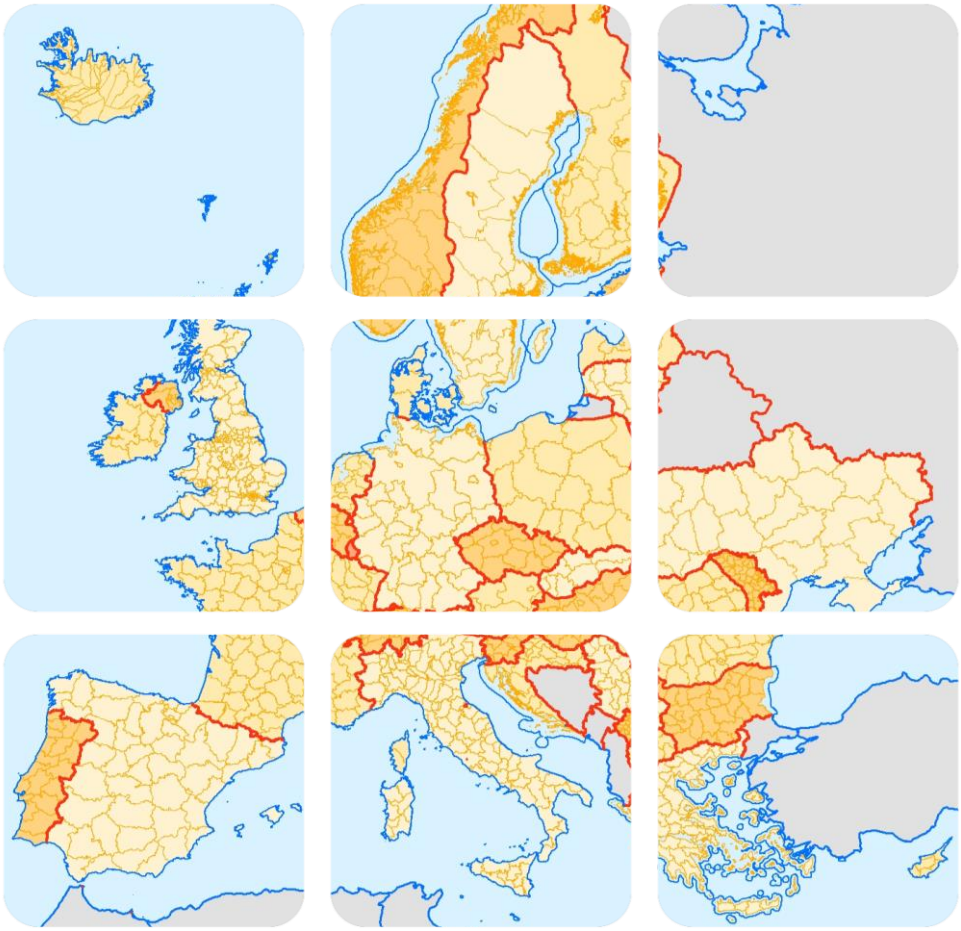
EuroGeographics

EuroBoundaryMap
Data product specification
Refers to production of v11 product



Change history

Version	*Date*	*Changes by*
3.1	12/2009	Derived from *EuroBoundaryMap_v30_Specification* and improved according to ISO 19131 by IN
4.0	01/2010	Creation of final version *EuroBoundaryMap_v40_Specification* after updating and reviewing of *EuroBoundaryMap_v31_Specification* by IN
4.1	03/2010	Update of the specification referring to the data request to EBM producers (NMCAs)
5.0	12/2010	Creation of final version *EuroBoundaryMap_v50_Specification* after updating and reviewing of *EuroBoundayMap_v4.1_Specification* by MB and IN
5.1	04/2011	Creation of *EBM_v60_Specification* for data production after updating and reviewing of *EuroBoundayMap_v5.0_Specification* by MB and IN
6.0	12/2011	General revision (especially chapter 5) and creation of final version *EBM_v60_Specification* by MB
6.1	03/2012	Creation of *EBM_v70_Specification* for data production after updating and reviewing of *EuroBoundayMap_v6.0_Specification* by MB
7.0	12/2012	General revision and creation of final version *EBM_v70_Specification* by MB and IN
7.1	03/2013	Creation of *EBM_v80_Specification* for data production after updating and reviewing of *EuroBoundayMap_v7.0_Specification* by MB
8.0	12/2013	Creation of final version *EuroBoundayMap_v8.0_Specification* by MB
9.0a	03/2014	Creation of *EBM_v90_Specification* for data production after updating and reviewing of *EuroBoundayMap_v8.0_Specification* by MB
9.1	12/2014	Creation of final version *EBM_v9.1_Specification* by MB
10	03/2015	Creation of *EBM_v10_Specification* for data production after updating and reviewing of *EuroBoundayMap_v9.1_Specification* by MB
10	11/2015	Creation of final version *EBM_v10_Specification* by MB
11	02/2016	Creation of *EBM_v11_Specification* for data production by MB
11	01/2017	Creation of final version EBM_v11_Specification by JSP

Contents

1 Scope

This document defines the content and structure of EuroGeographics reference data base of administrative and statistical units and regions covering Europe. The product defined is referred to as EuroBoundaryMap. It is a seamless and harmonised dataset continuously maintained by the National Mapping and Cadastral Agencies, members of EuroGeographics.

2 Overview

2.1 Name and acronyms

The name of the specified product (version) is EuroBoundaryMap v11 (EBM v11).

2.2 Information about the creation of the specification

This document has been designed according to ISO 19131 to provide all information needed to use the EuroBoundaryMap product.

Document title:	EBM_v11_Specification
Topic category:	003 – boundaries (Administrative regions, vector data)
Reference date:	2017-01-13
Responsible party:	EuroGeographics, BKG, Germany
Language:	English
Distribution format:	PDF

The document has been checked before issuing it, and every effort has been made to ensure that the contents are accurate. If you find an error, omission, or have a suggestion about how it can be improved, please contact EuroGeographics at the address shown below.

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2.3 Normative references

The following standards and specifications form a part of this document or have served as a reference for concepts defined in the EBM specification:

- ISO 19115: Geographic Information – Metadata
- ISO 19131: Geographic Information – Data product specifications
- ISO 19157: Geographic Information – Data quality
- ISO 3166, Codes for the Representation of Names of Countries
- ISO 639-2/B 3 character Language Code
- INSPIRE Data Specifications, especially D2.8.I.4 INSPIRE Data Specification on *Administrative units* – Guidelines v3.1
- EuroGeographics data product specifications, especially D41 EuroRegionalMap Specification and Data Catalogue

2.4 Terms and definitions

Terms and definitions necessary for understanding this document are defined in ISO 19131, Geographic Information – Data product specifications.

2.5 Abbreviations

BKG	Bundesamt für Kartographie und Geodäsie (Germany)
EuroGeographics	Association representing nearly all European National Mapping and Cadastral Agencies (NMCAs)
Eurostat	Statistical Office of the European Communities
GISCO	Geographic Information System of the European Commission
EBM	EuroBoundaryMap (product of EuroGeographics)
EC	European Commission
EU	European Union
LAU	Local Administrative Unit
NMCA	National Mapping and Cadastral Agencies
NUTS	Nomenclature of Territorial Units for Statistics
SHN	Strictly hierarchical built codes (defined by BKG/EuroGeographics) being European-wide unique identifiers for administrative units
UNCLOS	United Nations Convention on the Law of the Sea (10 December 1982)

2.6 Informal description of the data product

2.6.1 Content and purpose

EuroBoundaryMap is the European reference database of administrative units and boundaries established within the framework of **EuroGeographics**. The dataset is compiled from data supplied by European **National Mapping and Cadastral Agencies (NMCAs)** and harmonized by means of a uniform specification developed and continuously improved according to user needs by **Bundesamt für Kartographie und Geodäsie (BKG)**.

The present EuroBoundaryMap product contains the administrative units of all national administrative levels, their names and unique codes of 43 European states according to the administrative situation as it was on **1 January 2016** for an application scale of 1:100 000. The database includes relations between the European-wide unique identifiers (SHN) of administrative units on the lowest level for all 28 EU countries and their corresponding statistical codes (LAU2/LAU1) as defined by the National Statistical Institutes and also to the corresponding codes of the territorial units for statistics (NUTS) as defined in the framework of the following regulation maintained and published by Eurostat:

- Commission Regulation (EU) No 1319/2013 on NUTS codes, released on 9 December 2013 → referred to as **NUTS 2013**
- Commission Regulation (EU) No 868/2014 on NUTS codes, released on 8 August 2014 → This regulation contains new NUTS codes for Portugal. Apart from that, it's identical with No 1319/2013 (NUTS 2013).

Therefore EuroBoundaryMap makes it possible to connect detailed and up-to-date data of administrative regions to European thematic/statistical information.

The product **EBM v11** is a full update of all countries. Different product types (seamless FullEurope, specific regions) are deliverable as ESRI Geodatabase or Shapefiles. Names of administrative units and levels are stored with Unicode character set as well as standard ASCII. Considering the user requirements, it can also be distinguished between land and water parts of administrative units within EuroBoundaryMap.

Territorial sea areas are included for a number of countries as an optional feature. This comprises territorial waters assigned to administrative units on lowest national level as well as territorial waters, which are directly administered by the national government. The definition of the territorial sea strictly follows the United Nations Convention on the Law of the Sea. All territorial sea areas are attributed as coastal waters. Refer to section 5.2.5 for further details.

This new update represents a market oriented and user specific enhancement of the EuroBoundaryMap product and supports the interoperability between the EuroBoundaryMap product and various applications based on LAU and NUTS codes, which was a strong requirement of many customers.

2.6.2 Spatial and temporal extent

EuroBoundaryMap is the reference data of administrative and statistical regions at scale 1:100 000, that covers Europe and refers to the administrative situation as it was in each country on **1 January 2016** (reference date).

2.6.3 Data sources and maintenance

The source data, delivered by National Mapping and Cadastre Agencies, Members of EuroGeographics are of best available geometric and semantic quality produced according to the national specifications and quality control processes. Data required by EuroGeographics for maintenance of EuroBoundaryMap product are mainly derived from the national sources, and processed by the NMCAs to meet the specifications set up for the EBM product. EuroGeographics has made every effort to ensure that data supplied are free from errors and omissions.

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3 Specification scopes

3.1 Coverage and extent

EuroBoundaryMap provides a European geographic database for administrative and statistical regions for applications at 1:100 000 scale. This reference dataset covers Europe, is seamless and harmonized and continuously maintained by National Mapping and Cadastral Agencies of Europe. The data base includes:

- Geometry of all European administrative units from most detailed local level to the country level
- Names (Unicode-UTF8, ASCII versions and transliterations) and unique codes of all European administrative units on each national level based on the national nomenclatures and representing the national administrative hierarchy
- Names and unique codes for all administrative levels of Europe and the relation between them
- Linkage to corresponding LAU- and NUTS-codes for all local administrative units of the 28 EU countries
- Geometry, names and codes of each national administrative level and the derived national statistical regions for the 28 EU countries
- Attributes allowing to distinguish between land and water parts of administrative units

The definition of administrative boundaries with regards to sea and inland waters differs from country to country. In some countries the administrative areas extend into the sea. In some cases the sea boundary is not defined or is defined to a different precision than the other administrative boundaries. The TAA (type of administrative area) attribute has been introduced to enable the users to distinguish between and select water and land parts of administrative units.

EuroBoundaryMap reference data is delivered as individual country files as well as a seamless and consistent full Europe database. The term consistent refers to the contents, to the structure, to geo-referencing, and time referencing of the data. The term seamless means that there are no gaps or overlaps between polygons initially derived from different sources.

3.2 Level description

The hierarchy level (MD_ScopeCode) of EuroBoundaryMap product is 005 (see B.5.2.5 of ISO 19115 and EuroBoundaryMap v11 Metadata). Metadata is provided for the EBM v11 full Europe product as well as for each national contribution.

4 Data product identification

4.1 Title and purpose

The title of the specified data product (version) is EuroBoundaryMap v11 (EBM v11).

EuroBoundaryMap provides a European geographic database for administrative and statistical regions that will be maintained at the source level by the National Mapping and Cadastral Agencies (NMCAs). EuroGeographics provides harmonized access conditions for this geographic information within the framework of EuroGeographics. EBM (1:100 000) offers the combined strength of detailed European administrative units and the linkage to corresponding LAU- and NUTS-codes.

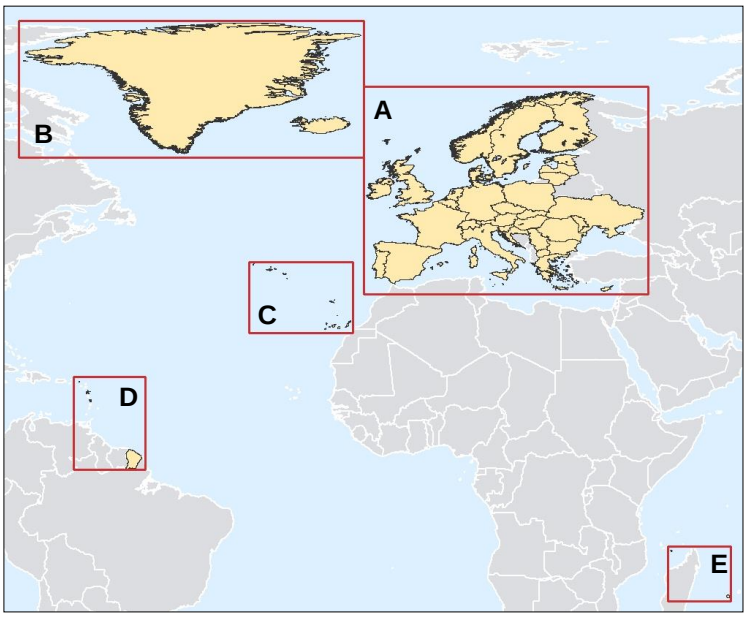
Especially this connection to the NUTS codes and to the national (statistical) LAU1- and LAU2-codes for every individual administrative unit at local level is a market oriented and user specific enhancement of EuroBoundaryMap. The EuroBoundaryMap reference data is strong in applications like referencing statistical cross border data, linking (geo-) marketing and market analysis, asset management, geo-referencing demographic analysis, thematic planning and many others.

The main benefits are:

- Sources are official, updated national administrative data
- Seamless database with GIS ready geometry
- Unique data model implemented for all countries
- Linkage to the NUTS codes as published and maintained by Eurostat
- Metadata available for all national contributions
- Maintenance and technical support assured
- Single licensing framework for 43 incorporated countries

4.2 Geographic description

EBM covers all 28 EU countries, 3 EU candidate countries, all 4 EFTA countries and 8 other European countries. The geographic extent of EuroBoundaryMap v11 can be split into five geographic bounding boxes:



A – Core Europe (see figure below)

B – Iceland, Greenland (part of Denmark)

C – Canary Islands (part of Spain), Azores and Madeira (part of Portugal)

D – French overseas territories: Guadeloupe, French Guiana, Martinique, Saint-Barthélemy, Saint-Martin

E – French overseas territories: Reunion, Mayotte

Figure 1 – Geographic extent of EBM (overview)

Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark (including Faroe Islands), Estonia, Finland, France (including Monaco), Germany, Great Britain, Greece, Hungary, Ireland, Italy (including San Marino and Vatican), Kosovo, Latvia, Lithuania, Luxembourg, Malta, Moldova, The Former Yugoslav Republic Of Macedonia, The Netherlands, Northern Ireland, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain (including Andorra and Gibraltar), Sweden, Switzerland (including Liechtenstein), Ukraine.

The extent of some countries includes the territorial sea areas (displayed dark blue in the figure).

Figure 2 – Geographic extent of EBM (core Europe)

Like in EBM v10 two country dataset were included in EBM v11:

- Albania,
- Bosnia and Herzegovina: This country consists of two entities. The dataset from the Federacija Bosne i Hercegovine, as one of the entities, is ready and compliant with the EBM specification.

For both countries, it was not possible to clarify the integration into the full Europe seamless database. The presentation of the international boundaries with the neighbouring countries is still an open issue and will be clarified as soon as possible.

Additionally, EBM v11 includes placeholders for potential EBM countries and territories: Montenegro, Belarus, Russian Federation, Georgia, Turkey, Isle of Man, Jersey and Guernsey. The outlines of these countries and territories have been adopted from freely available small scale data.

4.3 Spatial resolution

The EuroBoundaryMap v11 product provides the geometry, names and codes for each administrative unit of all national administrative hierarchies in Europe, i.e. data from the most detailed local to the country level.

For processing of the data the following tolerances were applied:

- Minimum distance separating all nodes and vertices of all lines (weed and fuzzy tolerance) is 5 meters. Coordinates of nodes or vertices within 5 m are considered equal.
- Minimum length of linear features is 30 meters.
- Minimum size of polygon features is in general 4 ha. Exceptions are allowed:
  - For administrative units, where the main area is smaller 4 ha,
  - For small islands or exclaves which are of major importance for the national territory.

5 Data content and structure

5.1 Basic notions

5.1.1 Terminology

The terminology used for EBM has been established over the lifetime of the EBM product. It is based on the conventions of geographic information systems. The following table lists a number of common synonyms and alias covering also the INSPIRE stereotypes.

Type	Description	Alias
Feature	Geographic entity related in some way to the Earth's surface.	object
Geometry type	Features may be either of Point, Line or Area type.	feature class type, area - polygon
Single part / multipart	Single part features consist of only one geometrical primitive. Multipart features are a collection of geometrical primitives of unique geometry type (either Area or Line).	
Feature class	Set of features with the same definition. All features share a homogeneous set of attributes.	featureType, data layer
Related table	Structured list of non-spatial information related to features. Related tables may contain additional attributive information or information to define relationships.	dataType, tabular data
Domain	List of legal values of an attribute.	codeList, enumeration
Relationship	Relationships define the associations between objects in one class (feature class or related table) and objects in another based on identifiers.	association, relation
Feature Dataset	Collection of feature classes.	thematic layer, package

5.1.2 Core feature attribution

Each feature class will be composed of a two basic attributes defined by INSPIRE:

Attribute: **inspireId**		
Definition:	External identifier of the spatial object	
Description:	An external object identifier is a unique object identifier published by the responsible body, which may be used by external applications to reference the spatial object. The identifier is an identifier of the spatial object, not an identifier of the real-world phenomenon.	
Value type:	Identifier (text, 80 characters)	
Value example:	_EG.EBM:AU3.EE670213	Identifier of an Estonian object in feature class *AdministrativeUnit_3*
Attribute: **beginLifespanVersion**		
Definition:	Date at which this version of the spatial object was inserted or changed in the spatial data set	
Value type:	Date	
Value example:	20.03.2013	Date at which an object was inserted in a feature class.

The INSPIRE attribute *endLifespanVersion* is not used, because EBM doesn't contain outdated objects.

Each feature class and related table contains the following basic EBM attribute:

Attribute: **ICC**		
Definition:	Two-character country code according to ISO 3166	
Description:	Country code of the country on which's territory the feature is located. Area features: In dispute areas claimed by two countries store the country code of both neighbouring countries in alphabetical order delimited by #. Line features: International boundaries store the country code of both neighbouring countries in alphabetical order delimited by #. Table EBM_CHR: Codes of those countries where the language is used in alphabetical order delimited by #.	
Value type:	Domain: ICC	
Value examples:	FI	Finland
	HR#RS	In dispute area claimed by Croatia and Serbia
	FI#SE	International boundary between Finland and Sweden

5.1.3 Missing attribute values

If feature attributes are not present in the dataset, but may be present or applicable in the real world, the attribute shall receive one of the following void characteristics:

- **Unknown –** This value is used when it is not possible to determine the value of an attribute for an object. Objects with missing attribute information have value 'Unknown' and other objects have actual values or classification code values to indicate the classification. 'Unknown' is used normally for a single attribute value of individual objects in a layer.
- **Unpopulated –** This value is used when this attribute information exists but the data producer doesn't have this attribute information and has left the attribute field empty. Value 'Unpopulated' indicates an empty attribute field for the whole class (feature class or related table) or a significant subset.
- **Not applicable –** This value is used in the case when the attribute is defined to be used for a certain feature but there are objects for which the attribute values do not apply. For example: if the geographical name of an administrative unit is unknown, then a transliteration to ASCII and the language code is not applicable.

Depending on the attribute type, the following attribute values are used for describing missing attribution:

Attribute type	**Unknown**	**Unpopulated**	**Not applicable**
Text	UNK	N_P	N_A
Integer, coded	0	997	998
Integer, actual value	-29999	-29997	-29998

The Feature Catalogue lists the allowed void characteristics for each attribute.

5.2 Data model

5.2.1 Narrative description

EBM data model includes two main themes (feature datasets): *Administrative Units* and *Statistical Units*. All feature classes within both themes can be derived from the basic geometry stored in feature class *EBM_A*. The administrative areas in *EBM_A* are the basic components on which administrative units of all hierarchical levels, as well as all statistical layers are composed. Administrative areas cover the whole territory of a country and distinguish between land and water parts.

The main feature class of theme *Administrative Units* are *AdministrativeUnit_x* (up to 6 layers) and *AdministrativeBoundary*. *AdministrativeUnit_x* includes core attribution. Detailed attributive information can be joined by the related tables *EBM_NAM* (names of administrative units), *EBM_ISN* (designations of administrative hierarchical levels) and the additional tables *EBM_CHR* and *EBM_coAdministered*. Feature class *ResidenceOfAuthority* contains the administrative centres of all administrative levels.

Theme *Statistical Units* contains territorial units for statistics defined by the National Statistical Institute and Eurostat: feature classes *LAU_x* and *NUTS_x*. The link between the basic geometry in *EBM_A* and the statistical layers is included in table *EBM_NUTS*.

5.2.2 UML model

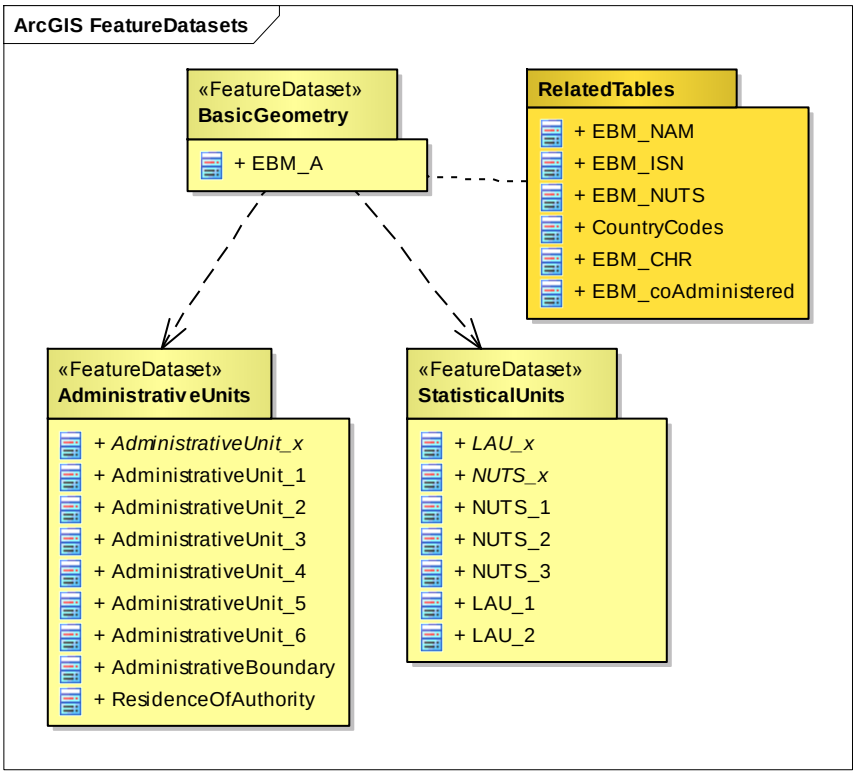


Figure 3 – EBM Feature Datasets (packages)

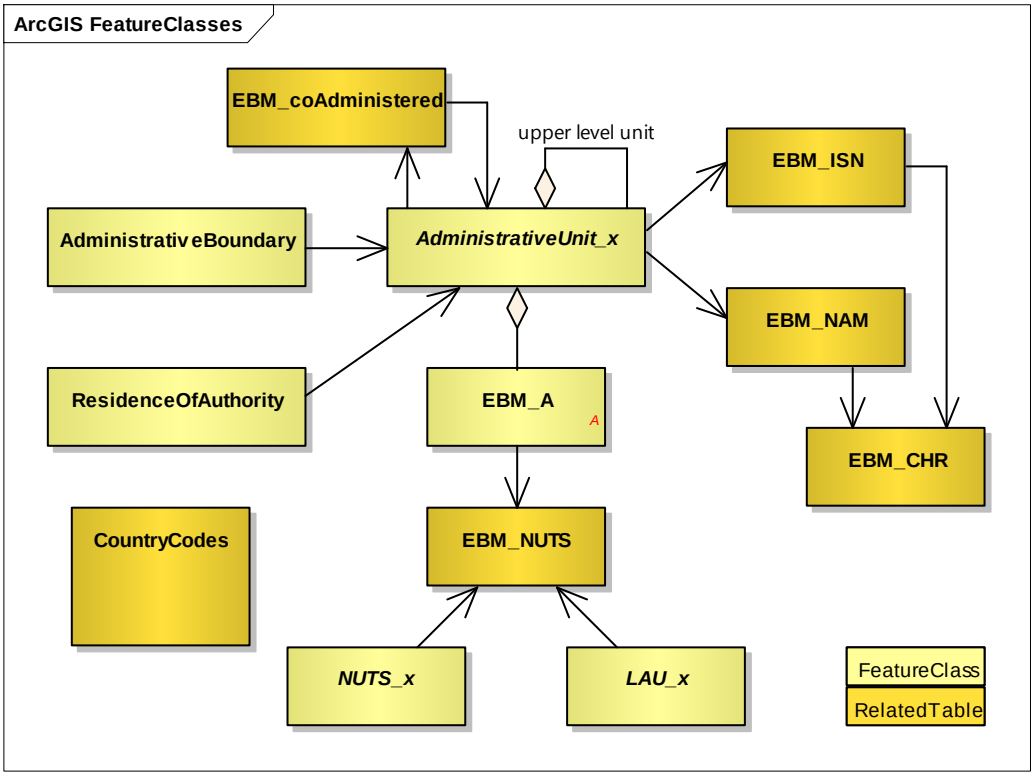


Figure 4 – Overview of the EBM data model

See also Annex C: Detailed EBM data model

5.2.3 INSPIRE compliancy

The feature classes *AdministrativeBoundary*, *AdministrativeUnit_x, ResidenceOfAuthority* and *NUTS_x* are compliant with the INSPIRE data specification on Administrative Units v3.1. The INSPIRE feature type *Condominium* is not relevant for EBM.

The nomenclature used for the EBM attributes is based on the DIGEST FACC (Digital Geographic Information Exchange Standard – Feature Attribute Coding Catalogue). All attribute concepts are matching the INSPIRE concepts.

5.2.4 Differences between administrative units and statistical regions

The Nomenclature of Territorial Units for Statistics (NUTS) was established in the framework of Commission Regulations: No 1319/2013 released on 9 December 2013 **(NUTS 2013)**; No 868/2014 released on 8 August 2014 (amendment Portugal).

A particularly important goal of the regulation is to manage the inevitable process of change in the administrative structures of member states in the smoothest possible way, so as to minimise the impact of such changes on the availability and comparability of regional statistics. The NUTS nomenclature serves as a reference:

- For the collection, development and harmonization of Community regional statistics
- For the socio-economic analyses of the regions
- For the framing of Community regional policies for instance for the purposes of appraisal of eligibility for aid from the Structural Funds

However, not for all EU countries a complete conformance can be found between the NUTS1, NUTS2 and NUTS3 levels and corresponding national administrative hierarchical levels. Often the NUTS classification differs from the national administrative hierarchy, for example Austria:

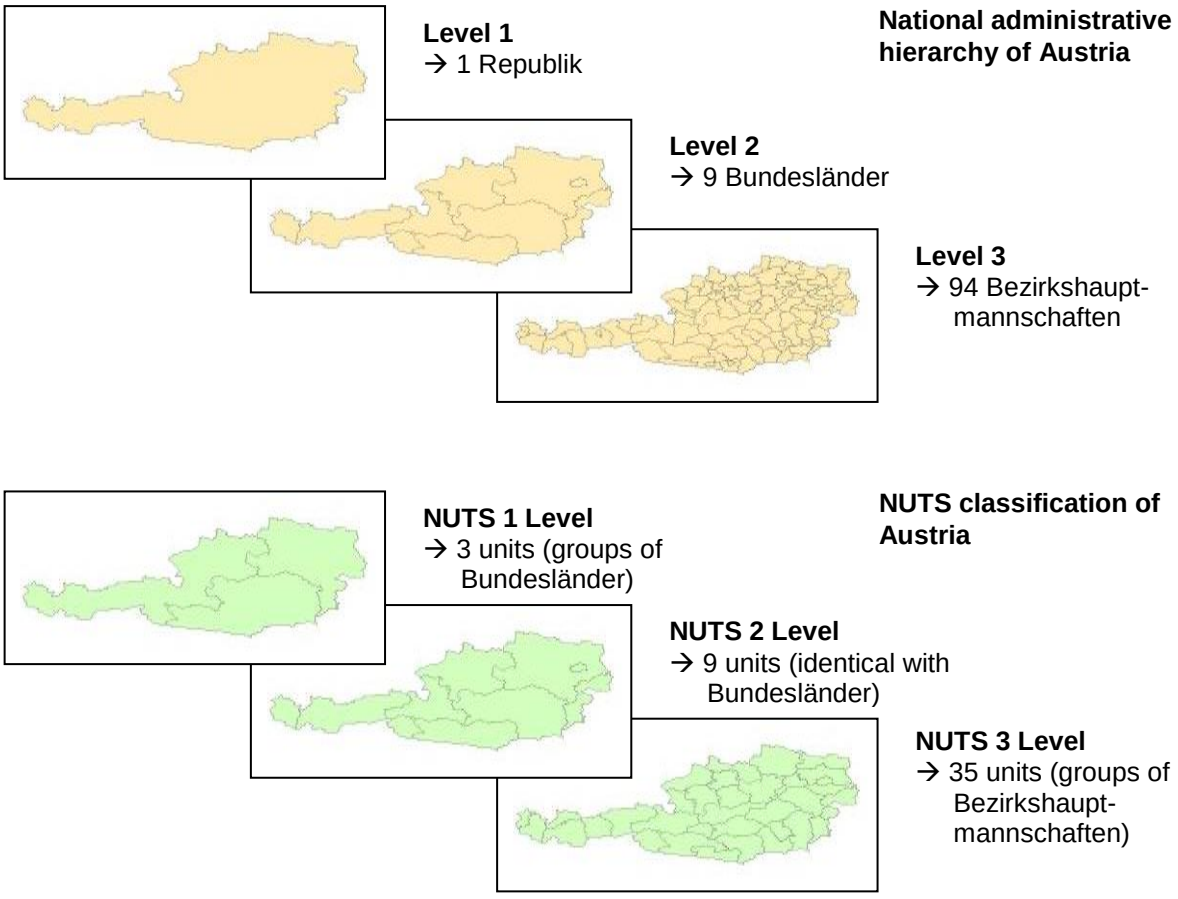


Figure 5 – Differences between administrative units and statistical regions

Local Administrative Units (LAU), the basic national entities for statistics, are defined by the National Statistical Institutes. In general, LAU 2 level refers to the lowest national administrative. For some countries with rather large basic administrative entities (communes or municipalities), LAU2 refers to units below the lowest national administrative, e.g. parishes or electoral divisions.

LAU1 level is defined only for those countries where a comparable administrative level is defined in the national administrative hierarchy.

See: http://ec.europa.eu/eurostat/web/nuts/national-structures-eu

5.2.5 Distinction between land and water areas

The status and administration of coastal water and main inland water bodies varies from country to country. In general, coastal water claimed as national territory can be provided with EBM if it is compliant with the United Nations Convention on the Law of the Sea (UNCLOS). Territorial sea must not exceed 12 nautical miles. There are three options how territorial sea is handled in national EBM contributions:

- A: Territorial sea is split and administered by the administrative units on lowest level which are linked to the sea.
- B: Territorial sea is one area directly administered by the national government.
- C: Territorial sea is not included in EBM.

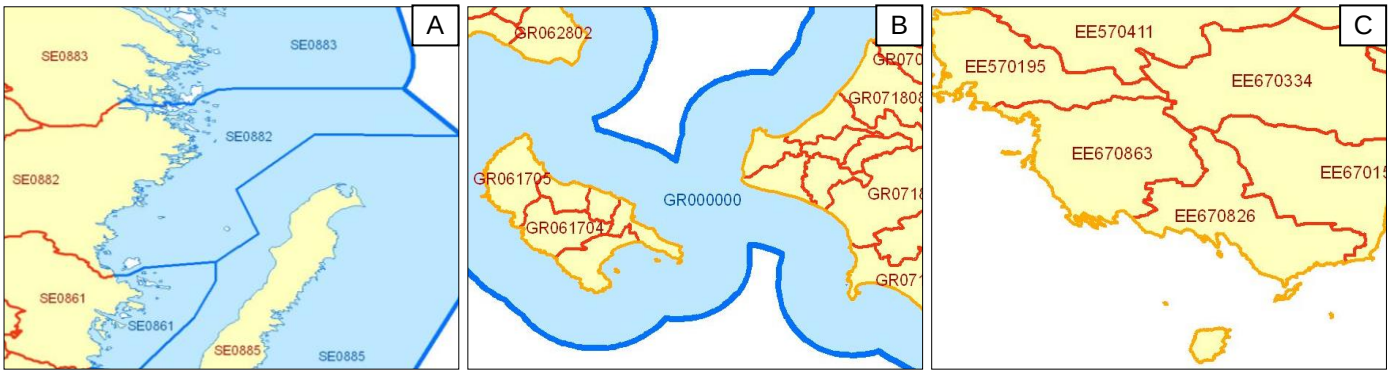


Figure 6 – Different options for territorial sea in EBM

For inland water areas, e.g. lakes and major estuaries, there are two options:

- For all countries where the administrative units are derived from national cadastre, inland water areas are usually not part of the administrative units on lowest level. In this case, lakes are created as units with special status to get a complete national coverage for EBM.
- In most countries, inland water areas are part of the administrative units. In this case, the the administrative units are intersected with shape of the major lakes larger 400 km^2 to distinguish between the land and water part of the administrative units.

Taking into account the variety of national definitions across Europe, all administrative units in EBM are provided with an explicit attribute TAA, allowing the distinction between land and water areas. This approach provides the possibility to meet different user demands:

- For users interested in the core landmass of administrative units → Delete all water areas (TAA=5 or TAA=7).
- For users interested in the landmass of administrative units without coastal water → Delete all coastal water (TAA=5). Merge inland water areas to land areas, for instance by deleting attribute TAA and dissolving all areas.
- For users interested in the real shape of administrative units as defined by the national authorities → Merge all water areas to land areas, for instance by deleting attribute TAA and dissolving all areas.

Statistical units do not include any coastal water areas, as NUTS regions are defined only for the main territory of a country without territorial sea. Major inland water areas are handled similar to the solution for administrative units.

5.3 Feature catalogue

5.3.1 Feature classes

5.3.1.1 Administrative areas

EBM_A			Alias: AdministrativeArea
	Definition:	Area controlled by an administrative authority; basic component of administrative units	
	Description:	Administrative areas are the basic components on which administrative units of all hierarchical levels are composed (see 5.3.1.2). Administrative areas cover the whole territory of a country. For most countries, this feature class is equivalent with the administrative units on lowest level. Each administrative unit on lowest level consists of one main area and occasionally of branch areas. Administrative areas distinguish between land and water parts, see 5.2.5. Minimum size of branch areas and water areas is 4 ha.	
	Geometry type:	Area, single part	
Attribute: **SHN**			
	Definition:	Unique identifier for all European administrative units	
	Description:	The SHN code indicates the administrative unit to which the area belongs. SHN is a strictly hierarchically built identifier for all administrative units on each administrative level. In general, SHN corresponds to the national administrative code. SHN starts with the ISO 3166 country code (ICC). For more information about the national structure of the SHN code refer to Annex A: Country codes and the national metadata (lineage file).	
	Value type:	Identifier (text, 14 characters)	
	Value example:	FI619698	Finnish administrative unit *Rovaniemi*
Attribute: **TAA**			
	Definition:	Type of the administrative area	
	Value type:	Domain: TAA	
	Values:	1	Main area
		3	Branch area
		4	Special area
		5	Coastal water
		7	Inland water
		8	In dispute area

5.3.1.2 Administrative units

AdministrativeUnit_x			x = {1,2,3,4,5,6}
	Definition:	Unit of administration where a national authority has and/or exercises jurisdictional rights, for local, regional and national governance	
	Description:	This feature type comprises administrative units of all national hierarchical levels from lowest level up to country level. The data is stored in up to 6 feature classes, depending on the hierarchical level. Administrative units are composed of administrative areas (see 5.3.1.1). Some lower hierarchical levels may not cover the whole extend of a country, even the lowest national level. The reason is that some parts of a country are not subdivided into all lower hierarchical levels.	
	Geometry type:	Area, multipart	
Attribute: **SHN**			
	Definition:	Unique identifier for all European administrative units	
	Description:	see EBM_A	
	Value type:	Identifier (text, 14 characters)	
	Value example:	FI619698	Finnish administrative unit *Rovaniemi*
Attribute: **ISN**			
	Definition:	Unique structure identifier for all European administrative hierarchical levels	
	Value type:	Identifier (integer)	
	Value example:	4904	Finnish administrative hierarchical level *Kunta / Kommun*
Attribute: **NAMN**			
	Definition:	Geographical (official national) name of the administrative unit given in national characters (Unicode-UTF8)	
	Description:	In case of more than one official language the names are delimited by #, starting with the primary official name.	
	Value type:	Text, 80 characters	
	Value examples:	Яздач	Bulgarian administrative unit
		Turku#Åbo	Finnish administrative unit
		UNK	Unknown
Attribute: **DESN**			
	Definition:	Designation of the national administrative hierarchy level given in national characters (Unicode-UTF8)	
	Description:	In case of more than one official language the designations are delimited by #.	
	Value type:	Text, 80 characters	
	Value examples:	Землище	Bulgarian designation
		Kunta#Kommun	Finnish designation
Attribute: **TAA**			
	Definition:	Type of the administrative area	
	Value type:	Domain: TAA	
	Value example:	2	Land area
		4	Special area
		5	Coastal water
		7	Inland water
		8	In dispute area

5.3.1.3 Administrative boundaries

AdministrativeBoundary			
	Definition:	Line of demarcation between administrative areas	
	Description:	Basically, administrative boundaries are demarcations outlining administrative units. This feature class also includes lines needed to distinguish between land and water areas of an administrative unit (coastlines or shorelines).	
	Geometry type:	Line, multipart	
Attribute: **ABID**			
	Definition:	Unique identifier for all administrative boundaries in EBM	
	Description:	ABID refers to the administrative units demarcated by the boundary. The ABID code is composed of the SHN codes (in alphabetical order) of the neighbouring administrative units on lowest level.	
	Value type:	Identifier (text, 30 characters)	
	Value example:	FI619047#SE2584	Boundary between the lowest level units *Enontekiö* (SHN=FI619047) and *Kiruna* (SHN=SE2584)
		N_A	Not applicable (for MOL=2 or MOL=3)
Attribute: **USE**			
	Definition:	Administrative hierarchy level of the boundary	
	Description:	Upmost hierarchical level of the boundary is given.	
	Value type:	Domain: USE	
	Values:	1	1st order (country level)
		2	2nd order
		3	3rd order
		4	4th order
		5	5th order
		6	6th order
		998	Not applicable (for international demarcations which are not referred to as international boundaries or MOL=2 or MOL=3)
Attribute: **BST**			
	Definition:	Legal status of the administrative boundary (boundary status type)	
	Description:	This attribute is maintained mainly for international boundaries.	
	Value type:	Domain: BST	
	Values:	1	Definite
		2	Indefinite
		3	In dispute
		998	Not applicable (for MOL=2 or MOL=3)
Attribute: **MOL**			
	Definition:	Type of the administrative boundary (meaning of line)	
	Value type:	Domain: MOL	
	Values:	1	Boundary and coastline
		2	Coastline
		3	Fictitious line
		7	Boundary on land
		9	Boundary on water

5.3.1.4 Label points

This feature class is included on request of Eurostat as additional feature for labelling purposes.

EBM_P		Alias: LabelPoints
Definition:	Reference point of an administrative unit on lowest level	
Description:	This feature is meant for labelling purposes. Label points are located within the main area of the administrative units on lowest level.	
Geometry type:	Point	
Attribute: **SHN**		
Definition:	Unique identifier for all European administrative units	
Description:	see EBM_A	
Value type:	Identifier (text, 14 characters)	
Value example:	FI619698	Finnish administrative unit *Rovaniemi*

5.3.1.5 Residence of Authority

ResidenceOfAuthority			
	Definition:	Centre for national or local administration	
	Description:	This feature class contains the administrative centres (administrative seats) of all administrative levels. National capitals are mandatory. Regional and local administrative centres are optional.	
	Geometry type:	Point	
Attribute: **ROA**			
	Definition:	Identifier of the residence of authority	
	Description:	Identifier *PopulatedPlaceID* will be used as defined and maintained by EuroRegionalMap.	
	Value type:	Identifier (text, 38 characters)	
	Value example:	N.FI.BUILTUP.000028	*PopulatedPlaceID* of the Finnish built-up area *Helsinki*
Attribute: **USE**			
	Definition:	Administrative hierarchy level	
	Value type:	Domain: USE	
	Values:	1	1st order (country level)
		2	2nd order
		3	3rd order
		4	4th order
		5	5th order
		6	6th order
Attribute: **NAMN**			
	Definition:	Geographical (official national) name of the residence of authority given in national characters (Unicode-UTF8)	
	Description:	In case of more than one official language the names are delimited by #, starting with the primary official name.	
	Value type:	Text, 80 characters	
	Value example:	Helsinki	Finnish residence of authority
Attribute: **NAMA**			
	Definition:	Geographical name of the residence of authority (NAMN) converted to ASCII characters without diacritical characters.	
	Value type:	Text, 80 characters	
	Value example:	Helsinki	ASCII conversion of the Finnish residence of authority *Helsinki*
Attribute: **NLN**			
	Definition:	ISO 639-2/B 3-char language code of the geographical name (NAMN)	
	Description:	In case of more than one official language the codes are delimited by #.	
	Value type:	Domain: NLN	
	Value example:	FIN	Finnish

5.3.1.6 NUTS regions

NUTS_x			x = {1,2,3}
	Definition:	Territorial unit for statistics defined in the framework of the Regulation (EU) No 31/2011 of the European Parliament and of the Council of 17 January 2011	
	Description:	NUTS regions are defined and published by Eurostat. The NUTS Regulation has been set up for EU countries, but it covers also EU candidate countries and EFTA countries. The NUTS Regulation subdivides the European countries into comparable statistical units, from small regions for specific diagnoses (NUTS 3) up to major socio-economic regions (NUTS 1). In most cases, NUTS regions refer to national administrative levels. For some countries, NUTS regions are defined independent from the national administrative hierarchy. The differences between administrative units and NUTS regions are explained in section 5.2.4.	
	Geometry type:	Area, multipart	
Attribute: **NUTS _CODE**			
	Definition:	Unique code of the NUTS region as defined and published by Eurostat	
	Value type:	Identifier (text, 5 characters)	
	Value example:	FI1A3	Finnish NUTS 3 region
Attribute: **NUTS _LABEL**			
	Definition:	Name of the NUTS region as defined and published by Eurostat	
	Value type:	Text, 80 characters	
	Value example:	Lappi	Name of the Finnish NUTS 3 region *FI1A3*
Attribute: **TAA**			
	Definition:	Type of the administrative area	
	Value type:	Domain: TAA	
	Values:	2	Land area
		7	Inland water

5.3.1.7 LAU regions

LAU_x			x = {1,2}
Definition:	Territorial unit for statistics defined by the National Statistical Institute		
Description:	Local Administrative Units (LAU) are the basic national entities for statistics. They are defined by the National Statistical Institutes. In most cases, LAU regions are identical with national administrative levels: LAU 2 is compliant with the lowest administrative level, LAU 1 to the next upper administrative level. There are some exceptions: • LAU 2 regions which are defined below the lowest administrative level (in case of very large communes) • LAU 1 regions are not defined if there is no referring national administrative level • In very special cases, National Statistical Institutes maintain LAU regions which refer to an outdated administrative hierarchy. LAU regions in EBM are based on lists of LAU codes and names published by Eurostat.		
Geometry type:	Area, multipart		
Attribute: **LAU_CODE**			
Definition:	National code of the LAU region as defined by National Statistical Institute and published by Eurostat		
Description:	For most countries LAU_CODE corresponds to the SHN code of the referring administrative unit.		
Value type:	Identifier (text, 14 characters)		
Value example:	698	Finnish LAU 2 region, corresponds to SHN=FI619698 of referring administrative unit	
Attribute: **LAU_LABEL**			
Definition:	Name of the LAU region as defined by National Statistical Institute and published by Eurostat		
Description:	For most countries LAU_LABEL is identical with the name of the referring administrative unit (NAMN).		
Value type:	Text, 80 characters		
Value example:	Rovaniemi	Name of the Finnish LAU 2 region *698*, name is identical with referring administrative unit	
	UNK	Unknown	
	N_P	Not populated (valid for LAU_1 only)	
Attribute: **TAA**			
Definition:	Type of the administrative area		
Value type:	Domain: TAA		
Values:	2	Land area	
	7	Inland water	

5.3.2 Related Tables

5.3.2.1 Names of administrative units

EBM_NAM			Alias: AdministrativeUnit_name
	Definition:	Names of administrative units	
	Description:	All administrative units of all national hierarchical levels have a corresponding record in this table. The relation to the referring feature classes is established based on the SHN codes.	
Attribute: **SHN**			
	Definition:	Unique identifier for all European administrative units	
	Description:	see EBM_A	
	Value type:	Identifier (text, 14 characters)	
	Value example:	FI619698	Finnish administrative unit *Rovaniemi*
Attribute: **USE**			
	Definition:	Administrative hierarchy level	
	Value type:	Domain: USE	
	Values:	1	1st order (country level)
		2	2nd order
		3	3rd order
		4	4th order
		5	5th order
		6	6th order
Attribute: **ISN**			
	Definition:	Unique structure identifier for all European administrative hierarchical levels	
	Value type:	Identifier (integer)	
	Value example:	4904	Finnish administrative hierarchical level *Kunta / Kommun*
Attribute: **NAMN**			
	Definition:	Geographical (official national) name of the administrative unit given in national characters (Unicode-UTF8)	
	Description:	In case of more than one official language the names are delimited by #, starting with the primary official name.	
	Value type:	Text, 80 characters	
	Value examples:	Яздач	Bulgarian administrative unit
		Turku#Åbo	Finnish administrative unit
		UNK	Unknown
		N_A	Not applicable
Attribute: **NAMA**			
	Definition:	Geographical name of the administrative unit (NAMN) converted to ASCII characters without diacritical characters.	
	Value type:	Text, 80 characters	
	Value examples:	Yazdach	ASCII conversion of the Bulgarian administrative unit *Яздач*
		Turku#Abo	ASCII conversion of the Finnish administrative unit *Turku#Åbo*
		N_A	Not applicable (for NAMN=UNK or N_A)
Attribute: **NLN**			
	Definition:	ISO 639-2/B 3-char language code of the geographical name (NAMN)	
	Description:	In case of more than one official language the codes are delimited by #.	
	Value type:	Domain: NLN	
	Value examples:	BUL	Bulgarian
		FIN#SWE	Primary name Finnish, secondary name Swedish
		N_A	Not applicable (for NAMN=UNK or N_A)
Attribute: **SHNupper**			
	Definition:	SHN code of the upper level unit which administers the administrative unit	

EBM_NAM			Alias: AdministrativeUnit_name
	Value type:	Identifier (text, 14 characters)	
	Value examples:	FI619000	Finnish administrative unit *Rovaniemi* with SHN=FI619698 (4th national level) is administered by the upper unit *Lappi* with SHN=FI619000 (3rd national level)
		N_A	Not applicable (for administrative units on country level)
Attribute: **ROA**			
	Definition:	Identifier of the residence of authority	
	Description:	Link to a point in feature class *ResidenceOfAuthority* where the administrative centres of this administrative unit is located. The linkage is established on the identifier *PopulatedPlaceID* as defined and maintained by EuroRegionalMap.	
	Value type:	Identifier (text, 38 characters)	
	Value examples:	N.FI.BUILTUP.000028	*PopulatedPlaceID* of the Finnish built-up area *Helsinki*
		UNK	Unknown
		N_P	Not populated
		N_A	Not applicable
Attribute: **PPL**			
	Definition:	Population	
	Description:	The number of people within the administrative unit.	
	Value type:	Integer	
	Value examples:	178630	Population of the Finnish administrative unit Turku#Åbo
		-29999	Unknown
		-29997	Unpopulated
		-29998	Not applicable
Attribute: **ARA**			
	Definition:	Area in km^2	
	Description:	The area size is calculated based on the objects in feature classes *AdministrativeUnit_x* excluding coastal waters, and rounded to a value with two decimal places.	
	Value type:	Decimal	
	Value example:	246.50	Area size of the Finnish administrative unit Turku#Åbo
Attribute: **effectiveDate**			
	Definition:	Official entry into force date of the administrative unit (timestamp)	
	Description:	Effective date is attributed, at least, for administrative units changed after 01.01.2010.	
	Value type:	Date	
	Value example:	01.01.2012	New Dutch administrative unit Hollands Kroon entered into force on 01.01.2012, merging four former administrative units.

5.3.2.2 Designations of administrative hierarchical levels

EBM_ISN			Alias: AdministrativeUnit_designation
	Definition:	Designation of administrative hierarchical levels	
	Description:	All administrative units of all national hierarchical levels have a corresponding record in this table. The relation to the referring feature classes and tables is established based on the ISN codes.	
Attribute: **ISN**			
	Definition:	Unique structure identifier for all European administrative hierarchical levels	
	Value type:	Identifier (integer)	
	Value example:	4904	Finnish administrative hierarchical level *Kunta / Kommun*
Attribute: **USE**			
	Definition:	Administrative hierarchy level	
	Value type:	Domain: USE	
	Values:	1	1st order (country level)
		2	2nd order
		3	3rd order
		4	4th order
		5	5th order
		6	6th order
Attribute: **DESN**			
	Definition:	Designation of the national administrative hierarchy level given in national characters (Unicode-UTF8)	
	Description:	In case of more than one official language the designations are delimited by #.	
	Value type:	Text, 80 characters	
	Value examples:	Землище	Bulgarian designation
		Kunta#Kommun	Finnish designation
Attribute: **DESA**			
	Definition:	Designation of the national administrative hierarchy level (DESN) converted to ASCII characters without diacritical characters	
	Value type:	Text, 80 characters	
	Value examples:	Zemlishte	ASCII conversion of the Bulgarian designation *Землище*
		Kunta#Kommun	ASCII conversion of the Finnish designation *Kunta#Kommun*
Attribute: **NLN**			
	Definition:	ISO 639-2/B 3-char language code of the designations (DESN)	
	Description:	In case of more than one official language the codes are delimited by #.	
	Value type:	Domain: NLN	
	Value examples:	BUL	Bulgarian
		FIN#SWE	Primary designation Finnish, secondary designation Swedish
Attribute: **SHNdigit**			
	Definition:	Number of digits of the SHN code which are significant for the hierarchical level	
	Description:	SHN is a strictly hierarchical built identifier. SHNdigit identifies those digits of the SHN code (starting from first digit) which represent the SHN codes of the specified hierarchical level (USE). First two digits of the SHN code are significant for country level (identical with ICC code). SHNdigit of the lowest hierarchical level is identical with the total length of the SHN code. For more information about the national structure of the SHN code refer to the national metadata (lineage files).	
	Value type:	Integer	
	Value example:	5	First five digits of the SHN code are significant for Finnish hierarchical level *Maakunta / Landskap* (total length of Finnish SHN is 8 digits)

EBM_ISN			Alias: AdministrativeUnit_designation
Attribute: **DES_ENG**			
	Definition:	Designation of the national administrative hierarchy level (DESN) translated into English	
	Value type:	Text, 80 characters	
	Value example:	Municipality	English translation of the Finnish designation *Kunta#Kommun*
Attribute: **SU**			
	Definition:	Statistical unit	
	Description:	Indicates the statistical level to which the administrative level refers to. It is only attributed if the relation is biunique.	
	Value type:	Domain: SU	
	Values:	1	NUTS1
		2	NUTS2
		3	NUTS3
		4	LAU1
		5	LAU2
		998	Not applicable

5.3.2.3 Relation to LAU and NUTS classification

EBM_NUTS			Alias: Relationship_NUTS
	Definition:	Relationship between the SHN codes of administrative units on lowest national administrative level and corresponding statistical codes	
	Description:	Statistical codes are LAU 2 and LAU 1 (maintained by the National Statistical Institutes) and NUTS codes published by Eurostat. The full linkage between administrative units and statistical codes is established only for EU countries. All administrative units of EU countries have a corresponding record in this table. Exceptions are all units where the relationship to the NUTS regulation is in discussion.	
Attribute: **SHN**			
	Definition:	Unique identifier for all European administrative units	
	Description:	see EBM_A	
	Value type:	Identifier (text, 14 characters)	
	Value example:	FI619698	Finnish administrative unit *Rovaniemi*
Attribute: **LAU2**			
	Definition:	National code of the LAU 2 region as defined by National Statistical Institute and published by Eurostat	
	Value type:	Identifier (text, 14 characters)	
	Value examples:	698	Finnish LAU 2region *Rovaniemi*
		UNK	Unknown
		N_A	Not applicable
Attribute: **LAU1**			
	Definition:	National code of the LAU 1 region as defined by National Statistical Institute and published by Eurostat	
	Value type:	Identifier (text, 14 characters)	
	Value examples:	191	Finnish LAU 1 region
		UNK	Unknown
		N_A	Not applicable
Attribute: **NUTS3**			
	Definition:	Unique code of NUTS 3 region as defined and published by Eurostat	
	Value type:	Identifier (text, 5 characters)	
	Value examples:	FI1A3	Finnish NUTS 3 region *Lappi*
		UNK	Unknown
		N_A	Not applicable
Attribute: **NUTS2**			
	Definition:	Unique code of NUTS 2 region as defined and published by Eurostat	
	Value type:	Identifier (text, 5 characters)	
	Value examples:	FI1A	Finnish NUTS 2 region *Pohjois-Suomi*
		UNK	Unknown
		N_A	Not applicable
Attribute: **NUTS1**			
	Definition:	Unique code of NUTS 1 region as defined and published by Eurostat	
	Value type:	Identifier (text, 5 characters)	
	Value examples:	FI1	Finnish NUTS 1 region *Manner-Suomi*
		N_A	Not applicable

5.3.2.4 Languages and character sets

EBM_CHR			Alias: Language
	Definition:	Description of languages used in EBM	
	Description:	This table stores the ISO code of the character set that can be used to read properly geographical names without using the Unicode character set. For non-Latin languages the transliteration scheme is given.	
Attribute: **NLN**			
	Definition:	ISO 639-2/B 3-char language code	
	Value type:	Domain: NLN	
	Value example:	BUL	Bulgarian
Attribute: **LNM**			
	Definition:	Language name (in English)	
	Value type:	Text, 50 characters	
	Value example:	Bulgarian	
Attribute: **ISC**			
	Definition:	ISO 8859 character set code	
	Value type:	Domain: ISC	
	Value example:	5	ISO 8859-5 (Cyrillic)
Attribute: **TLS**			
	Definition:	Transliteration scheme	
	Value type:	Text, 20 characters	
	Value examples:	ISO 9	Transliteration scheme for Cyrillic languages
		N_A	Not applicable (for all Latin languages)

5.3.2.5 Co-administered units

EBM_coAdministered			
	Definition:	Relationship between administrative unit and its co-administering administrative units on the same hierarchical level	
	Description:	In a few countries there are special areas, which are shared between administrative units.	
Attribute: **SHN**			
	Definition:	Unique identifier for all European administrative units	
	Value type:	Identifier (text, 14 characters)	
	Value example:	CH21015391	Swiss administrative unit *Comunanza Medeglia/Cadenazzo* co-administered by other units on the same hierarchical level
Attribute: **SHNco**			
	Definition:	Unique identifier of the co-administering administrative unit	
	Value type:	Identifier (text, 14 characters)	
	Value examples:	CH21015003	Swiss administrative unit *Cadenazzo* co-administering *Comunanza Medeglia/Cadenazzo*

5.3.2.6 Country Codes

CountryCodes			
	Definition:	Country code combinations of EuroGeographics, ISO and EU.	
	Description:	Within the EuroGeographics products, all countries have unique country codes (icc). In some cases these differs from the view of ISO and EU. There are also differences between ISO and EU. This table holds all combinations and one can join it by using the attributes “icc” and “EuroGeographics_Country_Code”.	
Attribute: **EuroGeographics_Country_Code**			
	Definition:	Country code of EuroGeographics	
	Value type:	Identifier (text, 2 characters)	
	Value example:	ND	Northern Ireland
Attribute: **name_national**			
	Definition:	Country name in national characters	
	Value type:	Identifier (text, 255 characters)	
	Value examples:	Κύπρος	Endonym of Cyprus
Attribute: **name_english**			
	Definition:	Long term of country name in English	
	Value type:	Identifier (text, 255 characters)	
	Value example:	Republic of Moldova	
Attribute: **name_english_short**			
	Definition:	Short term of country name in English	
	Value type:	Identifier (text, 255 characters)	
	Value example:	Moldova	
Attribute: **EU_Country_Code**			
	Definition:	Country code of European Commission	
	Value type:	Identifier (text, 2 characters)	
	Value example:	UK	Northern Ireland is located in United Kingdom
Attribute: **ISO_Country_Code**			
	Definition:	Country code of ISO	
	Value type:	Identifier (text, 2 characters)	
	Value example:	GB	Northern Ireland is located in Great Britain

5.3.3 Domains

ICC	
Definition:	Two-character country code according to ISO 3166
Description:	Exceptions: • For Great Britain country code GB is used with a different meaning than defined in ISO 3166 • Northern Ireland is provided separately with own country code ND (not ISO compliant) • For Kosovo country code KS is used (not yet defined in ISO 3166)
Value type:	Text, 5 characters
Value list: see Annex A: Country codes	

TAA		
Definition:	Type of the administrative area	
Description:	Distinction between land and water, as well as between different types of administration	
Value type:	Integer	
Value list:		
1	Main area	valid only for feature class *EBM_A*
2	Land area	not valid for feature class *EBM_A*
3	Branch area	e.g. exclaves and islands; valid only for feature class *EBM_A*
4	Special area	e.g. condominiums, forests, non-municipal areas; not valid for statistical units
5	Coastal water	not valid for statistical units
7	Inland water	
8	In dispute area	not valid for statistical units

USE		
Definition:	Administrative hierarchy level	
Value type:	Integer	
Value list:		
1	1st order	country level
2	2nd order	
3	3rd order	
4	4th order	
5	5th order	
6	6th order	
998	Not applicable	valid only for feature class *AdministrativeBoundary*

BST		
Definition:	Legal status of the administrative boundary (boundary status type)	
Value type:	Integer	
Value list:		
1	Definite	
2	Indefinite	
3	In dispute	
998	Not applicable	used for coastlines without administrative meaning (MOL=2)

MOL		
Definition:	Type of the administrative boundary (meaning of line)	
Description:	Indication if a boundary is based on a coastline	
Value type:	Integer	
Value list:		
1	Boundary and coastline	
2	Coastline	without administrative meaning; used for lines between water area and land area of the same administrative unit
3	Fictitious line	demarcation lines between coastal and inland water of the same administrative unit
7	Boundary on land	
9	Boundary on water	

NLN	
Definition:	ISO 639-2/B 3-char language code
Value type:	Text, 3 characters
Value list: see	

ISC	
Definition:	ISO 8859 character set code
Value type:	Integer
Value list:	
1	ISO 8859-1 (Latin 1)
2	ISO 8859-2 (Latin 2)
3	ISO 8859-3 (Latin 3)
4	ISO 8859-4 (Latin 4)
5	ISO 8859-5 (Cyrillic)
7	ISO 8859-7 (Greek)
9	ISO 8859-9 (Latin 5)
10	ISO 8859-10 (Latin 6)
15	ISO 8859-15 (Latin 9)

SU		
Definition:	Statistical unit	
Description:	Indicates the statistical level to which the administrative level refers to. It is only attributed if the relation is biunique.	
Value type:	Integer	
Value list:		
1	NUTS1	
2	NUTS2	
3	NUTS3	
4	LAU1	
5	LAU2	
998	Not applicable	no LAU/NUTS level defined or no biunique relation

5.3.4 Relationships

The EBM data model contains a number of relationships between classes, see

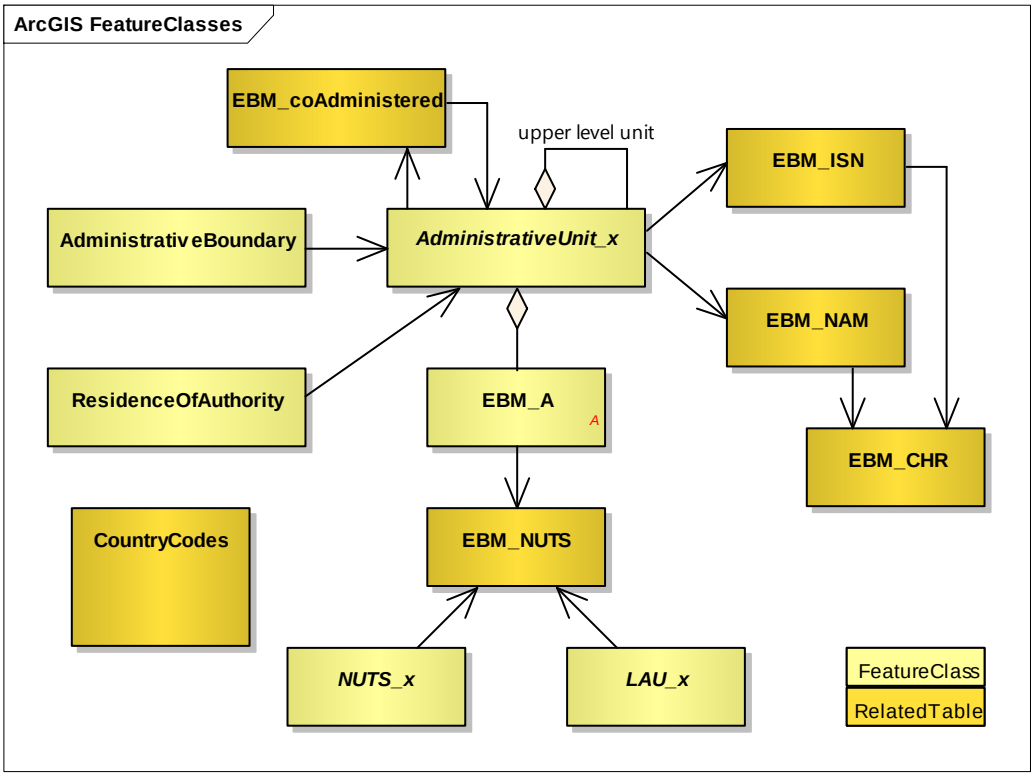


Figure 4. Relationships define the associations between objects in one class (feature class or related table) and objects in another based on identifiers. The following table provides an overview of the main EBM relationships.

Origin class		Destination class		Cardinality	Comment
Class name	**Identifier**	**Class name**	**Identifier**		
AdministrativeBoundary	ABID	AdministrativeUnit_x	SHN	1..* : 1..2 (1 : 2)	has to be implemented with a look-up table
AdministrativeUnit_x	SHN	AdministrativeUnit_y (y < x)	SHN	0..* : 0..1 (* : 1)	has to be implemented with table EBM_NAM (SHN to SHNupper)
AdministrativeUnit_x	SHN	AdministrativeUnit_x	SHN	0..1 : 0..* (1 : *)	has to be imple-mented with table EBM_coAdministered
AdministrativeUnit_x	SHN	EBM_NAM	SHN	1 : 1	
AdministrativeUnit_x	ISN	EBM_ISN	ISN	1..* : 1	
ResidenceOfAuthority	ROA	AdministrativeUnit_x	SHN	0..1 : 1..*	has to be implemented with table EBM_NAM
EBM_A	SHN	NUTS_x	NUTS_CODE	1..* : 0..*	has to be implemented with table EBM_NUTS
EBM_A	SHN	LAU_x	LAU_CODE	1..* : 0..*	

It has to be distinguished between two types of relationships:

- Simple: Relationship is based on one identifier which is included in origin and destination class.
- Complex: Relationship is based on identifiers which are different in origin and destination class. A look-up table has to be used in this case to establish the relationship.

By default, the EBM data product is provided without the implementation of the relationships. The main reason is the amount of possible relationships which may overload the EBM product. Further, relationships are maintained only by specific data formats.

6 Reference systems

6.1 Spatial reference system

EuroBoundaryMap data is stored in two-dimensional geographical coordinates, degrees (longitude, latitude) with decimal fraction. The spatial reference system is ETRS89 (WGS84) with ellipsoid GRS80. Difference between ETRS89 and WGS84 coordinate systems is negligible. ETRS89 is defined for the Eurasian Plate. Although EBM contains data outside this plate, the probable deviations are not of importance for the EBM reference scale 1:100 000.

EuroBoundaryMap is provided without a specific map projection. If required, it is recommended to apply one of the European map projections proposed by INSPIRE:

- Lambert Azimuthal Equal Area projection, see http://www.opengis.net/def/crs/EPSG/0/3035
- Lambert Conformal Conic projection, see http://www.opengis.net/def/crs/EPSG/0/3034

The positional accuracy describes how the coordinates of the feature agree with their real world values. The degree of accuracy depends first of all on the positional accuracy of the source dataset, but also on errors due to conversion processes or errors due to the manipulation processes. More detailed information is included in the metadata for each country.

6.2 Temporal reference system

Following ISO 19108, the Gregorian calendar is used as temporal reference system for the EuroBoundaryMap v11 product.

7 Data quality

Information on the quality of geographic/administrative/statistical data allows a data producer or vendor to validate how well a dataset meets the criteria set forth in its product specification and assists a data user in determining a product's ability to satisfy the requirements for their particular application.

The ISO standard 19157 establishes the principles for describing the quality of geographic data and specifies components for reporting quality information.

The EuroBoundaryMap database is compiled from national administrative datasets provided by National Mapping and Cadastral Agencies. The source data is of the best available quality which is described in more detail in the provided metadata country by country.

The data contributions were transformed into a uniform structure, were line-filtered (if necessary) to a uniform resolution, were edge matched at international boundaries and finally the quality was checked with regard to the defined specification. BKG, as the project coordinator of EuroGeographics EuroBoundaryMap product, also maintains an internal documentation on the whole production process for each version (date of delivery, results of pre-processing, validation reports and error management). BKG carried out a three-stage quality check procedure:

- BKG evaluated that the delivered national contributions are consistent with the required specification
- BKG developed and implemented routines to check the quality of the final database
- BKG sent the harmonized national contributions to each NMA for official quality check and asked for confirmation

The result of the quality checking is listed in the additional document ***EBM_v11_QualityReport.pdf***. This document describes the following main quality elements (according to ISO 19157):

- Completeness
- Temporal quality
- Positional accuracy
- Logical consistency
- Thematic accuracy

8 Data product delivery

The EuroBoundaryMap v11 product will be provided on DVD as standard in ArcGIS File Geodatabase format, but other formats can be delivered on request. A full Europe version, but also specific regional groups of countries are offered. For further details please see

http://www.eurogeographics.org/products-and-services/license-our-products

EuroGeographics and the National Mapping and Cadastral Agencies contributing to this database have made every effort to ensure that data supplied are free from errors and omissions. We will remedy, as soon as reasonably practicable, errors and omissions notified to EuroGeographics or National Mapping and Cadastral Agencies in writing.

Neither EuroGeographics nor the National Mapping and Cadastral 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.

9 Metadata

The metadata files are in accordance with the ISO/DIS 19115 standard. All core metadata elements defined in the standard and additional ones are included. The metadata files are also compliant with the INSPIRE Metadata Implementing Rules.

EBM metadata files are available for two levels: for the full Europe product as well as for the national datasets.

The general EBM metadata for the full Europe database consists of two files:

- ***Metadata_EBM_v11.pdf*** – table format
- ***Metadata_EBM_v11.xml*** – INSPIRE compliant XML format

The national metadata consists of two files (starting with the ISO 3166 country code):

- ***XX_Metadata_EBM_v11.pdf*** – table format
- ***XX_Lineage_EBM_v11.pdf*** – additional information that cannot be classified in the ISO metadata format

Annex A: Country codes

ICC has been defined according to ISO 3166, exceptions are described.

Dataset	Included Countries		Comment	Structure of SHN code
	ICC	Name		
Albania	AL	Albania		AL
Austria	AT	Austria		AT
Belgium	BE	Belgium		BE
Bosnia and Herzegovina	BA	Bosnia and Herzegovina	This country consists of two entities. Only data from entity Federacija Bosne i Hercegovine, included in EBM v11.	BA
Bulgaria	BG	Bulgaria		BG
Croatia	HR	Croatia		HR
Cyprus	CY	Cyprus		CY
Czech Republic	CZ	Czech Republic		CZ
Denmark	DK	Denmark		DK
	GL	Greenland		GL
	FO	Faroe Islands		FO
Estonia	EE	Estonia		EE
Finland	FI	Finland		FI
France	FR	France		FR
	MC	Monaco		MC
	GP	Guadeloupe	Overseas departments belonging to the European Union	*x**x*
	GF	French Guiana		
	MQ	Martinique		
	RE	Réunion		
	YT	Mayotte		
	BL	Saint Barthélemy	Overseas collectivities outside the French administrative hierarchy. But those territories are part of the European Union.	*x**x*
	MF	Saint Martin		
Germany	DE	Germany		DE
Great Britain	GB	Great Britain	Not completely compliant with ISO 3166, as the dataset only contains the provision of OS	GB
Greece	GR	Greece		GR
Hungary	HU	Hungary		HU
Iceland	IS	Iceland		IS
Ireland	IE	Ireland		IE
Italy	IT	Italy		IT
	SM	San Marino		*x**x*

	VA	Vatican City State		
Kosovo	KS	Kosovo	Not compliant with ISO 3166 (not yet defined)	KS
Latvia	LV	Latvia		LV
Lithuania	LT	Lithuania		LT
Luxembourg	LU	Luxembourg		LU
The Former Yugoslav Republic Of Macedonia	MK	The Former Yugoslav Republic Of Macedonia	Greece does not recognise this code to denote the country of the Former Yugoslav Republic Of Macedonia	MK
Malta	MT	Malta		MT
Moldova	MD	Republic of Moldova		MD
Netherlands	NL	Netherlands		NL
Northern Ireland	ND	Northern Ireland	Not compliant with ISO 3166, as this dataset contains only data delivered from OSNI	ND
Norway	NO	Norway		NO
Poland	PL	Poland		PL
Portugal	PT	Portugal		PT
Romania	RO	Romania		RO
Serbia	RS	Serbia		RS
Slovakia	SK	Slovakia		SK
Slovenia	SI	Slovenia		SI
Spain	ES	Spain		ES
	AD	Andorra		*xx*
	GI	Gibraltar		
Sweden	SE	Sweden		SE
Switzerland	CH	Switzerland		CH
	LI	Liechtenstein		LI
Ukraine	UA	Ukraine		UA

Additionally, EBM v11 includes placeholders for potential EBM countries. For each of these countries or territories, the shape is included in feature class AdministrativeUnit_1 (adopted from freely available small scale data), but there are no administrative subdivisions below country level.

Potential Countries	
ICC	**Name**
BY	Belarus
GE	Georgia
GG	Guernsey
IM	Isle of Man
JE	Jersey

ME	Montenegro
RU	Russian Federation
TR	Turkey

Annex B: Language codes

NLN has been defined according to ISO 639-2/B, exceptions are described.

NLN	Language	Comment
ALB	Albanian	
BAQ	Basque	
BEL	Belarusian	
BUL	Bulgarian	
BOS	Bosnian	
CAT	Catalan	
HRV	Croatian	
CZE	Czech	
DAN	Danish	
DUT	Dutch	
ENG	English	
EST	Estonian	
FAO	Faroese	
FIN	Finnish	
FKV	Kven Finnish	*Not yet used in EBM*
FRE	French	
FRY	Western Frisian	*Not yet used in EBM*
GEO	Georgian	
GER	German	
GLA	Gaelic	*Not yet used in EBM*
GLE	Irish	*Not yet used in EBM*
GLG	Galician	*Not yet used in EBM*
GRE	Greek	
HUN	Hungarian	
ICE	Icelandic	
ITA	Italian	
KAL	Kalaallisut, Greenlandic	
LAV	Latvian	
LIT	Lithuanian	
LTZ	Luxembourgish, Letzeburgesch	*Not yet used in EBM*
MKD	Macedonian	This code is according to ISO 639-2/T. It is officially used in The Former Yugoslav Republic Of Macedonia. The ISO 639-2/B code is MAC. Greece does not recognise this code to denote the language of the Former Yugoslav Republic Of Macedonia.
MLT	Maltese	
NOR	Norwegian	
POL	Polish	
POR	Portuguese	
RUM	Romanian, Moldavian, Moldovan	
ROH	Romansh	
RUS	Russian	

SRP	Serbian	
SLO	Slovak	
SLV	Slovenian	
SMA	Southern Sami	*Not yet used in EBM*
SMI	Sami languages	*Not yet used in EBM*
SMJ	Lule Sami	*Not yet used in EBM*
SPA	Spanish	
SWE	Swedish	
TUR	Turkish	
UKR	Ukrainian	
VAL	Valencian	Not ISO compliant. According to ISO, Catalan and Valencian are the same language with unique code CAT.
WEL	Welsh	*Not yet used in EBM*

Annex C: Detailed EBM data model