directive (2000/60/EC)’
* gwAreaSpecialisedZoneType : ‘WFDGroundWaterBody’
* Q°: we need to align names of those two attributes as, for the time being one is called ‘..area…’ and the other ‘…zone…’. Coherence also needed with the name we end up with for the class (ManagementArea only or should we add the notion of reporting ?).

## plan (association role)

Association definition: “*Reference to, or citation of a plan (management or action plan) that describes the environmental objectives and measures that shall be undertaken in the zone to protect the environment.*”

DocumentCitation class definition: “*Citation for the purposes of unambiguously referencing a document*.”

* Q°: in Inspire this class is not a FeatureType. It is only a class. Should we keep it that way ?

## legalBasis (association role)

Association definition: “*Reference to, or citation of the legal instrument or document that required the establishment of the zone.*”

LegislationCitation class definition: “Citation for the purposes of unambiguously referencing a legal act or a specific part of a legal act.”

* Q°: in Inspire this class is not a FeatureType. It is only a class. Should we keep it that way ?
* Q°: journalCitation : I haven't reused the Inspire DataDype for this (felt it was an overkill) but I can if you want (see image below).



## gwAreaLicence

Replaced by a more generic link to DocumentCitation or LegislationCitation (depending on the context).

Apart from the gwAssociatedGWVolume it is all covered in one of those classes.

* Q° : Where do we store the volume info ? association class ?

# Overall questions

* Q°: do we (and how) flag element (attribute, link) added for Inspire compatbility ? ex : 'Inspire blabla' in the element definition ?
* Q°: if we already foresee that GW\_ManagementArea might promoted to a higher level OGC spec (when feasible), we may already remove all ‘GW’ and ‘gw’ tags ?

# For Information: Inspire ManagementRestrictionOrRegulationZone model

