WISE EIONET spatial data sets (Internal Version)

Technical Report

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Imprint

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Preamble

The WISE databases contain near 70 000 identifiers related to EIONET monitoring sites, surface water bodies, groundwater bodies, sub-units or river basin districts.

The country data sets can be downloaded from the WISE Restricted distribution area. Authorised reporters have access to this internal version to help prepared their WISE-5 delivery (the publicly available European dataset only includes non-confidential spatial objects with associated time series). The country data sets can also be accessed in CDR (see the Reportnet2 CDR Guidance).

Around 39 000 EIONET identifiers have been replaced by new identifiers and are kept in the register for quality control purposes.
Around 21 000 EIONET identifiers have been retired, because they are no longer in use. Note that the retired identifiers may have associated time series. Therefore, it is still possible to report a successor code to re-establish the continuity of the time series.

Presently, around 10 000 EIONET identifiers are still in use.
Countries that report under the Water Framework Directive should ideally report all their spatial data under that reporting obligation. The existing EIONET identifiers should be mapped to WFD identifiers. That requires a single delivery under WISE-5: the identifier of the corresponding WFD successor needs to be filled in.

Please read the documentation available in http://cdr.eionet.europa.eu/help/WISE_SoE/wise5

Contact your EIONET National Focal Point if you need reporting permissions.

Contact wisesoe.helpdesk@eionet.europa.eu if you need technical support preparing your data.

Contact helpdesk@eionet.europa.eu if you have problems with your EIONET account.

Summary

1. This document describes the content of the EIONET files in the [WISE restricted distribution](#) area:

   - River basin districts
   - River basin district sub-units
   - Surface water bodies
   - Groundwater bodies
   - Monitoring sites

2. The data sets include all information reported to the European Environment Agency (EEA) under the [WISE - Spatial Data (WISE-5)](#) reporting obligation, **until 2021-03-01**.

3. The data sets also include legacy information reported **until 2013** to the EEA under the following terminated EIONET reporting obligations [River quality (EWN-1)](#), [Lake quality (EWN-2)](#), [Groundwater quality (EWN-3)](#), [State & Quantity of Water Resources (EWN-4)](#) and the previous data model of the [WISE SoE - Emissions (WISE-1)](#) reporting obligation.

4. The structure of the *shapefiles* follows the model defined for spatial data delivered under the WISE-5 reporting obligation. Detailed information about the structure and content of the spatial data is available in [CDR help](#) and specifically in the [WISE GIS Guidance](#).

5. For the 27 EU Member States, Iceland, Norway and the United Kingdom that reported their River Basin Management Plans spatial data under the [WFD2016](#) reporting obligation **until 2021-03-01**, the EIONET data was consolidated with the reported WFD spatial data (which is also available in the restricted area).

6. For 28 EU Member States that reported their River Basin Management Plans spatial data under the [WFD2010](#) reporting obligation, the legacy EIONET data was also consolidated with the legacy WFD data (which is also available in the restricted area).

7. The geometry of all spatial objects is published in WGS 84 (urn:ogc:def:crs:EPSG::4326). The geometry of the objects was not edited or corrected: topological and positional errors may exist.

8. Due to incomplete information, the *shapefiles* may contain:

   - empty geometries
   - 'NotApplicable' or 'Unknown' values in alphanumeric attributes
   - -9999 in numeric attributes
   - '9999-12-31' in attributes related to dates.

9. The *shapefiles* also contain attributes that provide ancillary information (see Table 1), but should be removed if the file is used to prepare a [WISE-5](#) delivery.

10. Additional information is available in the [WISE restricted distribution area](#), namely an extract the WFD2010 and WFD2016 data and the country boundaries.

How to use the pre-filled data sets to prepare a WISE-5 delivery

About the shapefiles

1. The shapefiles have the structure required by the WISE-5 reporting.

2. After you update the information in each shapefile, use the conversion tool in the CDR envelope to upload and convert the zipfile to a GML file that can be delivered. Remember to remove the ancillary attributes (Table 1) before converting the shapefiles to GML. (Empty shapefile templates can also be found in the help page).

Table 1. Additional fields present in the shapefiles: cYear, country, lat, lon, statusCode, statusDate, remarks and qcCheck.

Field name	Description
cYear	Integer field containing the year when the information was reported. The value **2013** is used for the objects that have never been reported in WISE-5 (i.e. legacy EIONET data).
country	Two-letter ISO code of the country (ISO 3166 alpha-2), except for Greece and the United Kingdom, for which the abbreviations EL and UK are used.
lat	Latitude, in decimal degrees, of an arbitrary point located within the geometry of the object (if available)
lon	Longitude, in decimal degrees, of an arbitrary point located within the geometry of the object (if available)
statusCode	Status code of the thematic identifier in the WISE register (refer to Status for further information).
statusDate	Date of reference for the status code (typically the date when the object was reported or extracted for publication).
remarks	Additional information about the status code of the superseding object, if any.
qcCheck	Additional information about checks performed in the data.

About the identifiers

1. The EEA uses the **thematicId** to identify each object uniquely across Europe and within each identifier scheme ('eionetMonitoringSiteCode', 'eionetSurfaceWaterBodyCode', 'eionetGroundWaterBodyCode', 'eionetSubUnitCode', 'eionetRBDCode'). Read the WISE GIS Guidance for further information.

2. The identifier of objects (**thematicId**) must follow the required syntax:
   - Start with the ISO 3166-1 alpha-2 country code, except for Greece ('EL') and the United Kingdom ('UK');
   - Be followed by the national code, with a maximum of 40 characters;
   - Use only uppercase letters [A to Z] and digits [0 to 9].
   - The underscore character ('_') or the hyphen character ('-') may be used as separators within the code (but not to separate the country code from the national code, and not in the end of the code).

3. The national code that was used when reporting the object is stored in the **localId** column.
   The EEA does not use the national codes, because they are not unique. You may use the **localId** value to cross-reference the WISE-5 record with information residing in the national databases. There are no syntax requirements for the national code: use whatever code is used in the national systems.

Objects with status = 'retired'

1. Review all objects with status = 'retired'.

2. These objects are not used in EEA products, because they have no associated time series – or have been retired because they have not been used since 2013.

3. **If you are not going to report time series associated with that object, you can simply delete that record (there is no need to report it back to EEA).**

4. If you plan to deliver time series associated with that object (under WISE-1, WISE-3 or WISE-4), then it must be included in your WISE-5 delivery.

   - Contact wisesoe.helpdesk@eionet.europa.eu

Important note:
When reporting time series under WISE-1, WISE-3 or WISE-4, the EU-27 countries, Iceland, Norway and the United Kingdom should use WFD monitoring sites, water bodies, etc. The WFD objects are reported under the WFD2022 Spatial reporting obligation, and it is not necessary to report them once again in WISE-5. Use EIONET objects only if strictly necessary (e.g. multiple reservoirs that are part of the same WFD waterbody).

Objects with status = 'superseded'

1. Review all objects with status = 'superseded'.
2. For each of these objects, a replacement identifier is proposed in the **successold** attribute. The successor can be:

   - another EIONET object reported at a later date (succeIdSch LIKE 'eionet%')
   - a WFD object reported under the Water Framework Directive (succeIdSch LIKE 'eu%')

3. **If the replacement is correct, you can simply delete that record (there is no need to report it again).**

4. If the replacement is incorrect, then contact wisesoe.helpdesk@eionet.europa.eu.

All other objects

1. If an object has been replaced, please provide its successors (it may be another EIONET object or a WFD object). Use the **successold** attribute and in the the **succeIdSch** attribute.
   Set wEvolution = 'deletion'.

2. You may use the process in point 1 to correct any errors – for example if there are any wrong identifiers in the shapefiles, simply provide their correct identifier as a successor.

3. If the object has been deleted (e.g. a monitoring site that was retired) and was not replaced, then set wEvolution = 'deletion'. Remember to provide any missing value, especially the geometry (see point 3 and 4 below).

4. Check the missing values, especially the geometry: please complete the information as much as possible prior to delivering the data.

5. If there are new objects to be reported, simply add the necessary records and fill the values according to the instructions in the WISE GIS Guidance.

Special cases

1. The data set may contain a *shapefile* named GroundWaterBody<u>Point</u>.shp – it contains information about groundwater bodies for which only the location of a point was known.

    Groundwater bodies must be reported as polygons: use the GroundWaterBody.shp for that effect. You cannot report point or line geometries for groundwater bodies.

    ### Note:
    If a spatial delineation of the groundwater body is not available, you may use a convex hull based on the location of national sites monitoring the water body. Most GIS software will allow the creation of convex hull geometries; see for example [ArcGIS](#) or [QGIS](#). (EU-27 countries, Iceland, Norway and the United Kingdom should always use WFD groundwater bodies, which have already been reported.).

2. The data set may contain a *shapefile* named SurfaceWaterBody<u>Point</u>.shp – it contains information about surface water bodies for which only the location of a point was known.

    Surface water bodies must be reported as lines (use the SurfaceWaterBodyLine shapefile) or as polygons (use the SurfaceWaterBody shapefile).

    ### Note:
    If the geometry of surface water bodies is not available from a national data source, consider using a publicly available dataset such as [Ecrins](#) or [EU-Hydro](#). Strictly speaking, only the surface water bodies with associated time series (and their monitoring sites) need to be reported.

3. If the delineation of the main river basin is not available, you may report the entire country as a single River Basin District and its single SubUnit. This may apply to the following cases:

Country	Identifier	IdentifierScheme	Observations
AL	AL100	eionetRBDCode	Report the geometry.
	AL200	eionetRBDCode	Report the geometry.
	AL300	eionetRBDCode	Report the geometry.
	AL400	eionetRBDCode	Report the geometry.
	AL500	eionetRBDCode	Report the geometry.
	AL600	eionetRBDCode	Report the geometry.
	AL800	eionetRBDCode	Report the geometry.
BA			No information available. If necessary report the country geometry as a single RBD (e.g. BA1)
ME			No information available. If necessary report the country geometry as a single RBD (e.g. ME1)
MK			No information available. If necessary report the country geometry as a single RBD (e.g. MK1)
RS	RS1	eionetRBDCode	Report the geometry.
TR			No information available. If necessary report the country geometry as a single RBD (e.g. TR1)
XK			No information available. If necessary report the country geometry as a single RBD (e.g. XK1)

Annex 1. About the status value

The section provides an overview of the different statuses and of their use in the context of the identifiers register and of the data quality control. The different possible statuses are defined in http://dd.eionet.europa.eu/vocabulary/datadictionary/status. See also Figure 1.

Figure 1. Status.
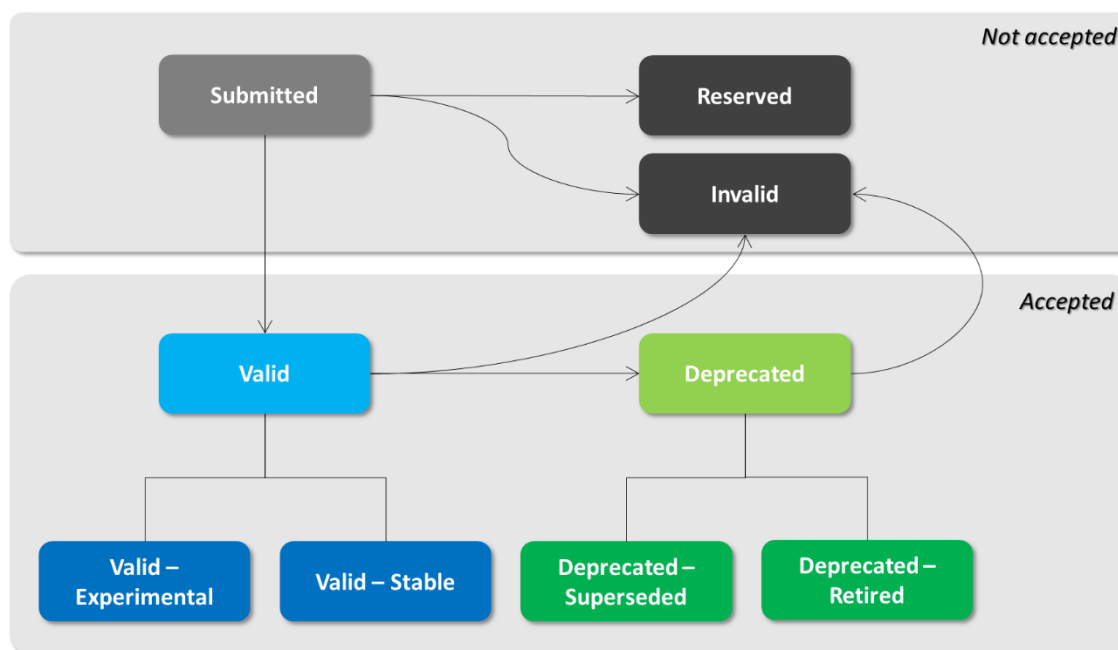
Not accepted is an abstract status that includes:

- **Submitted -** Used for identifiers that have not been evaluated (e.g. passed quality control). Can be seen as an internal initial state.
- **Reserved** - Used for reserved identifiers that cannot be used for real spatial units.
- **Invalid** - Used for identifiers that cannot not be used in the current reporting.

The invalid state is applied to "wrong" identifiers – e.g. identifiers that were used in the past, but that do not follow the current syntax requirements for identifiers, or identifiers that the Data Provider flagged has being wrong. Invalid spatial identifiers can be replaced by other identifiers.

Not accepted identifiers cannot be used in the WISE-5 reporting. Using one of these identifiers in a data delivery will trigger a BLOCKER, i.e. the data cannot be delivered.

Accepted is an abstract state that includes valid and deprecated identifiers.
Valid identifiers include 'valid – **experimental**' and 'valid – **stable**' identifiers.
Deprecated identifiers include 'deprecated – **superseded**' and 'deprecated – **retired**' identifiers.

Depending on the requirements of each specific data flow or spatial data set, the data delivery may include any accepted identifier, or only valid identifiers, or only valid – stable identifiers, etc…
The default approach is that any accepted identifier can be used.

Valid – stable identifiers are syntactically correct, no issue has been detected in the spatial object previously reported by the Data Provider, and refer to an active valid real world entity (as far as the Data Requester knows).

Valid – experimental identifiers are syntactically correct identifiers that are proposed by the Data Requester (i.e. the EEA or DG ENV) to replace invalid identifiers.
These identifiers were never reported by countries. They are proposed as a replacement for an invalid identifier that was reported by in the past (e.g. an identifier that had special characters). If countries accept the change and use it in the reporting, then the identifier state will be changed to **'valid – stable'**, **'deprecated – superseded'** or **'deprecated – retired'** (depending on what is reported, see definitions below).

Valid identifiers are syntactically correct identifiers reported by the Data Provider. However issues have been detected with the spatial object itself (e.g. the name is missing and/or the geometry needs to be checked), so the identifier cannot be marked as 'valid – stable'. Valid identifiers may replace 'deprecated' identifiers or 'invalid' identifiers (the same applies to 'valid – stable' or valid – experimental identifiers).

Deprecated – superseded identifiers are syntactically correct identifiers that have been replaced by another identifier (as reported by Data Providers in the normal reporting process, using the life-cycle information attributes).

Deprecated – retired identifiers are syntactically correct identifiers that are no longer used and have not been replaced (e.g. a monitoring site that is no longer operational and has not been replaced by a different one).

Deprecated identifiers are syntactically correct identifiers that were valid in the past. This status is only used when there is not enough information to know if the identifier has been superseded or retired.

Annex 2. Quick reference card

INSPIRE theme	INSPIRE element	#	WISE GML data element	MonitoringSite	RiverBasinDistrict	SubUnit	SurfaceWaterBody	SurfaceWaterBodyLine	GroundWaterBody	Shapefile field name
AM | EF	geometry	1	geometry	m	m	m	m	m	m	shape
AM | EF	inspireId	2	inspireIdLocalId	m	m	m	m	m		localId
		3	inspireIdNamespace	m	m	m	m	m		namespace
		4	inspireIdVersionId	c	c	c	c	c	c	versionId
AM	thematicId	5	thematicIdIdentifier	m	m	m	m	m		thematicId
		6	thematicIdIdentifierScheme							themaIdSch
AM | EF	beginLifespanVersion	9	beginLifespanVersion	c	c	c	c	c	c	beginLife
AM | EF	endLifespanVersion	10	endLifespanVersion	c	c	c	c	c	c	endLife
(concept from SU)	predecessors	11	predecessorsIdentifier		c	c	c	c	c	predecesId
		12	predecessorsIdentifierScheme							predeIdSch
(concept from SU)	sucessors	13	successorsIdentifier		c	c	c	c	c	successId
		14	successorsIdentifierScheme							succeIdSch
EF	supersedes	15	supersedesIdentifier	c						predecesId
		16	supersedesIdentifierScheme							predeIdSch
EF	supersededBy	17	supersededByIdentifier	c						successId
		18	supersededByIdentifierScheme							succeIdSch
(concept from SU)	evolutions	19	wiseEvolutionType	m	m	m	m	m	m	wEvolution
AM | EF	name	20	nameTextInternational	m	m	m	m	m	m	nameTxtInt
		21	nameText	m	m	m	m	m	m	nameText
		22	nameLanguage							nameTxtLan
AM	designationPeriod	25	designationPeriodBegin		m	m	m	m	m	desigBegin
		26	designationPeriodEnd		c	c	c	c	c	desigEnd
EF	operationalActivity	27	operationalActivityPeriodBegin	m						opActBegin
		28	operationalActivityPeriodEnd	c						opActEnd
AM	zoneType	29	zoneType		m	m	m	m	m	zoneType
AM	specialisedZoneType	30	specialisedZoneType			m	m	m	m	spZoneType
AM	legalBasis	31	legalBasisName							legisName
		32	legalBasisLink		o	o	o	o	o	legisLink
		33	legalBasisLevel							legisLevel
AM	relatedZone	34	relatedZoneIdentifier			m	m	m	m	rZoneId
		35	relatedZoneIdentifierScheme							rZoneIdSch
AM	relatedZone	36	relatedZoneTransboundaryIdentifier		o	o	o	o	o	rTrnsId
		37	relatedZoneTransboundaryIdentifierScheme							rTrnsIdSch
EF	featureOfInterest	38	featureOfInterestIdentifier	m						foiId
		39	featureOfInterestIdentifierScheme							foiIdSch
EF	relatedTo	40	relatedToIdentifier	o						rSiteId
		41	relatedToIdentifierScheme							rSiteIdSch
EF	mediaMonitored	42	mediaMonitoredBiota							mediaBiota
		43	mediaMonitoredWater	m						mediaWater
		44	mediaMonitoredSediment							mediaSedim
EF	purpose	45	purpose	o						purpose
		46	catchmentArea	o						catchArea
		47	maximumDepth	o						maxDepth
		48	confidentialityStatus	m						confStatus
		49	sizeValue		o	o	c	o	o	sizeValue
		50	sizeUom							sizeUoM
		51	meanDepth				o	o		meanDepth
		52	horizons						c	horizons
		55	link	o	o	o	o	o	o	link

Legend:

m	Mandatory element, must be reported
c	Conditional element, must be reported under specific circumstances
o	Optional element, can be reported