



***WFD2016 Reporting Workshop
under the Common Implementation
Strategy of the Water Framework
Directive (WFD)***

12/11/2015



Content

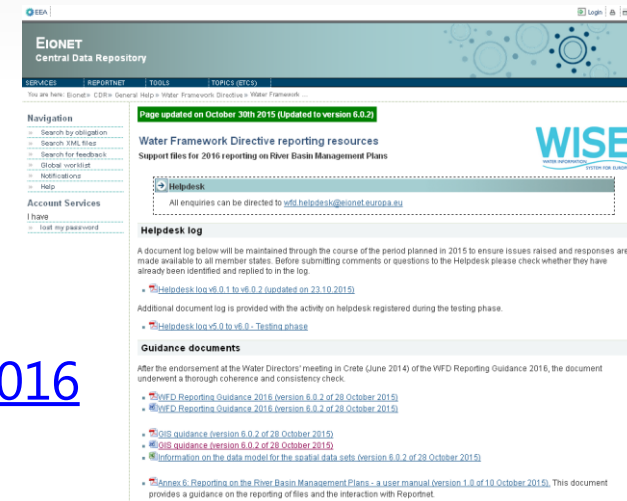
0. Overview
1. Reporting data schemas
2. Life cycle management
3. Quality control elements
4. Requirements for data exchange

0. Overview

Resources & tools

- GIS Guidance
- Information on the data model for spatial datasets
- UML Data Model
- Shapefile templates
- GML templates

http://cdr.eionet.europa.eu/help/WFD/WFD_521_2016



The screenshot shows the EIONET Central Data Repository website. The page is titled "Water Framework Directive reporting resources" and includes a "Helpdesk" section with a contact email address. It also features a "Helpdesk log" and "Guidance documents" section. The page is updated as of October 30th, 2015.

EIONET Central Data Repository

Page updated on October 30th 2015 (Updated to version 6.0.2)

Water Framework Directive reporting resources

Support files for 2016 reporting on River Basin Management Plans

Helpdesk

All enquiries can be directed to wfd_helpdesk@eionet.europa.eu

Helpdesk log

A document log below will be maintained through the course of the period planned in 2015 to ensure issues raised and responses are made available to all member states. Before submitting comments or questions to the Helpdesk please check whether they have already been identified and replied to in the log.

- [Helpdesk log v6.0.1 to v6.0.2 \(updated on 23.10.2015\)](#)

Additional document log is provided with the activity on helpdesk registered during the testing phase.

- [Helpdesk log v5.0 to v6.0 - Testing phase](#)

Guidance documents

After the endorsement at the Water Directors' meeting in Crete (June 2014) of the WFD Reporting Guidance 2016, the document underwent a thorough coherence and consistency check.

- [WFD Reporting Guidance 2016 \(version 6.0.2 of 28 October 2015\)](#)
- [WFD Reporting Guidance 2016 \(version 6.0.2 of 28 October 2015\)](#)

- [GIS guidance \(version 6.0.2 of 28 October 2015\)](#)
- [GIS guidance \(version 6.0.2 of 28 October 2015\)](#)
- [Information on the data model for the spatial data sets \(version 6.0.2 of 28 October 2015\)](#)

- [Annex 6: Reporting on the River Basin Management Plans - a user manual \(version 1.0 of 10 October 2015\)](#). This document provides a guidance on the reporting of files and the interaction with Reportnet

0. Overview

Resources & tools

- EuroBoundaryMap version 9.1 - 1:100000
(restricted access)

http://forum.eionet.europa.eu/x_wise-reporting/library/restricted_distribution

- Shapefile to GML conversion tool

http://cdr.eionet.europa.eu/help/WFD/WFD_521_2016

- INSPIRE Metadata editor

<http://inspire-geoportal.ec.europa.eu/>

- Tool to visualize and explore UML

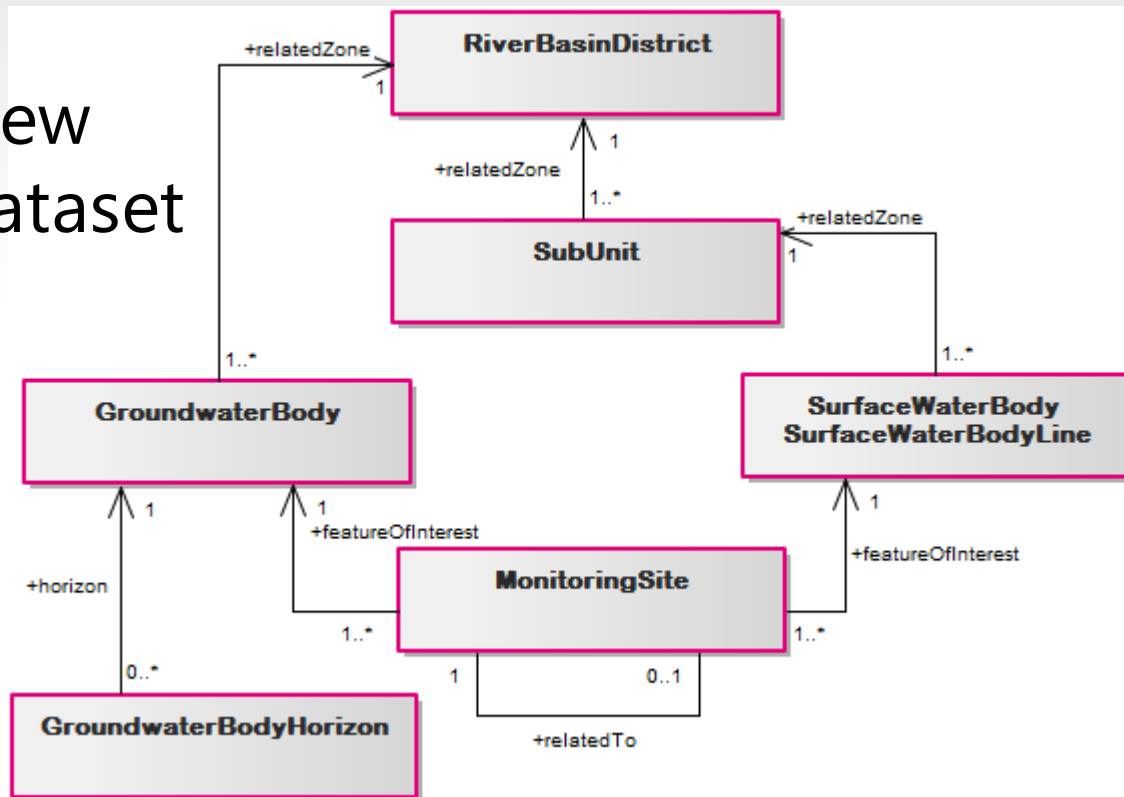
<http://www.sparxsystems.com.au/bin/EALite.exe>



0. Overview

Reporting spatial data

- Data model overview
- Deliverables per dataset
 - gml file
 - xml metadata



1. Reporting data schemas

RiverBasinDistrict

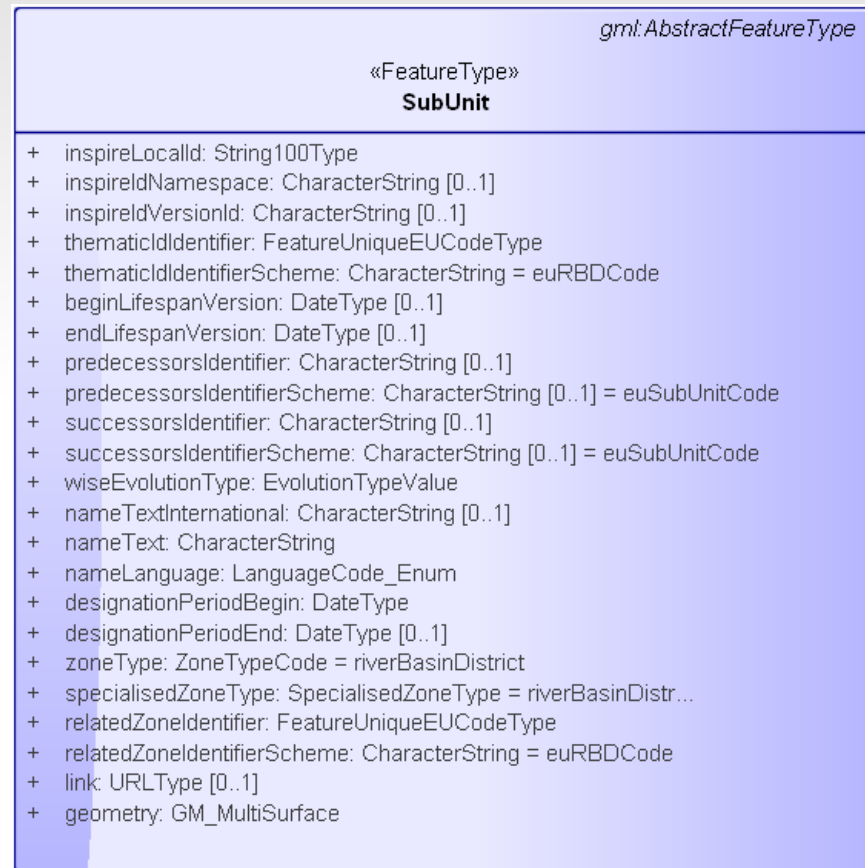
- Data model
- Tessellation of the national territory to the limit of the coastal waters
- EuroBoundaryMap v9.1 released

<i>gml:AbstractFeatureType</i>	
«FeatureType» RiverBasinDistrict	
+	inspireIdLocalId: String100Type
+	inspireIdNamespace: CharacterString [0..1]
+	inspireIdVersionId: CharacterString [0..1]
+	thematicIdIdentifier: FeatureUniqueEUCodeType
+	thematicIdIdentifierScheme: CharacterString = euRBDcode
+	beginLifespanVersion: DateType [0..1]
+	endLifespanVersion: DateType [0..1]
+	predecessorsIdentifier: CharacterString [0..1]
+	predecessorsIdentifierScheme: CharacterString [0..1] = euRBDCode
+	successorsIdentifier: CharacterString [0..1]
+	successorsIdentifierScheme: CharacterString [0..1] = euRBDCode
+	wiseEvolutionType: EvolutionTypeValue
+	nameTextInternational: CharacterString [0..1]
+	nameText: CharacterString
+	nameLanguage: LanguageCode_Enum
+	designationPeriodBegin: DateType
+	designationPeriodEnd: DateType [0..1]
+	zoneType: ZoneTypeCode = riverBasinDistrict
+	link: URLType [0..1]
+	geometry: GM_MultiSurface

1. Reporting data schemas

SubUnit

- Data model
- Tessellation of the River Basin District
- RBD geometry as SubUnit (if RBD not divided into SubUnits)



1. Reporting data schemas

SurfaceWaterBody

SurfaceWaterBodyLine

- Data model
- Contained in SubUnit
- No overlaps between SWB
 - No surfaces overlap
 - No line crossing

gml:AbstractFeatureType

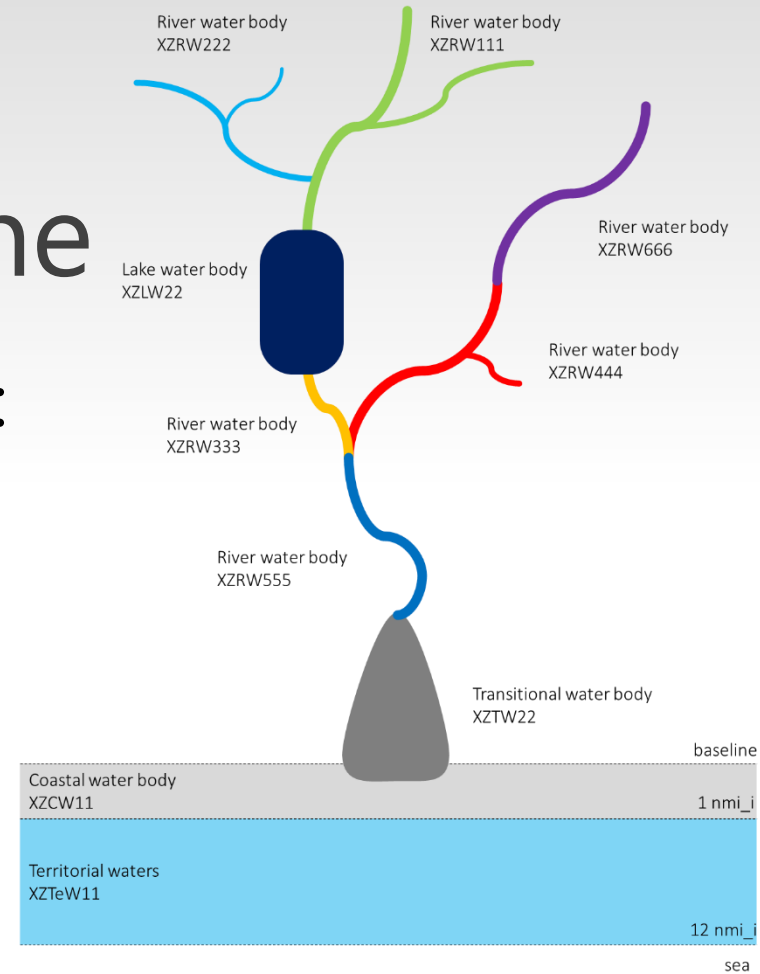
«FeatureType»
SurfaceWaterBody

```
+ inspireLocalId: String100Type
+ inspireIdNamespace: CharacterString [0..1]
+ inspireIdVersionId: CharacterString [0..1]
+ thematicIdIdentifier: FeatureUniqueEUCodeType
+ thematicIdIdentifierScheme: CharacterString = euSurfaceWaterB...
+ beginLifespanVersion: DateType [0..1]
+ endLifespanVersion: DateType [0..1]
+ predecessorsIdentifier: CharacterString [0..1]
+ predecessorsIdentifierScheme: CharacterString [0..1] = euSurfaceWaterB...
+ successorsIdentifier: CharacterString [0..1]
+ successorsIdentifierScheme: CharacterString [0..1] = euSurfaceWaterB...
+ wiseEvolutionType: EvolutionTypeValue
+ nameTextInternational: CharacterString [0..1]
+ nameText: CharacterString
+ nameLanguage: LanguageCode_Enum
+ designationPeriodBegin: DateType
+ designationPeriodEnd: DateType [0..1]
+ zoneType: ZoneTypeCode = waterBody
+ specialisedZoneType: SpecialisedZoneType
+ relatedZoneIdentifier: FeatureUniqueEUCodeType
+ relatedZoneIdentifierScheme: CharacterString = euSubUnitCode
+ relatedZoneTransboundaryIdentifier: CharacterString [0..1]
+ relatedZoneTransboundaryIdentifierScheme: CharacterString [0..1]
+ sizeValue: double
+ sizeUoM: SizeValueUnit
+ meanDepth: double [0..1]
+ link: URLType [0..1]
+ geometry: GM_MultiSurface
```

1. Reporting data schemas

SurfaceWaterBody SurfaceWaterBodyLine

- Rivers may be represented by:
 - Polygons
 - Lines



1. Reporting data schemas

SurfaceWaterBody

- Transboundary Water Bodies

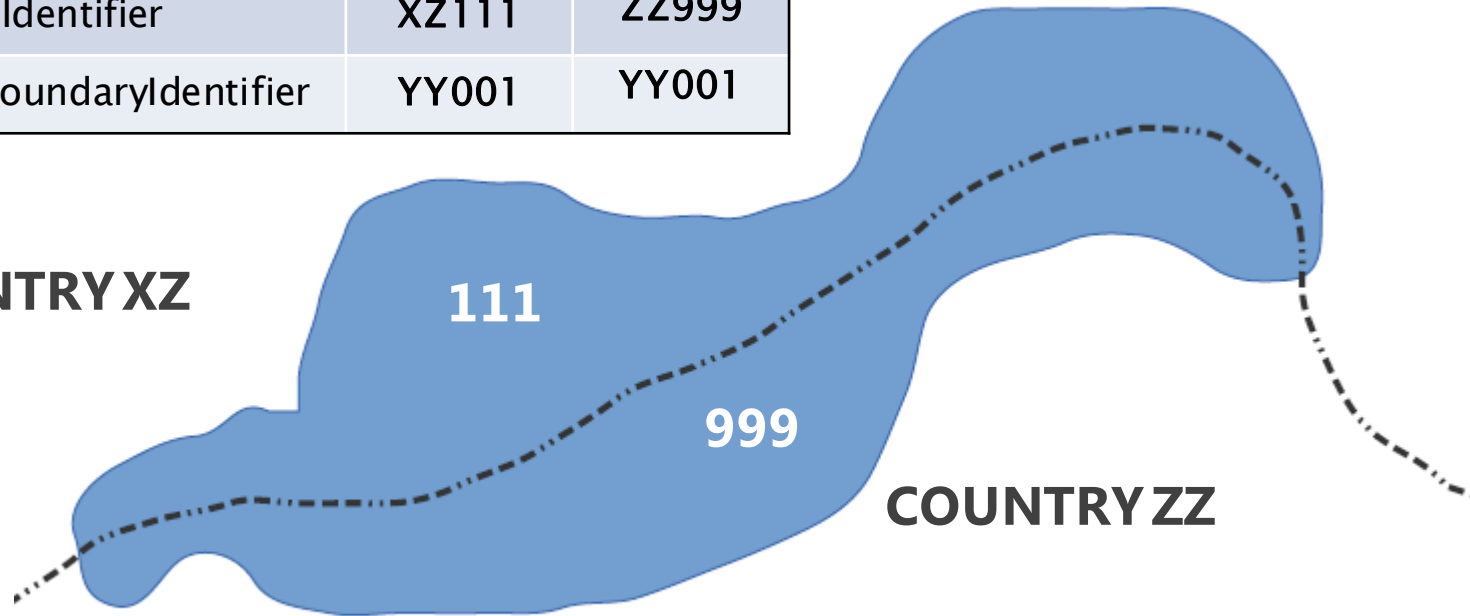
	XZ	ZZ
thematicIdIdentifier	XZ111	ZZ999
relatedZoneTransboundaryIdentifier	YY001	YY001

COUNTRY XZ

111

999

COUNTRY ZZ

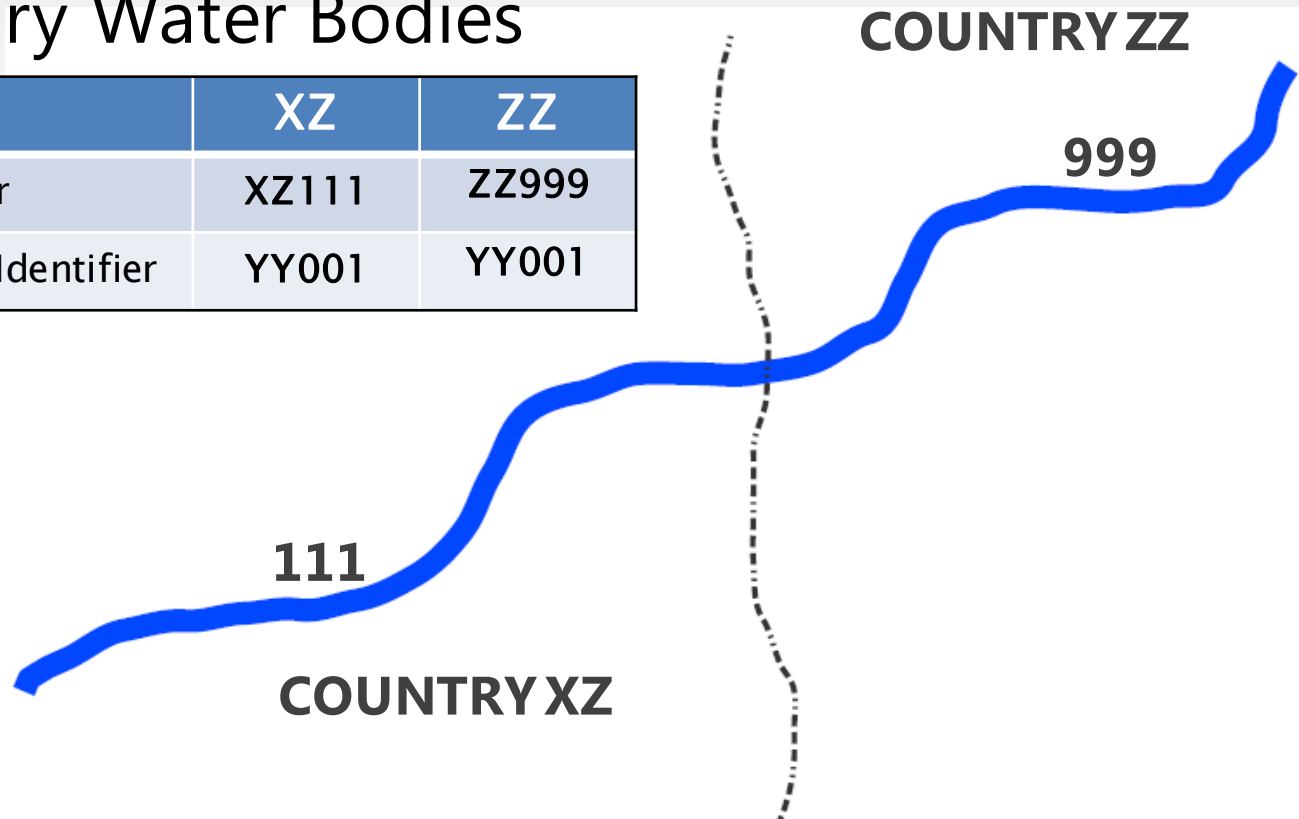


1. Reporting data schemas

SurfaceWaterBodyLine

- Transboundary Water Bodies

	XZ	ZZ
thematicIdIdentifier	XZ111	ZZ999
relatedZoneTransboundaryIdentifier	YY001	YY001



1. Reporting data schemas

SurfaceWaterBodyLine

- Transboundary Water Bodies

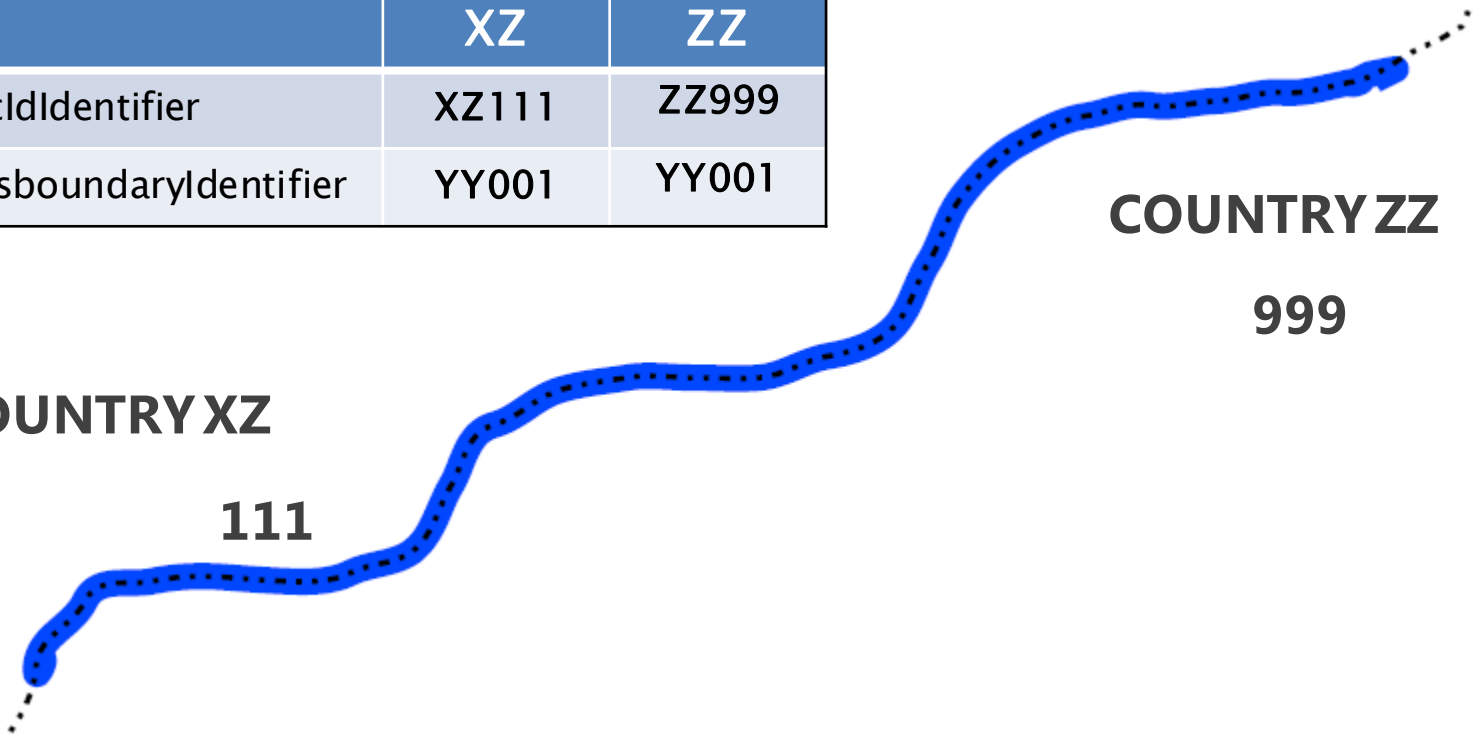
	XZ	ZZ
thematicIdIdentifier	XZ111	ZZ999
relatedZoneTransboundaryIdentifier	YY001	YY001

COUNTRY XZ

111

COUNTRY ZZ

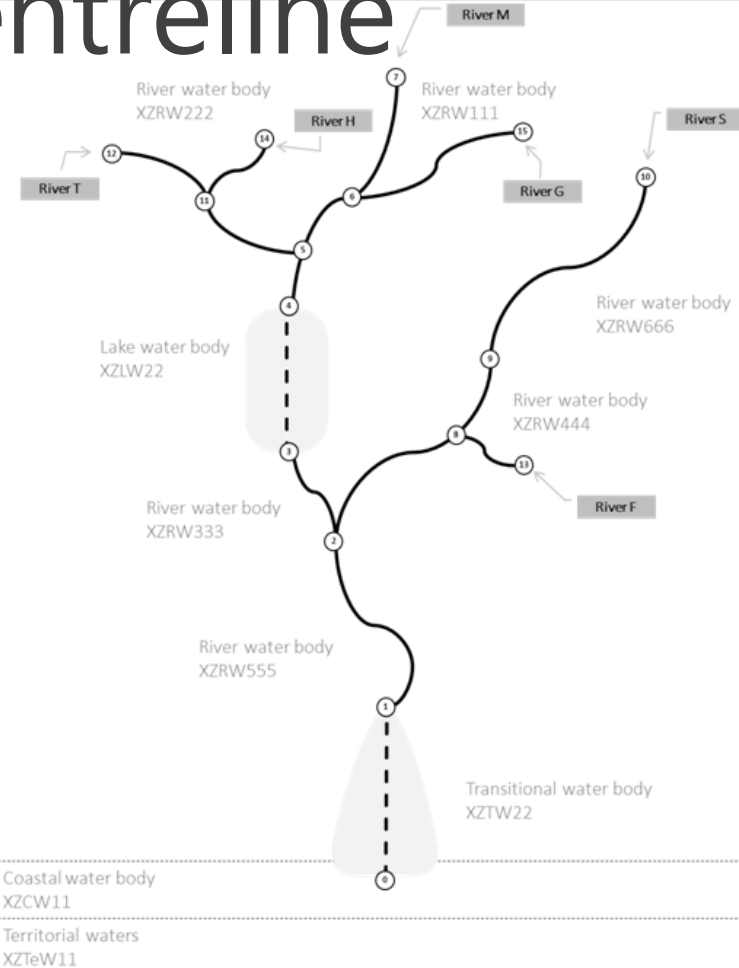
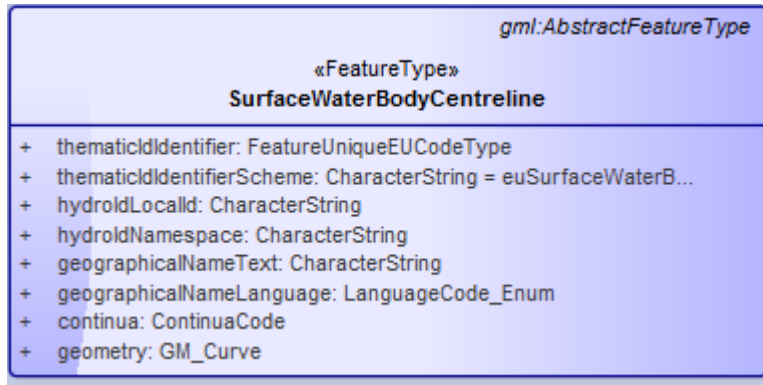
999



1. Reporting data schemas

SurfaceWaterBodyCentreline

- Data model
- Ensure network connectivity
- No multipart geometry



1. Reporting data schemas

GroundwaterBody

- Data model
- Contained in RBD
- horizons identifies different horizon levels (comma-separated list)

gml:AbstractFeatureType

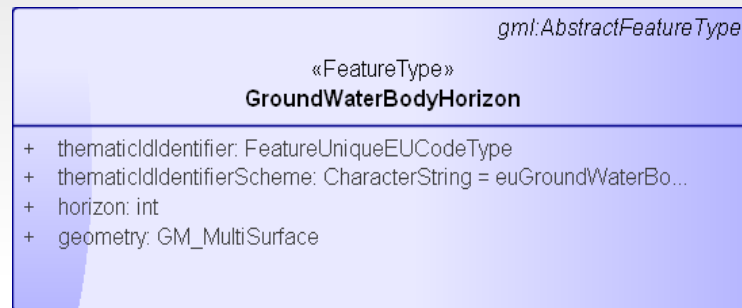
«FeatureType»
GroundwaterBody

```
+ inspireIdLocalId: String100Type
+ inspireIdNamespace: CharacterString [0..1]
+ inspireIdVersionId: CharacterString [0..1]
+ thematicIdIdentifier: FeatureUniqueEUCodeType
+ thematicIdIdentifierScheme: CharacterString = euGroundWaterBo...
+ beginLifespanVersion: DateType [0..1]
+ endLifespanVersion: DateType [0..1]
+ predecessorsIdentifier: CharacterString [0..1]
+ predecessorsIdentifierScheme: CharacterString [0..1] = euGroundwaterBo...
+ successorsIdentifier: CharacterString [0..1]
+ successorsIdentifierScheme: CharacterString [0..1] = euGroundwaterBo...
+ wiseEvolutionType: EvolutionTypeValue
+ nameTextInternational: CharacterString [0..1]
+ nameText: CharacterString
+ nameLanguage: LanguageCode_Enum
+ designationPeriodBegin: DateType
+ designationPeriodEnd: DateType [0..1]
+ zoneType: ZoneTypeCode = waterBody
+ specialisedZoneType: SpecialisedZoneType
+ relatedZonIdentifier: FeatureUniqueEUCodeType
+ relatedZonIdentifierScheme: CharacterString = euRBDCCode
+ relatedZoneTransboundaryIdentifier: CharacterString [0..1]
+ relatedZoneTransboundaryIdentifierScheme: CharacterString [0..1]
+ sizeValue: double
+ sizeUom: SizeValueUnit
+ horizons: CharacterString
+ link: URLType [0..1]
+ geometry: GM_MultiSurface
```

1. Reporting data schemas

GroundwaterBodyHorizon

- Data model
- Reporting Guidance
Annex IV



1. Reporting data schemas

GroundwaterBodyHorizon

- Annex IV

Horizon 1	GWB2	GWB1	GWB2
Horizon 2	GWB3	GWB2	GWB3
Horizon 3		GWB3	

GroundWaterBody

thematicID Identifier	horizons
GWB1	1
GWB2	1,2
GWB3	2,3

GroundWaterBodyHorizon

thematicID Identifier	horizon
GWB2	1
GWB2	2
GWB3	2
GWB3	3

1. Reporting data schemas

ProtectedArea

ProtectedAreaPoint

ProtectedAreaLine

- Data model
- Related with RBD
- Habitats or Birds zoneType not reported in WISE Spatial

<i>gml:AbstractFeatureType</i>	
«FeatureType»	
ProtectedAreaLine	
+	inspireIdLocalId: String100Type
+	inspireIdNamespace: CharacterString [0..1]
+	inspireIdVersionId: CharacterString [0..1]
+	thematicIdIdentifier: FeatureUniqueEUCodeType
+	thematicIdIdentifierScheme: CharacterString = euProtectedAreaCode
+	beginLifespanVersion: DateType [0..1]
+	endLifespanVersion: DateType [0..1]
+	predecessorsIdentifier: CharacterString [0..1]
+	predecessorsIdentifierScheme: CharacterString [0..1] = euProtectedAreaCode
+	successorsIdentifier: CharacterString [0..1]
+	successorsIdentifierScheme: CharacterString [0..1] = euProtectedAreaCode
+	wiseEvolutionType: EvolutionTypeValue
+	nameTextInternational: CharacterString [0..1]
+	nameText: CharacterString
+	nameLanguage: LanguageCode_Enum
+	designationPeriodBegin: DateType
+	designationPeriodEnd: DateType [0..1]
+	zoneType: ZoneTypeCode
+	specialisedZoneType: SpecialisedZoneType [0..1]
+	legalBasisName: CharacterString
+	legalBasisLink: URLType
+	legalBasisLevel: LegislationLevelValue
+	link: URLType [0..1]
+	sizeValue: double
+	sizeUoM: SizeValueUnit
+	geometry: GM_MultiCurve

1. Reporting data schemas

MonitoringSite

- Data model
- Related with SWB or GWB
- WB polygon → inside WB
- WB line → <20 m

<i>gml:AbstractFeatureType</i>	
«FeatureType»	
MonitoringSite	
+	inspireIdLocalld: String100Type
+	inspireIdNamespace: CharacterString [0..1]
+	inspireIdVersionId: CharacterString [0..1]
+	thematicIdIdentifier: FeatureUniqueEUCodeType
+	thematicIdIdentifierScheme: CharacterString = euMonitoringSiteCode
+	beginLifespanVersion: DateType [0..1]
+	endLifespanVersion: DateType [0..1]
+	supersedesIdentifier: CharacterString [0..1]
+	supersedesIdentifierScheme: CharacterString [0..1] = euMonitoringSiteCode
+	supersededByIdentifier: FeatureUniqueEUCodeType [0..1]
+	supersededByIdentifierScheme: CharacterString [0..1] = euMonitoringSiteCode
+	wiseEvolutionType: EvolutionTypeValue
+	nameTextInternational: CharacterString [0..1]
+	nameText: CharacterString
+	nameLanguage: LanguageCode_Enum
+	operationalActivityPeriodBegin: DateType
+	operationalActivityPeriodEnd: DateType [0..1]
+	relatedToIdentifier: CharacterString [0..1]
+	relatedToIdentifierScheme: CharacterString [0..1] = eionetMonitorin...
+	featureOfInterestIdentifier: FeatureUniqueEUCodeType
+	featureOfInterestIdentifierScheme: CharacterString
+	mediaMonitoredBiota: Boolean
+	mediaMonitoredWater: Boolean
+	mediaMonitoredSediment: Boolean
+	purpose: PurposeOfCollectionValue
+	catchmentArea: double [0..1]
+	maximumDepth: double [0..1]
+	confidentialityStatus: ConfidentialityStatusValue [0..1] = 'F'
+	link: URLType [0..1]
+	geometry: GM_Point

2. Life cycle management

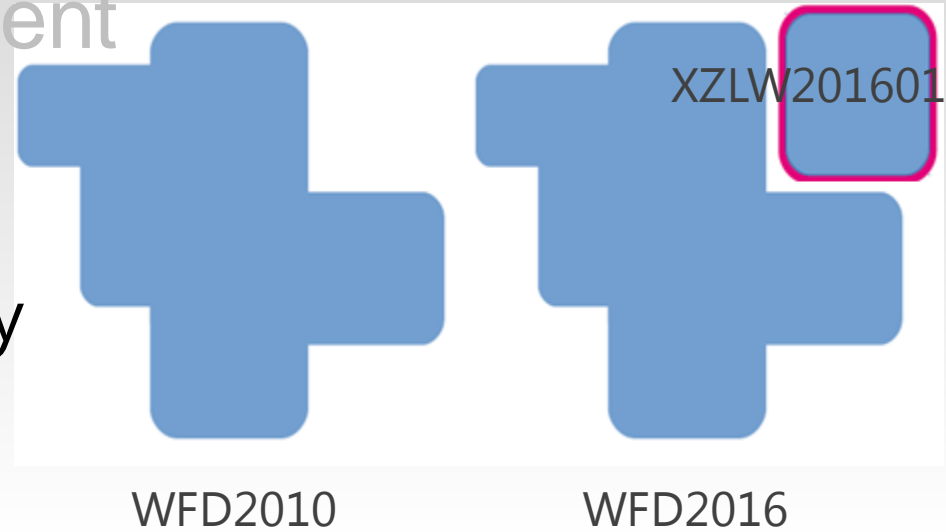
Overview

- beginLifespanVersion/endLifespanVersion
- versionId
- predecessorsIdentifier (supersedes)
- successorsIdentifier (supersededBy)

2. Life cycle management

Creation

- Not reported previously



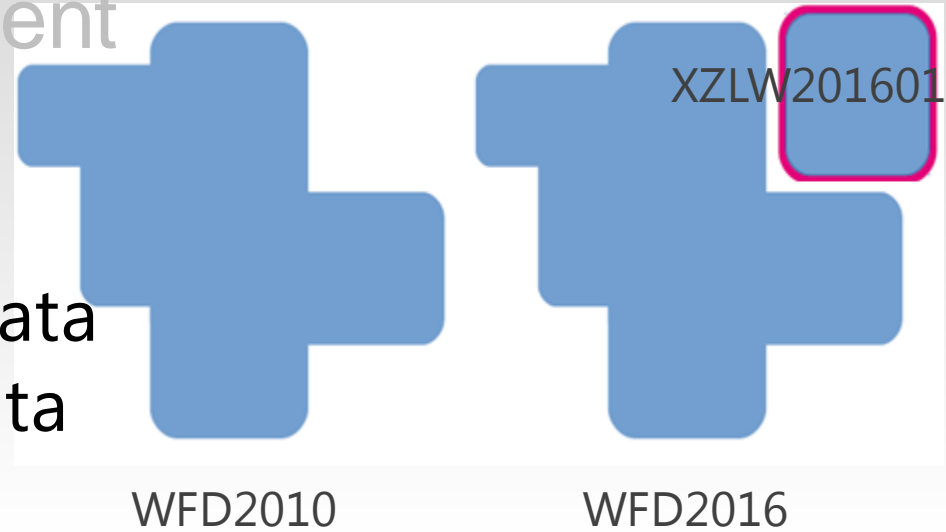
thematicID Identifier	Predecessor Identifier	beginLife SpanVersion	endLife SpanVersion	versionId	wise Evolution Type
XZLW201601		2016-01-01		V1.0	creation

(*) data shown are examples

2. Life cycle management

Creation

- Reported non-spatial data
- Not reported spatial data



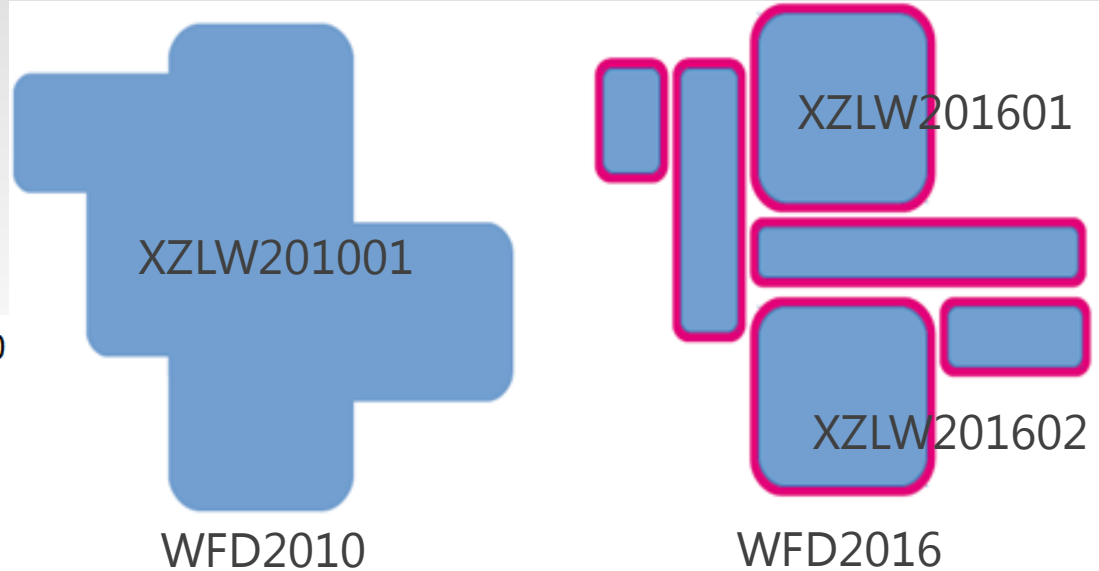
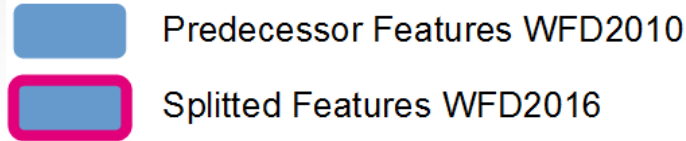
thematicID Identifier	Predecessor Identifier	beginLife SpanVersion	endLife SpanVersion	versionId	wise Evolution Type
XZLW201601		2016-01-01		V1.0	noChange

(*) data shown are examples

Note that this option must be used for the WFD water bodies that haven't changed from the 1st to 2nd RBMP, but that were not previously reported in the spatial data sets

2. Life cycle management

Split predecessor

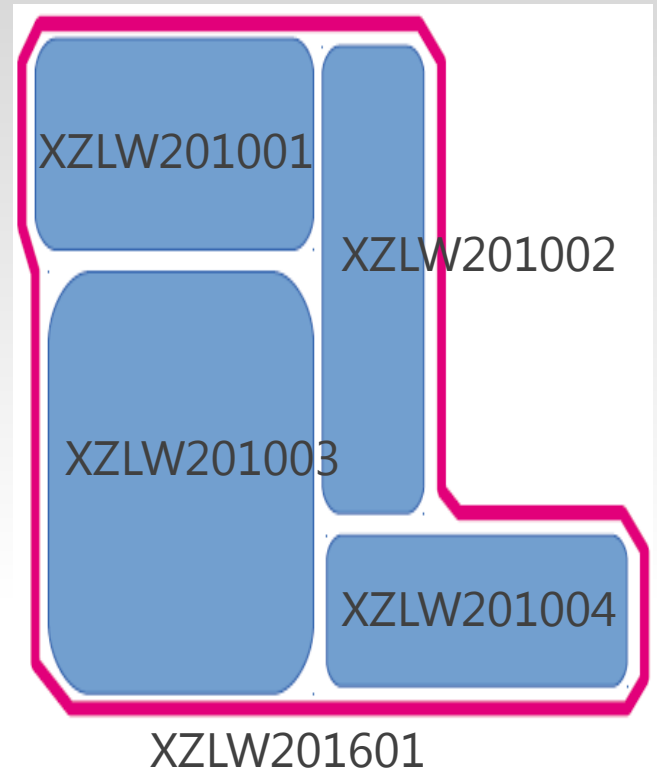
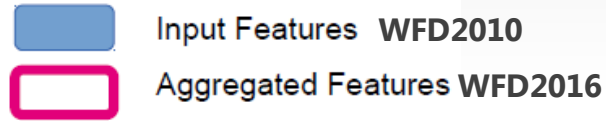


thematicID Identifier	predecessor Identifier	beginLifeSpan Version	wiseEvolution Type
XZLW201601	XZLW201001	2016-01-01	splitting
XZLW201602	XZLW201001	2016-01-01	splitting

(* data shown are examples)

2. Life cycle management

Aggregate predecessors

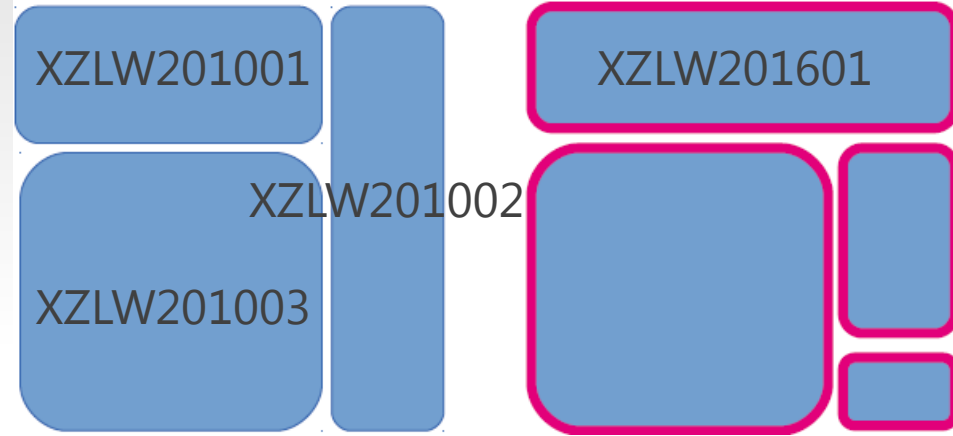
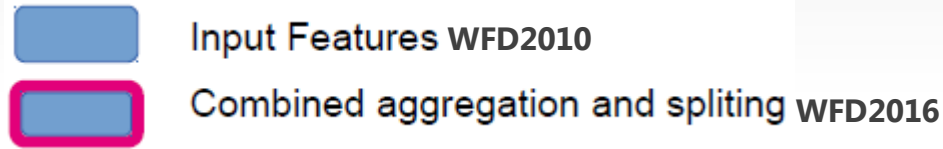


thematicID Identifier	Predecessor Identifier	beginLifeSpan Version	wiseEvolution Type
XZLW201601	XZLW201001,XZLW201002, XZLW201003,XZLW201004	2016-01-01	aggregation

(*) data shown are examples

2. Life cycle management

Aggregate & Split predecessors



thematicID Identifier	Predecessor Identifier	beginLifeSpan Version	wiseEvolutionType
XZLW201601	XZLW201001, XZLW201002	2016-01-01	changeBothAggregationAndSplitting

(* data shown are examples)

2. Life cycle management

Changes in geometry



thematicID Identifier	Predecessor Identifier	beginLife SpanVersion	endLife SpanVersion	versionId	wise Evolution Type
XZLW201001	XZLW200401	2010-01-01	2015-12-31	V1.2	
XZLW201001	XZLW200401	2016-01-01		V1.3	change

(*) data shown are examples

3. Quality control elements

Envelope level

- .gml file exists for spatial data
- .xml file exists for metadata
- Naming convention
- Metadata validation against INSPIRE validator
- Coordinate Reference System validation

QA/QC specifications

http://cdr.eionet.europa.eu/help/WFD/WFD_521_2016/

3. Quality control elements

RiverBasinDistrict

- Tessellation of the National territory to the limit of the coastal waters
- No gaps, overlaps or self-intersecting
- Element restrictions
- Element enumeration lists



3. Quality control elements

SubUnit

- relatedZoneIdentifier references
RBD/thematicIdIdentifier
- Tessellation of RiverBasinDistrict
- No gaps, overlaps or self-intersecting
- Element restrictions
- Element enumeration lists



3. Quality control elements

SurfaceWaterBody (Line)

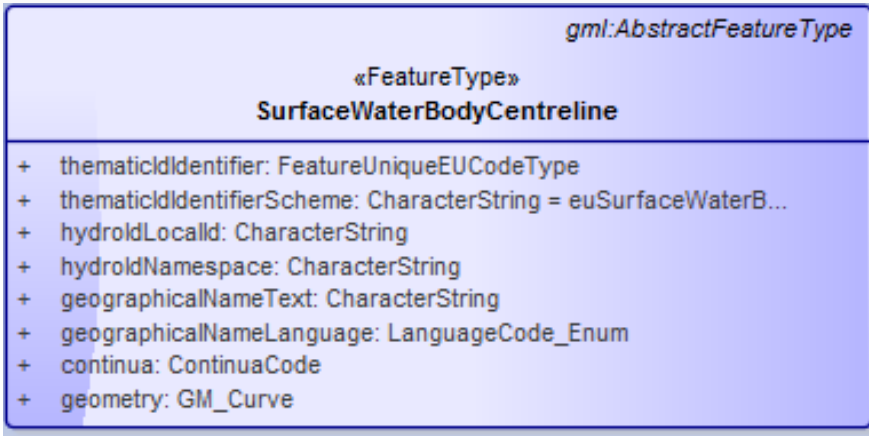
- relatedZoneIdentifier references
SubUnit/thematicIdIdentifier
- Contained in SubUnit polygon
- No overlaps (No crossing)
- Element restrictions
- Element enumeration lists



3. Quality control elements

SurfaceWaterBodyCentreLine

- Element restrictions



3. Quality control elements

GroundwaterBody

- relatedZoneIdentifier references
RBD/thematicIdIdentifier
- Contained on RiverBasinDistrict polygon
- Overlaps allowed if different depths
- Element restrictions
- Element enumeration lists



3. Quality control elements

GroundwaterBodyHorizon

- relatedZoneIdentifier references
GroundWaterBody/thematicIdIdentifier
- horizon value contained in
GroundWaterBody/horizons
- Union of geometry of different horizons must be equal to the referenced GroundWaterBody
- Element restrictions
- Element enumeration lists



3. Quality control elements

MonitoringSite

- featureOfInterestIdentifier references appropriate SWB or GWB
- Position checks for referenced SWB or GWB
- Element restrictions
- Element enumeration lists



3. Quality control elements

ProtectedArea

- Element restrictions
- Element enumeration lists



<i>gml:AbstractFeatureType</i>	
«FeatureType»	
ProtectedAreaLine	
+	inspireIdLocalId: String100Type
+	inspireIdNamespace: CharacterString [0..1]
+	inspireIdVersionId: CharacterString [0..1]
+	thematicIdIdentifier: FeatureUniqueEUCodeType
+	thematicIdIdentifierScheme: CharacterString = euProtectedAreaCode
+	beginLifespanVersion: DateType [0..1]
+	endLifespanVersion: DateType [0..1]
+	predecessorsIdentifier: CharacterString [0..1]
+	predecessorsIdentifierScheme: CharacterString [0..1] = euProtectedAreaCode
+	successorsIdentifier: CharacterString [0..1]
+	successorsIdentifierScheme: CharacterString [0..1] = euProtectedAreaCode
+	wiseEvolutionType: EvolutionTypeValue
+	nameTextInternational: CharacterString [0..1]
+	nameText: CharacterString
+	nameLanguage: LanguageCode_Enum
+	designationPeriodBegin: DateType
+	designationPeriodEnd: DateType [0..1]
+	zoneType: ZoneTypeCode
+	specialisedZoneType: SpecialisedZoneType [0..1]
+	legalBasisName: CharacterString
+	legalBasisLink: URLType
+	legalBasisLevel: LegislationLevelValue
+	link: URLType [0..1]
+	sizeValue: double
+	sizeUoM: SizeValueUnit
+	geometry: GM_MultiCurve

3. Quality control elements

Metadata

- Validation against INSPIRE validator

<http://inspire-geoportal.ec.europa.eu/>

The screenshot shows the INSPIRE GEOPORTAL website. At the top left is the European Commission logo. The main header reads "INSPIRE GEOPORTAL" and "Enhancing access to European spatial data". Below the header is a navigation bar with "EUROPEAN COMMISSION > INSPIRE > INSPIRE GEOPORTAL" and a "What's new" link. The main content area features a map of Europe with several callout boxes:

- Discovery / Viewer**: Search, discover and access geographic information provided by European governmental, commercial, and non-commercial organizations. Includes a "More ..." link and a small map of Europe.
- Validator**: The purpose of the INSPIRE Metadata Validator is to test the compliance of INSPIRE metadata with the INSPIRE Metadata Regulation. Includes a "More ..." link and a small box with technical details: "Invalid Item: number of 400 (2.2.53) invalid (117) invalid (2005/1999/11) (2.4) for dat (/www.1999/11)".
- Resource Browser**: Technical insight into resource metadata. Includes a "More ..." link and a small box with technical details: "xsd:schema <-Doc1 <xsd:el / 1.1.1".
- Metadata Editor**: Create metadata according to the INSPIRE implementing rules. Includes a "More ..." link and a small box with technical details: "xsd:schema <-Doc1 <xsd:el / 1.1.1".

4. Requirements for data exchange

File formats to report

- gml for spatial data
 - shapefile converter tool
- xml for metadata
 - INSPIRE metadata editor (suggested)
- Character encoding: UTF-8

4. Requirements for data exchange

GML format

- XSD schemas available-Data Dictionary schemas
<http://dd.eionet.europa.eu/schemaset/WFD2016/view>

Shapefile format

- shapefile templates
- shapefile to GML converter tool

http://cdr.eionet.europa.eu/help/WFD/WFD_521_2016

4. Requirements for data exchange

File naming convention

- RiverBasinDistrict_XZ_2016-01-01
- SubUnit_XZ_2016-01-01
- SurfaceWaterBody_XZ_2016-01-01
- SurfaceWaterBodyLine_XZ_2016-01-01
- GroundWaterBody_XZ_2016-01-01
- MonitoringSite_XZ_2016-01-01
- ProtectedArea_XZ_2016-01-01
- ProtectedAreaLine_XZ_2016-01-01
- ProtectedAreaPoint_XZ_2016-01-01
- SurfaceWaterBodyCentreline_XZ_2016-01-01
- GroundWaterBodyHorizon_XZ_2016-01-01

.gml for spatial data
.xml for metadata

Non Spatial vs Spatial Codes

- Information reported for WFD2010
- Lists of codes and cross-check routines
- Issues detected
- Correspondence between spatial and non-spatial codes list
- Information will be uploaded to restricted access area:
http://forum.eionet.europa.eu/x_wise-reporting/library/restricted_distribution

Questions?



THANK YOU

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