

**European Commission - DG Environment**

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**Background document on coding of IDs  
and specifications for reporting  
geographical data under BWD**

**FINAL**

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# 1 INTRODUCTION

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The aim of this document is to explain needs and specifications for spatial data in relation to reporting under the Bathing Water Directive (2006/7/EC). There is a need to obtain spatial data systematically, to improve the positional accuracy, the topological correctness and furthermore to harmonise the format of the data across the EU. Spatial data is of crucial importance to produce high quality maps which are in turn essential for presentational purposes and to make accurate GIS analysis.

This document is based on the “Background document on specifications for reporting geographical data under UWWTD”, drafted by the EC DG Environment contractor Umweltbundesamt (final version 08/05/2007) and the “Background document on specifications for reporting geographical data under NiD reporting obligations”, drafted by the EC DG Environment contractor Alterra, Wageningen UR, The Netherlands (version 27/03/2008).

## 2 SPECIFICATIONS FOR REPORTING GEOGRAPHICAL DATA UNDER BWD

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The aim is to harmonise geographical data in relation to reporting under BWD. Geographical data should also be in line with future reporting in WISE. The following aspects are considered:

1. Coordinate reference system
2. Data accuracy
3. Format / Coding / Geometry of datasets
4. Data quality
5. Data documentation (metadata)

### 2.1 COORDINATE REFERENCE SYSTEM

The use of a common coordinate reference system is particularly important for the harmonisation of geographic information across Europe. Spatial data provided by Member States are often insufficiently documented (e.g. the used projection is unknown or is only partially described). The use of different coordinate systems is a potential source of errors when national data are imported into a European wide system. **Therefore it is important that Member States shall provide data for reporting under a single coordinate system.**

The **ETRS89** (European Terrestrial Reference System) is recommended by the WFD GIS Working Group for pan Europe spatial data collection, storage and analyses. Furthermore this is a reference system required to be used by the INSPIRE directive for spatial data exchange and communication.

**Therefore it is recommended to use ETRS89 for the national point feature datasets regarding the Bathing Water Directive.**

The description and definition of ETRS89 is based on the convention of ISO19111, the “Spatial referencing by coordinates” standard. For further documentation on ETRS89, see <http://crs.bkg.bund.de/crs-eu> and <http://www.eionet.eu.int/gis>.

### 2.2 DATA ACCURACY

#### Scale and positional accuracy

The factor determining the required detail of spatial data is the size of the smallest feature to be shown on digital and paper maps. This “spatial detail” determines both the minimum mapping area and the number of coordinates used to describe an element. For example on a large scale map (1:250.000) a river is presented with more points than on a small scale map (1:1.000.000) where small meanders may not be represented.

For the WFD the level of spatial detail is set to 0,5 km<sup>2</sup> surface for lakes and to a 10 km<sup>2</sup> catchment area for rivers that leads to a scale of 1:250.000.

The GIS Working Group recommends for WFD needs a positional accuracy for the reporting of 1000 metres (corresponding to an input scale of approximately 1:1.000.000) in the short term. In the long term a positional accuracy of 125 m (1:250.000) is strongly recommended for higher positional data accuracy for web mapping purposes. The scale of 1:250.000 is preferable/advisable to use.

**As for the scale and positional accuracy of GIS BWD data concerning point features (bathing waters) the accuracy of 125 m (1:250.000) is strongly recommended as a minimum.**

Data precision: coordinates in decimal degrees in 6 digits behind the comma.

## 2.3 FORMAT / CODING / GEOMETRY OF DATASETS

### 2.3.1 Data exchange format

#### Point information

To report the point information (the locations of bathing waters) it is strongly recommended to use the templates which are available in the DD of Reportnet. See also the document “How to use Reportnet and deliver data under the BWD”, which is available at <http://cdr.eionet.europa.eu/help>.

### 2.3.2 Coding

Concise coding will ease up electronic data transfer in the future and allow linkage to additional datasets that use the same coding mechanism. GIS feature coding is the assignment of unique identification codes to each table or spatial feature that will be referenced by GIS. This assignment needs to be managed to ensure uniqueness at national and international level. Standard code format will ease electronic data transfer and enhance the possibility of central querying against distributed storage.

**Unique European codes should be generated by placing the ISO 2 character national code (ISO 3166-1-Alpha-2 country codes) for each Member State in front of up to 22 characters unique identifiers generated within Member States.**

#### Coding in the bathing water reporting

The “bathing water” is the main unit of reporting in the Bathing Water Directive. It requires unique coding at European level. To establish the link with the Water Framework Directive and other reporting in WISE, also the River Basin District (or subunit) and water body where the bathing water is located shall be reported. If the bathing water is not part of a water body reported in the frame of the WFD, the national water unit where the bathing water is located shall be also provided. According to Article 4.5 of the BWD, bathing waters can be grouped together in the light of bathing water quality assessments. Also for a group of bathing waters, a unique code is required.

Table 1 gives an overview of the codes required for bathing water reporting.

**Table 1: Overview of codes used in bathing water reporting**

Attribute	Format	Comment
Bathing water	MS#1#2...#22, where: MS = 2 character Member State identifier #1#2...#22 = up to 22 characters code that is unique within the Member State	Code assigned in the framework of the Bathing Water Directive
Group of bathing waters	MS#1#2...#22, where: MS = 2 character Member State identifier #1#2...#22 = unique code assigned by Member State	Code assigned in the framework of the Bathing Water Directive
River Basin District	MS#1#2...#22, where: MS = 2 character Member State identifier #1#2...#22 = unique code assigned by Member State	The same codes should be used as in the latest dataset/update of RBD's or sub-units provided to EC under WFD
Water body	MS#1#2...#22, where: MS = 2 character Member State identifier #1#2...#22 = unique code assigned by Member State	The same codes should be used as in the latest dataset/update of water bodies provided to EC under WFD

National water unit	MS#1#2...#22, where: MS = 2 character Member State identifier #1#2...#22 = unique code assigned by Member State	
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### 2.3.3 Geometry types/Topological rules

The spatial datasets delivered to the Commission concerning the Bathing Water Directive should be represented as following regarding the geometry types:

- **Point features: bathing waters in the ETRS89 reference system. Coordinates should be based on ISO 6709:1983 (Standard representation of longitude, latitude for geographic point locations). These coordinates (longitude (X) and latitude (Y)) can be filled in as tabular information in the template which is available in the DD.**

### 2.3.4 Data Dictionary

According to the WFD GIS Guidance Document the aim of a Data Dictionary is to provide a common understanding of the file/table structure that is used for the report of both tabular and geographic datasets to the Commission.

For all data which has to be reported for BWD, data definitions and templates are available in the Data Dictionary at Reportnet. The templates (Excel or XML schemas) and the specifications will guide in formatting and collating the data delivery. The format is compatible with the table in the BWD guidance document on reporting endorsed in June 2008<sup>1</sup>.

It is strongly advised to use the Excel or XML templates, provided in the DD, for filling with data and uploading, else the automatic QC procedures will not be carried out after uploading the digital data on CDR (Central Data Repository located at EEA) and the data providers will not receive an immediate feedback on data delivery.

#### Point information

The geographic information for the bathing waters (point features) can be submitted by filling in the longitude (X) and latitude (Y) international geographical coordinates (in ETRS89 reference system) in decimal degrees format in the table **Inventory of identified bathing waters**.

## 2.4 DATA QUALITY

It is essential that data delivered to the Commission are homogeneous and of general good quality. After completing the submission of the data an automatic quality assessment (QA) will be carried out to check and control the quality of the uploaded data.

Quality control includes the following questions:

- Do values and codes in tabular data are within the range defined in the guideline documents?
- Are ID's in accordance with the given standards?
- Do the geometric accuracy, coordinate reference system, projection and file format follow specifications?
- Has metadata been filled in, including aspects of accuracy, coordinate system, methodology and source?

<sup>1</sup> Reporting sheets for Bathing Water Directive 2006/7/EC

## 2.5 DATA DOCUMENTATION (METADATA)

Metadata is defined in the INSPIRE Directive (Art. 3, point (6)) as “information describing spatial data sets and spatial data services and making it possible to discover, inventory and use them”. The general principle informing the need for metadata is that “the infrastructures for spatial information in the Member States should be designed that it is easy to **discover** available spatial data, to **evaluate** their suitability for the purpose and to know the conditions applicable to their **use**”.

The *INSPIRE Implementing Rules* will define the technical rules to set up the European spatial data infrastructure within the Member States. The INSPIRE Implementing Rules cover metadata, data specifications, network services, data and service sharing and monitoring procedures.

The INSPIRE Implementation Rules for Metadata<sup>2</sup> have been approved by the INSPIRE Committee on 14 May 2008. The IRs are sent to the European Parliament which has one month time to comment, after which the adoption procedure will start. The European Commission will establish, in collaboration with stakeholders and relevant standardisation organisations, detailed guidelines and instructions for implementation to ensure interoperability of metadata. These will include instructions on how the European standards EN ISO 19115 and EN ISO 19119 shall be used to disseminate INSPIRE metadata, should one chose to use these standards.

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<sup>2</sup> The draft INSPIRE Implementing Rules for Metadata are available at [http://www.ec-gis.org/inspire/reports/ImplementingRules/INSPIRE\\_Metadata\\_ImplementingRule\\_v3\\_20071026.pdf](http://www.ec-gis.org/inspire/reports/ImplementingRules/INSPIRE_Metadata_ImplementingRule_v3_20071026.pdf)