10 March 2025

English

United Nations Group of Experts on Geographical Names
2025 session
New York, 28 April – 2 May 2025
Item 5 (b) of the provisional agenda *
Technical expertise: Geographical names data management

Place Names Database of Latvia

Submitted by Latvia**

Summary:

Place Names Database of Latvia, established in 1998, is maintained by the Latvian Geospatial Information Agency. The data corresponds to map scales up to 1:10,000 and covers all territory of the Republic of Latvia.

The Database accumulates geographical names, as well as concise data about them and the corresponding geographical features. The features are characterized by textual data, coordinates and geometries (point, area or line).

On 1 January 2025 the Database contained 137,000 records, which included 186,900 geographical names.

The latest version of the Database for internal use was launched in January 2023, while the public version (available at https://vietvardi.lgia.gov.lv) was released in May 2024.

* GEGN.2/2025/1
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Introduction

The Place Names Database of Latvia was established in 1998. The Latvian Geospatial Information Agency is the holder of the database. This repository maintains geographical names, as well as information about them and their corresponding geographical features.

The database data covers the entire territory of Latvia and the border areas of neighbouring countries. It is used to perform cartographic activities, as well as for the standardization of domestic geographical names and research in the field of applied toponymy. Beyond this, the database serves a wide range of users, including government institutions, municipalities, researchers, surveyors, students, teachers, local historians, and other interested parties.

In January 2023, the internal database was updated, followed by the public version in May 2024 (freely accessible online at https://vietvardi.lgia.gov.lv).

Contents of the Database

As of 1 February 2025, the Place Names Database of Latvia contains **186,400 geographical names** for **131,700 geographical features**.

The database accumulates and compiles information on the following geographical names:

- names of administrative and territorial units;
- names of populated places (cities, towns, villages, homesteads);
- names of buildings and structures, including industrial and public facilities, transport infrastructure objects (e.g., airports, airfields, ports, lighthouses, railway stations), hydraulic and engineering structures, places of worship, and other features, whose names are used for cartographic work;
- names of cultural and historical features (e.g., hillforts, memorial sites);
- names of natural features (e.g., vegetation, hydrographic features, landforms, named areas);
- other feature names necessary for the preparation of geodetic and cartographic information, as well as for applied toponymic research.

The Latvian Place Names Database has a comprehensive classification of geographical features, structured into three hierarchical levels – ranging from general to most detailed. In total, there are 306 distinct types of geographical features.

The distribution of features across these types is uneven (Fig. 1).

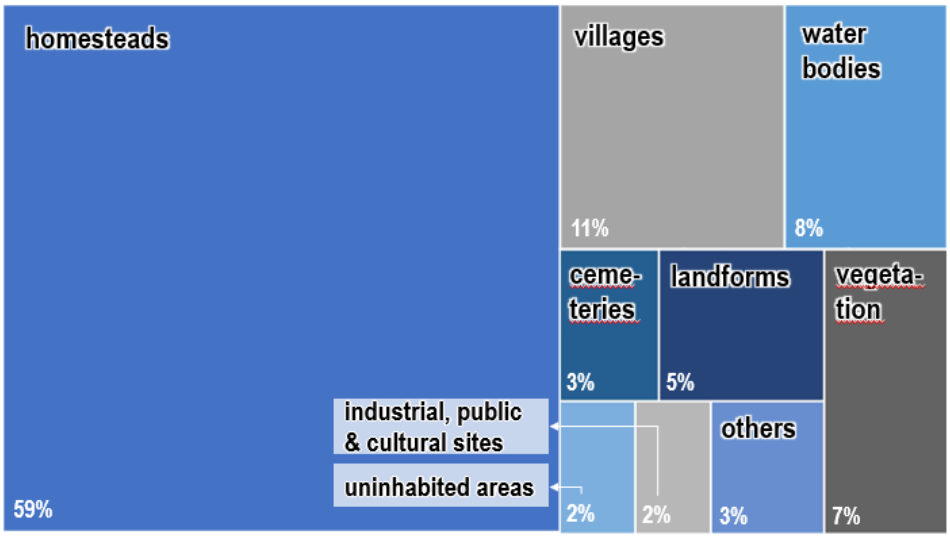

Figure 1. Geographical name distribution by major feature types

The majority of geographical features registered in the database – more than half (70%) – consist of characteristic elements of Latvia's rural settlement structure – homesteads (separately located family houses) and villages (both compact and dispersed). Accordingly, 59% of the features included in the database are homesteads, while 11% are villages.

The third most common category includes water bodies, comprising 8% of all entries, and includes various watercourses and standing water features. The fourth most frequent category is vegetation, referring to wetlands, grasslands and wooded areas, accounting for 7% of the entries.

Among the database's geographical features, 5% represent landforms, including hills, valleys, dunes, and similar features. Cemeteries account for 3%, while industrial, public and cultural sites, and uninhabited areas each make up 2%. The remaining 3% of the database records belong to other geographical feature types like hydro orographic features, administrative territories and so on.

Database entry structure

The Place Names Database includes the following basic information about each geographical name:

- geographical name and its unique identifier (a character string that ensures accurate recognition of the database entry);
- information about the corresponding geographical feature – feature type and unique identifier;
- administrative and territorial affiliation of the feature;
- geographical coordinates of the feature (approximate center or centroid coordinates of the area features; coordinates of the mouth oh the flowing water features);
- other names of the same feature, including erroneous and outdated ones (with an appropriate indication);
- information source name and a citation from it;
- information on the assignment of the official geographical name, changes in name status, or spelling adjustments, including:
    - conclusion of the State Language Centre – document name, date, and citation;
    - corresponding legal act (geographical names authority title, date, and citation);
    - reference to the National Address Register, if the database entry relates to an addressing object.

Additional information in the Place Names Database may include:

- historical names of the geographical feature (with appropriate indication);
- geographical, linguistic, and historical information about the geographical name, including pronunciation;
- details on the corresponding geographical feature, such as numerical characteristics, current status;
- other information useful for identifying the geographical name and feature, or for geographical name standardization.

Each Place Names Database entry must include a **preferred name** – the main toponym, which is usually the official name. If the feature does not have an official name, the most recommended for use is selected from all registered names of the feature.

Sources for compiling and updating the geographical names data include:

- legal acts and decisions of geographical name authorities regarding official geographical name designation, status changes, or spelling adjustments;
- cartographic materials and data;
- toponymic fieldwork materials, mainly from the massive toponymic fieldwork conducted in the second half of the 1990s;
- data obtained through consultations with municipality employees and specialists;
- geographical, linguistic, and historical research on geographical names;
- various other available information sources.

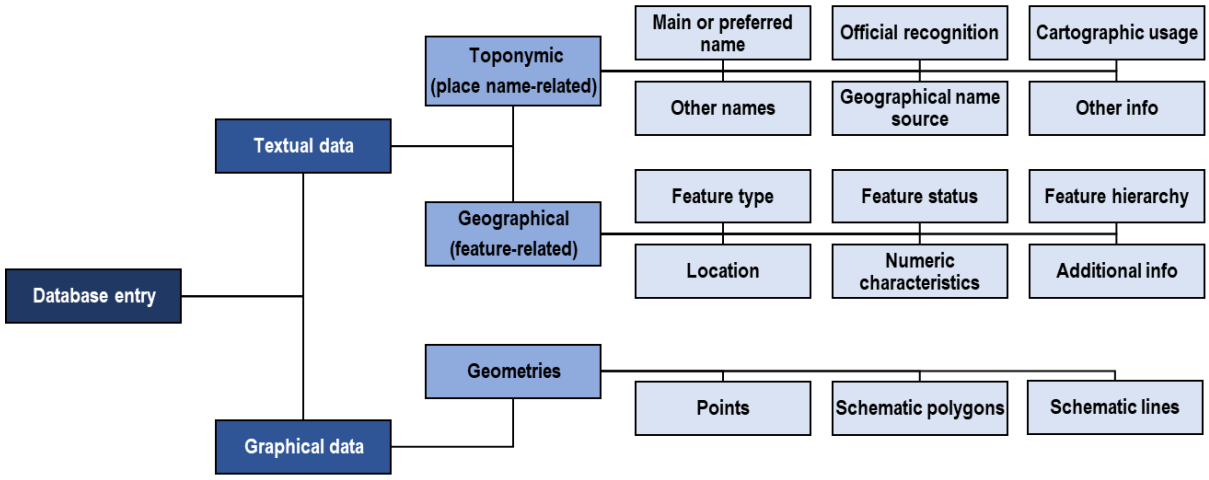

Figure 2. Data structure in a Place Names Database entry

Graphical data (geometries - points, lines and areas) characterizing an extent of the named feature

To represent various geographical features, the Place Names Database uses three types of geometries (Fig. 3): points, lines, and polygons.

- Point geometries are used for point-like features, such as homesteads, as well as for area features with administratively defined or cartographically distinct boundaries, such as administrative and territorial division units, cities, towns, cemeteries, lakes, ponds etc.
- Line geometries represent linear watercourses, such as rivers, streams, canals, ditches, additionally indicating their flow direction.
- Polygon geometries are used for area features that lack clearly defined boundaries or contours on maps, such as small villages, swamps, forests etc.

It is important to note that lines and polygons are not cartographically precise representations but rather manually drawn schematic depictions that indicate the approximate extent of features or, in the case of watercourses, their general flow path.

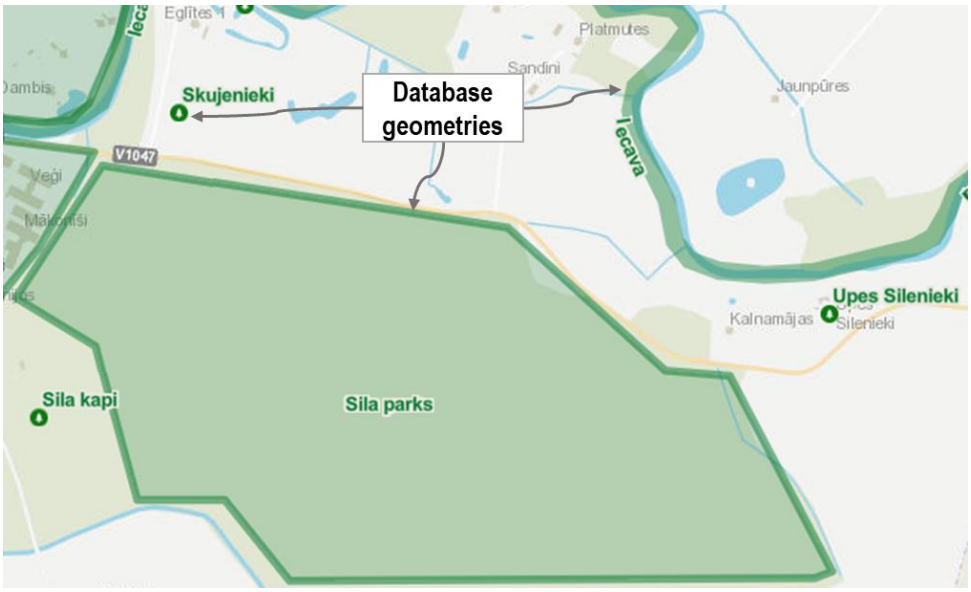

Figure 3. Representation of all types of geometrical data in the database

Public Database

The Place Names Database of Latvia has a freely accessible public version, available at: *https://vietvardi.lgia.gov.lv/*.

The two versions differ in terms of available data and functionality (Fig. 4). The first difference lies in the number of records accessible, as the public version does not display incomplete entries that lack essential information, such as coordinates. Additionally, the public database only contains data on geographical names within Latvia, whereas the internal version also includes data on geographical features located in border areas of neighboring countries.

The second significant difference is the amount of information displayed per entry. To ensure faster performance and convenient use on mobile devices, only the most important and user-relevant data is included in the public version. Geometries are also accessible in the public database.

Editing capabilities (data updates, corrections, and addition of new records) are exclusively available in the internal database, whereas the public version provides data only in viewing mode, additionally allowing users to filter and download data.

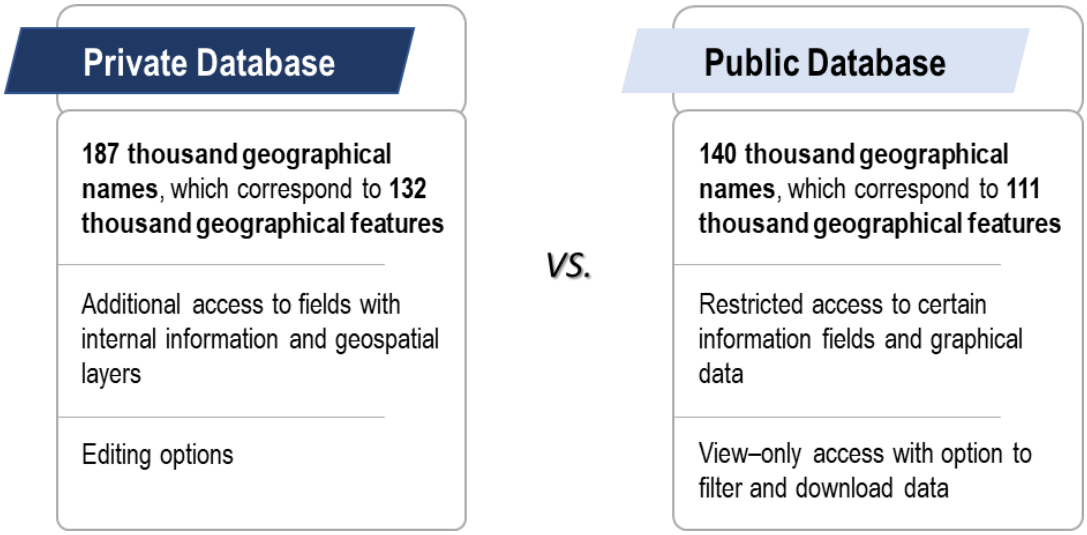

Figure 4. Comparison of private and public database versions

Both versions (private and public) have a map window allowing to view the geometries on the background of maps in various scales and orthophotos (RGB and CIR), produced by the Latvian Geospatial Information Agency.

Search options include:

- search by name or part of it,
- by the feature type,
- by the Latvian historical land
- or by the administrative or territorial division unit.

Search can be specified also by:

- ignoring diacritics,
- search only for official names
- search for official names approved by the Latvian Geospatial Information Agency,
- search for names in citations from data sources.

Further Development

To enhance the functionality and data accessibility of the Place Names Database, the following improvements are planned:

- expanding geometries, especially for orographic features;
- improving and enhancing data quality and accuracy;
- gradually replacing schematic watercourse lines with cartographically precise ones from a 1:10,000 scale map;
- adding an English language interface to the public version to improve accessibility for international users;
- continuing the implementation of INSPIRE data specification requirements for geographical names data.

Points for discussion

The Group of Experts is invited to

(a) Take note of the efforts made in the maintenance and development of the Latvian Place Names Database and to share feedback.