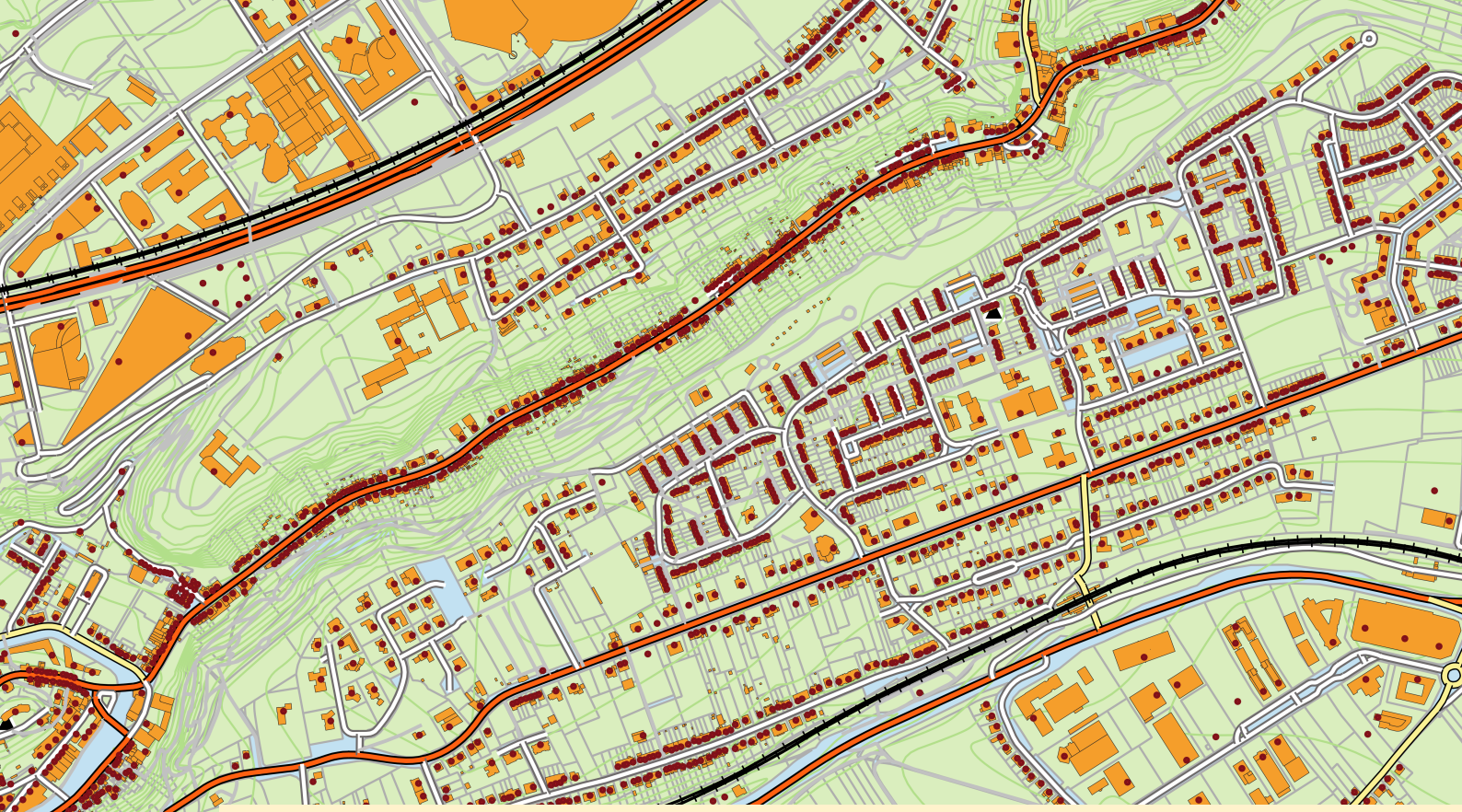

Dataset contents description

BD-L-GeoBase

Version 1.0
24/09/2024

LE GOUVERNEMENT
DU GRAND-DUCHÉ DE LUXEMBOURG
Administration du cadastre
et de la topographie

Table of contents

1 Overview

This document contains a comprehensive guide to the BD-L-GeoBase, produced and managed by the Administration du Cadastre et de la Topographie (ACT). It aims to provide an understanding of the BD-L-GeoBase, its structure and contents.
BD-L-GeoBase serves as the authoritative reference dataset for current geographic data produced and managed by the ACT. This innovative dataset is automatically generated from various data sources maintained by the ACT, ensuring a high-frequency update rate.
Designed as an official geographic reference, BD-L-GeoBase supersedes the discontinued 'Base de données topo-cartographique' (BD-L-TC). The dataset's structure is based on the recommendations of the UN-GGIM Europe Working Group A (WG A) on Core Data and tailored to meet national needs and general data availability. These recommendations encompass 14 INSPIRE themes, including a subset of six themes that are within the scope of direct responsibility of the ACT.
The data structure may evolve in future versions of the product to accommodate for additional datasets and attributes or to adapt to changing needs and data availability.

2 Supply specifications

2.1 Supply mechanism

The BD-L-GeoBase dataset is publicly available on the national open data portal (data.public.lu). It is offered in two file formats: Geopackage (.gpkg) and Geodatabase (.gdb). The dataset is comprised of six different themes, each containing the corresponding layers. Available for download is either the comprehensive dataset including all themes and layers or the individual themes as seperate databases.

2.2 Update Frequency

The dataset is updated and published every three months with each release containing only current, valid data. Only vector data is included in the dataset to keep the file size manageable and reduce complexity. All raster data produced by the ACT can be downloaded separately from the national open data portal. The geopackages and geodatabases are compressed to zip files.

2.3 File and layer naming

Complete dataset:

- BD-L-GeoBase{YYYMMDD}.zip *(geopackage)*
- BD-L-GeoBase{YYYMMDD}.gdb.zip *(geodatabase)*

Theme subset database:

- **ThemeName*{YYYYMMD}.zip *(geopackage)*
- **ThemeName*{YYYYMMD}.gdb.zip *(geodatabase)*

Layers:

- **ThemeToken*_**LayerName***

2.4 Additional specifications

The comprehensive dataset in geodatabase format includes relationship classes to associate objects of different feature classes. The comprehensive dataset in geopackage format contains QML style information.

3 Technical data specifications

3.1 Extent and coverage

The data covers the entire territory of the Grand Duchy of Luxembourg, including the Luxemburgish-German Condominium on the Moselle, Sauer and Our (Map 1).

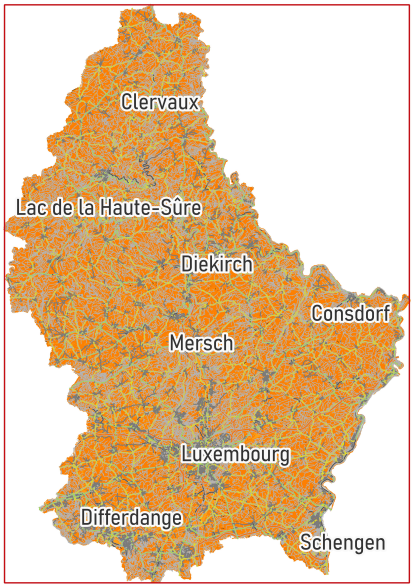

Figure 1: Extent of the BD-L-GeoBase dataset.
(BBox: 48794.45, 138823.77 ; 106221.15, 57000.00)

3.2 Coordinate Reference System

The dataset uses the national LUREF LTM (EPSG: 2169) coordinate reference system.

3.3 Available Formats

- Geodatabase (.gdb)
- Geopackage (.gpkg)

The included themes can be downloaded as seperate datasets or as a complete package. Each version is available in both geopackage and geodatabase file formats.

3.4 Scale

The data is supplied at the largest available scale. Generalized data is, at the moment, not included.

3.5 Update Frequency

The database is populated and published automatically to ensure the high frequency update rate of three months. Only current and valid features are included in the dataset. Despite our best efforts to provide high-quality data, inaccuracies may be introduced during the dataset generation process. If you encounter any technical or content issues, please contact the Administration du Cadastre et de la Topographie - Service gestion des géodonnées (topographie@act.etat.lu).

4 Layers and attributes

The dataset is composed of six distinct themes, containing only vector data. The layer and attribute definitions are derived from the INSPIRE data model documentation and have been adapted to fit national definitions. The overall structure follows the recommendations of the UN-GGIM, with modifications due to data availability. The stability of the BD-L-GeoBase identifier cannot be guaranteed between different versions of the dataset. However, it is guaranteed to be unique within the dataset, across all themes. The six themes currently included in the BD-L-GeoBase are:

- Addresses (AD)
- Buildings (BU)
- Cadastral Parcels (CP)
- Administrative Units (AU)
- Transport Network (TN)
- Elevation (EL)

Example

Each layer in the dataset is described below. The definitions are taken from the INSPIRE data structure whenever directly applicable. Otherwise, the definitions have been adapted to the available data or created if not existent in the INSPIRE structure. The definition tables in this document follow the same example table:

Attributes	*Geometry type*
Attribute name	*Data type* (*Positions*)
Definition of the attribute as defined by the INSPIRE directive and the UN-GGIM recommendations, adapted to the national situation.	
Possible values:	
Coded value → **Definition of the coded value if existant.**	

4.1 Addresses (AD)

The *Addresses* theme contains a subset of valid, georeferenced addresses from the *'Registre national des localités et rues'* (CACLR). The CACLR database is maintained by the Administration du cadastre et de la topographie and the data is provided by the responsible communal administrations. Wherever possible, the address point is placed within the corresponding building boundaries, close to the main entrance.

4.1.1 Address

An identification of the fixed location of property by means of a structured composition of geographic names and identifiers.

Attributes	*Point*
AD_AddressID *Unique identifier of the address.*	String (30)
AlternativeIdentifier *Identifier from the CACLR.*	Integer (4)
AddressSemantics *Complete address semantics as a simple text string.*	String (75)
AddressNumber *Address component composed only by numbers.*	Integer (2)
AddressNumberExtension *Extension to the address number.*	String (10)
ThoroughfareName *An address component which represents the name of a passage or way through from one location to another.*	String (55)
PostCode *A code created and maintained for postal purposes to identify a subdivision of addresses and postal delivery points.*	Integer (2)
AddressAreaName *The AddressAreaName corresponds to the locality of the address.*	String (25)
AddressAreaID *Identifier of the address area. Corresponds to the CACLR identifier.*	Integer (4)
MunicipalityName *Name of the administrative unit to which the address belongs to.*	String (25)
ValidFrom *Date and time at which this version of the address point was created or last modified in the CACLR.*	Date (8)
MunicipalityID *Identifier of the corresponding administrative municipality.*	String (30)
RoadID *Identifier of the corresponding road.*	String (30)

4.2 CadastralParcels (CP)

The *CadastralParcels* theme includes data extracted from the digital cadastral plan (PCN, plan cadastral numérisé). The position, geometry and attribute values of the parcels and boundaries are based on the graphical and alphanumerical content of the national cadastral database maintained by the Administration du cadastre et de la topographie. Due to historic mensuration processes and repeated manual data transposition the precision of the data is heterogeneous and partially very poor (ranging from less than 5cm to over 10m).

4.2.1 CadastralMunicipality

Territorial unit that groups cadastral sections together.

Attributes	*Polygon*
CP_CadMunID *Unique identifier of the cadastral municipality.*	String (30)
Name *Name of the cadastral municipality.*	String (25)
NationalIdentifier *National identifier of the cadastral municipality.*	Integer (8)
AdmMunName *Name of the administrative municipality the cadastral municipality belongs to.*	String (25)
AdmMunID *Identifier of the administrative municipality the cadastral municipality belongs to.*	String (25)

4.2.2 CadastralBoundary

Part of the outline of a cadastral parcel. One cadastral boundary may be shared by two neighbouring cadastral parcels.

Attributes	*Polyline*
CP_BoundaryID *Identifier of the cadastral parcel boundary.*	String (30)
Source *Origin of the digitalized boundary. The planar accuracy of the positioning of a boundary is related to its source.* Possible values: MO → *The source of the cadastral boundary is the 'Mensuration officielle' and the accuracy is centimetric.* PCN → *The source of the cadastral boundary is the 'Plan cadastral numérisé' and the accuracy is metric.* Other → *The source of the cadastral boundary is neither MO nor PCN and the accuracy is metric.*	String (10)

4.2.3 CadastralParcel

Areas of homogeneous real property rights and defined by the national digital cadastral plan (PCN).

Attributes	*Polygon*
CP_ParcelID *Identifier of the cadastral parcel.*	String (30)
NationalReference *National reference of the cadastral parcel.*	String (20)
ShortLabel *Semantics of the cadastral number unique within one cadastral section.*	String (15)
Label *Unique semantics of the entire cadastral parcel label.*	String (65)
MainNumber *Main number of the parcel code.*	Integer (4)
SecondaryNumber *Secondary number of the parcel code.*	Integer (4)
SectionID *Identifier of the section the cadastral parcel belongs to.*	String (30)

4.2.4 CadastralSection

Smallest territorial subunit containing the cadastral parcels.

Attributes	*Polygon*
CP_SectionID *Unique identifier of the section.*	String (30)
SectionCode *Single letter uniquely identifing the section in its cadastral municipality.*	String (2)
ShortName *Shortened name of the section that might not be unique.*	String (35)
Name *Name of the section.*	String (40)
CadMunName *Name of the cadastral municipality the section belongs to.*	String (25)
AdmMunName *Name of the administrative municipality the section belongs to.*	String (25)
CadMunID *Identifier of the corresponding cadastral municipality.*	String (30)

4.3 TransportNetwork (TN)

The *TransportNetwork* theme contains data on the national infrastructure for transportation. Multiple sources are used to generate the content of the transport network dataset. The data is intended for simple cartographic representations of the network or the gain of basic information (name, number of lanes etc.) concerning the infrastructure. Depending on the road category, the data is more or less precise.

4.3.1 Road

Links representing a road.

Attributes			*Polyline*
TN_RoadID			String (30)
Unique identifier of the road.			
NationalIdentifier			Integer (4)
National identifier of the road corresponding to the CACLR identifier.			
Name			String (55)
Name of the road.			
FormOfWay			String (20)
Physical form of the way.			
Possible values:			
Freeway	→	*Road having no single level crossings with other roads (A).*	
NationalRoad	→	*National road managed by the National Roads Administration (N).*	
StateRoad	→	*Regional road managed by the National Roads Administration (CR).*	
MunicipalRoad	→	*Road managed by the municipaliy.*	
Track	→	*Unpaved gravel or forest track.*	
BicycleRoad	→	*Road where bicycles are the only vehicles allowed.*	
PedestrianZone	→	*Part of a road network which is especially designed for use by pedestrians.*	
Path	→	*Path not accessible by car.*	
NotCoded	→	*Road with unknown form of way.*	
NumberOfLanes			Integer (2)
Number of lanes.			
VerticalPosition			String (20)
Position of the road relative to the ground.			
Possible values:			
OnGroundSurface	→	*The spatial object is on ground level.*	
SuspendedOrElevated	→	*The spatial object is suspended or elevated.*	
Underground	→	*The spatial object is underground.*	

TENT String (15)

Part of the Trans-European Transport Network (TEN-T).

Possible values:

TentNetwork	→	*The road is part of the Trans-European Transport Network.*
NoTentNetwork	→	*The road is not part of the Trans-European Transport Network.*

SurfaceCategory String (10)

Type of road surface.

Possible values:

Paved	→	*Road with a hard paved surface.*
Unpaved	→	*Road not paved.*

ConditionOfFacility String (20)

Condition of road link with regards to its completion and use.

Possible values:

Disused	→	*The facility is no longer used, but is not being or has not been decommissioned.*
Functional	→	*The facility is functional.*
Projected	→	*The facility is being designed. Construction has not yet started.*
UnderConstruction	→	*The facility is under construction and not yet functional. This applies only to the initial construction of the facility and not to maintenance work.*
Decommissioned	→	*The facility is no longer used and is being or has been decommissioned.*

NationalRoadCode String (10)

The national code of the road.

EuropeanRouteNumber String (10)

Code identifying the route in the international E-road network.

RoadWidth String (20)

Approximate width of the road surface.

Possible values:

3,5m $<$ W $<$ 4,5m	→	*The road width ranges from 3.5 to 4.5 meters.*
4,5m $<$ W $<$ 6,5m	→	*The road width ranges from 4.5 to 6.5 meters.*
6,5m $<$ W $<$ 7,5m	→	*The road width ranges from 6.5 to 7.5 meters.*
7,5m $<$ W $<$ 10m	→	*The road width ranges from 7.5 to 10 meters.*
W $>$ 10 m	→	*The road width exceeds 10 meters.*
NotCoded	→	*The road width is not coded.*

4.3.2 Railway

Links representing a railway track.

Attributes	*Polyline*
TN_RailwayID	String (30)
Unique identifier of the railway.	
Type	String (20)
The type of railway transport the track is designed for.	
Possible values:	
Tramway → *A railway transport system used in urban areas, which often runs at street level, sharing road space with motor traffic and pedestrians. Tramways are usually electrically powered.*	
Train → *A railway transport usually consisting on two parallel rails on which a powered-vehicle or train machine (Train) pulls a connected series of vehicles in order to transport freight or passengers from one destination to another.*	
Funicular → *A railway transport usually consisting on two parallel rails on which an unpowered-vehicle is pulled by cable (Funicular) in order to transport freight or passengers from one destination to another.*	
NumberOfTracks	Integer (2)
The number of tracks present.	
VerticalPosition	String (20)
Position of the railway relative to the ground.	
Possible values:	
OnGroundSurface → *The spatial object is on ground level.*	
SuspendedOrElevated → *The spatial object is suspended or elevated.*	
Underground → *The spatial object is underground.*	
ConditionOfFacility	String (20)
Condition of railway link with regards to its completion and use.	
Possible values:	
Projected → *The facility is being designed. Construction has not yet started.*	
UnderConstruction → *The facility is under construction and not yet functional. This applies only to the initial construction of the facility and not to maintenance work.*	
Functional → *The facility is functional.*	
Disused → *The facility is no longer used, but is not being or has not been decommissioned.*	
Decommissioned → *The facility is no longer used and is being or has been decommissioned.*	

4.3.3 Runway

Surface that represents the spatial extent of a runway.

Attributes	*Polygon*
TN_RunwayID *Unique identifier of the runway.*	String (30)
SurfaceComposition *A code indicating the composition of an aerodrome/heliport related surface.* Possible values: Asphalt → *Surface made of an asphalt layer.* Concrete → *Surface made of a concrete layer.* Grass → *Surface consisting on a grass layer.*	String (10)
AerodromeID *The identifier of the corresponding aerodrome.*	String (30)

4.3.4 Aerodrome

Airport or airfield.

Attributes	*Point*
TN_AerodromeID *Unique identifier of the aerodrome.*	String (30)
DesignatorIATA *The three letter IATA designator of the aerodrome.*	String (5)
LocatorIndicatorICAO *The four letter ICAO location indicator of the aerodrome.*	String (5)
UNLocode *UN Locode code for trade and transport locations of the aerodrome.*	String (5)
Name *Name of the aerodrome.*	String (50)
Category *Aerodrome category concerning the scope and importance of the air traffic services offered from and to it.* Possible values: International → *Aerodrome serving international air traffic services.* DomesticRegional → *Aerodrome serving domestic regional air traffic services.*	String (20)

Type String (20)

A code specifying the type of aerodrome.

Possible values:

AerodromeHeliport	→	*Aerodrome with heliport landing area.*
AerodromeOnly	→	*Aerodrome only.*
HeliportOnly	→	*Heliport only.*

Restriction String (10)

The restrictions to the use of an air network object.

Possible values:

MilitaryRestrictions	→	*The air network object is exclusively for military use.*
TemporalRestrictions	→	*The temporal restrictions apply to the use of the air network object.*

ConditionOfFacility String (25)

State of a transport network element with regards to its completion and use.

Possible values:

Projected	→	*The facility is being designed. Construction has not yet started.*
UnderConstruction	→	*The facility is under construction and not yet functional. This applies only to the initial construction of the facility and not to maintenance work.*
Functional	→	*The facility is functional.*
Disused	→	*The facility is no longer used, but is not being or has not been decommissioned.*
Decommissioned	→	*The facility is no longer used and is being or has been decommissioned.*

4.4 Buildings (BU)

The *Buildings* theme contains a set of graphical representations of buildings on the national territory. The multiple datasources are mainly based on automatic detection and manual digitization on the orthoimage, the national cadastral plan (PCN), and the footprints from the 3D buildings database. Only the 2D footprints of the buildings are currently available in this dataset.

4.4.1 Building

A Building is an enclosed construction above ground, used or intended for the shelter of humans, animals or things or for the production of economic goods.

Attributes		*Polygon*
BU_BuildingID		String (30)
Unique building identifier.		
Source		String (15)
Source of the digitized building.		
Possible values:		
Bati3DACT	→	*The building footprint originates from the 3D building database managed by the ACT.*
Bati3DVDL	→	*The building footprint originates from the 3D building database managed by the City of Luxembourg.*
PCN	→	*The building footprint originates from the digitized cadastral plan.*
MO	→	*The building footprint originates from the 'Mensuration officielle'.*
Ortho	→	*The building footprint was digitized on the orthoimage.*

4.5 AdministrativeUnits (AU)

The *AdministrativeUnits* theme contains data on different national administrative units.

4.5.1 ResidenceOfAuthority

Main residence from which an administrative unit is administered.

Attributes	*Point*
AU_AuthorityID *Unique identifier of the residence of authority.*	String (30)
Locality *Locality where the residence is situated.*	String (25)
Municipality *Administrative municipality that is administered from the residence of authority.*	String (25)
AddressSemantics *Address of the residence of authority.*	String (75)
AdmMunID *Identifier of the administrative municipality that is administered at the residence of authority.*	String (30)

4.5.2 CadastralSection

Smallest territorial subunit containing the cadastral parcels.

Attributes	*Polygon*
AU_SectionID *Unique identifier of the cadastral section.*	String (30)
SectionCode *Single letter uniquely identifing the section in its cadastral municipality.*	String (2)
ShortName *Shortened name of the section that might not be unique.*	String (35)
Name *Unique name of the section.*	String (40)
CadMunName *Name of the cadastral municipality the section belongs to.*	String (25)
AdmMunName *Name of the administrative municipality the section belongs to.*	String (25)
CadMunID *Identifier of the corresponding cadastral municipality.*	String (30)

4.5.3 CadastralMunicipality

Territorial unit that groups sections together.

Attributes	*Polygon*
AU_CadMunID *Unique identifier of the cadastral municipality.*	String (30)
Name *The name of the cadastral municipality.*	String (25)
NationalIdentifier *National identifier of the cadastral municipality.*	String (4)
AdmMunName *Name of the administrative municipality the cadastral municipality belongs to.*	String (25)
AdmMunID *Identifier of the corresponding administrative municipality.*	String (30)

4.5.4 AdministrativeMunicipality

Smallest administrative unit of the fourth order.

Attributes	*Polygon*
AU_AdmMunID *Unique identifier of the administrative municipality.*	String (30)
Name *The name of the adminstrative municipality.*	String (25)
NationalIdentifier *National identifier of the administrative municipality. Corresponds to the LAU2 code.*	String (4)
CantonID *Identifier of the corresponding canton.*	String (30)

4.5.5 Canton

Administrative unit of the third order.

Attributes	*Polygon*
AU_CantonID *Unique identifier of the canton.*	String (30)
Name *The name of the canton.*	String (20)
NationalIdentifier *National identifier of the canton. Corresponds to the LAU1 code.*	String (4)
DistrictID *Identifier of the corresponding district.*	String (30)

4.5.6 District

Administrative unit of the second order.

Attributes	*Polygon*
AU_DistrictID *Unique identifier of the district.*	String (30)
Name *The name of the district.*	String (15)
NationalIdentifier *National identifier of the district.*	Integer (2)
CountryID *Identifier of the corresponding country.*	String (30)

4.5.7 Country

Administrative unit of the first order.

Attributes	*Polygon*
AU_CountryID *Unique identifier of the country.*	String (30)
Name *The name of the country.*	String (30)
NationalIdentifier *National identifier of the country.*	String (5)

4.5.8 CountryBoundary

A line of demarcation between countries.

Attributes	*Polyline*
AU_CountryBoundaryID *Unique identifier of the country boundary.*	String (30)
TechnicalStatus *Technical status of the country boundary.*	String (15)

4.5.9 Condominium

An administrative area established independently to any national administrative division of territory and administered by two or more countries.

Attributes	*Polygon*
AU_CondominiumID *Unique identifier of the condominium.*	String (30)
Name *The name of the condominium.*	String (40)

4.5.10 JudicialDistrict

Territorial unit of the two district courts.

Attributes	*Polygon*
AU_JudicialDistrictID *Unique identifier of the judicial district.*	String (30)
Name *The name of the judicial district.*	String (15)
NationalIdentifier *National identifier of the judicial district.*	Integer (2)

4.5.11 Constituency

Territorial unit based on cantonal boundaries for the election of the Chamber of Deputies.

Attributes	*Polygon*
AU_ConstituencyID *Unique identifier of the constituency.*	String (30)
Name *The name of the constituency.*	String (10)
NationalIdentifier *National identifier of the constituency.*	Integer (2)

4.6 Elevation (EL)

All the elevation data is extracted directly from the national DEM. Therefore the elevation values correspond to LUREF LTM ellipsoidal heights in meters.

4.6.1 ContourLines

Linear spatial object composed of a set of adjoining locations characterized by having the same elevation property value. It describes, together with other contour lines present in the area, the local morphology of the Earth's surface. The countour interval is 2.5 meters.

Attributes	*Polyline*
EL_ContourID *Unique identifier of the contour line.*	String (30)
Elevation *Elevation that the contour line represents.*	Double (8)
Importance *Hierarchical importance of the contour line (0 = master ; 1 = first order ; 2 = second order).*	Integer (2)
Level *Indication on the position of the contour line relative to its surrounding as a top (summit), normal (slope) or bottom (depression) line.*	String (10)

4.6.2 SpotHeights

Point spatial object which describes the elevation of an Earth's surface at a specific location.

Attributes	*Multipoint*
EL_SpotID *Unique identifier of a spot height point.*	String (30)
Elevation *Value of the elevation property at that point.*	Double (8)
Level *Indication on the position of the spot height relative to its surrounding as a top (summit) or bottom (depression) point.*	String (10)

5 Licensing

The dataset is available under the Creative Commons Zero (CC0) license. The product is downloadable on the national Open Data portal (data.public.lu).

LE GOUVERNEMENT
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Administration du cadastre
et de la topographie

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