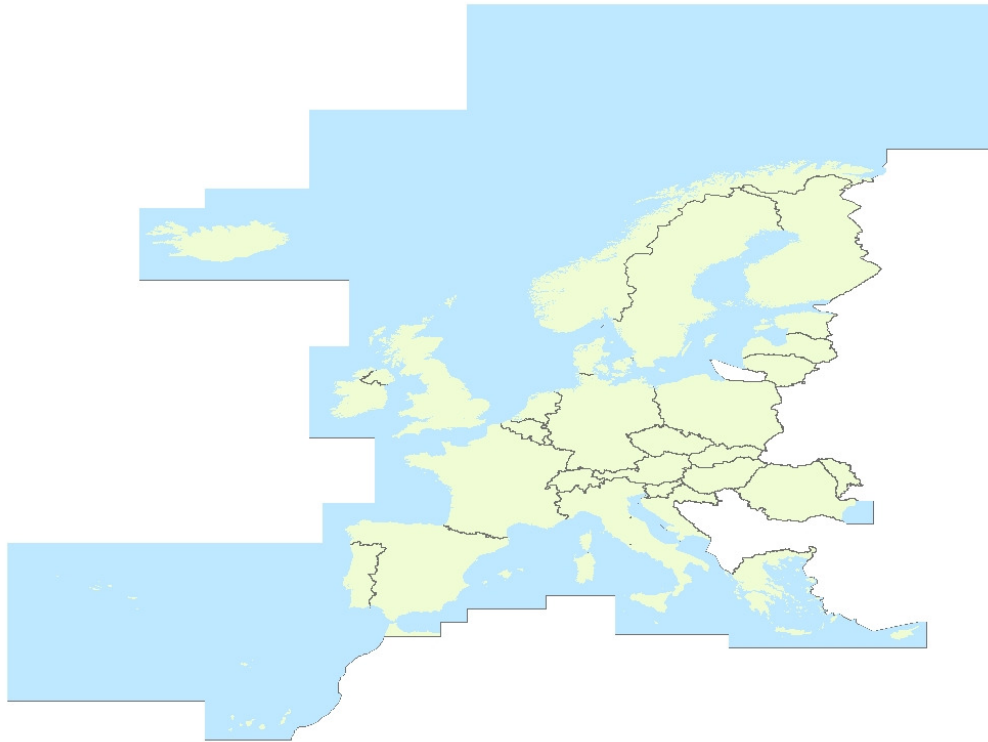




# EuroRegional- Map User Guide

Refers to ERM 4.0, released in March 2011



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## Introduction

This User Guide has been designed to provide information needed to use the EuroRegionalMap (ERM) dataset.

The Guide is arranged into the following sections:

- "Introduction": contact details, copyrights, other general information
- "Overview of ERM data" provides an introduction to ERM product
- "Using ERM" contains some instructions on how to use the dataset

Supporting document for detailed information:

- ERM Specifications and data Catalogue: *D41\_ERMSpecification\_v44.pdf*
- ERM Technical Guide: *D21\_ERMTechnicalGuide\_v41.pdf*
- ERM validation Specifications: *D51\_DataValidationSpecifications\_V41c.pdf*
- ERM Edge matching specification: *D21\_ERM\_EdgeMatchingRules\_v20.pdf*

If you find an error, omission, or have a suggestion about how this Guide can be improved, please contact EuroGeographics at the address shown below, under contact details.

## Contact details

If you have problems using ERM or any questions related to the dataset or its use please contact EuroGeographics or the distributor from which you purchased the data.

EuroGeographics' address is:

EuroGeographics  
76, Rue du Nord  
1000 Brussels  
Belgium

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Facsimile: +32 (2) 888 71 94  
e-mail: [contact@EuroGeographics.org](mailto:contact@EuroGeographics.org)  
WWW: <http://www.EuroGeographics.org>

The addresses of the contact persons in national mapping agencies are listed in corresponding metadata files.

## Product performance

If you have any problems or identify any errors in the data, please complete the product performance report provided in Annex A.

## Liability

A full description of the terms and conditions of supply and use of ERM is included in the *End User Licence* signed by your organisation.

EuroGeographics and the national mapping and cadastral agencies contributing to ERM have made every effort to ensure that data supplied are free from errors and omissions. The quality checking of the data is made by ERM *Project Management Team*. Possible exceptions from ERM specifications are described in the metadata files.

It is the Customer's responsibility to ensure that the data ordered are suitable for the intended purpose. Neither EuroGeographics nor the national mapping agencies will

be liable to the customer or any other party for any loss, damage, inconvenience or expense resulting from the use of, or reliance upon, the data.

### **Delivery of ERM**

You are advised to make a back-up copy of the data delivered.

Written notification of any deficiency in the ERM data or damage to the goods must be given to EuroGeographics or the distributor from which you bought the data.

### **Data copyright**

ERM data are copyright of EuroGeographics and the contributing national mapping agencies. As standard, ERM data may be used for internal business use only. It may not be used for Internet applications unless this has been explicitly agreed within a schedule addition to the licence. Your licence agreement specifies the number of concurrent users, which may use the data. Additionally, any printed output, which is based on ERM data must bear an appropriate copyright acknowledgement.

Copyright statements are named in Annex B.

### **User Guide copyright**

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INFO is a trade mark of Henco Software, Inc.

Excel and Word are trade marks of Microsoft.

# Overview of ERM data

## General product description

**EuroRegionalMap v4.0** is a pan-European dataset containing topo-geographic information at the scale 1:250 000 assembled from 31 country data sets covering 26 EU Countries (Bulgaria not included), 4 EFTA countries, the Republic of Moldova (see the map on the first page of this document and the list below). It is a seamless<sup>1</sup> and harmonised data and is produced in cooperation by the National Mapping and Cadastral Agencies of Europe, using official national databases.

**EuroRegionalMap** is ideal for a wide range of uses, including cartographic publishing and backdrop visualisation, or in combination with other datasets for marketing planning and socio-economic analysis, environmental analysis, and transport management.

EuroRegionalMap contains 7 themes:

- Administrative boundaries
- Hydrography
- Transportation (roads, railways, airports, ferry lines)
- Built-up areas (settlements)
- Soil and vegetation
- Miscellaneous objects
- Named location (geographical names)

**Coordinates:** Geographical in degrees (longitude, latitude) with decimal fraction and based on the ETRS89 spatial reference system (which corresponds to WGS84 reference system).

**Horizontal geometric resolution:** equivalent precision of 5 meters or 0.2 in arc-seconds or 0.00005 in decimal degrees

**Positional accuracy:** 125 meters

**Minimum size of polygon:** 0.06 km<sup>2</sup>

**Feature coding structure:** DIGEST FACC Edition 2.1, Sep. 2001.

**Character sets used:** ISO8859 –series and UNICODE system.

**Metadata:** According ISO19115 standard.

**Coverage:** Andorra<sup>2</sup>, Austria, Belgium, Czech Republic, Cyprus, Denmark, Estonia, Faeroe Islands<sup>2</sup>, Finland, France, Germany, Gibraltar<sup>2</sup>, Greece, Great Britain, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein<sup>2</sup>, Lithuania, Luxembourg, Malta, Monaco<sup>2</sup>, Moldova, Northern Ireland, Norway, Poland, Portugal, Romania, San Marino<sup>2</sup>, Slovakia, Slovenia, Spain, Sweden, Switzerland, The Netherlands, Vatican<sup>2</sup>. The product will be gradually extended targeting to cover the whole of the Europe.

**Product types for supply:** ERM will be supplied on bi-annual subscription basis including the updates issued in the license period.

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<sup>1</sup> The term "seamless" means that there are no gaps between graphical objects initially derived from different sources.

<sup>2</sup> The datasets covering these countries are included to the data directories of the surrounding areas; see details below.

**Update:** The product is constantly updated over a one year cycle (on average).

ERM v4.0 includes updates for the themes Administrative boundaries, Hydrography, Transportation, and Built-up areas (settlements). These updates were performed in two steps in the period 2009/2010. In 2009, the themes Administrative boundaries, Transportation and Built-up areas (settlements) were updated by NMCAs. Further in 2010, NMCAs provided an update for the theme Hydrography considering a better harmonisation and integration of the water network in Europe. Besides that, an additional European road classification for visualisation purposes was introduced.

Due to this step-wise approach to updating the product might contain inconsistencies with respect to the topological associations required between themes as stated in the ERM data specification (Annex D).

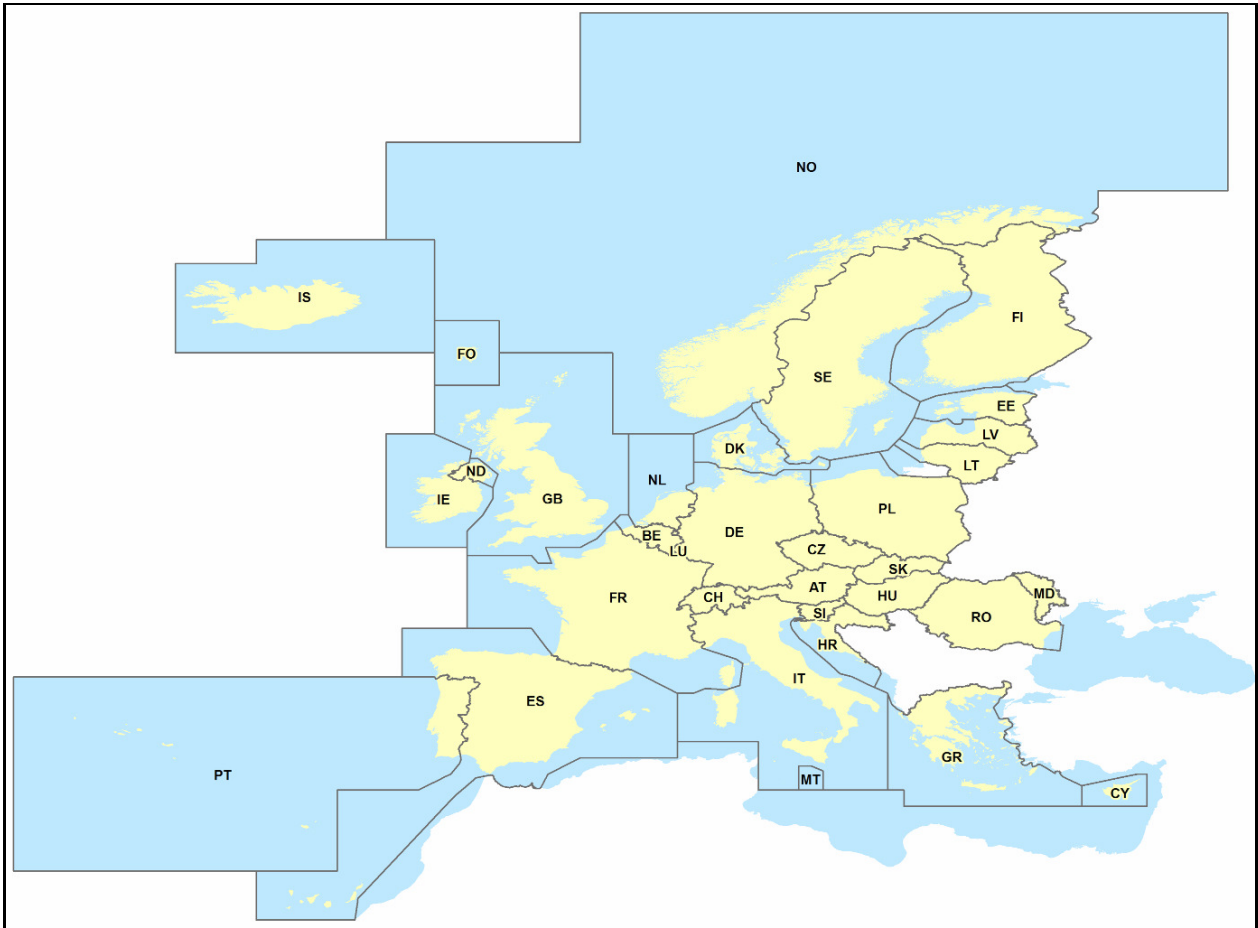
For better information on reference date of update per theme and per country , see the lineage.doc files.

See more information on ERM project's website:

<http://www.eurogeographics.org/content/euroregionalmap-0>

### **Dataset partition**

EuroRegionalMap 4.0 is a seamless coverage of Europe. However the product has adopted a tile partition, which is delimited by the territories under the responsibility of a producing NMCA. This implies that several countries can be gathered into a single tile partition, i.e. Switzerland and Liechtenstein produced by the NMCA of Switzerland.



This tile partition defines the **minimum unit dataset** that can be licensed. For example it is not possible to license individually France without Monaco because those two countries are in the same dataset.

Metadata files are defined and provided by minimum unit dataset.

Each minimum unit dataset is identified by the ICC code of the countries (ISO 3166 two character country code). Refer to: [http://www.iso.org/iso/en/prods-services/iso3166ma/02iso-3166-code-lists/iso\\_3166-1\\_decoding\\_table.html](http://www.iso.org/iso/en/prods-services/iso3166ma/02iso-3166-code-lists/iso_3166-1_decoding_table.html)

The dataset naming description is following:

<b>Dataset Coding</b>	<b>Minimum Unit Dataset Description</b>
AT	Austria
BE	Belgium
CZ	Czech Republic
CY	Cyprus
DK + FO	Denmark including Faeroe Islands
EE	Estonia
FI	Finland
FR+ MC	France including Monaco
DE	Germany

GR	Greece
GB1 (*)	United Kingdom excluding Northern Ireland = Great Britain
HU	Hungary
IS	Iceland
IE	Ireland
IT+SM+VA	Italy including San Marino and The Vatican City
LT	Lithuania
LU	Luxembourg
LV	Latvia
MT	Malta
MD	Moldova
GB2 (*)	United Kingdom excluding Great Britain = Northern Ireland (ND)
NL	The Netherlands
NO	Norway
PL	Poland
PT	Portugal
RO	Romania
SI	Slovenia
SK	Slovakia
ES+AD+GI	Spain + Andorra + Gibraltar
SE	Sweden
CH+LI	Switzerland + Liechtenstein

(\*) GB is the ISO (UN) code for the United Kingdom. However this country is split into two data-sets: Great Britain (GB1) produced by NMCA of Great Britain and Northern Ireland (GB2) produced by the NMCA of Northern Ireland.

## Standard products

### Coverages

EuroRegionalMap will be licensed according to two standard product options:

1. A full European coverage including all countries
2. A predefined dataset covering one of the following 5 European regions:
  - Northern Europe
  - Western Europe
  - Central Europe
  - Eastern Europe
  - Southern Europe

The coverages of the European regions overlap each other so that a country may be included into several regions.

There is no possibility to license a single minimum unit dataset. However the minimum unit datasets can be licensed in addition to a European region in the condition that they create a seamless coverage and being a neighbouring country of the region.

Table 1: description of the European regions

<b>Minimum Unit (MinU) Datasets included</b>
--

	<b><u>Minimum Unit (MinU) Datasets included</u></b>
Northern Europe  8 MinU datasets	Denmark + Faeroe Islands Finland Norway Sweden Iceland Estonia Latvia Lithuania
Western Europe  14 MinU datasets	Austria Belgium France + Monaco Germany Great Britain Luxembourg N. Ireland Ireland Italy + San Marino + Vatican Malta Portugal Spain + Andorra + Gibraltar Switzerland + Liechtenstein The Netherlands
Central Europe  15 MinU datasets	Austria Belgium Czech Republic Denmark + Faeroe Islands France + Monaco Germany Hungary Italy + San Marino + Vatican Luxembourg Malta Poland Slovak Republic Slovenia Switzerland + Liechtenstein The Netherlands

	<b><u>Minimum Unit (MinU) Datasets included</u></b>
Eastern Europe 10 MinU datasets	Cyprus Czech Republic Greece Hungary Moldova Poland Romania Slovak Republic Slovenia
Southern Europe 8 MinU datasets	Cyprus France + Monaco Greece Italy + San Marino + Vatican Malta Slovenia Spain + Andorra + Gibraltar

## Data content

EuroRegionalMap can be licensed using the complete data content or by the following themes:

- Transportation
- Hydrography
- Settlements

All those themes include the administrative boundaries.

The Transportation theme holds the following features:

▪ Railway	Line Feature	Feature CODE: AN010
▪ Interchange of motorways	Point feature	Feature CODE: AP020
▪ Road	Line feature	Feature CODE: AP030
▪ Control Tower	Point Feature	Feature CODE: AQ060
▪ Level Crossing	Point Feature	Feature CODE: AQ062
▪ Road Intersection	Point Feature	Feature CODE: AQ063
▪ Ferry Crossing	Line Feature	Feature CODE: AQ070
▪ Ferry Station	Point Feature	Feature CODE: AQ080
▪ Entrance / Exit	Point Feature	Feature CODE: AQ090
▪ Railway Station	Point Feature	Feature CODE: AQ125
▪ Vehicle Stopping Area / Rest Area	Point Feature	Feature CODE: AQ135
▪ Pier / Wharf / Quay	Line Feature	Feature CODE: BB190
▪ Pier / Wharf / Quay	Area Feature	Feature CODE: BB190
▪ Airport / Airfield	Point Feature	Feature CODE: GB005
▪ Airport / Airfield	Area Feature	Feature CODE: GB005
▪ Heliport	Point Feature	Feature CODE: GB035
▪ Runway	Line Feature	Feature CODE: GB055
▪ Administrative Boundary	Line Feature	Feature CODE: FA000
▪ Administrative Area	Area Feature	Feature CODE: FA001

The Hydrography theme holds the following features:

▪ Well	Point Feature	Feature CODE: AA050
▪ Coastline / Shoreline	Line Feature	Feature CODE: BA010
▪ Sea Limit	Line Feature	Feature CODE: XX500
▪ Foreshore	Area Feature	Feature CODE: BA020
▪ Island	Area Feature	Feature CODE: BA030
▪ Water (except inland)	Area Feature	Feature CODE: BA040
▪ Shoreline Construction	Line Feature	Feature CODE: BB081
▪ Aqueduct	Line Feature	Feature CODE: BH010
▪ Lake / Pond	Area Feature	Feature CODE: BH080
▪ Reservoir	Area Feature	Feature CODE: BH130
▪ Spring / Water Hole	Point Feature	Feature CODE: BH170
▪ Waterfall	Point Feature	Feature CODE: BH180
▪ Waterfall	Line Feature	Feature CODE: BH180
▪ Watercourse	Area Feature	Feature CODE: BH502
▪ Watercourse	Line Feature	Feature CODE: BH502
▪ Dam / Weir	Point Feature	Feature CODE: BI020
▪ Dam / Weir	Line Feature	Feature CODE: BI020
▪ Lock	Point Feature	Feature CODE: BI030
▪ Lock	Line Feature	Feature CODE: BI030
▪ Glacier	Area Feature	Feature CODE: BJ030
▪ Snow Field / Ice Field	Area Feature	Feature CODE: BJ100

- |                           |              |                     |
|---------------------------|--------------|---------------------|
| ▪ Wetland                 | Area Feature | Feature CODE: ED010 |
| ▪ Administrative Boundary | Line Feature | Feature CODE: FA000 |
| ▪ Administrative Area     | Area Feature | Feature CODE: FA001 |

The Settlement theme holds the following features:

- |                           |               |                     |
|---------------------------|---------------|---------------------|
| ▪ Built-up Area           | Area Feature  | Feature CODE: AL020 |
| ▪ Built-up Area           | Point Feature | Feature CODE: AL020 |
| ▪ Populated Place         | Point Feature | Feature CODE: AL022 |
| ▪ Named Location          | Point Feature | Feature CODE: ZD040 |
| ▪ Administrative Boundary | Line Feature  | Feature CODE: FA000 |
| ▪ Administrative Area     | Area Feature  | Feature CODE: FA001 |

### Cartographic projection

EuroRegionalMap is available in decimal degree (ETRS89-WGS84) but can be projected into the Lambert projection (conformal conic) ETRS-LCC, suitable for the whole of Europe.

### Product delivery formats:

The Full Europe and the European regions (the complete set or by theme) can be provided as following:

- as a seamless coverage into one dataset using ArcGIS File Geodatabase (ArcGIS v9.2)
- partitioned into MinU datasets using ArcGIS File Geodatabase (9.2), Personal Geodatabase (9.2) or ArcInfo Shape files

Diverse formats might be available from VARs and distributors.

### Metadata

Discovery metadata are provided in Excel format, compliant with the ISO 19115 profile. There is a discovery metadata file documenting the entire dataset and a discovery metadata customised by Minimum Unit Dataset, which specifies at national level the data quality and the production process (source, producer organisation, date of production, reference date of data, accuracy, completeness, and consistency). This discovery metadata delivered by Minimum Unit Dataset is completed by a *lineage.doc* file describing the level of compliancy with the EuroRegionalMap specifications, any specificity coming from national criteria, the feature and attribute completeness described by feature classes, the reference dates by themes or feature classes.

**Distribution media:** DVD, CD-ROM.

## File Naming convention

### Dataset

The naming convention for a dataset will be structured as following:

Dataset description	Dataset name
Complete set covering Full Europe in File GDB	ERM_Data .gdb
Complete set covering Northern Europe in File GDB	NorthEur_ERM_Data.gdb
Complete set covering Western Europe in File GDB	WestEur_ERM_Data .gdb
Complete set covering Central Europe in File GDB	CenEur_ERM_Data .gdb
Complete set covering Eastern Europe in File GDB	EastEur_ERM_Data .gdb
Complete set covering Southern Europe in File GDB	SouthEur_Data_File.gdb
Transport theme covering full Europe in File GDB	ERM_Data_TRANS.gdb
Hydro theme covering full Europe in File GDB	ERM_Data_HYDRO.gdb
Settlement theme covering full Europe in File GDB	ERM_Data_POP.gdb
Complete set covering a MinU dataset in File/Personal GDB	AT_ERM_Data.gdb/mdb (AT: UN country code for Austria)
Complete set covering a MinU dataset in Shapefiles	AT_shape/ (directory holding the shapefiles)

### Metadata

The naming convention for the discovery metadata and the lineage.doc files are:

- <Country Codes>\_ERM\_Metadata.xls, e.g. *AT\_ERM\_Metadata.xls*
- <Country Codes>\_Lineage.doc, e.g. *AT\_Lineage.doc*
- <Country Codes>\_Lineage.xls, e.g. *AT\_Lineage.xls*
- <Country Codes>\_Lineage\_<Layer>.doc, e.g. *AT\_Lineage\_Hydro.doc*
- <Country Codes>\_Lineage\_<Layer>.xls, e.g. *AT\_Lineage\_Hydro.xls*

## Data Structure in Geodatabase

### Data Model

The ERM Geodatabase model has gathered all the feature classes into a unique dataset. Themes are not defined. The feature classes are defined as GDB simple feature class: area, line, point. The feature classes hold and define the attribute fields. The features are defined as a subtype of the feature class. Coded value domains have also been defined for attributes at the subtype level.

For example:

The PHYSL feature class holds two features: the Bluff/Cliff/Escarpment (DB010) and the Embankment/Fill (DB090) Those two features share the same list of attributes, which are the PFH, USE and VRR attribute but with different values attributed to each of them.

<b>Bluff / Cliff / Escarpment</b>			<b>DB010</b>
<i>Definition:</i> A steep, vertical or overhanging face of rock or earth.			
<i>Feature class:</i> PHYSL			
<i>Feature type:</i> Line			
<i>Primitive type:</i> Edge			
<i>Portrayal criteria:</i> Length ≥ 1600 meters and Height ≥ 50 m			
<i>Attributes:</i>			
PFH	Predominant Feature Height	<i>Data type:</i> Short integer <i>Measurement unit:</i> decimetre <i>Domain:</i> Actual value -32768 Null / no value	
USE	Usage	<i>Data type:</i> Short integer <i>Domain:</i> Coded value -32768 Null / no value	
VRR	Vertical Reference Category	<i>Data type:</i> Short integer <i>Domain:</i> Coded value -32768 Null / no value	
<b>Embankment / Fill</b>			<b>DB090</b>
<i>Definition:</i> A raised long mound of earth or other material.			
<i>Feature class:</i> PHYSL			
<i>Feature type:</i> Line			
<i>Primitive type:</i> Edge			
<i>Portrayal criteria:</i> Length ≥ 1600 meters and Height ≥ 3 meters			
<i>Attributes:</i>			
PFH	Predominant Feature Height	<i>Data type:</i> Short integer <i>Measurement unit:</i> decimetre <i>Domain:</i> Actual value -29999 Unknown -29997 Unpopulated	
USE	Usage	<i>Data type:</i> Short integer <i>Domain:</i> Coded value 0 Unknown 69 Levee / dike 127 As a causeway 136 As a fill 997 Unpopulated	
VRR	Vertical Reference Category	<i>Data type:</i> Short integer <i>Domain:</i> Coded value 0 Unknown 1 Above surface / does not cover (at high water) 8 Covers and uncovers 997 Unpopulated	

Figure 1: Extract from the Specifications and Data catalogue

The translation into the Geodatabase data model is the following:

The PHYSL feature class is modelled as a simple line feature class defining the list of attributes including F\_CODE, PFH, USE and VRR. The two features are modelled as subtypes. The attribute values specific to each feature are defined in a coded value domain. In this way, e.g. the VRR attribute values are respectively defined in the PHYSL\_VRR domain for the Embankment/Fill and in the EuroRegionalMap\_Null domain for the Bluff/Cliff/Escarpment (Figure2).

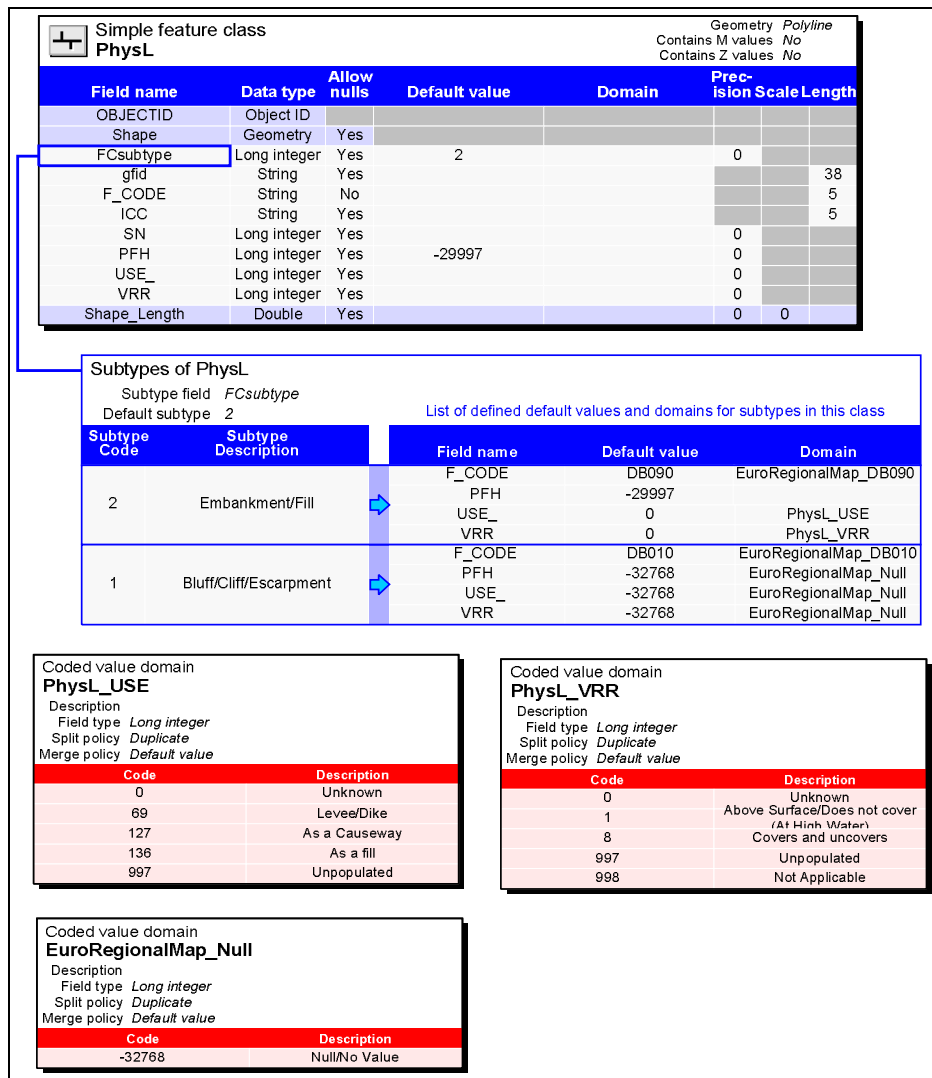
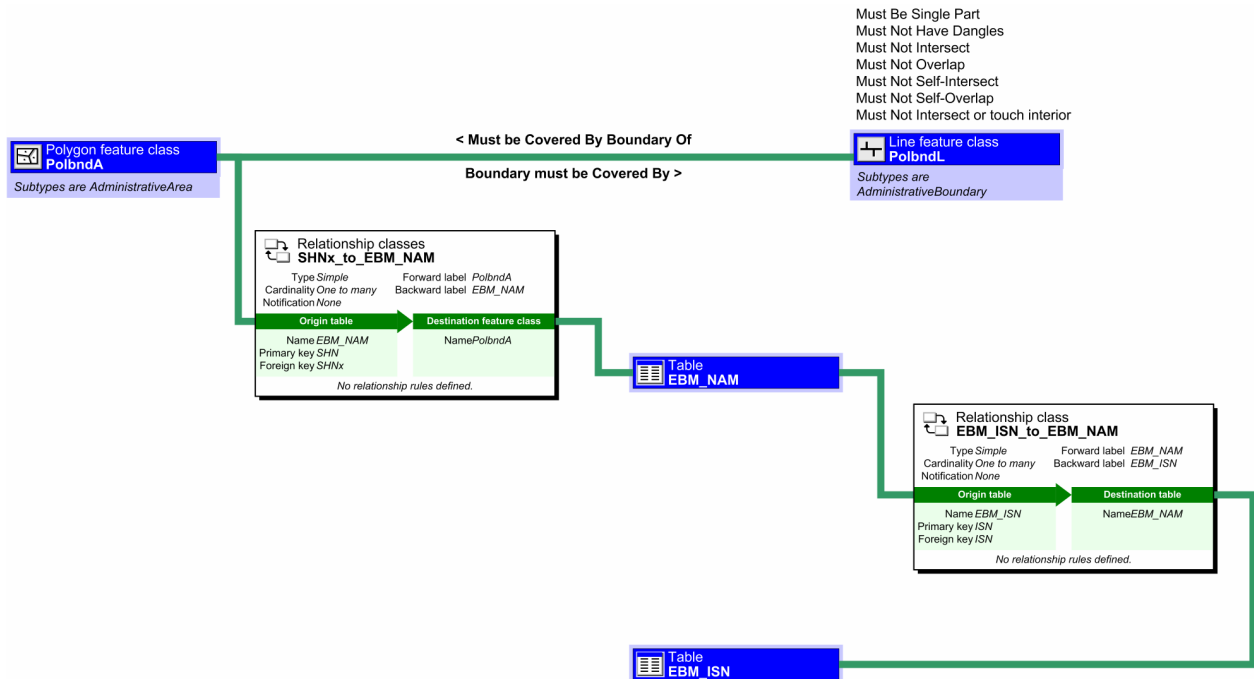


Figure 2 Geodatabase modelling for PHYSL feature class

## Topology rules and relationships

The related tables like EBM\_NAM or EBM\_ISN have been added and their relationship classes have also been predefined.



Topology rules have been set up in the Geodatabase data model and are restricted to a basic topology related to the planar graph topology (arc-node). The topology rules are applied inside each feature class (from a feature class to the same feature class).

In that way,

Line feature classes have systematically the following topology rules:

- Must not Self-Overlap
- Must Not Self-Intersect
- Must Not Overlap
- Must not Intersect

Area feature classes have:

- Must not overlap

Point feature considered as connected nodes have:

- Must be covered by endpoint of

## Shapefile data structure

Shape files are converted from geodatabases. Each feature class is saved to a separate shape file, e.g. "AirfldP.shp", see the table below:

Themes	Feature class name	Feature class type	Feature codes	Shape File Name	
BND	POLBND	Area	FA001	POLBND.SHP	
	POLBNDL	Line	FA000	POLBNDL.SHP	
HYDRO	AQUEDCTL	Line	BH010	AQUEDCTL.SHP	
	COASTA	Area	BA020	COASTA.SHP	
	COASTL	Line	BA010,XX500	COASTL.SHP	
	DAML	Line	BI020, BI030	DAML.SHP	
	DAMC	Point	BI020, BI030	DAMC.SHP	
	LAKERESA	Area	BH080, BH130	LAKERESA.SHP	
	LANDICEA	Area	BJ030,BJ100	LANDICEA.SHP	
	ISLANDA	Area	BA030	ISLANDA.SHP	
	SEAA	Area	BA040	SEAA.SHP	
	SEASTRTL	Line	BB081	SEASTRTL.SHP	
	SPRINGP	Point	BH170	SPRINGP.SHP	
	SPRINGC	Point	BH170	SPRINGC.SHP	
	SWAMPA	Area	ED010	SWAMPA.SHP	
	RAPIDSL	Line	BH180	RAPIDSL.SHP	
	RAPIDSC	Point	BH180	RAPIDSC.SHP	
	WATRCR	WATRCRSA	Area	BH502	WATRCRSA.SHP
		WATRCRSL	Line	BH502	WATRCRSL.SHP
WELLP		Point	AA050	WELLP.SHP	
NAME		GNAMET	Text	ZD040	GNAMETP.SHP
	GNAMEL	Line	ZD040	GNAMEL.SHP	
MISC	BUILD	Point	AL015	BUILD.SHP	
	CTOWERP	Point	AT080	CTOWERP.SHP	
	EXTRACTP	Point	AA010	EXTRACTP.SHP	
	INDPRODL	Line	AQ113	INDPRODL.SHP	
	INDPRODP	Point	AB000, AC000, AQ116	INDPRODP.SHP	
	LANDMRKP	Point	AH050, AK030, AK130, AK160, AL130, AL200	LANDMRKP.SHP	
	PARKA	Area	FA080, FA081	PARKA.SHP	
	PHYSL	Line	DB010, DB090	PHYSL.SHP	
	PHYSP	Point	DB030	PHYSP.SHP	
	POWERL	Line	AT030	POWERL.SHP	
POWERP	Point	AD010	POWERP.SHP		
TOWERP	Point	AL240	TOWERP.SHP		
POP	BUILTUPA	Area	AL020	BUILTUPA.SHP	
	BUILTUPP	Point	AL020, AL022	BUILTUPP.SHP	
	URBANP	Point	ZD040	URBANP.SHP	
TRANS	AIRFLDA	Area	GB005	AIRFLDA.SHP	
	AIRFLDP	Point	GB005	AIRFLDP.SHP	
	EXITC	Point	AQ090	EXITC.SHP	
	FERRYL	Line	AQ070	FERRYL.SHP	
	FERRYC	Point	AQ080	FERRYC.SHP	
	HARBORA	Area	BB190	HARBORA.SHP	
	HARBORL	Line	BB190	HARBORL.SHP	
	HELIP	Point	GB035	HELIP.SHP	
	INTERCC	Point	AP020	INTERCC.SHP	
	LEVELCC	Point	AQ062, AQ063	LEVELCC.SHP	

	MISAEROP	Point	AQ060	MISAEROP.SHP
	RAILRDL	Line	AN010	RAILRDL.SHP
	RAILRDC	Point	AQ125	RAILRDC.SHP
	RESTC	Point	AQ135	RESTC.SHP
	ROADL	Line	AP030	ROADL.SHP
	RUNWAYL	Line	GB055	RUNWAYL.SHP
VEG	SOILA	Area	DA010	SOILA.SHP
	VEGA	Area	EC050, EA015, EA045	VEGA.SHP

**Related tables**

EBM_NAM	EBM_NAM.DBF
EBM_ISN	EBM_ISN.DBF
SYMBOL_RAT	SYMBOL_RAT.DBF
ERM_CHR	ERM_CHR.DBF
Ferry_Link	Ferry_Link.DBF
FERRY_LINES	FERRY_LINES.DBF

**Note:** As the shapefile format cannot store annotation/text, the GNameT feature class is converted into point before or while exporting to the shapefile format.

## Using ERM

### What you need to use ERM

#### Hardware

ERM can be used with any computer platform from a PC to a mainframe. There are no specific hardware requirements for managing ERM data.

#### Software

ERM is a dataset and is delivered without a user interface for displaying or analysing it. Whatever you want to do with the data, you need to have appropriate software.

ERM can be used directly with the ESRI ArcGIS system and may also be imported into other GIS software packages.

#### The Spatial reference

Geodetic Datum: ETRS89

Vertical Datum: EVRS

Coordinate System: Lat/Lon in DD

Absolute horizontal accuracy: 125m

Horizontal geometric resolution: equivalent precision of 5 meters or 0.2 in arc-seconds or 0.00005 in decimal degrees.

Coordinate accuracy: ArcGIS Personal Geodatabase and Shape files; 9 significant digits e.g. 61.0000001 dd.

Geographic Coordinate System: ETRS89

- Datum: D\_ETRS\_1989
- Spheroid: GRS\_180
- Semi major Axis: 6378137
- Semi minor Axis: 6356752.3141403561

Note: In practice it is considered WGS84 = ETRF89 = ETRS89 = GRS80.

Cartographic Projection: ETRS-LCC (Lambert Conformal Conic ETRS89), units in meter

- False\_Easting: 4000000.000000
- False\_Northing: 2800000.000000
- Central\_Meridian: 10.000000
- Standard\_Parallel\_1: 35.000000
- Standard\_Parallel\_2: 65.000000
- Latitude\_Of\_Origin: 52.000000



## Annex B : Copyright statements

ERM data copyright is held by European National Mapping Agencies:

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